Encompass 2040 Performance Measures (Draft)

Introduction
Presented are proposed performance measures for the Oklahoma City Area Regional Transportation Study (OCARTS) Metropolitan Transportation Plan (MTP), Encompass 2040. The proposed objectives are designed to:

- Meet the Federal requirements for long-range transportation plans;
- Provide the technical foundation for the development of the MTP Update;
- Embody SMART characteristics:
  - Specific enough to guide the development of the MTP;
  - Measurable enough to identify and track plan success;
  - Agreed upon by regional and local agency stakeholders;
  - Realistic and supported by available tools, data, and overall agency resources; and
  - Time-bound or achievable in a specific timeframe (e.g., Encompass 2040 time horizon).

Approach
In developing a recommended set of performance measures for Encompass 2040, a review was conducted of national requirements and performance measures adopted by other MPOs across the country. The following factors were considered in developing the performance measures:

- Ability to address objectives/strategies
- An efficient use of measures in addressing the objectives/strategies, in order to minimize the number of total measures needed
- Starting, at a minimum, with the Federal MAP-21/FAST Act performance measures
- Linking MTP performance measures to Transportation Improvement Program (TIP) criteria, such that the TIP criteria relate to the performance measures, goals, and objectives.
- Consistency with the OCARTS Congestion Management Process (CMP), where appropriate, to avoid being duplicative
- Reliance on a combination of actual and modeled data
- Usefulness in guiding direction of the MTP, and tracking progress over time, per Federal requirements

Federal Performance Measures
MAP-21 and the FAST Act include provisions that require certain performance measures be monitored by state DOTs and regional MPOs. FHWA has developed these measures for inclusion in metropolitan transportation plans; several are still in the process of being finalized. DOTs and
MPOs may add additional performance measures if they so choose; the federal measures serve as a starting point for monitoring the performance of the nation’s transportation network, and many focus on the interstate system and national highway system.

The Federal performance measures include:

- Number of Fatalities
- Rate of fatalities per 100 million Vehicle Miles Traveled
- Number of Serious Injuries
- Rate of Serious Injuries per 100 million Vehicle Miles Traveled
- Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries
- Percent of Pavements in Good Condition or Poor Condition Interstates and remainder of National Highway System
- Percent of National Highway System Bridge Deck Area in Good Condition or Poor Condition
- Level of Travel Time Reliability (draft)
- Peak Hour Travel Time Ratio (draft)
- Truck Travel Time Reliability (draft)
- Average Truck Speed (draft)

ACOG Additional Areas of Concentration
The goals and objectives for ACOGs Encompass 2040 go well beyond the Federal goals, which are more concerned with routes of national significance and very high level performance. Areas that the Federal goals and measures do not address, but ACOG objectives do, include:

- Alternative travel modes – Bicycle, Pedestrian, Transit
- Land use impacts of transportation
- Additional linkages to the CMP
- Security of transportation networks, services
- Efficiency, sustainability, and environment

ACOG Performance Measures
Figure 1 displays the overlap between the Encompass 2040 goals and their relationship to the performance measures. Table 1 shows the Encompass 2040 goals, objectives, corresponding measures, and relevant data sources for each; it also highlights those measures that are federally required and those that are included in the CMP. Performance measures are characterized as Tier 1 (measurement data immediately available) and Tier 2 (measurement datasets require time to develop).
Figure 1 ACOG Goals and Performance Measures

Notes: Solid lines connect to Tier 1 Performance Measures for a goal area.
Bolded performance measures are federal measures.
Table 1 Draft Encompass 2040 MTP Performance Measures

<table>
<thead>
<tr>
<th>Encompass 2040 Goals</th>
<th>Proposed LRTP Objectives</th>
<th>Proposed Performance Measures</th>
<th>Data Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Strength:</td>
<td>- Invest in improvements that enhance the efficiency of the existing transportation system.</td>
<td>Tier 1</td>
<td>- National Performance Measure Research Dataset (NPMRDS)&lt;sup&gt;1&lt;/sup&gt;</td>
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<td></td>
<td>- Improve accessibility to regional employment centers.</td>
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<td>- Travel Demand Model</td>
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<td>- Increase efficiency of goods movement by truck, rail, water, air and pipeline.</td>
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<td>- US Census Transportation Planning Products (CTPP)&lt;sup&gt;2&lt;/sup&gt;</td>
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<td>Tier 2</td>
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<td></td>
<td>- Level of Travel Time Reliability</td>
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<td>- Peak Hour Travel Time Ratio</td>
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<td>- Truck Travel Time Reliability</td>
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<td>- Average Truck Speed</td>
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<td>- Mode share for commuter trips.</td>
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<td>- User Cost (as a function of delay).</td>
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<td>- Vehicle Miles Traveled (VMT) per capita.</td>
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<td>- Person Miles Traveled (PMT)</td>
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<td>Safety and Security:</td>
<td>- Improve design, construction, and maintenance of infrastructure to reduce the number and severity of crashes, injuries and fatalities.</td>
<td>Tier 1</td>
<td>- Oklahoma Department of Transportation Statewide Analysis for Engineering &amp; Technology (SAFE-T) website&lt;sup&gt;3&lt;/sup&gt;</td>
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<tr>
<td>Provide a safe and secure transportation system.</td>
<td>- Increase awareness of the public on safety issues and skills.</td>
<td></td>
<td>- National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System (FARS)&lt;sup&gt;4&lt;/sup&gt;</td>
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<td></td>
<td>- Collaborate on transportation system security strategies.</td>
<td>Tier 2</td>
<td>- ACOG</td>
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<td>Tier 2</td>
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<td>- Number of crashes by severity for vehicle crashes, vehicle-bicycle crashes, and vehicle-pedestrian crashes.</td>
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<td>- Fatality and serious injury crash rate per 100M VMT.</td>
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<td>- Existence of Regional Security Strategies</td>
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<td>- Response and/or incident clearance time</td>
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1 Provided by FHWA [http://ops.fhwa.dot.gov/freight/freight_analysis/perform_meas/vpds/npmrdsfaqs.htm](http://ops.fhwa.dot.gov/freight/freight_analysis/perform_meas/vpds/npmrdsfaqs.htm)
3 [ODOT SAFE-T](https://oksafe-t.org/)
4 [NHTSA FARS](http://www.nhtsa.gov/FARS)
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| **Equity and Options:** Provide transportation access for the movement of all people and goods. | - Provide equitable transportation services and improvements.  
- Expand and maintain accessible and connected pedestrian and bicycle facilities.  
- Expand and maintain a safe, secure and accessible public transportation system. | Tier 1  
- Miles of sidewalk and bicycle paths/lanes added within ¼ mile of transit stop.  
- Percent of population and jobs located within ¼ mile of transit stops. | - ACOG generated shapefile  
- Census data, relevant transit agencies, ACOG generated shapefile |

| **Healthy Communities:** Recognize and improve the connection between land use and transportation to enable citizens to live healthier lives and reduce environmental impact from vehicle travel. | - Improve and increase the walkability and bikeability of the region.  
- Leverage Clean Cities to bring together stakeholders in the public and private sectors to deploy alternative and renewable fuels, idle-reduction measures, fuel economy improvements, and emerging transportation technologies  
- Reduce the impacts transportation projects have on the environment. | Tier 1  
- Mode share for commuter trips.  
- Annual air quality index reading for the region.  
Tier 2  
- Miles of roadway operating under a newly implemented Local Complete Streets policy.  
- Mobile source emissions by pollutant.  
- Transit ridership per revenue vehicle hour | - ACOG  
- Environmental Protection Agency Airnow.gov  
- Oklahoma Department of Environmental Quality (ODEQ) Air Quality Index[^5]  
- US Census Transportation Planning Products (CTPP)[^6] |

[^5]: ODEQ AQI [http://www.deq.state.ok.us/agdnew/AQIndex/AQI.htm](http://www.deq.state.ok.us/agdnew/AQIndex/AQI.htm)
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</thead>
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<tr>
<td><strong>Connectivity:</strong></td>
<td>- Provide efficient</td>
<td>Tier 1</td>
<td>- ACOG generated</td>
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<td>connections within and</td>
<td>- Percent of population and jobs</td>
<td>shapefile</td>
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<td></td>
<td>between modes and</td>
<td>located within (\frac{1}{4}) mile of transit.</td>
<td>- Census data,</td>
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<td>facilities.</td>
<td>- Average trip distance</td>
<td>relevant transit</td>
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<td>- Better connect land</td>
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<td>agencies, ACOG</td>
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<td>use and transportation</td>
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<td>generated shapefile</td>
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<td></td>
<td>decision-making.</td>
<td>- Total miles of sidewalk and</td>
<td>- Travel demand</td>
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<td>- Invest in projects that</td>
<td>bicycle facilities.</td>
<td>model.</td>
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<td>enhance the existing</td>
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<td>transportation infrastructure.</td>
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<td>- Implement a Complete</td>
<td>Tier 2</td>
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<td>Streets policy where</td>
<td>- Miles of roadway operating</td>
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<td>appropriate.</td>
<td>under a newly implemented</td>
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<td>Local Complete Streets policy.</td>
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<td><strong>Performance:</strong></td>
<td>- Invest in improvements</td>
<td>Tier 1</td>
<td>- National Performance Measure Research</td>
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<td>that enhance the efficiency</td>
<td>- Level of Travel Time Reliability</td>
<td>Dataset (NPMRDS)^7</td>
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<td>of the existing transportation system.</td>
<td>- Peak Hour Travel Time Ratio</td>
<td>- Travel demand model</td>
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<td>- Supply alternative travel</td>
<td>- Truck Travel Time Reliability</td>
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<td>options. For every person</td>
<td>- Average Truck Speed</td>
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<td>that carpools, uses transit,</td>
<td>- User Cost (as a function of delay).</td>
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<td>walks or rides their bicycle,</td>
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<td>there is one less car on the road.</td>
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<td>- Increase capacity</td>
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<td>where needed.</td>
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<td><strong>System Preservation:</strong></td>
<td>- Preserve existing and</td>
<td>Tier 1</td>
<td>- Oklahoma DOT</td>
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<td>future transportation</td>
<td>- Number/percent of structurally</td>
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<td>investments.</td>
<td>deficient bridges.</td>
<td>- National Bridge</td>
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<td>- Decrease unnecessary</td>
<td>- Percent Lane Miles of Pavement</td>
<td>Investment Analysis</td>
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<td>bridge and roadway wear and</td>
<td>in Good/Fair Condition</td>
<td>System (NBIAS)^8</td>
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<td>tear.</td>
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<td>- Encourage policies and</td>
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<td>procedures that preserve</td>
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<td>traffic operations and</td>
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<td>safety.</td>
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**Notes:** Federal measures shown in green  
Italicized measures are those that correspond directly with CMP Objectives

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