

# Technical Memorandum#1B Screening

AMATS 2040 Metropolitan Transportation Plan

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## Acronyms and Abbreviations

AMATS	Anchorage Metropolitan Area Transportation Solutions
CMP	Congestion Management Program
FAST Act	<i>Fixing America's Surface Transportation Act</i>
MAP-21	<i>Moving Ahead for Progress in the 21st Century Act</i>
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan

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# 1 Purpose

The purpose of this technical memorandum is to identify and recommend appropriate Metropolitan Transportation Plan (MTP) analysis framework and measures to be used to screen and rank projects for inclusion in the MTP.

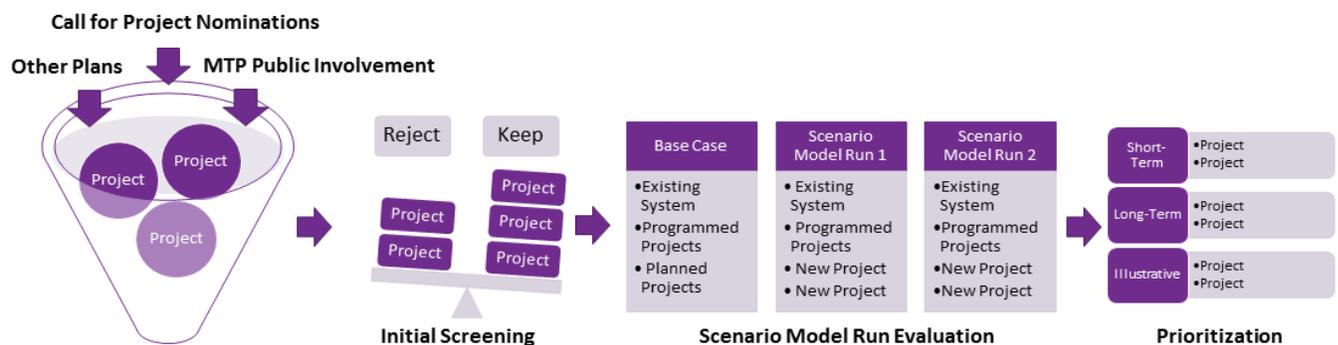
MAP-21 and the FAST Act require Metropolitan Planning Organizations (MPOs) incorporate performance measures and targets into their long-range transportation plans. Performance measures are a way to assess how the proposed MTP improvements will allow AMATS to reach their adopted goals and objectives. Performance measures can be used at two levels of analysis:

- System Level Performance Measures:** These performance measures are meant to track the progress the overall transportation system is making towards implementing the MTP goals and objectives over time. These performance measures will be used to monitor the system performance, and will be tracked and reported. These are described in Technical Memorandum 1A.
- Project Level Performance Measures:** These criteria will be used to assess how specific projects/alternatives fit in with the AMATS 2040 goals and objectives and whether those projects are consistent with the plan.

# 2 Project Level Performance Measures/Screening Criteria

This section describes the screening process (Figure 2-1) to be used to determine how proposed projects will be screened and evaluated for inclusion in the 2040 MTP.

**Figure 2-1. Screening Process**



## 2.1 Initial Screening

Projects identified during the nomination process will be evaluated according to the criteria shown in Table 2-1. The results of the evaluation are not intended to be the final determination in what projects are included in the MTP. It is meant as an initial step to identify projects that are reasonable to be considered as part of the alternative development phase. This initial evaluation will provide basic information about how well each project addresses the 2040 MTP transportation priorities. In some cases, projects may be included in the MTP based on information not easily evaluated by these criteria.

Table 2- 1. Draft 2040 MTP Initial Screening Criteria				
	-2 Poor	0 Neutral	+1 Fair	+2 Good
<b>Operational Improvements<sup>1</sup></b>	Negative impacts to system operations	No change	Limited improvement to system operations	Significant improvement to system operations
<b>Regional Connections<sup>2</sup></b>	Negative impacts to regional connections	No effect on regional connections	Moderate improvement to regional connections	New or improved regional connections
<b>System Connectivity (Motorized and Non-Motorized)<sup>3</sup></b>	Negative impacts to system connectivity	No change	New or improved system connectivity	New or improved system connectivity between two or more modes
<b>Bicycle Route/Trail Use</b>	Negatively impacts bicycle route/trail use	No change	N/A	Improves bicycle route/trail use
<b>Transit Access</b>	Negatively impacts transit access	No change	Improves transit access within ½ mile of a transit route	Improves transit access within ¼ mile of a transit route
<b>Sidewalk Use</b>	Negatively impacts sidewalk use	No change	N/A	Improves sidewalk use

<sup>1</sup> Operations are the provision of integrated systems and services that make the best use of existing transportation systems in order to preserve and improve customer-related performance. This is done in anticipation of, or in response to, both recurring and non-recurring conditions. Operations includes a range of activities in both urban and rural environments, including: routine traffic and transit operations, public safety responses, incident management, snow and ice management, network/facility management, planned construction disruptions, and traveler/shipper information. Operational Improvements enhance the provision of these types of systems and services, and can be multi-modal.

<sup>2</sup> Regional Connections are facilities that serve regional transportation needs (such as access and/or mobility to and from the area outside the region; major activity centers in the region; major planned developments such as new retail malls, sports complexes, or employment centers; or transportation terminals).

<sup>3</sup> Connectivity is the degree to which the transportation system is integrated to provide access to essential services and places travelers need to go. The highest degree of system connectivity is between modes.

<b>Table 2- 1. Draft 2040 MTP Initial Screening Criteria</b>				
	<b>-2 Poor</b>	<b>0 Neutral</b>	<b>+1 Fair</b>	<b>+2 Good</b>
<b>Level of Environmental Impacts<sup>4</sup></b>	Significant negative impacts anticipated	Mixed positive and negative impacts anticipated	Moderate positive impacts anticipated	Significant positive impacts or no negative impacts anticipated
<b>Level of Community Impacts<sup>5</sup></b>	Significant negative impacts anticipated	Mixed positive and negative impacts anticipated	Moderate positive impacts anticipated	Significant positive impacts or no negative impacts anticipated
<b>Environmental Justice<sup>6</sup></b>	Degrades mobility for EJ populations	No effect	N/A	Directly improves mobility for EJ populations
<b>ADA<sup>7</sup></b>	Project decreases ADA elements	No effect	N/A	Project incorporates new ADA elements
<b>Addresses Safety Issue</b>	Increases safety concerns	No effect	Project should improve vehicular or bicycle/pedestrian safety in area not identified as safety issue	Directly addresses an identified vehicular or bicycle/pedestrian safety issue
<b>Improve the existing transportation system efficiency by implementing TSM<sup>8</sup>, TDM<sup>9</sup>, ITS<sup>10</sup>, and TOD<sup>11</sup> strategies.</b>	N/A	No TSM, TDM, or ITS	N/A	Includes TSM, TDM, or ITS

<sup>4</sup> Level of Environmental Impacts: consider factors such as property impacts, air quality impacts, noise impacts, wildlife, potential threatened and endangered species, wetlands, floodplains, stream crossings, storm water run-off, and parkland.

<sup>5</sup> Level of Community Impacts - Consider factors such as impacts to educational facilities, negative visual impacts, impacts to recreational facilities, neighborhood division, and impacts to livability factors.

<sup>6</sup> Environmental Justice (EJ) at the Federal Highway Administration (FHWA) means identifying and addressing disproportionately high and adverse effects of the agency's programs, policies, and activities on minority populations, [including limited English proficient populations], and low-income populations to achieve an equitable distribution of benefits and burdens.

<sup>7</sup>The Americans with Disabilities Act of 1990 (ADA) prohibits discrimination and ensures equal opportunity and access for persons with disabilities.

<sup>8</sup> TSM (Transportation System Management) is a program to reduce congestion and improve traffic flow through traffic signal synchronization, freeway operations improvements (e.g., changeable message signs and ramp metering), incident management (clearing accidents and breakdowns quickly), and other methods.

<sup>9</sup> TDM (Transportation Demand Management) is the application of strategies and policies to reduce travel demand, or to redistribute this demand in space or in time, to increase transportation system efficiency.

<sup>10</sup> ITS (Intelligent Transportation Systems) is the deployment of advanced transportation technologies in an integrated manner to improve the surface transportation system.

<sup>11</sup> TOD (Transit Oriented Development) at the Federal Transit Administration (FTA) means creating compact, mixed-use communities near transit where people enjoy easy access to jobs and services. Well-done TOD connects transit to desirable places to live, work and visit that feature amenities like entertainment venues, parks, retail, restaurants, an improved pedestrian environment and diverse housing choices.

Table 2- 1. Draft 2040 MTP Initial Screening Criteria				
	-2 Poor	0 Neutral	+1 Fair	+2 Good
<b>Level of consistency with other adopted plans or studies</b>	No consistency with adopted plans or studies	Mixed consistency with adopted plans or studies	Marginal consistency with adopted plans or studies	Strong consistency with adopted plans or studies
<b>Economic Benefits<sup>12</sup></b>	Negative impacts to economic benefits	No economic benefits	Moderate economic benefits	Significant economic benefits
<b>Preservation of Existing Facility</b>	No impact	Minor preservation	Moderate preservation	Significant preservation
<b>Deliverability</b>	Significant community concerns and/or significant negative financial impacts to MTP funding	Mixed community support and/or mixed financial impacts to MTP funding	Moderate community support and/or manageable negative financial impacts to MTP funding	Strong community support and/or minimal negative financial impacts to MTP funding

These initial screening criteria are related to the proposed 2040 MTP goals. Projects under consideration should be consistent with and help to achieve the goals. Table 2-2 compares the initial screening criteria with the proposed 2040 MTP goals.

Table 2- 2. Comparison of Proposed Initial Screening Criteria with Proposed 2040 MTP Goals	
Goal	Proposed Screening Criteria
<b>GOAL 1 Preserve the Existing System:</b> Maintain the transportation system in a state-of-good repair.	<ul style="list-style-type: none"> <li>• Preservation of Existing Facility</li> <li>• Improve the existing transportation system efficiency through the implementation of effective and innovative transportation system management (TSM), transportation demand management (TDM), and Intelligent Transportation System (ITS) strategies.</li> </ul>
<b>GOAL 2 Improve Safety:</b> Increase the safety and security of the transportation network.	<ul style="list-style-type: none"> <li>• Addresses safety issue</li> </ul>

<sup>12</sup> Economic benefits consider factors that encourage economic development, redevelopment, and/or freight mobility through improved access and transportation opportunities; addresses impacts on urban areas, freight corridors, recreational or educational opportunities, tourism activity. Benefits economic development projects and or/facility improvements to support mixed use/redevelopment, business areas, employment center, transit supportive corridors, other significant types of urban development areas; recreation or education opportunities; and/or tourism activity.

Table 2- 2. Comparison of Proposed Initial Screening Criteria with Proposed 2040 MTP Goals	
Goal	Proposed Screening Criteria
<p><b>GOAL 3 Improve Travel Conditions:</b> Develop an efficient multi-modal transportation system to reduce congestion, promote accessibility, and improve system reliability.</p>	<ul style="list-style-type: none"> <li>Operational Improvements</li> <li>Regional Connections</li> <li>System Connectivity</li> <li>Bicycle Route/Trail Use</li> <li>Transit Access</li> <li>Sidewalk Use</li> <li>Improve the existing transportation system efficiency through the implementation of effective and innovative transportation system management (TSM), transportation demand management (TDM), and Intelligent Transportation System (ITS) strategies.</li> </ul>
<p><b>GOAL 4 Support the Economy:</b> Develop a transportation system that supports a thriving, sustainable, broad-based economy.</p>	<ul style="list-style-type: none"> <li>Economic Benefits</li> <li>Regional Connections</li> </ul>
<p><b>GOAL 5 Promote Environmental Sustainability:</b> In developing the transportation network, respect the community’s natural and built environment and quality of life while considering our northern climate and supporting planned land use patterns.</p>	<ul style="list-style-type: none"> <li>Level of Environmental Impacts</li> <li>Level of Community Impacts</li> <li>Environmental Justice and ADA</li> <li>Level of consistency with other adopted plans or studies</li> </ul>
<p><b>GOAL 6 Quality Decision-Making:</b> Make sound public investments.</p>	<ul style="list-style-type: none"> <li>Level of consistency with other adopted plans or studies</li> <li>Economic Benefits</li> <li>Deliverability</li> </ul>

## 2.2 Scenario Development and Evaluation

Table 2-3 shows the performance measures that will be used to evaluate the traffic model runs. Maps showing level of service for each model run will also be produced.

Based on the model results, projects in each scenario will be considered and assessed based on the improvement the project makes to the transportation system and how well it meets the proposed 2040 MTP goals and objectives. The project team will present information to the public and decision makers to foster a discussion of which projects should advance into the preferred final scenario. This information will come from the results of the initial screening and may be supplemented with additional information during the scenario evaluation. As part of this process, consideration will be given to all modes, as well as consistency with the comprehensive plans, the MTP Goals and Objectives, the land

use plan map, the Anchorage Bicycle Plan, the Anchorage Pedestrians Plans, and the Freight Mobility study.

Table 2- 3. Draft 2040 MTP Scenario Model Run Evaluation Criteria				
Measure	Goal or Objective	Base Case	Scenario Model Run 1	Scenario Model 2
<b>Households and Employment</b>				
<b>Entire Region</b>				
<b>MOA</b>				
<b>Auto Statistics</b>	3I &3H			
VMT				
VHT				
VHD				
VHD (as percent of VHT)				
<b>Auto Statistics (per capita)</b>	3I & 3H			
VMT				
VHT				
VHD				
VMD				
<b>Total Centerline miles</b>				
<b>VMT of LOS E by Facility Type</b>	3I			
Freeway\Expressway				
Major Arterial				
Minor Arterial				
Other				
<b>VMT of LOS F by Facility Type</b>	3I			
Freeway\Expressway				
Major Arterial				
Minor Arterial				
Other				
<b>VHT of LOS E by Facility Type</b>	3I			
Freeway\Expressway				
Major Arterial				
Minor Arterial				

Table 2- 3. Draft 2040 MTP Scenario Model Run Evaluation Criteria				
Measure	Goal or Objective	Base Case	Scenario Model Run 1	Scenario Model 2
Other				
<b>VHT of LOS F by Facility Type</b>	3I			
Freeway\Expressway				
Major Arterial				
Minor Arterial				
Other				
<b>VDT of LOS E by Facility Type</b>				
Freeway\Expressway				
Major Arterial				
Minor Arterial				
Other				
<b>VDT of LOS F by Facility Type</b>				
Freeway\Expressway				
Major Arterial				
Minor Arterial				
Other				
<b>VMT by LOS</b>	3I			
<b>Centerline Miles by LOS</b>				
<b>VHD for Key Facilities</b>	3H			
<b>Average time by Income</b>	5A			
Low Income Trips				
All Trips				
<b>Average cost by Income</b>	5A			
Low Income				
All				
<b>Total Transit Boardings</b>	3E			
<b>Total Transit Boarding per Capita</b>	3E			

Table 2- 3. Draft 2040 MTP Scenario Model Run Evaluation Criteria				
Measure	Goal or Objective	Base Case	Scenario Model Run 1	Scenario Model 2
<b>Transit Access</b>	3E			
Low Income HHs				
All HHS				
Employment				
<b>Trips By Mode (Region)</b>	3E			
<b>Mode Shares (Region)</b>	3E			
<b>Mode Shares (Region, Aggregate)</b>	3E			
<b>Trips By Mode (MOA)</b>	3E			
<b>Mode Shares (MOA)</b>	3E			
<b>Mode Shares (MOA, Aggregate)</b>	3E			
<b>Mode Shares (MOA, Aggregate 2)</b>	3E			
<b>HBW Total and Average Travel Time and Cost By Income Group</b>	4C & 5A			
LOW				
MLO				
MHI				
HI				

### 2.3 Prioritization

The transportation improvements needed by 2040 are likely to be greater than the available funding for over the next 20 years. As a result, the recommendations need to be prioritized so that the total cost of the recommendations match the anticipated available funding; resulting in a fiscally constrained plan. The prioritization criteria were developed with the intent of uniformly scoring both new projects and improvements to existing facilities. While other measures can be used to quantify improvement that

would result from a project, such as congestion reduction measured by LOS, using this as a measure would unfairly prioritize capacity enhancements to existing roadways. Other measures that could be effective, such as measuring the efficiency of freight movement, were not used due to limitations of available data.

To avoid unfairly prioritizing one mode over another, roads, transit, and non-motorized improvements will be scored separately. The prioritization criteria for each mode can be found in Tables 2-4, 2-5, and 2-6.

Table 2- 4. Draft 2040 MTP Prioritization Criteria for Road Projects					
Criterion	-2	0	1	3	5
<b>Project Readiness</b>	N/A	No work started	Some preliminary design and/or environmental work complete	Final engineering completed or nearing completion	Right-of-way purchased; ready to construct
<b>Timing of need</b>	Can wait until beyond 2040	N/A	Long-term need (2031-2040)	N/A	Needed in short term (2018-2030)
<b>Project Need</b>	Negatively impacts existing facility and/or network	N/A	Completes a gap in the existing network	Upgrade of an existing facility and/or addresses capacity needs	Addresses a safety need and/or helps to preserve the existing facility
<b>Functional Classification</b>	N/A	N/A	Collector	Arterial/Expressway	Highway/Interstate
<b>Logical sequencing</b>	Would conflict with another project	N/A	New project	N/A	Next logical or final phase of an existing road
<b>Cost (length X AADT)</b>	N/A	Fourth quartile	Third quartile	Second quartile	First quartile
<b>Obstacles to construction</b>	<b>Unlikely</b> to be overcome	Require <b>significant effort</b> to resolve	<b>Likely</b> to be overcome	N/A	<b>No obstacles</b> are foreseeable

<b>Table 2- 5. Draft 2040 MTP Prioritization Criteria for Transit Projects</b>					
<b>Criterion</b>	<b>-2</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>5</b>
<b>Timing of Need</b>	Can wait until beyond 2040	N/A	Long-term need (2031-2040)	N/A	Needed in short term (2018-2030)
<b>Additional Transit Service</b>	Reduces service coverage, frequency, or removes transit amenities	No change	Helps to maintain existing service or amenities	Increases capacity on existing routes or adds additional amenities (i.e. bike racks, vehicles, benches, etc.)	Helps expand service coverage and/or helps increase frequency on an existing route
<b>Accessibility</b>	Reduces accessibility for transit users	N/A	N/A	Improves/fixes /replaces existing accessibility accommodation	Addresses accessibility need for a current non-accessible condition
<b>Increase Ridership</b>	Worsens	No change	Minimal Increase	Moderate Increase	Substantial Increase
<b>Improve Rolling Stock</b>	Reduces FTA required fleet size	No change	Routine capital repair or maintenance	N/A	Replaces assets at the end of FTA useful life or buys new assets to accommodate additional service.
<b>Safety</b>	Worsens	No change	Minimal Improvement	Moderate Improvement	Substantial Improvement
<b>System Reliability</b>	Reduces System Reliability	No change	Helps to maintain system reliability	Moderate improvement in system reliability	Substantial improvement in system reliability
<b>Transit Supportive Corridor(TSC)/ Transit Oriented Development (TOD)</b>	N/A	Not located along a TSC or within a TOD area	N/A	N/A	Located along a TSC identified in the Land Use Plan or within a TOD area identified in a plan

<b>Table 2- 6. Draft 2040 MTP Prioritization Criteria for Non-motorized Projects</b>					
<b>Criterion</b>	<b>-2</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>5</b>
<b>Project Readiness</b>	N/A	No work started	Some preliminary design and/or environmental work complete	Final engineering completed or nearing completion	Right-of-way purchased; ready to construct
<b>Project Need</b>	Negatively impacts existing facility and/or network	N/A	Completes a gap in the existing network	Upgrade of an existing facility and/or addresses capacity needs	Addresses a safety need and/or helps to preserve the existing facility
<b>Timing of Need</b>	Can wait until beyond 2040	N/A	Long-term need (2031-2040)	N/A	Needed in short term (2018-2030)
<b>Potential for New Trips considering type of facility, nearby facilities, topography, etc.</b>	New trip discouraged by type of facility, nearby facilities, topography, etc.	Unlikely to generate new walking/bicycle trips	Small likelihood to generate new walking/bicycle trips	Moderately likely to generate new walking/bicycle trips	Highly likely to generate new walking/bicycle trips
<b>Obstacles to construction</b>	Unlikely to be overcome	Require significant effort to resolve	Likely to be overcome	N/A	No obstacles are foreseeable

AMATS has the final authority to select the projects included in the recommendations and to prioritize them. The final selection and prioritization will be refined during the plan adoption process.