TRANSPORTATION ADVISORY BOARD
Of the Metropolitan Council

Notice of a Meeting of the
TECHNICAL ADVISORY COMMITTEE
Wednesday, April 3, 2019
Metropolitan Council
9:30 A.M.

AGENDA

1. **Call to Order**
2. **Approval of Agenda**
3. **Approval of March 6, 2019 Minutes**
4. **TAB Report** (Elaine Koutsoukos, TAB Coordinator)
5. **Committee Reports**
   - **Executive Committee** (Lisa Freese, Chair)
   - **Planning Committee** (Jan Lucke, Chair)
     a. **2019-22 TPP Administrative Modification: Performance Measures**
     b. **2019-23 TIP Amendment: Performance Measures**
   - **Funding & Programming Committee** (Paul Oehme, Chair)
6. **Special Agenda Items**
   - **Regional Solicitation Before & After Study** (Steve Peterson, MTS)
   - **2018 Regional Solicitation Feedback and 2020 Regional Solicitation Schedule**
7. **Agency Reports**
8. **Other Business**
9. **Adjournment**

Streamlined TIP Amendments going to TAB this month. Contact Joe Barbeau with questions at 651-602-1705.

Click here to print all agenda items at once.

Minutes of a Meeting of the
TECHNICAL ADVISORY COMMITTEE
Wednesday, March 6, 2019
9:30 A.M.

Members Present: Doug Fischer, Brian Isaacson, Lisa Freese, Emily Jorgenson, Steve Bot, Elaine Koutsoukos, Cole Hiniker, Michael Larson, Adam Harrington, Molly McCarthy, Innocent Eyoh, Andrew Emanuele, Jen Lehman, Peter Dahlberg, Danny McCullough, Karl Keel, Ken Ashfeld, Anne Kane, Paul Oehme, Michael Thompson, Kim Lindquist, Jennifer Hager, Paul Mogush

1. Call to Order
The meeting was called to order by Chair Lisa Freese at 9:31 a.m.

2. Approval of Agenda
A motion to approve the agenda was moved by Brian Isaacson and seconded by Doug Fischer. No discussion. Motion passed.

3. Approval of Minutes
A motion to approve the February 6, 2019 TAC minutes was moved by Cole Hiniker and seconded by Paul Oehme. Motion passed.

4. TAB Report

Elaine Koutsoukos reported that the February 20 TAB meeting was cancelled due to weather. However, an electronic vote was undertaken to cover items that were time-sensitive. All other items will be added to the March TAB agenda.

5. Committee Reports

A. Executive Committee (Lisa Freese, Chair)
Chair Freese noted that the Executive Committee met during the morning and talked about the meeting's agenda as well as upcoming items for the committees.

B. Planning Committee (Kevin Roggenbuck, Vice Chair)
Chair Freese noted that the February meeting of the TAC-Planning Committee had been cancelled.

C. Funding and Programming Committee (Paul Oehme, Chair)

2019-15: TIP Amendment: US 212 Reduced Conflict Intersection.

Paul Oehme presented this item, noting that is needed in order to revise the project scope and total cost of the US 212 and CSAH 36 reduced conflict intersection project. The scope was revised to add a reduced conflict intersection at US 212 and CSAH 36 and the total project cost was increased from $1.14

million to $1.949 million. A motion to approve the revised scope and adjusted cost of the project was moved by Karl Keel and seconded. Motion passed unanimously.

2019-16: TIP Amendment: I-94 Reconstruction.

Mr. Oehme presented this amendment, which updates the project description and total projects cost of the I-94 project between Maple Grove and Rogers. He noted that the scope changes include additional rest area work and weigh-in-motion technology along the corridor. The scope change also includes temporary lane widening and crossovers during the 2019 construction year. This project is funded with state bond funds. Innocent Eyoh clarified that the addition of the lanes was necessary for construction and is a temporary change. A motion to approve the TIP amendment was moved by Karl Keel and seconded by Ken Ashfeld. Motion passed unanimously.

2019-17 Program Year Change Request: Metro Transit.

Mr. Oehme presented this item, noting that Metro Transit is requesting to delay the 2016 transit expansion project along Hennepin Avenue in Minneapolis from 2021 to 2023. This will ensure that the timing of the expansion is coordinated with a road reconstruction also occurring on Hennepin Avenue. A motion to approve the TIP amendment was moved by Brian Isaacson and seconded by Anne Kane. Motion passed unanimously.

6. Special Agenda Items

Freeway Improvement Plan Schedule.

Metropolitan Council staff Joe Barbeau presented this item. Mr. Barbeau noted that the proposed TIP schedule does not divert much from schedules used in the past. He walked through the major milestones of the TIP schedule, noting that November 1st is when final approval must take place.

Congestion Management Plan Update.

Metropolitan Council staff Mark Filipi presented this item. Mr. Filipi explained that this item stems from feedback from FHWA from the Council's 2016 triannual TMA certification review, which recommended the Council develop a fully realized Congestion Management Process that adheres to federal regulations. The CMP is required under federal law, and was previously included within the Transportation Policy Plan. The CMP Plan is an updated, freestanding document that is more in-depth and includes extensive feedback from regional partners such as metro-area counties, cities, FHWA, and MnDOT. It follows the guidelines from the Congestion Management Process Guidebook published by FHWA. It is an ongoing process that will be taken forward in coming years. The goal is to assess somewhere between four and six corridors per year. The Plan includes a Policies and Procedures Handbook and a Transportation Trends report, the latter of which will be updated on an annual basis.

Karl Keel inquired if there was any attempt to estimate the cost effectiveness of any of the CMP strategies as part of the study. Mr. Filipi responded that the Council and its partners will attempt to evaluate and track the cost effectiveness to the greatest extent possible.

Brian Isaacson asked how the CMP will be used. Mr. Filipi noted that the next steps of the process is figuring out the best mechanisms to get the CMP integrated into the decision-making processes of decision makers throughout the metro area.

Doug Fischer inquired if there would be guidelines available to local stakeholders who wish to use the CMP Plan for their own project evaluation process. Mr. Filipi explained that this is one of the main goals of the Congestion Management Process, and it would be outlined in the Policies and Procedures Handbook.

7. Agency Reports

Molly McCartney from MnDOT announced that the Governor and MnDOT has released a transportation package, which outlines MnSHIP investment strategies and projects. She continued by noting that Lynne Bly would be retiring from her post at MnDOT and that the vacancy is expected to be filled within the next month.

Adam Harrington from Metro Transit announced that they will be implementing quarterly bus and rail service changes, which will be primarily minor in nature.

8. Other Business and Adjournment

A motion to adjourn the meeting was moved by Doug Fischer and seconded by Brian Isaacson. The motion passed and the meeting was adjourned at 10:18 a.m.

Prepared by:

David Burns

ACTION TRANSMITTAL No. 2019-22

DATE:	March 27, 2019
TO:	TAC
FROM:	TAC Planning
PREPARED BY:	David Burns, Senior Highway Planner (651-602-1887)
SUBJECT:	Transportation Policy Plan Administrative Modification to Chapter 13: Performance Outcomes
REQUESTED ACTION:	Federal law requires an administrative modification to the Transportation Policy Plan to add the federally required performance measures and the associated targets into Chapter 13: Performance Outcomes.
RECOMMENDED MOTION:	That the Technical Advisory Committee approve an administrative modification to the Performance Outcomes chapter of the TPP to include the federally required performance measure targets and an associated analysis.

BACKGROUND AND PURPOSE OF ACTION:

Pursuant to 23 CFR 490.29, all State DOTs and Metropolitan Planning Organizations (MPOs) must adopt a program to measure system performance and set performance targets in order to monitor progress. These performance measures are divided into the following five categories:

- Safety Performance Measures (PM1);
- Pavement/Bridge Performance Measures (PM2);
- System Performance Measures and CMAQ (PM3); and
- Transit Asset Management (TAM)

The existing chapter of the Transportation Policy Plan includes the adopted 2018 safety (PM1) performance measure targets. The remaining measures were not officially adopted by the Council until November of 2018, just after the adoption of the TPP. As such, they are not included in the adopted plan. This administrative modification rectifies this by updating Chapter 13: Performance Outcomes to include all federally required performance measure targets. Additionally, and pursuant to federal requirements, an analysis of how the system has performed, including the identification of performance trends (as applicable) and their implications. This administrative modification must be adopted prior to May 20, 2019 to fulfill federal requirements.

RELATIONSHIP TO REGIONAL POLICY: The 2040 Transportation Policy Plan includes a list of performance measures used to monitor and assess system performance. These performance measures support the six over-arching transportation system goals of the TPP. The inclusion of the adopted federal performance measure targets fulfills federal requirements of an MPO to include performance measure targets in the region's Transportation Policy Plan.

STAFF ANALYSIS: The inclusion of the adopted federal performance measure targets brings the 2040 Transportation Policy Plan into compliance with federal performance measure law by serving to report upon the adopted performance measure targets, trends, and the potential implications of these trends.

COMMITTEE ACTION: TAC Planning asked for clarification on what requires a TPP Amendment and what requires a TPP administrative modification. Mark Filipi explained that amendments are required for changes to project scope or schedule. Also funding changes require amendments. Changes like those found within this item are considered bureaucratic details of the plan and only require an administrative modification.

Committee voted unanimously to recommend approval.

ROUTING

TO	ACTION REQUESTED	DATE COMPLETED
TAC Planning Committee	Review & Recommend	3-14-19
TAC Funding & Programming Committee	Information	
Technical Advisory Committee	Review & Recommend	
Transportation Advisory Board	Review & Adopt	
Metropolitan Council Transportation Committee	Concur	
Metropolitan Council	Concur	

Chapter 13

Performance Outcomes

Overview

As discussed in Chapter 1, this document incorporates a performance-based planning approach that includes a strategic vision and direction and a process to evaluate the effectiveness of the plan's implementation. This chapter provides detail on the process and outcomes of performance measures used to evaluate the plan.

The performance measures outlined in this chapter are organized by the six overarching goals of the Transportation Policy Plan, detailed in Chapter 1, which are:

- Transportation System Stewardship
- Safety and Security
- Access to Destinations
- Competitive Economy
- Healthy and Equitable Communities
- Leveraging Transportation Investments to Guide Land Use

These six goals are supported by 20 regional objectives listed in Chapter 1. Objectives are more specific and achievable in the short term than goals and give direction to how the goals may ultimately be achieved. Objectives are also used to inform the specific Strategies and Actions the Metropolitan Council and its partners will employ to achieve the Transportation Policy Plan Goals and Objectives. The strategies are listed in Chapter 2. Performance measures are intended to be clear, quantifiable metrics that convey whether the region is achieving its goals, and which goals are not being fully met, and therefore need additional emphasis and resources.

The performance measures included in this chapter can be broadly characterized as fitting into one of the following two categories:

- *Required federal performance measures that are tracked and must be reported upon on a regular basis*. The Metropolitan Council is required to set short-term performance targets for these performance measures. The results of these measures are primarily concerned with the overall trend and whether this trend is meeting the desired expectations. These performance measures are important in that if a measure is not trending towards achieving the target, federal funds may need to be re-directed to address the problem.
- *Regional performance measures that directly support the Transportation Policy Plan's goals and objectives*. These measures are tracked regularly to ensure they are consistent with the desired outcomes as defined by the goals and objectives. Additionally, many of

these performance measures are modeled for 2040 conditions and provide a tool to guide the actions the region could take to achieve the desired system vision. The establishment of specific, quantifiable targets for these measures is included as a future work program item for the Metropolitan Council.

The specifics of both the federally required performance measures and the regional performance measures are outlined in the following sections.

Federally Required Performance Measures

Federal law (23 CFP 490.29) requires all state Departments of Transportation and Metropolitan Planning Organizations (MPOs) adopt a performance-based program to measure system performance and set performance targets that monitor progress toward achieving the plan's goals. The federally required performance measures are divided into the following four categories:

- Safety Performance Measures (PM1)
- Pavement/Bridge Performance Measures (PM2)
- System Performance Measures and Congestion Mitigation and Air Quality ~~(CMAQ)~~ (PM3); and~~)~~
- Transit Asset Management (TAM).

For each of the non-transit performance measures, the state (through the Minnesota Department of Transportation) has a required deadline to set a statewide target. After the state sets a performance target, the MPO has 180 days to either concur with the DOT's statewide target or set a different target that is specific for its region. Targets for the safety performance measures and transit asset management are set annually, while all other targets are set on a four-year basis with the option to adjust after two years. ~~As of this plan, the Metropolitan Council has only adopted targets related to the PM1 (safety) performance measures. As additional targets are set, future updates to the Transportation Policy Plan will incorporate the targets and include an evaluation of the how the system has performed with respect to the adopted targets.~~ Table 13-1 details the regional, federal ~~safety~~ targets adopted by the Metropolitan Council~~. for calendar year 2018~~.

The federally required performance measures have been woven into the TPP's goals, objectives, and strategies framework and are incorporated into the performance measures included within this chapter. Each measure directly supports one or more of the goals and objectives of the plan, and the recent trends corresponding with the specific measure have been included in the tables of this chapter. The following table details the performance measures required for the four federal performance monitoring programs and the applicable targets. ~~and the timeline for state and MPO target adoption.~~

Table 13-1 – Federal Performance Measures and Adopted Targets ~~Setting Timeline~~

Final Rule		Measures	Adopted Targets
PM1	**Safety Performance Measure/HSIP**	Annual reporting and target setting for: 1. Number of fatalities 2. Rate of fatalities (per 100 million VMT) 3. Number of serious injuries 4. Rate of serious injuries (per 100 million VMT) 5. Number of non-motorized fatalities and serious injuries	2019~~8~~ Metro Area Targets: 1. Number of fatalities: ~~89~~108 2. Fatality rate: 0.3~~41~~ per 100 million VMT 3. Number of serious injuries: 748~~642~~ 4. Serious injury rate: 2.375~~5~~ per 100 million VMT 5. Non-motorized fatalities/serious injuries: ~~112~~190
PM2	**Pavement/ Bridge Performance Measures (PM2)**	2- and 4-year targets for: Bridges: 1. % NHS bridges by deck area in good condition 2. % NHS bridges by deck area in poor condition Pavement: 1. % of interstate pavement in good condition 2. % of interstate pavement in poor condition 3. % of non-interstate NHS pavement in good condition 4. % of non-interstate NHS pavement in poor condition	Bridges: 1. 2020: >50%; 2022 >50% 2. 2020: <4%; 2022: <4% Pavement: 1. 2020: no target; 2022: >55% 2. 2020: no target; 2022 <2% 3. 2020: >50%; 2022: >50% 4. 2020: <4%; 2022: <4%

PM3	**System Performance Measures (Non-CMAQ)**	1. % of reliable person-miles traveled on the interstate 2. % of reliable person-miles traveled on non-interstate NHS 3. % of interstate system mileage providing for reliable truck travel time ~~4. Greenhouse Gas Emissions Measure (subject to repeal)~~ 2 and 4 year targets for interstate; 4-year targets for non-interstate	1. 2020: >70%; 2022: >70% 2. 2020: >75%; 2022: >75% 3. 2020: <2.20; 2022: <2.20 ~~No target adopted at the time of this writing.~~
PM3	**CMAQ - only applicable to Metro Area**	2- and 4- year targets while designated nonattainment/maintenance. Only 4- year if in attainment. (Attainment anticipated in November of 2019.) ~~Staff is working with MnDOT to establish all targets.~~ 1. On-road Mobile Source Emissions measure. Sum of emissions reductions of pollutants, in kilograms per day, for all projects funded with CMAQ funds. 2. Non-Single Occupancy Vehicle measure. Percent of regional travel by non-SOV modes. 3. Peak Hour Excessive Delay. Measured by annual hours of delay per capita. Delay is travel at less than 20 MPH or 60% of posted speed.	1. 2020: >6,800; 2022: >6,800 2. 2020: >25%; 2022: >25% 3. 2020: no target; 2022: <8.5 ~~No target adopted at the time of this writing.~~

TAM	**Transit Asset Management**	Annual Reporting and Target Setting for: Rolling Stock (revenue vehicles): % exceeding useful life, by vehicle type Equipment (non-revenue): % exceeding useful life, by vehicle type Facility: % rated below a 3 on condition scale, by facility type Infrastructure: % of track with performance restrictions	Rolling Stock: % Exceeding Useful Life 1. Articulated bus: 8% 2. Bus: 2.4% 3. Cutaway: 14% 4. Light Rail Vehicle: 0% Equipment: % Exceeding Useful Life 1. Automobiles: 42% 2. Trucks/other rubber tire vehicles: 38% Facility: % Rated Below 3 on Condition Scale 1. Passenger/parking facilities: 0% 2. Administrative/maintenance facilities: 0% Infrastructure: % of Track with Performance Restrictions 1. Light Rail: 1%~~No target adopted at the time of this writing.~~

Per federal requirements, the TPP should include an evaluation of how the system has performed, including the identification of performance trends and the implications. The following sections discuss the current metro area performance for each of the performance measure categories and, as applicable, how performance is trending.

Safety Performance Measures

The region has implemented a number of strategies to improve safety for all users of all modes within the metro area. The strategies include a commitment to aggressively reduce the number of fatal and serious injury crashes annually, with an aspirational goal of achieving zero fatal and serious injury crashes sometime in the future.

Pursuant to federal requirements, the Council must adopt short-range annual highway safety performance targets that are both reasonable and achievable. The Council thus adopted 2019 targets that reflect an annual reduction from the base-year data for fatal and serious injury crashes, as shown in Table 13-1. While the methodology used to determine the targets is the same as that employed by MnDOT for the state as a whole, it is applied to the metro area in order to produce a target that is specific and meaningful for the region.

Overall, there are significantly fewer fatal and serious injury crashes per capita and a lower crash rate in the metro than in Greater Minnesota. The fatal crash rate in the metro area is approximately half of that of Greater Minnesota, while the serious injury rate is approximately 35% lower.

From 2018 to 2019, the total number of fatal crashes, serious injuries, and non-motorized fatalities and serious injuries increased within the metro area. Similarly, the rate of fatal and serious injury crashes, which accounts for vehicle miles travelled, also increased. The Council will continue to monitor and report upon these safety measures on an annual basis, which should assist in determining whether the increase was an outlier or part of a larger trend.

Pavement and Bridge Performance Measures

The Council chose to concur with MnDOT and apply the statewide bridge and pavement targets in the metro area. The targets were adopted for the first time in 2018 and coordinated closely with MnDOT. Overall, performance for the bridge and pavement measures was similar in the metro area to Greater Minnesota as a whole.

Currently, the percent of NHS bridges whose deck area is in good condition is lower in the metro area than the adopted 2020 and 2022 targets. This is offset, however, by the state-wide condition, which is on track to meet the established targets. Bridge deck condition can fluctuate significantly from year to year, and one major bridge project has the potential to skew the overall performance. While this is likely the case within the metro area, the existing performance will be closely monitored and may indicate a need to place a greater emphasis on bridge deck condition within the region over the coming years.

Regarding pavement, while Interstate pavement condition within the metro area is performing at a level greater than the targets, non-Interstate NHS pavement is not performing at the same level. This may indicate a need to focus more explicitly on non-Interstate NHS facilities in the future in an effort to ensure the region continues to be on track to meet the 2020 and 2022 targets.

System Performance Measures

Due to the more urbanized nature of the metro area as opposed to the more rural character of Greater Minnesota, the Council adopted system performance measures for system reliability that are specific to the region. The existing metro area performance for the percent of reliable person-miles traveled on the interstate system is approximately 69%. MnDOT established a state-wide target of greater than 80%, which would likely be unattainable for the near-term future within the metro area. Instead, the Council has adopted a 2020 and 2022 target of greater than 70%. This target is appropriate in that it still aspires to be better than current conditions, but is more attainable than the statewide target of 80%.

In addition to the interstate reliable person-miles target, the Council has also elected to adopt targets that are different than MnDOT for the truck travel time reliability index measure. This is

due to the fact that the reliability of truck travel is lower in the metro area than in Greater Minnesota as a whole. The adopted MnDOT target of less than 1.5 would be very difficult to attain given the traffic levels in the metro area as compared to Greater Minnesota.

All of the adopted reliability targets aim for improvement over the existing conditions, and as such may be considered aspirational given recent trends. There is, however, no consequence to the region for not meeting these targets, and the State of Minnesota as a whole is likely to meet the statewide adopted targets. The Council has chosen these targets as a mechanism to work towards improvement in both the near- and long- term future.

Congestion Mitigation and Air Quality (CMAQ) Performance Measures

CMAQ measures are unique in that they only apply to areas which are not in full air quality attainment and the targets must be jointly agreed to by both the Council and MnDOT. As such, the Council worked closely with MnDOT staff to set the 2020 and 2022 CMAQ measures shown in Table 13-1.

On-road mobile source emissions reductions can vary considerably from year to year, as they reflect the result of projects programmed in the Transportation Improvement Plan. Given this, MnDOT and the Council set a target that is similar to the most current year's performance.

The percent of regional travel by non-single occupancy vehicles has been gradually increasing over the past several years, with more residents choosing to carpool, walk, bike, or take transit to and from work. A 2020 and 2022 target of greater than 25 percent will be difficult for the region to attain, but reflects the TPP's vision of travel via multiple modes and decreased single-occupancy vehicle use.

Peak-hour excessive delay measures "excessive delay," or delay in which vehicles are travelling at either less than 20 miles per hour or less than 60% of the posted speed limit. Excessive delay is a significant mobility concern within the metro area and affects the Access to Destinations goal of the TPP, among others. The most recent metro area performance showed that there was an average of 8.65 annual hours of excessive delay for each resident of the metro area. The adopted target was set to improve upon this number, with no more than 8.5 hours of peak hour excessive delay per capita in both 2020 and 2022.

Transit Asset Management Performance Measures

Transit asset management (TAM), a best practice and a requirement under federal law, is a business model that prioritizes funding decisions based on the condition of transit assets. Transit providers are required to assess, track, and report on their assets to FTA, and develop annual targets for asset management to ensure a state of good repair. Transit providers also develop transit asset management plans that document implementation actions for asset management within their transit systems. TAM must be coordinated with the Council, which is

the region's MPO. The four FTA-required performance measures for transit asset management are:

- Rolling stock (buses and train used for serving customers): The percentage of revenue vehicles (by type) that exceed the useful life benchmark.
- Equipment (vehicles used in a support role): The percentage of non-revenue service vehicles (by type) that exceed the useful life benchmark.
- Facilities: The percentage of facilities (by group) that are rated less than 3.0 on the *Transit Economic Requirements Model (TERM) Scale*.
- Infrastructure: The percentage of rail track segments (by mode) that have performance restrictions. Track segments are measured to the nearest one-hundredth of a mile.

The region's transit operators officially established 2018 performance targets on April 1 of 2018, which are shown in Table 13-1. These targets were consequently adopted by the Council in October of 2018.

The TPP outlines the goals, objectives, and strategies that are used to set transit investment priorities for the region. These factors, in turn, directly guide the investment plan and transit projects programmed and ultimately built. The TPP guides transit investments through the following objectives and strategies:

- Efficiently preserve and maintain the regional transit system in a state of good repair;
- Manage the regional transit network and respond to demand as deemed appropriate based on the Transit Market Area;
- Provide transit police services and coordinate with other public safety agencies to ensure the safety and security of the transit system;
- Promote alternatives to single occupant vehicles and ensure transit services reach major job and commercial activity centers;
- Expand and modernize transit service, facilities, systems, and technology to meet demand, improve customer experience, and increase transit access to destinations.

Regional Performance Measures

As noted, in addition to the federally required measures, the performance measures within this chapter also include several measures to evaluate the desired outcomes of this Transportation Policy Plan. These performance measures reflect the long-term vision for the region and serve as indicators to track the region's progress towards achieving the goals and objectives of this Plan. Some of the performance measures can be evaluated using horizon year 2040 model outputs for the revenue scenarios outlined in this Transportation Policy Plan, while others are intended to reflect and track current conditions and assess whether the region is making progress towards meeting the 2040 system vision.

The regional performance measures were chosen after meetings and input from Metropolitan Council stakeholders and the public. The previous *2040 Transportation Policy Plan*, adopted in 2015, included a work item with the task of refining the planning and programming performance measures. Comments received from the public outreach process for that plan indicated that the plan goals, objectives and strategies, their inter-relationship, and the related performance measures needed further review.

This work item was implemented through the formation of five modal work groups: highway, transit, freight, aviation, and bicycle/pedestrian. Membership in these work groups included representatives from cities, counties, MnDOT, transit providers, the University of Minnesota, the Minnesota Department of Health, the Metropolitan Airports Commission, and Metropolitan Council staff. The work groups also included representatives of advocacy groups such as Saint Paul Smart Trips, Minneapolis Bicycle Coalition, Transportation Accessibility Advisory Committee (TAAC), the American Trucking Association, and Transit for Livable Communities.

These modal work groups met throughout 2015 to develop recommendations for the performance measures to be used in the *2040 Transportation Policy Plan*. Their task was to develop additional or replacement plan performance measures. In recommending performance measures, the work groups considered the availability of data and other factors. The groups developed a list of measures, which were prioritized based on their relationship to the plan's goals and objectives. Those performance measures with strong relationships are used in this plan and outlined in this chapter.

Modeling Process

Where possible, and for those performance measures where a long-term result was desired, the process utilized the regional travel demand model to provide estimates for the expected 2040 results under two different investment scenarios, as well as a "no build" scenario. The scenarios are described below.

- Current Revenue Scenario. This scenario accounts for the assumption that all revenues that the region can reasonably expect to be available will continue to be available at the same level (accounting for inflation) until the horizon year of 2040. It is a fiscally constrained scenario that is based on historical funding levels, current laws, and current allocation formulas. The estimated revenues available under this scenario total approximately $92.1 billion dollars.
- Increased Revenue Scenario. This scenario is premised on the region adopting policy changes, laws, or decisions that increase local, state, or federal funding levels. It is a scenario based on plausible reason and illustrates what may be achieved with additional revenues. While the projects are not considered part of the approved plan, this scenario provides context for the level of transportation revenues and investments needed to move the region closer to achieving the transportation goals and objectives of this plan.
- "No Build" Scenario. This scenario presents the modeled conditions of the region under the assumption that no projects are built after the 2015 base-year condition. This

represents the expected conditions should no transportation improvement be made from 2015 to 2040.

All future scenarios assume the same assumptions for demographic growth in the region, with population in the region increasing from 2,973,000 in 2015 to 3,640,000 in 2040 and total employment increasing from 1,620,000 to 2,070,000. This represents a total increase of 22% and 28% increase in population and employment, respectively. Note that the demographic forecasts used for the travel demand modeling process differ slightly from the Metropolitan Council's regional forecast for 2040. The demographic projections used for the travel demand model are based upon the local forecasts and summed for all traffic analysis zones (TAZs) in the metro area.

Performance Measure Outcomes

The following tables, which are categorized by the overall goals of this Transportation Policy Plan, list each performance measure chosen for this plan and, if applicable, their modeled outcomes based upon the three scenarios. The tables include the following information:

- The performance measure
- A description of the performance measure
- The applicable geography or transportation network that is being measured
- The existing performance
- The 2040 outcomes for each model scenario, if applicable

Note that not all performance measures have associated model outputs. In these cases, the table includes an outcomes column that provides additional information pertaining to the desired long-term outcomes.

Transportation System Stewardship

Transportation System Stewardship – *Sustainable investments in the transportation system are protected by strategically preserving, maintaining, and operating system assets.*

The transportation system that exists at any given time needs to be maintained and operated. The priority is to keep the system in working order and maximize its potential in terms of effectively and efficiently moving people and freight. Keeping up a well-maintained, functional transportation system is at the core of transportation investment.

Table 13-2: Transportation System Stewardship Performance Measures

Performance Measure	Description		Existing Performance	Outcomes
	Percentage of pavement with a	Interstate System - Good	63%	Federally-required short term targets.
		Interstate System - Poor	1.4%	

Performance Measure	Description		Existing Performance	Outcomes
Roadway Pavement Condition	ride quality in good and poor condition	Non-Interstate NHS - Good	51%	Council has work program item to develop long-term outcomes with MnDOT.
		Non-Interstate NHS - Poor	3.2%	
Bridge Condition	Percentage of bridges (expressed in deck area) in good and poor condition	Interstate and NHS - Good	46%	
		Interstate and NHS - Poor	1.3%	
MnPASS Reliability	Percent of time MnPASS lanes are operating at 45 mph or greater		95.2%	Will be managed to be as close to 100% as possible
Transit State of Good Repair	Percent of assets in good repair	Rolling Stock: Revenue Vehicles	Annual targets set in accordance with adopted asset replacement policies	Federally required annual targets. Long-term outcomes will not be developed for this measure
		Equipment: Service Vehicles		
		Facilities: Customer and Maintenance/Administrative		
		Infrastructure: Rail Track		

Transportation System Stewardship Outcomes Summary

Three of the four performance measures included under this goal are federally mandated, with the Council required to set performance targets (or concur with the MnDOT or transit provider targets) and report upon the trends toward that target on a regular basis. These performance measures and their applicable targets will be included in the next update to the Transportation Policy Plan, per the schedule for federal requirements.

The Federal Highway Administration has set minimum performance requirements for both pavement and bridge condition at the state level. For roadway pavement condition, this minimum standard is that no greater than 5% of the total state-wide interstate system should be in poor condition. There is no performance threshold for the non-Interstate portion of the National Highway System (NHS). The minimum standard for bridge condition (including both Interstate and non-Interstate NHS) is no greater than 10% should be in poor condition.

Overall, the State of Minnesota's Interstate pavement condition is currently about 60% good and 1% poor. The state's non-Interstate NHS condition, meanwhile, is approximately 53% good and 2.5% poor. When compared to the state as a whole, the metro area has less non-Interstate

pavement in good condition, and more non-interstate pavement in poor condition. In contrast, the state-wide interstate pavement condition is slightly worse than the metro area's.

The metro area's bridge condition performance, which is defined as the total deck area of bridges along Interstate and NHS systems in good and poor condition, closely mirrors the overall state performance since approximately 75% of the total bridge deck area in Minnesota is located within the metro area. The metro area's overall bridge condition is 46% in good condition and 1.3% in poor condition. The state, by contrast, is approximately 47% in good condition and 1.5% in poor condition.

The MnPASS system continues to operate efficiently, with the system speed historically averaging greater than 45 miles per hour over 95% of the time. This is a key metric to continue to track in the future, given the reality of limited resources for roadway expansion and the importance of the MnPASS system to providing a reliable alternative to congestion. MnPASS lanes are anticipated to continue to operate reliably, as the region can set prices in order to control volume and ensure the lanes operate at a consistent speed.

Transit asset management targets are set on an annual basis by regional transit providers and must be officially adopted by the MPO 180 days after these targets are set. These targets reflect the expected conditions of transit assets by the conclusion of the year when they are set. For example, the 2018 targets are based on a reasonable expectation of the state of the system at the end of 2018.

Safety and Security

Safety and Security – *The regional transportation system is safe and secure for all users.*

In order for the transportation system to function well, it needs to be safe and secure. Safety and security are not only essential to protect life, but also to instill confidence in users of the system. Every investment in the transportation system should strive to make it safer and more secure for the user.

Table 13-3: Safety and Security Performance Measures

Performance Measure	Description		Existing Conditions	Outcomes
Crashes with Fatal or Serious Injuries		Fatal Crashes	98	Federally required 2018 targets shown in Table 13-1.

	Number of Fatal or Serious Injury Crashes	Serious Injury Crashes	749	Long-term outcomes cannot be reasonably developed for these measures.
Fatal and Serious Injury Crash Rate	Rate of Crashes per 100 million vehicle miles traveled	Fatal Crash Rate	0.35	
		Serious Injury Crash Rate	2.67	
Bicycle/Pedestrian Fatal or Serious Injury Crashes	Number of Fatal or Serious Injury Crashes		131	

Safety and Security Outcomes Summary

The measures in Table 13-3 outline the federally required measures and the current performance for the metro area.

The metro area's rate of fatal and serious injury crashes is significantly lower than that of the state as a whole. In 2015, the metro area's rate of fatal crashes was 0.35 crashes per 100 million vehicle miles travelled. The State of Minnesota's rate (including the metro area) was 0.62 per 100 million vehicle miles travelled, nearly double that of the region. Serious injury crash rates were similarly disproportional, with the metro area rate significantly lower than the state as a whole.

Recent serious injury and fatal accident rates have been notably lower than in past decades. This can likely be attributed to safety improvements to automobiles as well as continued safety engineering improvements to the roadway system.

Unlike overall fatal and serious crashes, non-motorized crash trends have been fairly stable over the past few decades, with some fluctuations from year-to-year. Crashes involving pedestrians represent the majority of non-motorized crashes, both within the metro area and nationally. Although recent trends indicate increased travel by pedestrians and bicyclists, the lack of a significant reduction in fatal or serious injury crashes involving these travelers is a cause for concern, given the reductions seen for overall fatal and serious injury crashes. The region will need to continue to improve bicycle and pedestrian safety as these modes continue to grow in use.

Given the many uncertainties surrounding future technologies (e.g. the potential introduction of automated vehicles), it's not plausible to accurately forecast 2040 conditions for these

measures. Research strongly suggests that that safety conditions will continue to improve by 2040 due to technological improvements, roadway geometry improvements, and other factors.

Access to Destinations

Access to Destinations – *A reliable, affordable, and efficient multimodal transportation system supports the prosperity of people and businesses by connecting them to destinations throughout the region and beyond.*

Transportation is fundamentally about providing access to destinations, the places where people and goods need to go. People choose destinations based on the ease of access, whether that relates to cost, their trust that the system will work reliably, or the transportation mode that might be able to get them there. When access is possible, other factors will also affect how people choose to get to destinations, such as the travel time, reliability, comfort, and safety of the trip. Travel preferences can vary widely across people and transportation modes.

Table 13-4: Access to Destinations Performance Measures

Performance Measure	Description		Existing Performance	2040 No Build	2040 Current Revenue Scenario	2040 Increased Revenue Scenario
Access to Jobs	Number of jobs accessible within 30 minutes and percent increase compared to "2040 No Build"	Driving	1,038,957	1,229,954	1,261,075	1,283,115
		Percent Increase	N/A	N/A	2.5%	4.2%
		Transit	24,574	29,121	31,950	32,733
		Percent Increase	N/A	N/A	9.7%	12.4%
MnPASS Usage	Average daily number of people in MnPASS lanes		93,000	99,000	288,000	614,000
Percent Non-Single-Occupant Vehicle Travel	Percent of all trips using modes other than non-single occupancy vehicles		23%	TBD A methodology for calculating this measure will continue to be developed and these outcomes will be included in future plans.		
Transit Ridership	Increase in daily transit ridership		315,000	+74,000	+145,000	+185,000

Performance Measure	Description		Existing Performance	2040 No Build	2040 Current Revenue Scenario	2040 Increased Revenue Scenario
Modal Participation Rate	Percent of people who use transit, bicycle, or walk at least once on a typical day	Transit	6.2%	TBD A methodology for calculating this measure will continue to be developed and the outcome will be included in future plans.		
		Bicycle	3.6%	Will be tracked on an ongoing basis by the Travel Behavior Inventory		
		Walk	11.2%			
Travel time Reliability	Ratio of longer travel times to normal travel times, in percent of total person-miles travelled	Interstate	68.8%	Will be tracked and reported upon on an ongoing basis		
		Non-Interstate NHS	76.5%			
Peak Hour Excessive Delay	Number of hours of excessive delay (travel at less than 20 MPH or 60% of posted speed limit) per capita		8.65	Federally required short term target. Will be tracked and reported upon on an ongoing basis.		
Aviation Performance	Average aircraft delay per operation at MSP International Airport (minutes)		4.3	Will be tracked and reported upon on an ongoing basis		
Regional Bicycle Transportation Network (RBTN) Implementation	Percent of RBTN with fully constructed facilities		47%	Will be tracked and reported upon on an ongoing basis		

Access to Destinations Outcomes Summary

The Access to Destinations goal features a number of performance measures, all of which are important indicators for the overall effectiveness of the transportation network in helping to provide reliable, affordable, and efficient travel options for a diverse range of metro area residents. This goal also contains many performance measures in which 2040 outcomes for the three investment scenarios have been developed. This allows the region to better understand the tangible impacts investment decisions may have on the regional transportation network.

The ability for residents to access jobs in a timely manner is a key for a healthy and competitive economic environment. Currently, just over 1 million jobs are located within a 30-minute drive for the typical resident. Without any additional investments, this number will increase to approximately 1.2 million by 2040 based on the addition and location of forecasted job growth. Job access within a 30-minute drive in 2040 would increase by 2.5% for the current revenue scenario and 4.2% for the increased revenue scenario compared to the no build scenario. The number of jobs accessible within 30 minutes by transit is anticipated to increase by a higher percentage, 9.7% for the current revenue scenario and 12.4% for the increased revenue scenario, though the overall number of jobs accessible within a 30-minute transit trip is still far less than driving. The increase in access to jobs can be attributed not only to a more robust transportation network, but also due to changes in the distribution of people and jobs over the next few decades.

The results of modeled MnPASS use vary considerably depending on the investment scenario. The current revenue scenario forecasts a significant increase in MnPASS usage as compared to the no-build scenario, with daily person through-put nearly doubling. Under the increased revenue scenario, MnPASS usage increases greatly over 900% from the no-build scenario. This suggests that the construction of additional MnPASS lanes dramatically affects usage within the region.

Transit ridership is anticipated to rise under both the current and increased revenue scenarios. Under the current revenue scenario, transit ridership would increase by 71,000 over the no build scenario. The increased revenue scenario would show an even more dramatic rise, with approximately 185,000 additional daily trips representing 250% growth from current conditions.

The remaining performance measures shown in Table 13-4 do not have calculated model outputs because most of these measures are dependent on economic or other variables that cannot be predicted at this time by the travel demand model. As indicated, these performance measures will be tracked on a regular basis to ensure the region's investment and transportation priorities are having their intended effect.

Competitive Economy

Competitive Economy – *The regional transportation system supports the economic competitiveness, vitality, and prosperity of the region and state.*

A well-developed and functioning transportation system is a significant attractant to worldwide business and talent. It also helps the region retain existing businesses and residents, allowing them to thrive in current and future work environments by supporting efficient movement.

Table 13-5: Competitive Economy Performance Measures

Performance Measure	Description		Existing Conditions (2015)	2040 No Build	2040 Current Revenue Scenario	2040 Increased Revenue Scenario
Air Travel	Fee per passenger that airlines pay MAC to use MSP		$6.17	Will be tracked and reported upon on an ongoing basis.		
Access to Transit	Population that lives within 1/2 mile to high-frequency transit corridor	Population within 1/2 mile	569,000	658,000	904,000	1,107,000
		Percent of total population	17%	18%	25%	30%
Freight Reliability	Truck travel time reliability on the Interstate System		2.23	Federally required short term target. This measure will be tracked and reported upon on an ongoing basis.		

Competitive Economy Outcomes Summary

The fee per passenger at MSP International Airport is an important indicator to track to ensure the metro area remains competitive with peer regions. It has been relatively consistent over time and compares favorably to other U.S.-based airports of a similar size.

Access to transit is a way of assessing how the region is improving opportunity for residents and providing a transit system that can attract and retain businesses and residents. A more robust transit system allows the metro area to compete with other regions across the nation. High-frequency transit is a very attractive option that is convenient for potential users of the system, particularly users who believe transit to be integral to their economic prosperity. Currently, about 17% of people live near the high-frequency transit network of buses and light rail. By 2040, the no build scenario would see additional individuals living near high-frequency transit service. This is due to people moving closer to current high-frequency transit service lines. In both the current and increased revenue scenarios, more people are served due to not only the clustering of people near existing lines, but also the construction of new lines serving areas of the region not currently supported by high-frequency transit service.

Freight reliability, the percent of the Interstate system that provides for reliable truck travel time, is both a federally required measure and a key indicator for ensuring the metro area's transportation network is sufficiently accommodating the movement of freight. This measure is calculated by comparing the ratio of longer travel times to "normal" travel times for 5 different time periods over 24 hours. The existing conditions have been relatively stable over time, though freight reliability is worse in the metro area than in greater Minnesota.

Healthy and Equitable Communities

Healthy and Equitable Communities – *The regional transportation system advances equity and contributes to communities' livability and sustainability while protecting the natural, cultural, and developed environments.*

The transportation system can be the catalyst for improving communities, but it can also contribute negatively to communities. The transportation system needs to contribute to the health and vitality of all communities, including protecting and enhancing existing communities and their cultures as well as future communities and cultures.

Table 13-6: Healthy and Equitable Communities Performance Measures

Performance Measure	Description		Existing Conditions	2040 No Build	2040 Current Revenue Scenario	2040 Increased Revenue Scenario
Bike and Pedestrian Miles Travelled	Total miles travelled	Bicycle	384,250	Not currently forecastable		
		Pedestrian	239,236	Not currently forecastable		
Vehicle Miles Travelled Per Capita	Daily average vehicle miles travelled for a metro area resident		23.9	23.3	23.3	23.5
On-Road Mobile Source Emissions	Amount of CO2, nitrogen, sulfur dioxide, VOCs, and CO emissions	CO (pounds)	718,000	293,000	288,000	304,000
		Nitrogen Oxides (pounds)	85,000	16,700	16,500	17,400
		Sulfur Dioxide (pounds)	474	354	340	355
		VOCs (pounds)	19,410	6,100	5,800	6,100
		CO2 Equivalent (pounds)	68,930,000	51,100,000	49,000,000	51,200,000

Healthy and Equitable Communities Outcomes Summary

The total bicycle and pedestrian miles travelled are an important indicator for the overall livability and sustainability of the region as well as contributing to the health of the region's residents. The data also sheds light on the accessibility of the region's bicycle and pedestrian network to individuals within the region. The data in Table 13-5 is from 2010 and trend data for the region is not yet available, but it will be updated with more current data once available. This measure is important to track on a regular basis but cannot be forecasted for 2040.

Analysis on vehicle miles travelled (VMT) per capita is a way of understanding how the region's investments and development patterns are impacting overall livability. When people are driving further, there are implications for the environment (beyond just air quality), the economic viability of travel and related equity of access, the potential for fatal and serious crashes, and wear and tear on the region's transportation infrastructure.. For these reasons, VMT per capita can be a proxy for measures in other goals that cannot be forecasted through the regional travel demand model.

VMT per capita decreases slightly from current conditions under all three modeled scenarios, with the increased revenue scenario showing the region with the highest VMT levels. However, due to the increase in population and assuming similar single-occupancy vehicle rates, this would likely lead to more vehicles on the roadways. This would have an effect on congestion and reliability in the no build scenario, as the possible lack of capacity expansion to handle the increased number of vehicles could potentially overwhelm the existing roadway system.

The increased revenue scenario has a higher overall VMT per capita due in part to the investment in MnPASS lanes. The efficiency provided by the MnPASS system leads to greater usage of the system, consequently increasing the region's VMT per capita. However, the substantial investment in MnPASS lanes increases system capacity and efficiency, likely leading to reduced congestion and greater mobility than in the no build and current revenue scenarios.

Federal law requires regions in non-attainment or maintenance for air quality report upon on-road mobile source emissions. The monitoring and reporting of air quality is essential in ensuring the air quality within the region is not adversely affecting residents. Total emissions have declined in recent decades, in part due to improved vehicle and bus efficiency and technological improvements to newer vehicles that result in greatly reduced emissions. By 2040, the air quality within the region is anticipated to improve. This is in large part due to a rollover of older vehicles to these newer vehicles with reduced emissions.

Leveraging Transportation Investments to Guide Land Use

Leveraging Transportation Investments to Guide Land Use – *The region leverages transportation investments to guide land use and development patterns that advance the regional vision of stewardship, prosperity, livability, equity, and sustainability.*

The effective use of land by people and businesses requires a transportation system to access it. Similarly, land use drives the need for the transportation system. The two systems must work together to be effective, and the transportation system can be a catalyst for land use change that will contribute toward achieving the other six goals.

Table 13-7: Leveraging Transportation Investments to Guide Land Use Performance Measures

Performance Measure	Description		Existing Conditions	2040 No Build	2040 Current Revenue Scenario	2040 Increased Revenue Scenario
Freight Land Use	Total acreage of land zoned as industrial and located on riverfront or with rail access		11,839	Will be tracked and reported upon on an ongoing basis.		
Population and Job Growth Near High-Frequency Transit Service Areas	Percent of forecasted growth projected to occur within 1/2 mile of high-frequency transit corridors	Percent Population Increase	N/A	13%	19%	23%
		Percent Job Increase	N/A	24%	34%	44%
Transit-Supportive Policies in Local Comprehensive Plans	Number of communities with comprehensive plans that include transit supportive policies or strategies		Will develop evaluation process as 2018 comprehensive plan update process concludes	Will be tracked and reported upon on an ongoing basis.		

Leveraging Transportation Investments to Guide Land Use Outcomes Summary

The freight land use measure is important to track in order to ensure that the region is preserving sufficient land for freight-focused development adjacent to freight infrastructure. Increasingly, land which has historically been zoned as industrial and vital to the region's freight activities has been converted to residential and commercial uses. This has caused a need for

trucks to travel longer distances from distribution centers and freight yards, leading to increased congestion, less efficiency, and greater amounts of on-road mobile source emissions.

As discussed under the competitive economy outcomes summary, high-frequency transit provides a unique option for residents and businesses to access opportunity and talent. In this context, the region is investing in an expanded transit system to provide for more options for residents and businesses, both existing and future. Measuring the growth of jobs and population near high-frequency transit is a way of assessing how much the future will be supported by multimodal options. Current forecasts indicate that 13% of new people and 24% of new jobs would be located near the existing high-frequency transit system by 2040. Building the current revenue scenario would increase this to 19% of new people and 34% of new jobs by 2040, and the increased revenue scenario would increase this to 23% and 44%, respectively.

There are several factors that can affect where growth by 2040 is distributed in the region. The region's local forecasts were developed based on historical data and previous comprehensive plans. The forecasts are also a product of discussions with local communities. It is a challenge for any forecast to capture shifting market trends. For example, from 2010-2015 the region observed 53% of added housing units and 57% of the permit value for commercial and industrial development on previously developed land. When communities were assessing their initial 2040 forecasts, this market trend for redevelopment was unforeseen in some communities. The region will be assessing and updating forecasts as more recent data becomes available. Local governments are also in the process of updating their 2040 comprehensive plans to reflect *Thrive MSP 2040* and its policy plans, which often results to changes in the location and intensity of growth in a community. These factors affect the existing and future conditions and thus, it is important to track how this measure changes over time for both existing conditions and forecasted plan outcomes.

The Council has made a commitment to monitor the incorporation of transit-supportive development policies and strategies in comprehensive plans throughout the metro area. To accomplish this, the Council will evaluate comprehensive plans submitted during the 2018 planning cycle for transit-supportive elements and track how this evolves over time through amendments and future planning cycles.

Summary of Major Outcomes of Three Scenarios

No build

The no-build scenario presents the outcomes of the region's transportation conditions should no improvements be made to the system between 2015 conditions to 2040. In this scenario, while the region continues to experience population and job growth, the lack of investment in system mobility has clear effects on the level of congestion, access to jobs, transit usage, and system reliability in general. The system is unable to keep pace with the increased level of demand and threatens to affect freight reliability and residents' access to destinations; commute times; and overall quality of life.

Under the no build scenario, transit ridership and the ability to access jobs within 30 minutes do increase, but this is due to increased population density and a predicted development pattern where more individuals settle closer to the urban core of the metro than in existing conditions. The modeled results of MnPASS usage under the no build scenario indicates that the capacity of the existing system is limited in its ability to handle the increased volume of traffic expected by 2040. This would likely cause a policy discussion to increase the maximum MnPASS fee for single-occupancy vehicles. The lack of MnPASS expansion, coupled with per capita VMT figures consistent with current levels, points to a roadway system with rising levels of congestion, lower travel time reliability, and overall reduced mobility for residents of the region.

Current Revenue

Under the current revenue scenario, the region experiences investments in the transit system and the development of MnPASS lanes, leading to an increase in the number of people utilizing these facilities. As a result, system congestion and reliability are predicted to be better than in the no-build scenario, and overall access to the transit system leads to a greater percentage of the population living near high-frequency transit corridors and increased accessibility to jobs. The results of the current revenue scenario indicate that investments to the transportation system make a difference and improve the quality of life for residents living within the metro area.

Compared to the no-build scenario, the current revenue scenario experiences nearly double the transit ridership increase, approximately 10 percent more jobs are accessible within 30 minutes, and over 250,000 more people are located close to a high-frequency transit corridor. Forecasted population and job growth within high-frequency transit corridors consequently increases by six and 10 percent over the no build scenario, respectively.

The investment in the MnPASS system under the current revenue scenario, from 71 to 121 miles, leads to an increase of nearly 200,000 users over the present conditions. The effect of this investment is likely to lead to greater reliability and reduced travel times for these users. Overall the investments made in the current revenue scenario improve upon the conditions presented in the no build scenario and depict a transportation network that better addresses the increased demand.

Increased Revenue

The increased revenue scenario shows greater positive trends than those illustrated in the current revenue scenario, with increased transit accessibility and a substantial increase in the number of MnPASS lane users. All the trends summarized in the current revenue scenario are further increased, showing that more investment on the transportation network equates to a greater overall impact.

MnPASS lanes receive substantial investment in the increased revenue scenario, with a total of 295 miles of MnPASS lanes in the region. This leads to usage patterns over six times greater

than present conditions and double those of the current revenue scenario. This results in slightly higher VMT in the metro area, but also an increase in accessibility to jobs. Daily transit ridership is anticipated to increase by 40,000 over the current revenue scenario and the number of individuals within a half mile of a high-frequency transit route increases over 200,000.

The overall results of the increased revenue scenario reveal a region with reduced congestion, greater accessibility and reliability, and a more efficient transportation network than in the no build and current revenue scenarios. Again, the outcomes show that investments impact many facets of the transportation network, and the more investment the region puts into the network, the greater the impact will be.

ACTION TRANSMITTAL No. 2019-23

DATE:	March 27, 2019
TO:	TAC
FROM:	TAC Planning Committee
PREPARED BY:	Joe Barbeau, Senior Planner (651-602-1705) David Burns, Senior Planner (651-602-1887)
SUBJECT:	2019-2022 TIP Amendment: Performance Measures and Targets
REQUESTED ACTION:	The Metropolitan Council requests an amendment to the 2019-2022 Transportation Improvement Program (TIP) to incorporate pavement / bridge and system performance / CMAQ performance measures.
RECOMMENDED MOTION:	That the Technical Advisory Committee approve an amendment to the 2019-2022 Transportation Improvement Program (TIP) to incorporate pavement / bridge and system performance / CMAQ performance measures.

BACKGROUND AND PURPOSE OF ACTION: This TIP amendment is needed to add text related to performance measures.

Title 23, Section 450.326(d) of the CFR states: The TIP shall include, to the maximum extent practicable, a description of the anticipated effect of the TIP toward achieving the performance targets identified in the metropolitan transportation plan, linking investment priorities to those performance targets.

The initial incorporation of performance measures into the TIP included performance measure (PM) 1 – Safety with a deadline of May 27, 2018. This was amended into the 2018-2021 TIP in the spring of 2018 and is included in the current 2019-2022 TIP.

Two additional performance measures are due to be included in the TIP by the deadline of May 20, 2019. They are:

- Pavement and Bridge Performance Measure (PM2)
- Congestion Management and Air Quality (CMAQ) (PM3)

While it is not necessarily required to incorporate language on these performance measure into the current (2019-2022) TIP, the ability to amend projects into or within the TIP could be jeopardized if this language is not included. Similar language will be included in the 2020-2023 TIP current in development.

RELATIONSHIP TO REGIONAL POLICY: Federal law requires that all transportation projects that will be funded with federal funds must be in an approved TIP. Further, federal law requires performance-based planning related to for safety, pavement, bridge, reliability, freight, Congestion Management/Air Quality (CMAQ), and transit asset and safety. The Pavement &

Bridge Performance (PM2) and System Performance and Congestion Management and Air Quality (PM3) measures are to be incorporated into the TIP by May 20, 2019.

STAFF ANALYSIS: This is a text change and does not impact any individual project in the TIP. This change enables the TIP to be compliant with federal regulations and to remain flexible if an amendment is needed to an individual project. This amendment is consistent with the Metropolitan Council Transportation Policy Plan, adopted by the Metropolitan Council on October 24, 2018, with FHWA/FTA conformity determination established on December 13, 2018.

COMMITTEE ACTION: Committee voted unanimously to recommend approval.

ROUTING

TO	ACTION REQUESTED	DATE COMPLETED
TAC Planning Committee	Review & Recommend	3-14-19
TAC Funding & Programming Committee	Information	
Technical Advisory Committee	Review & Recommend	
Transportation Advisory Board	Review & Adopt	
Metropolitan Council Transportation Committee	Concur	
Metropolitan Council	Concur	

Pavement/Bridge Performance Measures (PM2)

Council Activities and Progress

The Council adopted the 2020 and 2022 PM2 target for the first time over the course of 2018. Given the close coordination with MnDOT and similar performance for both the metro area and greater Minnesota, the Council chose to concur with the adopted MnDOT pavement/bridge performance measure targets. Table 3 depicts the existing metro area performance as well as the adopted statewide and regional targets for both 2020 and 2022.

Table 3: Existing Conditions and Adopted Bridge and Pavement Condition Targets for 2020 and 2022

Measure	Existing Performance	2020 Target	2022 Target
Bridges			
1. % of bridges by deck area in good condition	46.3%	>50%	>50%
2. % of bridges by deck area in poor condition	1.3%	<4%	<4%
Pavement			
1. % of interstate pavement in good condition	62.7%	*	>55%
2. % of interstate pavement in poor condition	0.8%	*	<2%
3. % of non-interstate NHS pavement in good condition	50.7%	>50%	>50%
4. % of non-interstate NHS pavement in poor condition	3.2%	<4%	<4%

*No target set for this measure/year

Anticipated Effect of the Pavement/Bridge Performance Measures

The 2019-2022 TIP is anticipated to have a positive effect on the pavement and bridge performance measures, as there are projects programmed specifically for the purpose of improving bridge and pavement conditions. While interstate pavement condition within the metro area is performing at a level greater than the targets, non-interstate NHS pavement is not performing at the same level. This may indicate a need to focus more explicitly on non-interstate NHS facilities in the future in an effort to ensure the region continues to be on track to meet the 2020 and 2022 targets.

Currently, the metro area is not meeting the adopted target for the percent of bridges by deck area in good condition. This is offset, however, by the performance of the state a whole, which is on track to meet the established targets. Moving forward, the Council will continue to monitor bridge deck condition and explore mechanisms to ensure the future targets are met.

System Performance Measures and Congestion CMAQ (PM3)

Council Activities and Progress

The Council adopted both the initial system reliability (shown on Table 4) and congestion mitigation and air quality (CMAQ) (Table 5) targets for the region during the fall of 2018. All of the targets associated with these measures are specific to the metro area.

Because almost all congestion within the State of Minnesota occurs within the Metro Area, the Council adopted targets specific to the region that differed from the state-wide targets. The existing metro area performance for the percent of reliable person-miles traveled on the interstate system is approximately 69%. MnDOT established a state-wide target of greater than 80%, which would likely be unattainable for the near-term future within the metro area. Instead, the Council has adopted a 2020 and 2022 target of greater than 70%. This target is appropriate in that it still aspires to be better than current conditions, but better fits the urban context than does the statewide target of 80%.

In addition to the interstate person-miles target, the Council has also elected to adopt targets that are different than MnDOT's for the truck travel time reliability index measure. This is because truck travel reliability is less in the metro area than in Greater Minnesota as a whole. The adopted MnDOT target truck travel time reliability of less than 1.5 would be very hard to attain given the increased traffic in the metro area as compared to greater Minnesota.

All of the adopted reliability targets aim for improvement over the existing conditions, and as such may be considered aspirational given recent trends. There is, however, no consequence to the Council for not meeting these targets, and the State of Minnesota as a whole is likely to meet their adopted targets. The Council has chosen these targets as a mechanism to aim for improvement in reliability in the immediate future and prioritize highway projects integrated within the TIP thusly.

Table 4: Existing Conditions and Adopted System Reliability Targets for 2020 and 2022

Measure	Existing Performance	2020 Target	2022 Target
% of reliable person-miles traveled on the Interstate	68.8%	>70%	>70%
% of reliable person-miles traveled on the non-Interstate NHS	76.5%	>75%	>75%
Truck travel time reliability index	2.23	<2.20	<2.20

Table 5: Existing Conditions and Adopted CMAQ Targets for 2020 and 2022

Measure	Existing Performance	2020 Target	2022 Target
On-road mobile source emissions – sum of emissions reductions of pollutants, in kilograms per day, for all projects funded with CMAQ funds	6,800	>6,800	>6,800
% of non-single occupancy vehicles	23.2%	>25%	>25%
Peak hour excessive delay – annual hours of delay per capita (delay is travel at less than 20 MPH or 60% of the posted speed	8.65	<8.5	<8.5

Anticipated Effect of the System Reliability and Congestion Reduction Performance Measures
In total, there is over $117 million in CMAQ projects programmed in the 2019-2022 TIP. The net benefit of these projects, as shown in table 5, is a reduction of approximately 6,800 kg/day of mobile source pollution. The CMAQ projects include the purchase of a number of transit vehicles; activities to market and incentive the use of carpools, vanpools, and ride matching programs; and projects aimed at retiming and optimizing traffic signal coordination.

The 2019-2022 TIP also includes projects which are anticipated to have a positive effect on mobility and system reliability. This includes a number of spot mobility enhancements as well as a large set-aside for future mobility projects (fiscal year 2022).

April 3, 2019

Regional Solicitation Before-and-After Study

Technical Advisory Committee

METROPOLITAN COUNCIL

Today’s Talking Points

- Study Team
- Study Purpose & Process
- Peer Review
- Study Results
  - Methodology
  - Findings
- Discussion

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Consultant Team

SRF Consulting Group, Inc. and Hoisington Koegler Group, Inc.

Marie Cote, PE | Project Principal/Manager | SRF

Lance Bernard | Deputy Project Manager | HKGi

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Study Purpose

The purpose of this study is to document the benefits achieved through the Regional Solicitation program and Highway Safety Improvement Program (HSIP). This will be achieved by using a performance-based approach that evaluates the “before-and-after” conditions associated with a built project.

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Study Process

- Determine the “before-and-after” conditions for built projects that have received funds dating back to 2007:
  - 45 Roadway Projects
  - 25 Transit Projects
  - 40 Ped/Bike Projects
  - 30 HSIP Projects
- Document the cumulative benefits
- Use a performance-based approach to document the benefits
- Evaluate other MPOs (Peer Review)

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MPO Peer Review

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Peer Review

Findings from this effort are intended to spark conversations about future policy decisions regarding the Regional Solicitation.

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Peer Review

1. North Carolina Capital Area Metropolitan Planning Organization (NC CAMPO): Raleigh, NC
2. Denver Regional Council of Governments (DRCOG): Denver, CO
3. Metro Portland: Portland, OR
4. Metropolitan Transportation Commission (MTC): San Francisco, CA
5. Southeast Michigan Council of Governments (SEMCOG): Detroit, MI
6. New York Metropolitan Transportation Commission (NYMTC): New York, NY
7. North Central Texas Council of Governments (NCTCOG): Dallas, TX
8. East-West Gateway Council of Governments (EWG COG): St. Louis, MO
9. Baltimore Metropolitan Council (BALTOMETRO): Baltimore, MD
10. Puget Sound Regional Council (PSRC): Seattle, WA

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Peer Review

1. **Funding Process:** What is the process used for allocating federal transportation dollars and selecting projects to inform the Transportation Improvement Plan (TIP)?

2. **Funding Amount:** What is the maximum dollar amount an agency can request?

3. **Project Priorities:** Is the MPO setting any goals to direct funds towards projects that achieve a specific benefit (e.g., congestion, complete streets, transit, freight, mobility or safety) or improvement (e.g., roadway expansion, transit or pedestrian/bicycle facility)?

4. **Geographical Distribution:** Are there any distribution measures (e.g., urban, suburban or rural) being used to ensure funds are being allocated equitably across the region?

5. **Scale of Projects:** Is funding going towards more complex projects that achieve a higher regional benefit?

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Peer Review

6. **Social Equity Measures:** What type of equity measures are being used to score projects?

7. **Before/After Results:** Is the MPO conducting any follow-up evaluations to identify the impacts federally funded projects have on the region?

8. **Safety Funds:** How does the MPO handle the solicitation of Highway Safety Improvement Program (HSIP) projects?

9. **Technology:** How does the MPO handle Connected and Automated Vehicle (CAV) projects and other projects utilizing advanced technology? Have CAV projects been funded? Any challenges faced with funding CAV projects?

10. **CMP Approach and Methods:** Is the MPO's Congestion Management Process (CMP) being used to help inform the selection of projects?

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Peer Review – Key Findings

- **Long-Range Transportation Plan Approach**: A larger emphasis is being placed on projects that have been identified in the MPO's LRTP. In most cases, these plans have gone through an extensive process to determine regional needs based on a number of factors (e.g., congestion, safety, equity and multimodal goals). The end result is a short-term program of transportation investment priorities.

- **Geographical Distribution Approach:** Several MPOs use a funding formula that allocates federal transportation funds to sub-regions or priority areas. In general, the sub-regions are responsible for developing a list of priority projects for consideration.

- **Traditional Approach**: METRO (Portland, OR) and BALTOMETRO (Baltimore, MD) use a similar regional solicitation process as the Metropolitan Council, which includes a "call-for-proposals" through an application process. Projects that are selected for funding are still closely linked to regional goals and priorities identified in their regional policy plans or LRTP.

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Peer Review – Key Findings

9 out of the 10 MPOs do not cap the amount of money being requested.

MPOs are programming/funding larger scaled projects that achieve a larger regional benefit.

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Peer Review – Items of Note

- A large emphasis has been placed on air quality, economic development initiatives and affordable housing goals.
- The peer review did not discover any studies being done to report the “before-and-after” results of a transportation project that has received federal funds.
- MPOs play an active role in helping establish HSIP performance measures and targets, but do not manage the program.
- Most MPOs do not have any CAV projects within their current TIP.
- CAV scoring criteria have not been established.

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Before-and-After Study (Methodology and Findings)

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Findings will help address the study objectives:

- Review existing and proposed conditions at the time of the application submittal and compare post construction conditions to determine if the region received the level of benefits identified in the project application.
- Identify if there are specific types of projects that resulted in the highest level of safety or delay benefits per dollar invested.
- Determine if there are any scoring measure modifications or lessons learned for future solicitations.
- Identify how the Regional Solicitation and HSIP prioritization criteria can better align with new federal performance targets.

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Roadway Performance Measures

Performance Measure #1: Roadway Congestion

Determine if congestion benefits due to the project have been achieved by evaluating the peak hour intersection delays or speed data under no build and build conditions

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Roadway Performance Measures

Roadway Congestion Methodology

- 2007, 2009 and 2011 Project Applications:
  - The congestion reduction measure for the 2007, 2009 and 2011 project applications required a calculation based on the one-way peak hour volume divided by capacity (number of lanes), resulting in a V/C ratio.
  - The congestion benefits in this evaluation were determined by conducting a Synchro analysis for no build (without improvement) and build (with improvement) conditions using current peak hour volumes.

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Roadway Performance Measures

Roadway Congestion Findings

- 2007, 2009 and 2011 Findings (13 Projects):
  - Total delay for the intersections was reduced for 6 applications with an overall average delay reduction of 55 percent.
  - Total delay for the intersections remained the same for 7 applications, although some had reductions by approach.

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Roadway Performance Measures

Roadway Congestion Methodology

- 2014 Project Applications:
  - Due to the build and inspection dates of the 2014 roadway projects, it was too early to evaluate intersection volumes with a Synchro analysis for no build and build conditions.
  - A before-and-after speed analysis was conducted using StreetLight GPS data.

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Roadway Performance Measures

Roadway Congestion Findings

- 2014 Findings (Three Projects)
  - All three projects experienced an increase in speeds during the a.m. and p.m. peak hours. The average speed increase was two miles per hour.
  - **The low number of projects did not provide enough information for conclusive results to demonstrate a benefit.**

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Roadway Congestion – Items of Note

The 2014 application included a new methodology for the congestion measure that required the applicant to analyze the worst-case intersection within the project limits using current peak hour volumes, with and without the project improvement. This provides a solid base condition that can be used to evaluate post construction conditions.

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Roadway Performance Measures

Performance Measure #2: Roadway Safety

Determine if roadway safety benefits due to the project have been achieved by evaluating crash data.

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Roadway Performance Measures

Roadway Safety Methodology

- Review the crash reduction analysis and before conditions submitted in the roadway project applications.
- Utilized Minnesota Crash Mapping Analysis Tool (MnCMAT) data to assess after crash conditions.

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Roadway Performance Measures

Roadway Safety Findings

- There was variation in the datasets used to calculate the crash reduction. Data provision included:
    - Total crash reduction
    - A more detailed approach with injury and property-damage crashes identified
    - Detailed analysis separating specific crash types.
- The source of the crash reduction factors varied as the applicant had the flexibility to use a published resource of their choice.

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Roadway Performance Measures

Roadway Safety Findings

- 2007, 2009 and 2011 Findings (18 Projects):
  - 10 projects experienced a reduction in overall crashes.
  - 8 projects saw an increase in total crashes.

Roadway Safety – Items of Note

The 2014 application included a new methodology for the safety measure that required the applicant to utilize the HSIP application B/C worksheet. This provides clear direction with a specific FHWA resource for crash modification factors that can be used to evaluate post construction conditions.

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Transit Performance Measures

Performance Measure #3: Transit

- Determine if transit ridership projections have been achieved.

Transit Performance Measures

Transit Ridership Methodology

- Each transit provider was contacted for Actual New Ridership data and their methodology used for tracking the data.
  - Actual New Ridership is defined as Total Ridership after Implementation (Total Ridership after Implementation – Original Ridership) equals New Riders.
  - New Riders is then compared to Projected Ridership from the grant application.

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Transit Performance Measures

Transit Ridership Findings (16 projects)

- Ridership totals:
  - Projected New Ridership: 5.6 million (28 percent increase)
  - Total New Ridership: 8.9 million (44 percent increase)
- The Green and Blue Line LRT projects played a significant role with 7.4 million out of the 8.9 million Total New Ridership as a result from these projects.

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Bicycle/Pedestrian Performance Measures

Performance Measure #4: Bicycle & Pedestrian Safety

Determine if pedestrian and bicycle safety benefits have been achieved by evaluating crash data.

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Bicycle/Pedestrian Performance Measures

Bike/Ped Safety Methodology

- Utilized MnCMAT data provided by MnDOT for the years 2007 through 2017.

- The annual reduction was determined by calculating the average number of crashes that occurred before and after the project was built.

- The methodology is qualitative in nature

Bicycle/Pedestrian Performance Measures

Bike/Ped Safety Findings (34 projects)

- The number of pedestrian and bicycle crashes have been reduced within a half-mile buffer of the built projects:
  - Annual reduction of 93 pedestrian and bicycle crashes.
  - Built projects have resulted in an annual reduction of one fatality.
- The number of pedestrian and bicycle crashes have been reduced within a quarter-mile buffer of the built projects:
  - Annual reduction of 18 pedestrian and bicycle crashes.
  - Built projects have resulted in an annual reduction of one fatality.

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Bicycle/Pedestrian Performance Measures

Performance Measure #5: RBTN Contribution

Tabulate the number of bikeway miles funded and programmed and their contribution to the Regional Bicycle Transportation Network (RBTN).

The RBTN has only been a consideration in the scoring since 2014.

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Bicycle/Pedestrian Performance Measures

Bike/Ped RBTN Methodology

- Each project was coded in GIS to determine if its location was part of a RBTN Alignment or Corridor.
- Evaluated roadway (reconstruction and expansion) projects to determine if any helped play a role in developing bikeway facilities.

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Bicycle/Pedestrian Performance Measures

Bike/Ped RBTN Findings (67 projects)

- Approximately 73 miles of bikeway facilities have been built or programmed. 55 miles have contributed to the RBTN.
- The roadway expansion and reconstruction projects have helped build 19 miles of bikeway facilities. Approximately 7 miles were part of the RBTN.
- The projects noted above have contributed 62 bikeway miles to the RBTN network or 4.23 percent of the overall RBTN (existing and planned - 1,453 miles).

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Bicycle/Pedestrian Performance Measures

Performance Measure #6: Pedestrian/Bicycle Connections Achieved

Document the number of desirable destinations (e.g., jobs, homes, recreation, shopping, etc.) connected/linked by built or programmed pedestrian or bikeway projects.

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Bicycle/Pedestrian Performance Measures

Ped/Bike Connection Methodology

- Each project was coded in GIS to determine its location relative to various activity centers and population groups.

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Bicycle/Pedestrian Performance Measures

Ped/Bike Connection Findings (58 projects – 76 miles)

- Direct and indirect connections have been made to the following areas:
  - Major job or activity centers (20 projects - 23 miles)
  - Areas above the regional average of concentrated race or poverty (20 projects - 25 miles)
  - Areas of concentrated poverty (15 projects – 19 miles)
  - Areas of concentrated poverty greater than 50 percent residents of color (10 projects – 13 miles)

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HSIP Performance Measures

Performance Measure #7: HSIP Safety Benefits

Determine if roadway and intersection safety benefits have been achieved by evaluating crash data.

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HSIP Performance Measures

HSIP Safety Methodology

- Review the HSIP B/C worksheet and “before” conditions submitted in the application.
- Utilize MnCMAT data for “after” conditions.
- The 2007 and 2009 “after” conditions were based on three years of crash data, whereas the 2011 “after” conditions were based on one year of crash data.
  - Therefore, the 2007 and 2009 findings were reported separately from the 2011 findings.

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HSIP Performance Measures

HSIP Safety Findings

- 2007 and 2009 Findings (20 projects)
  - 12 projects met or exceeded the specific crash type reduction benefit identified in the application.
  - 7 projects did not meet the specific crash type reduction benefit identified in the application, but experienced a reduction in total crashes.
  - 1 project saw a slight increase in total crashes, but experienced a reduction in injury type crashes.

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HSIP Performance Measures

HSIP Safety Findings

- 2007 and 2009 Findings (20 projects)
- **With these investments, crash severity has been reduced.**
  - 100 percent reduction in fatal crashes (five to 0)
  - 97 percent reduction in A injury crashes (30 down to one)
  - 68 percent reduction in B injury crashes (85 down to 27)
  - 69 percent reduction in C injury crashes (144 down to 45)

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HSIP Performance Measures

HSIP Safety Findings

- 2011 Findings (seven projects)
  - 5 projects met or exceeded the specific crash type reduction benefit identified in the application.
  - 1 project did not meet the specific crash type reduction benefit identified in the application, but experienced a reduction in total crashes.
  - 1 project saw an increase in total crashes from one to three crashes.

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HSIP Performance Measures

HSIP Safety Findings

- 2011 Findings (seven projects)
- **With these investments, crash severity has been reduced.**
  - No fatal crashes observed in before or after analysis
  - 63 percent reduction in A injury crashes (three down to one)
  - 100 percent reduction in B injury crashes (six down to 0)
  - 83 percent reduction in C injury crashes (23 down to four)

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Summary of Findings

- Roadways
  - With the Regional Solicitation investments, roadway delays have been constant or reduced.
  - Scoring measures for safety and delays improved following 2014 Reg Sol Redesign.
- Transit
  - Projects have exceeded Annual New Ridership forecasts
- Pedestrian/Bicycle
  - Safety benefits have been achieved
  - Projects have played a large role in contributing to the RBTN
  - Funding has been directed towards job/activity centers, and areas of concentrated poverty/race
- HSIP
  - With the HSIP investments, crash severity benefits have been achieved

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Recommendations

- Share the “Good News” (e.g., safety benefits, RBTN, and transit ridership).
- Monitor 2014 Regional Solicitation projects to determine their benefits.
- Discuss the Peer Review findings and if any new approaches to the Regional Solicitation funding cycle should be considered.
- Discuss minor modifications or better guidance for the Regional Solicitation and/or HSIP applications.
- Address data needs/gaps:
  - StreetLight Data
  - RBTN Network
  - Pedestrian/Bicycle Volumes
  - Construction/Built Dates

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Discussion

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2018 Regional Solicitation Assessment: Surveys and Sensativty Analysis

Looking Toward 2020: Top Issues List

April 3, 2019

Technical Advisory Committee

METROPOLITAN COUNCIL

Participant Surveys

- Surveys provided to applicants, scorers, TAB members, and F&P/TAC members.
- Responses:
  - Applicants: 18
  - Scorers: 21
  - F&P/TAC members: 21
  - TAB Members: 12

Survey Themes: Applicants

- Timeline: applications not due near 4th of July.
- How to assign points to projects included (or not) in studies?
- Confusion regarding the snow and ice control measure.
- Consider new categories for intersection/interchange projects.
- Reward projects with funding secured/committed.
- More funding for Multiuse Trails & Bicycle Facilities.
- Geographic balance.

Survey Themes: Scorers

- Scoring guidance clarity and subjectivity.
- Equity:
  - The presence of more scorers was valuable.
  - Rationale not entirely clear.
  - Does not incentivize meaningful project elements.
- More time to score projects would have been valuable.
- More introductory info for scorers.

Survey Themes: F&P / TAC

- Geographic balance and project type (e.g., BRT vs. local)
- Mode distribution.
- Deadline for new funding scenarios.
- Use studies (e.g., bicycle barrier) and data (e.g., Streetlight).
- Focus on innovation? New category? How to score?
- Fix or eliminate snow/ice control in Multiuse Trails category.
- Truck corridor study scoring; points off of the corridor?

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Survey Themes: TAB

- Geographic balance.
- Emissions and climate change are key issues to focus on more.
- Timing of the process: vote in December before membership turnover.

Scoring Measure Sensitivity Analysis

- Few counterintuitive results: more valuable measures tend to have larger impacts.
- A few measures (e.g., housing performance) have minimal impact in several application categories.
- The 2016 issue of scoring outliers was almost non-existent.
  - 2016: 18 outliers.
  - 2018: 3 outliers.

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Scoring Measure Sensitivity Analysis, cont'd

- Risk Assessment Worksheet: Number of sub-measures was reduced from 10 to four with hope for more differentiation. Improvement was negligible.
- Deficiencies and Safety (Multi-Use Trails and Pedestrian Facilities) saw more differentiation than in past Regional Solicitations.

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Top Issues Heading Toward 2020

Top Issues Generated from:

- Survey Responses
  - Applicants
  - Scorers
  - TAC / Funding & Programming
  - TAB
- Scoring Committee Suggestions
- Committee Meeting Discussions

1. Technology, Demand Management, and Unique Projects

How do we accommodate the potential influx of interest related to technology and shared mobility?

- Unique Projects:
  - Formalize the category with a set-aside of funding?
  - How to score?
  - TAB directed staff to create a framework for Unique Projects
- Rethinking the Travel Demand Management category.
- Shared mobility / CAV / new technologies
- Policy-level input needed.

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2. The Solicitation's Approach to Transit

Transit and Roadways are very different in several ways. Should they continue to be handled identically?

- The Twin Cities has a total of five transit providers, with Metro Transit providing 94% of rides.
- The $7M maximum causes Metro Transit to incrementally build out ABRT corridors in an inefficient manner.
- How do regional priorities get implemented, while still enabling smaller projects to compete?
- Policy-level input needed.

METROPOLITAN COUNCIL

3. Geographic Balance

Is geographic balance an issue? If so, what, if anything, should be done to address it?

- From a policy standpoint, TAB should consider whether the Solicitation is for funding projects of regional importance or a local project grant opportunity that spreads around federal dollars across the region.
- Currently, the highest-scoring projects are funded and regional balance is a secondary lens to select between funding scenarios.
  - A-Minor Connector set-aside is one exception.
- How should “geographic balance” be measured?
- Policy-level input needed.

4. Incorporation of Studies into Scoring

Should additional transportation studies be incorporated into the scoring process and should anything change about the approach?

- The Congestion Management Process and Bicycle Barriers Study will be ready for inclusion into the scoring process.
- Some feedback indicates an interest in finding ways to award points to projects not directly cited in the regional studies used in the current scoring, particularly the Regional Truck Corridor Study.

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5. Maximum Federal Award Amounts

Should the federal maximum awards be revisited?

- Should the roadways maximum be increased? The $7M maximum only funds about 25% of an interchange and MnDOT is lacking matching funds.
- Is the Multiuse Trails and Bicycle Facilities maximum too high? For the past two cycles, there has been a lot of feedback that the $5.5M maximum has limited the number of projects that can be completed.
- Is the transit maximum too low?

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6. Regional Solicitation Before-and-After Study

What changes should be incorporated?

- Key findings presented separately.

7. Equity

What changes should be incorporated?

- The role of community engagement.
- The impact of the scoring criterion on equity.
- The impact/value of the Housing Performance score.

8. ADA Transition Plans

Are we ready to require completion as a qualifying requirement?

- 2018 Regional Solicitation: Transition plans must be in process. Plans to be complete by 2020.
- Is this still reasonable? How can we assure that proper progress is being made?

9. Updating the Scoring Measures

Feedback has been provided on several scoring measures. What should change?

- SRTS: How to define “student population within school’s walkshed?”
- Bike/Ped: Adjust Safety/Deficiencies measures to account for varying project types?
- Multiuse Trails and Bicycle Facilities: Re-think how to score the winter maintenance question?
- Disconnect cost estimate from multi-modal scoring measure?
- Others?

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10. Other Top Issues?

TAC F&P Input:

- Should trail reconstruction projects be allowed to apply since several did this last cycle and a trail that was closed due to poor conditions was funded?
  - Consider how to compare new trails to reconstructed trails in terms of scoring.
- Should MnDOT continue to be eligible to apply for roadway expansion and/or roadway reconstruction projects? They were awarded a $7M award last cycle for an interchange reconstruction and have applied for and been awarded funding in past cycles over the years in various application categories.

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Draft 2020 Regional Solicitation Schedule

DATE	TAC/TAB PROCESS
February 2019	Survey applicants, scorers, F&PC and TAC members, TAB on previous solicitation.
February/March 2019	Staff evaluate previous solicitation scoring. Staff review survey and summarize results.
March/April 2019	Staff present Survey results Scoring Criteria Sensitivity Analysis to F&P, TAC, and TAB
April – June 2019	Develop and discuss changes to the Regional Solicitation applications
July 17/August 21, 2019	Introduce changes to Introduction and Qualifying Criteria sections; roadway, transit, bike/pedestrian applications.
Sept 19, 2019	Release draft 2020 regional solicitation package for public comment; comments due November 6.
Nov 20, 2019	The TAB forwards the adopted 2020 regional solicitation package to the Met Council for concurrence.
December 2019	TC/Council concur
Sept 2019 – February 2020	Online application set-up and testing
Jan/Feb 2020	TAC F&PC names project scoring group chairs; Met Council and TAB host workshops; Solicitation released
April 2020	Staff the scoring committees
April 2020	**Regional Solicitation applications are due by 4:00 PM.**
May 21, 2020	F&PC vote on qualification
May 25 – July 2, 2020	Scoring groups meet and evaluate the applications. They develop ranked lists of projects.
July 16, 2020	**The TAC F&PC approve the ranked lists of projects**
July 31, 2020	Scoring re-evaluation requests are due.
July 31-Aug 7, 2020	Staff reviews all the scoring reevaluation requests, consults with the individual scorer and chair and prepares a report for TAC F&PC.
August 20, 2020	Scoring evaluation (F&PC)
Late Aug-mid-Oct, 2020	Staff develops funding options
October	TAC F&PC recommend.
November 2020	**TAC recommend; TAB approve.**

INFORMATION ITEM

DATE:	March 22, 2019
TO:	Technical Advisory Committee
PREPARED BY:	Joe Barbeau, Senior Planner (651-602-1705)
SUBJECT:	2018 Regional Solicitation Surveys

Following the 2018 Regional Solicitation, a link to a survey was sent to applicants, scorers, TAB members, and TAC/Funding & Programming members. This survey has been conducted since the 2014 Regional Solicitation and is meant to inform staff and committee members on how to improve the process.

- Responses from Applicants: pages 2-8
- Responses from TAC and Funding & Programming Committee Members: Pages 9-17
- Responses from Scoring Committee Members: Pages 18-23
- Responses from TAB Members: Pages 24-28

SUMMARY OF APPLICANT RESPONSES TO 2018 REGIONAL SOLICITATION SURVEY

Eighteen applicants replied to the survey. At least one respondent completed an application in nine of the ten funding categories with Traffic Management Technologies the only one not represented.

Themes

- Timeline: applications not due near 4th of July; complete process in calendar year.
- Limit the number of attachment pages.
- How to assign points to projects included (or not) in studies (e.g., Regional Truck Corridor Study)
- Online mapping difficulties.
- Confusion regarding the snow and ice control measure in Multiuse Trails & Bicycle Facilities.
- Geographic balance
- Online application losing/changing characters with copy/paste.
- Some confusion with what attachments are needed and where they need to be attached.
- Reduced maximum awards to allow for more projects.
- Reward projects with funding secured/committed
- More funding for Multiuse Trails & Bicycle Facilities
- Consider new application categories for intersection and/or interchange projects

Responses (18 Respondents)

1. Agency type (check one)

	Responses
State	0
City	7
County	7
Other -JPA -Nonprofit -Consultant -University	4
Total Respondents	**18**

2. Category you submitted in (Check all that apply)

	Responses
Roadway Expansion	50.0% (9)
Roadway Reconstruction, Modernization, Spot Mobility	50.0% (9)
Traffic Management Technologies	0.0% (0)
Bridges	11.1% (2)
Transit Expansion	11.1% (2)
Transit System Modernization	11.1% (2)
Travel Demand Management	22.2% (4)
Multi-use Trails & Bicycle Facilities	55.6% (10)
Pedestrian Facilities	33.3% (6)
Safe Routes to Schools	11.1% (2)
Unique Projects	0.0% (0)
Total Respondents:	18

3. Are there specific features of the online application that should be changed?

1. Reduce the word limit to a maximum of 200 for individual responses. In the bikeway category there were approximately 40 applications submitted, which results in a lot of reading for the reviewer.
2. -
3. -
4. No
5. no
6. -
7. None
8. Unclear, at times, where and when to upload attachments, such as maps. Often resorted to making sure the maps were added at the closing attachment section.
9. Confirm attachments needed before continuing - as sometimes attachments are at the end or in the body of solicitation.
10. There needs to be questions regarding EV/AV technology being employed for the new roadway. The incentive needs to be there to provide for the evolution of the system.
11. I thought the process developed by Met Council staff worked quite well.
12. No
13. The online application does not read some characters when copy/paste feature is used such as apostrophes. This creates a time consuming effort to go through all the text and remove unwanted symbols.
14. -

15. The application seems clunky and not very user friendly. It would be nice if improved editing could be offered. text characters need to be expanding to allow more writing if needed. Some sections are very limiting.
16. The online form has difficulty with apostrophes, and removes certain kinds of special characters when items are copy-pasted. It would be great if this could be resolved before the next Regional Solicitation.
17. Adding check boxes for each of the qualifying requirements.
18. too much emphasis on core cities/inside the beltway.

4. Are there changes you would make in the application training (overall regional solicitation information, online application, mapping, MnDOT State Aid information)?

1. It seems that staff from agencies who routinely submit applications feel very comfortable with the online system, so I think the training mainly benefits agencies who don't regularly apply for the Regional Solicitation.
2. -
3. -
4. No
5. no
6. -
7. None
8. Still challenging to map projects involving large areas or several locations like transit expansions
9. -
10. -
11. I thought the process developed by Met Council staff worked quite well.
12. No
13. No, the training is helpful and well-planned.
14. -
15. The online mapping feature should be more easily accessible if changes need to be made to specific mapping sections. Also, there should be the ability to add reference comments to the graphic if needed. Also, if you are going to give the option to copy from an old application, maybe there should be an option to select what information you would like to transfer.
16. –
17. No
18. –

5. Are there specific changes you would make to the qualifying criteria/requirements established to determine whether projects are eligible?

1.
    - 1) Simplify the section where agencies are required to describe how their project aligns with the 2040 Transportation Policy Plan. This section is not worth any points and it's exhausting to fill out.
    - 2) TAC Funding & Programming will want to review the new requirement for agencies to have completed (or started working on) an ADA Transition Plan.
    - 3) Consider eliminating the sufficiency rating criteria for Replacement/Rehabilitation eligibility. Bridge projects will receive points based on their sufficiency rating, so I don't think we'll ever run into an issue where a relatively new bridge is awarded funded.
2. -
3. -
4. Not sure if this belongs here, but I think we may need to break out interchange projects separately in the future.
5. In the Multi-Use Trail Category, peds and bikes are hit/injured/killed primarily as they cross a roadway. The category should be split in two with one dealing with projects that are primarily focused on upgrading crossings and the other with projects that are primarily focused on providing a new trail or a connection. The safety points for crossing improvement projects should be calculated differently. Recent crash history should only account for half the points. The other half of the points should be determined via a look up table or nomograph that considers # of peds crossing, # of bikes crossing, # of vehicles on roadway, speed limit of roadway, width of crossing and available sight distance.
6. -
7. None

8. Move trail maintenance from trail scoring criteria to qualifying criteria. Most agencies have policies of some sort.
9. -
10. -
11. I thought the process developed by Met Council staff worked quite well.
12. There was a lot of confusion about snow plowing trails. Rather than awarding points for that question, it should have just been made clear that snow plowing was required.
13. Under Table 1: Regional Solicitation Funding Award Minimums and Maximums, the maximum federal award for the Multiuse Trails and Bicycle Facilities should be decreased from $5.5 million in order to fund a greater number of worthy projects.
14. -
15. Yes, the scoring/project criteria needs to be updated or redeveloped for multi-use trail applications. The scoring criteria used does not take into account for long regional trails that extend through multiple cities. there should be a percentage of points given for additional populations, housing connections, concentrated poverty, and trail use. Current standards do not take into account for other critical connections to communities outside of the project area. The population and housing scores need to be changed because if you are not in a highly urban area, you do not get any points even though the trail makes critical connections to these areas outside of the project area.
16. -
17. Limit the number of applications from any single agency. Larger agencies can afford to put together multiple applications. Smaller agencies struggle to do so. A cap would force large agencies to prioritize their needs and level the playing field.
18. mapping needs work. Does not account for D-A-R types of services.

6. There are a number of submittals/attachments required with applications. Were any of these difficult to produce or obtain?

1. No. I support the notion to limit attachments to 15 pages and require applicants to only submit PDFs that are 8.5 X 11. Whenever these guidelines are not followed, it is a headache for the reviewer.
2. -
3. -
4. No
5. no
6. -
7. None
8. Not difficult but just found it pointless to produce the one-pager. the information is available within the application. Scoring individuals need to just look and read.
9. NO, but inconsistent to where they go. Sometimes asked for in body, sometimes nothing but we know we need to add it somewhere
10. -
11. No
12. No
13. No, the addition of the 1-page project summary and the layout are positive additions to the solicitation process. There was confusion regarding what documentation was required to fulfill Measure 2B - Snow and Ice Control in the Multiuse Trails & Bicycle Facilities applications. This needs to be clarified for the next round.
14. It was difficult to reduce large corridor layouts into 8.5" x 11" displays. This required a lot of extra work for projects that were not in final design stages in which we had sheet layouts set up.
15. The online mapping needs to be more accessible and have the option for editing if needed. Better description of required attachments need to be clarified. Would suggest an option for uploading attachments for particular sections rather than just uploading all documents at the end. Also, a naming criteria could be used rather than just creating the name of the document you are going to attach.
16. -
17. -
18. Depends on the application type.

7. Was there any confusion or difficulty with any prioritizing criteria (i.e., scoring measures)? Please highlight specific issues that can be addressed.

1. There seemed to be confusion with the following criteria:
    - 1) How points were assigned in the "Level of Congestion" measure since we looked at parallel corridors and could gain points even though the given roadway may not function as a reliever.
    - 2) How points were assigned in the "Regional Truck Corridor Study Tiers" measure since projects that indirectly benefit a truck route did not receive points. I think the intent of this measure makes sense, however, too many projects did not receive points because of how it is scored.
    - 3) How points were assigned in the "Snow and Ice Control" measure. I anticipate we'll discuss this at Funding & Programming.
2. -
3. -
4. No
5. See answer to #5.
6. -
7. None
8. Reduce the number of points allocated to the safety category in the Transportation Management Technology applications.
9. -
10. -
11. No
12. see #5
13. Same as above - There was confusion regarding what documentation was required to fulfill Measure 2B - Snow and Ice Control in the Multiuse Trails & Bicycle Facilities applications. This needs to be clarified for the next round.
14. The scoring for maintenance language regarding sidewalks and trails could have been handled better. It would seem unnecessary for a city or county to change their language to include a new segment. Any language would imply that a new segment would be maintained in the same way as the existing system.
15. Yes, the scoring criteria was not readily available on the website or was old. Our applications are based on prioritizing criteria and they are not readily available it makes it really hard to make sure all information is provided in order to answer the question.
16. The use of equity scoring measures is helpful. However, they have relatively little weight, and projects in areas that require equitable approaches are often at odds with the priorities in the other parts of the solicitation. To successfully prioritize and fund equity, the weight of equity scoring measures needs to be significantly higher.
17. Can content outside of a specific answer be considered in the score? This is difficult when writing an application and also scoring. Applicants don't want to waste space on reiterating what is mentioned in other places but don't know if they should do so for the scorer of each question.
18. No, staff was very helpful.

8. Was the scoring guidance clear and helpful to your understanding the criteria?
    1. Yes, Met Council always does a great job elaborating within the application how the specific measure will be scored. The use of scoring committees gives me great confidence that we're being fair and transparent.
    2. -
    3. -
    4. Yes
    5. Yes
    6. -
    7. Yes
    8. Provide more direction in what is expected in the safety category for Transportation Management Technology group.
    9. No - not for maintenance plan in bike category
    10. -
    11. Yes
    12. Yes
    13. Overall, yes it was. However, two criteria need to be further developed to make sure they are scored per the guidance and consistently across project categories: Measure 3A - Connection to disadvantaged populations and

Measure 7A-Multimodal Elements. Both of these measures need to be evaluated to provide better guidance to the scorers and/or monitored more closely to make sure the scorers adhere to the guidance when scoring. Particularly for Measure 7A, there needs to be more consistency on how this is scored between categories.

14. -
15. no
16. Somewhat. The scoring guidance is very difficult to follow with the current evaluation process, where the backgrounds of individual scorers for questions can vary widely and is not transparent. Without having a clear sense of audience, it was unclear how to ensure we were providing the right level of base knowledge and context to meet the guidelines.
17. Scoring the multi-modal component of the transit applications was confusing. Giving examples but then also expecting items outside of the examples is hard to compare from application to application.
18. -

9. What one thing would you change about the solicitation process, criteria, or scoring above all else?
    1. I would introduce a "Spot Mobility" category where applicants could submit intersection specific projects that aim to improve safety and/or mobility. I realize that the HSIP solicitation exists, however, funding is capped at $2.0 MIL per project and is targeted towards safety projects. The use of a Spot Mobility category would likely include a funding maximum less than $7.0 MIL per project and would provide us with greater flexibility when distributing funds across the categories within Roads/Bridges (Modernization, Expansion, Bridge, etc.).
    2. Review scoring to equal the playing field for suburban communities, scoring favors MPLS and St. Paul.
    3. -
    4. Create separate category for interchange projects
    5. Allocated more funding towards Multi-use Trail Project Category as the number of applications/good projects in this category is large.
    6.
        - Scoring criteria should include projects with committed funding
        - Equitable distribution for transportation modernization/expansion
        - Population too heavily weighed upon
        - Project location relative to jobs is poorly structured and needs to either deleted or modified from how it's currently applied
    7. None
    8. Remove trail maintenance policy from scoring criteria.
    9. Maintenance plan - simple commitment to maintain from agency would be better than what was done with last solicitation
    10. Add scoring categories for EV/AV and not just a token amount.
    11. At times I think there is a disconnect between the planning for transportation and the planning for sanitary sewer service. Those things happen and there are unintended consequences. I would recommend that the Met Council hold back some funds for discretionary spending on projects that are warranted to correct unintended consequences.
    12. Make it more user friendly to apply online
    13. Measure 7A -Multimodal Elements in the roadway categories needs better guidance provided to scorers. It was not scored consistently between roadway categories, and too much leeway was given to the scorer to interpret using their own biases in scoring.
    14. Higher scores for projects that already have significant funding and support gathered.
    15. Criteria for multi-use trails needs to be revamped. Criteria used for this type of application does not work well for large regional trails.
    16. The requirement that all matching funds be secured at the time of application is an extremely difficult criterion for nonprofits. Private foundations, individual donors, and fee for service work all operate on a much shorter timescale than the Regional Solicitation process and other government funding. As an organization who has previously been awarded Regional Solicitation funds and has never run into issues drawing down funds, we would hope that this criterion would change in the future. If a select few organizations are having difficulty drawing down awarded funds, addressing that with those organizations would be more effective than changing the requirement for all applicants.
    17. Geographical equity.

18. –

10. Are there any other things you would change about the solicitation?
    1.
        - 1) Consider reducing the federal maximum totals in the main categories to $5 MIL or $6 MIL to allow for more projects to be awarded funding. Most of the applicants (counties and large cities) have the financial support to still deliver these projects if there was less federal funds tied to them. It seems like a 50% application success rate would be a great story to tell applicants and TAB (awesome Return on Investment of the $200 MIL of federal funds and applying is worth everyone's time).
        - 2) I support the notion of having applications due in May (instead of July) to allow for final awards to be determined prior to the end of the year.
        - 3) I'd support review of each of the individual measures prior to the 2020 Regional Solicitation. A number of studies were completed (Regional Truck, Principal Arterial Conversion Study, etc) and introduced as scoring measures, and I'm not sure how well they provide clarity when assigning points.
        - 4) Apply the results of the SRF Before/After solicitation analysis to inform which project types yield a high return on investment.
    2. -
    3. -
    4. Can’t think of any
    5. no
    6. -
    7. None
    8. Do not allow the Regional Barriers study to enter into scoring criteria for trails.
    9. Limit attachment pages if possible?
    10. -
    11. No
    12. Allow for an easier to read copy of the online application that we could save for our records.
    13.
        - In addition to consideration of a lower project maximum in the Multiuse Trails and Bicycle Facilities category, consider separate categories either by project location or type in order to allow a diversity of worthy projects to be funded. This category needs a revamp and reanalysis based on the results of the last two solicitations.
        - Reevaluate the Cost Effectiveness calculation as it currently penalizes large projects even if they are leveraging large amounts of outside funding and that funding is secured. It encourages applicants to apply for only a piece of a larger project and then combine it with the larger project after the funding is awarded, which there were examples of this in this solicitation. If this happens, this measure should be re-scored.
    14. The Region (and this scoring criteria) needs to get behind furthering projects that already have significant funding secured. Projects that have been able to secure significant amount of funding should be evaluated higher than projects that don't have funding to fill the gap.
    15. There needs to be a limit for the amount of applications selected for funding. There seems to always be a couple applicants that receive funding on multiple applications and it eliminates an even spread or distribution of funds. Also, there needs to be more funding available for multi-use trails.
    16. The Regional Solicitation process is extremely time intensive, and we deeply appreciate the responsiveness and timeliness of staff in responding to our questions both in advance of and during the process, in particular Elaine Koutsoukos. This was extremely important for our capacity to successfully complete an application, and we hope it continues to be a priority in future years.
    17. Change the due date to end of June or at least 2 weeks after the 4th of July.
    18. -

SUMMARY OF TAC/F&PC RESPONSES TO 2018 REGIONAL SOLICITATION SURVEY
Twenty-one TAC and Funding & Programming members/alternates replied to the survey.

Themes

- Timeline; avoid summer/4th of July deadline. Better sequencing at end of process.
- Geographic distribution and project type head-to-head competition (e.g., BRT vs. local route)
- Fix or eliminate snow/ice control in Multiuse Trails category
- Use studies (Intersection Conversion, Bicycle Barrier) to generate points (or, even, instead of arduous scoring process)
- More focus on innovation; new category? How to score?
- Select projects with air-quality/environmental benefits
- Use Streetlight and other data sources (possibly remove time-consuming/costly modeling)
- Mode/sub-mode distribution
    - Less roadway expansion
    - More bike/ped/transit.
- Truck corridor study scoring; points off the corridor?
- Deadline for new funding scenarios
- Proportionate scoring can have drawbacks.

Replies (21 Respondents)

1 Member/alternate of (check all that apply)

	Responses
TAC	14
Funding & Programming	13
Total Respondents	**21**

2. Agency type (check one)

	Responses
State	4
County	5
City	6
Other	6
Total Respondents	**21**

3. Do you have concerns related to any of the following? (Check all that apply)

	Responses	'16 Responses	'14 Responses
Weighting/distribution of points	38.9% (7)	37.5% (6)	**33.3% (5)**
Number and type of sub-categories within the three modal categories	33.3% (6)	18.8% (3)	20.0% (3)
Project cost inflation	N/A	18.8% (3)	6.7% (1)
Modal distribution of funds	22.2% (4)	25.0% (4)	26.7% (4)
Geographic distribution of funds	38.9% (7)	25.0% (4)	N/A
Scoring committee structure	16.7% (3)	18.8% (3)	6.7% (1)
Scoring criteria	38.9% (7)	**56.3% (9)**	26.7% (4)
Qualifying criteria	11.1% (2)	25.0% (4)	13.3% (2)
Process for determining final program of projects	38.9% (7)	31.3% (5)	13.3% (2)
Maximum and minimum fund requests	**50.0% (9)**	18.8% (3)	20.0% (3)
Restrictions (e.g., project bundling)	16.7% (3)	25.0% (4)	20.0% (3)
Other (please specify, only 2018 shown) • "Special Direction" for distribution, A-minor distrib., bridge • MnDOT as applicant • Suggest new category for non-downtown/Univ route types • How to handle unique projects going forward	22.2% (4)	0.0% (0)	26.7% (4)
Total Respondents	18	16	15

4. Please provide specific comments to help articulate the concerns alluded to in the above question.
    1.
        - Modal distribution. The amount of roadway expansion funding could be considered contrary to regional policy. Needs evaluation.
        - Scoring criteria. Important suburban and exurban roads that do not involve an interchange have had trouble getting funding. Are there ways to change the scoring criteria to improve this situation in a way that's consistent with regional policy? (relates to geographic balance)
        - TAB seems to want to encourage innovation through unique projects, but they are tough to score. Is there a better way to evaluate unique projects?
    2. Smaller counties and cities have harder chances of getting their project funded
    3. -

4. -
5. See Appendix A.
6.
    - There should be no points awarded under the Multiuse Trails and Bicycle Facilities for having a maintenance program/policy for year-round maintenance of the trail system. Each agency has a different policy (for unique reasons) and some agencies don't plow in the winter because the trails are used for winter sports, such as skiing. Under the safe routes to school infrastructure category, criteria 2A (Average share of student population that bikes or walks) and 2B (Student population within school's walkshed) were difficult to measure and should be reviewed. The equity criteria within several of the modes/categories raised a lot of questions/comments and should also be reviewed for the next solicitation.
    - In regards to the max./min. funding amounts, I think the multiuse trail and bicycle facilities max needs to be lowered from $5.5M to something much less (maybe $3M). This category received a lot of interest/applications and lowering the max funding amount would help fund more projects in this category. It may be worth looking at an interchange only category and doing something similar to the bridge category and funding a minimum of two projects.
7. Lack of cohesion between funded projects and TPP, such that adopted policy priorities are often not reflected in the final program.
8.
    - 1) Number and type of sub-categories within the three modal categories
        - a) I've heard comments related to the potential of converting the existing "Unique Project" category to an "Innovation" category that would formalize how special projects are evaluated. I am supportive of establishing this new "Innovation" category that would provide clarity to both applicants and the various Met Council committees versus our current practice of TAB voting Yes/No on unique projects. This new category would also allow the consideration of projects that may implement a new technology not currently listed as an eligible project within any of the current categories.
        - b) I'd like to recommend the inclusion of a fifth sub-category within the "Roadways including Multimodal Elements" category that could be called "Spot Mobility". This new sub-category would be intended for intersection specific projects that generally provide safety (crashes reduced) and mobility (improved level of service) benefits. I'd encourage a relatively modest funding maximum for projects in this sub-category (such as $2 to $3 MIL). This would provide Met Council with more flexibility in selecting projects (since more projects could be selected for $7 MIL in this sub-category versus a typical $7 MIL project in the expansion sub-category). Additionally, projects that provide an improvement along a corridor (such as a reconstruction) are difficult for intersection projects to compete against as they are typically targeting a specific location.
    - 2) Scoring Criteria
        - a) I am supportive of retaining the current "Snow and Ice Control" measure within the Multi-Use Trails and Bicycle Facilities, however, I recommend that more clarity is provided in how points are assigned. It was clear during the scoring appeal process that many applicants felt that they did not receive an adequate number of points based on their information provided. It seems like sub-criteria should be assigned to allow for the receipt of 0, 10, 20, 30, 40, or 50 points (or something to that effect).
    - 3) Maximum and Minimum Federal Funding Amounts
        - a) I am supportive of reducing the federal funding maximum amount for bikeway projects by $1.5 MIL from $5.5 MIL to $4 MIL. This will likely allow for the selection of more applications to fund within this sub-category (as 40 applications were submitted in 2018) and it's unlikely that an agency is unable to deliver a bikeway project if they only received $4 MIL. In review of the applications submitted in 2018, the average federal amount requested was $2.4 MIL, with 8 applications exceeding $4.2 MIL (I figured if an application was seeking $4.2 MIL of federal funding, then $4.0 MIL is good enough).

- b) I am supportive of removing the current "At least one project will be funded from each of the five eligible functional classifications" requirement. It is impossible to know if a "good" project will be submitted along each of the eligible functional classifications, therefore, this current requirement could award funds to relatively modest project only because of its functional classification designation. I understand the logic behind including the requirement (connectors are typically located in rural areas), however, we'll never have difficulty finding enough projects to fund. We may come to a point where only two applications are submitted along Connector roadways where one application scored last in the Reconstruction sub-category, and the other application scored last in the Expansion sub-category.

9.
   - There are too many categories for distributing funds to the point where we are drawing lines on project categories without being able to compare the value of projects across categories. The solicitation should determine the specific areas of need for the region and be more targeted in its investment approach. A similar comment would apply to modal distribution of funds. The distribution is not needs based and does not consider funding availability for that mode from other funding sources. There seems to be a propensity to prioritize projects that have other funding sources based on the idea that they are the best projects, but that doesn't make sense if the projects do not score well. Also, the lack of other funding opportunities for certain types of projects, like transit, is not factored into the modal split. The funding picture for roads and counties has change substantially in the last 10 years and that should be taken into account in the regional solicitation. If counties can raise more funds for roads through sales taxes, perhaps the federal funding should be prioritized elsewhere.
   - The scoring committee structure needs a better balance of multi-modal planners in each committee. Committee members do not necessarily need to be experts to score these applications.
   - There needs to be a more comprehensive opportunity for public comment on the project of projects. The TIP input process is not adequate, since it is too late in the process to really change the distribution of funds. TAB should not be immune to hearing public input on the distribution of hundreds of millions of dollars every two years.
10.
   - Increase max for roadways, transit, and peds.
   - Allow bundling on SRTS and ped projects. Need regional priorities for ped projects.
11. -
12.
   - Analysis of recent solicitations provided by Council staff shows the geographic distribution of scores has become focused on the core in recent years; the high point value of certain measures contributes to this effect. Additionally, for transit projects, there seemed to be a natural break between urban focused projects and suburban projects where suburban projects can rarely compete unless they serve the core due to the way points are distributed across measures.
   - The process seemed to go around in circles this year at all committee levels. The ultimate decision made by each body makes sense but the process and need to recommendations up & back down should be reviewed.
   - Project bundling seems to come up more during the application process; however there were several transit projects this year that had overlapping components, and while identified by the applicant, the project didn't seem to be completely vetted for independent utility during the eligibility review.
13. –
14. 7 million doesn’t go very far on critical expansion projects
15. Overall I think the application is good. However I think that Criteria 4- Deficiencies and Safety Measure A is very important. When major gaps are closed on a trail system it strengthens the entire system, not just a localized area. It is perhaps hard to quantify yet it is important.
16. I feel we should use newly available data to figure out who uses various projects -- the use should be geographically distributed -- not necessarily projects. I expect this "fair" review would tend to support more urban projects that serve a broader range of users. Regarding minimum and maximums, as project

costs continue to rise, we should always review these mins/max to make sure federal amounts are still a significant amount of a project -- otherwise, we would only do projects that have predominantly local funding.

17. Some smaller counties have problems being able to get funding for their project based on current selection criteria.
18.
    - The proportionate scoring seems to be overly influential in the outcomes.
    - Express bus, regular route and BRT should not compete in the same category.
    - Interchanges and road improvements should not compete in the same category.
    - There is no consideration of geographic distribution of the funds built into the process.
    - The Truck Corridor study does not consider geographical context. The way the criteria is set up it doesn't allow for projects that would benefit the corridors to score well. There is also no spot to attach a narrative to this criteria to make a case prior to scoring.
    - We would like to discuss the idea of a max number of applications per agency.
    - A deadline for new scenarios should be imposed.
19. At some point it becomes unclear what direction/feedback TAB is looking for from the subcommittees on the program of projects. Once we get so many different scenarios, it becomes difficult to wade through the information and advocate for any particular scenario. If we are going to select a scoring scenario so that each county gets a certain # of projects, it should be made clear in the application process. Otherwise it looks like we are going to extraordinary measures to accommodate geographic balance and the scoring process seems undermined.
20. -
21.
    - Using proportionate scoring for subjective criteria is challenging. It puts a lot of decision making in the hands of a single reviewer and it can be like splitting hairs. I can understand proportionate scoring with its used with numerical data. I recommend for subject criteria that a high, medium high, neutral, medium low and low evaluation be given with a set point value for each. This would also take some of the scoring burden off the scorer for subjective criteria.
    - Interchanges should not complete with A-minors and BRT should not compete with express and regular route bus.
    - There needs to be a criterion related to balancing funds geographically... perhaps at the end after the technical scoring is complete. Or perhaps there is a base amount of funding provded to each county and beyond that the funding is competitive. Or perhaps there is a maximum number of applications that can be submitted per geographic area so that one area of the region does not dominate based on the staffing resources they have available to work on applications.
    - There needs to be a cutoff for when new funding scenarios can be brought forward. Walking on a new scenario to TAB is unacceptable.

5. Are there specific changes you would make to the criteria/measures?
    1. No. In fact, I think many of the criteria we currently have are very good. No need to toss the baby with the bath water.
    2. More points for green projects
    3. No. Process was managed very efficiently and equitable.
    4. -
    5. See above (Appendix A, below)
    6. See above comment.
    7. Winter maintenance, "getting points" just for answering questions
    8. Scoring Criteria
        - a) Snow and Ice Control - I am supportive of retaining the current "Snow and Ice Control" measure within the Multi-Use Trails and Bicycle Facilities, however, I recommend that more clarity is provided in how points are assigned. It was clear during the scoring appeal process that many applicants felt that they did not receive an adequate number of points based on their information provided. It seems like sub-criteria should be assigned to allow for the receipt of 0, 10, 20, 30, 40, or 50 points (or something to that effect).

- b) Measures A and C were new in the Roadway Reconstruction sub-category. They were added with good intentions, however, they didn't necessary apply to a large percentage of the projects being considered. Level of congestion didn't necessarily make sense unless your project was classified as a Reliever. I'm curious to know if many projects received their highest score in either the Principal Arterial Intersection Conversion Study or the CMSP IV sub-sections of Measure A. I recommend requiring the applicant to enter a narrative in Measure C (Regional Truck Corridor Study) to receive their maximum number of points, otherwise, applicants are receiving points based on their location, and not necessarily, based on their proposed improvements.
- c) Measure 5 (Congestion Reduction / Air Quality) - I'm wondering if we can investigate using Street Light to evaluate this measure in the 2020 Regional Solicitation instead of requiring the applicant to perform an exhausting Synchro analysis.
- d) Measure 6 (Safety) - I'd like to recommend that we split this measure into two sub-measures. Reactive Safety (70% of the points) that follows the same process. Proactive Safety (30% of the points) that allows the applicant to list all the safety strategies included in the project.

9. -
10. Add a cost effectiveness measure for amount requested, in addition to total project cost.
11. -
12. A transit work group is needed.
13. –
14. –
15. We should consider the system as a whole when scoring- we do that some in Criteria 1 by measuring value to the RBTN but there are some projects that close gaps between RBTN corridors, which strengthen the RBTN as a whole and create a more robust system.
16. Nothing specific. I think we should continually review the statistical influence of each criteria and get rid of those that do not contribute to project selection. If the issue covered by the criteria is disproportionately important to the region, we should increase its relative points so that it does contribute to selection. We need to keep in mind that our process simply picks projects and that any system we have will be not be precise. Making the process more complicated usually does not make the ultimate selections more precise or fair. Considering that application preparation is expensive (~$10K), we should simplify whenever possible.
17. Awards more points for projects that show better environmental improvements.
18. The Truck Corridor study does not consider geographical context. The way the criteria is set up it doesn't allow for projects that would benefit the corridors to score well. There is also no spot to attach a narrative to this criteria to make a case prior to scoring.
19. Instead of striving for geographic balance by county perhaps we should look to planning area (i.e. urban, suburban, suburban edge, rural center, etc). That way projects are competing with other projects with similar demographic and land use characteristics and we don't get so much of an urban/rural battle when it comes to selecting projects. This approach certainly has its own challenges, but it might be worth exploring how to integrate geographic context (instead of county) into the scoring somehow.
20. -
21. The truck corridor scoring criteria needs to allow projects that benefit truck corridors through overpasses and other investments that are not directly on the interstate. Not every freight need is captured in the truck corridor study's efforts to rank interstate investments. Of particular concern is that some counties only have one or two truck corridors as defined by Met Council, which only allows projects on the interstate to access full points in the roadway expansion category. The regional solicitation is gravitating towards an interstate solicitation in the roadway category, which moves it away from it's core purpose of providing funding to local counties and cities for regional needs. Interstates are the realm of MnDOT.

6. On a scale from 1 (strongly disagree) to 5 (strongly agree), do you agree with the following?

	1	2	3	4	5	Total	Avg	2016 Avg
TAC F&P & TAC had adequate time to discuss funding options	1	2	6	7	5	21	3.62	4.38
The funding options provided to TAC by TAC F&P made sense	0	4	5	7	5	21	3.62	4.13

7. What one item would you change about the solicitation above all else?
    1. Greater share of funding to bike, ped, and transit
    2. -
    3. -
    4. But for the last minute question about funding allocation by category, I thought process worked.
    5. Continue to reduce reliance on interpretation in scoring wherever possible.
    6. We need to continue tweaking the scoring criteria and points
    7. There should be stronger consideration for Streetlight data and less focus on geographic distribution, such that the solicitation's focus should be on asset management, safety, multimodal, and sustainable transportation. Move away from highway expansion projects unless critical gap or key safety metrics.
    8. The introduction of the "Innovation" category to replace the existing "Unique Projects" category.
    9. Allow the solicitation to fund more large-scale regional projects or focus more on opportunities for innovation and let local governments take care of A Minor or similar needs with their own funding.
    10. Incorporate CMP, Bike Barriers Study, and other regional studies into scoring
    11. the weighting of projects means that areas with less development have a hard time competing with the more developed areas. While it is understood that regional dollars should go where there is the "greater good", this also kicks the project can down the road for those developing areas. This also causes consternation about project distribution. maybe some thought to differentiate between urbanized, growing and rural and some type of recognition for funding within that split would help?
    12. -
    13. Reduce the maximum amount of funds for bike/ped projects so more projects get funded.
    14. –
    15. Overall I think the process is sufficient and our bi-annual reviews improve the process even more.
    16. Simplify -- it would still do just as good a job of selecting projects!
    17. Try to be equitable. Select more green projects and those that provide more regional air quality benefits.
    18. Geographic equity needs to be built in if this process is meant to be truly regional and fund local projects.
    19. -
    20. -
    21. Geographic balance criteria

8. Are there any other things you would change about the solicitation?
    1. Craft a schedule so that you don't feel the need to show things to TAB before TAC and F&P because of how the dates line up. That seemed unnecessarily chaotic and put everybody in tough positions.
    2. -
    3. Well done. Not an easy task to manage due to various inputs required.
    4. -
    5. No.
    6. -
    7. Raising the minimum award in certain categories, reducing the maximum award in certain categories (e.g., bike and multi-use trails), are MnDOT trunk highways eligible?, greater consideration for new transportation trends such as advanced mobility and 21st century transportation as compared to SOV based highway projects
    8. Accelerate the deadline of applications to May to allow adequate time for TAC F&P and TAC to review preliminary scores, complete the scoring appeal process, and develop various funding scenarios before the information is shared with TAB and still complete the approval process by December.
    9. Develop a program of projects for funding needs every 10 years based on regional planning studies and programs and pick projects from this list every year to prioritize. For example, intersection conversion study has a list of prioritized improvements. Scrap the current system entirely and let planning dictate the needs, not a rigorous application process with unclear regional benefits.
    10. Increase max awards and work on federal funds swaps
    11. -
    12. –
    13. –
    14. –

15. Consider adding criteria for eliminating barriers identified in MET Council's Bicycle Barrier study.
16. Automate calculations to take advantage of ever evolving data sources (i.e. Streetlight Data, Census) and technologies (i.e. Data Analytics and GIS).
17. Use better air quality models and modeling methodologies for some highway projects that could show greater air emissions reductions than what we currently get.
18. The timeline. Applications should be due at the end of June or later in July. Mid-July is awful due to the 4th of July holiday.
19. -
20. -
21. Respondent skipped this question

APPENDIX A: Respondent #5's reply to Q4 (Please provide specific comments for the items checked in the above question.)

Weighting/Distribution of Points

Suggest rather than using the range of points from applications received to set 0 and 100 point values for some measures, that a range of points corresponding to measure responses is developed ahead of time for each measure. This avoids a tight measure (points are very close) from dominating the scoring more than it should. See example below where Application 3 is generally lower scoring than Application 1, but scores the highest of applications because of limited range of scores in Measure B.

Example: Applications 1, 2, and 3, Measures A and B (both measures are proportioned and set 0 to 100)

Application	Measure A Raw Score	Measure B Raw Score	Measure A Weighted Score	Measure B Weighted Score	Total Score
1	50	100	48	0	100
2	0	0	50	100	100
3	10	10	50	100	100

Scoring Committee Structure

Suggest that cross-checking of scores is provided by chair or other staff, and chair has the authority to re-evaluate scoring with another member or to revise scoring when, in the chair's judgement, this is needed.

Maximum/Minimum Amounts

Trail projects should be limited to a lower ceiling to avoid having fewer projects absorb a high percentage of funding. $3 to $3.5 million seems to be a better limit to achieve this. Perhaps considering a higher match percentage requirement beyond a certain threshold would be a way of keeping the higher cap.

Restrictions

Suggest monitoring or policy to avoid bundling of multiple projects serving the same corridor/function within a time or application cycle limit. Secondly, consider limiting agencies from too many multiple awards in any one category by formula.

MnDOT as Applicant

This came up during multiple TAC meetings and guidance should be developed to establish MnDOT's application limitation(s).

SUMMARY OF SCORING COMMITTEE MEMBER RESPONSES TO 2018 REGIONAL SOLICITATION SURVEY

Twenty-one scoring committee members replied to the survey. At least one participant from each of the 10 application categories responded.

Themes

- Scoring Guidance clarity and subjectivity
- Various comments about equity
    - The presence of more scorers is valuable
    - Rationale not entirely clear
    - Doesn't incentivize meaningful project elements
- More time to score projects would have been valuable.
- More introductory info for scorers.
- Firmer expectations for applicants' clarifying their responses.

Replies (21 Respondents)

5. On a scale from 1 (strongly disagree) to 5 (strongly agree), do you agree with the following?

	1	2	3	4	5	N/A	Total
Information from the applications was easy to find and interpret	0.0% (0)	19.1% (4)	14.3% (3)	52.4% (11)	14.3% (3)	0.0% (0)	21
The scoring committee structure was effective	0.0% (0)	0.0% (0)	19.1% (4)	47.6% (10)	28.6% (6)	4.8% (1)	21
The way to distribute scores within the measure made sense	0.0% (0)	14.3% (3)	19.1% (4)	38.1% (8)	28.6% (6)	0.0% (0)	21
My scoring methodology was consistent with the scoring guidelines	0.0% (0)	0.0% (0)	9.5% (2)	23.9% (5)	61.9% (13)	4.8% (1)	21
The scoring guidelines were useful/understandable	5.0% (1)	15.0% (3)	20.0% (4)	35.0% (7)	25.0% (5)	0.0% (0)	20

6. Please provide any comments you may have for question number 5

1. .
2. Met Council staff may want to consider pre-determining which 'Innovation' scoring category each submittal should be judged by prior to scorer review. Additionally, its not all that clear whether applicants submittals were expanding an existing program, or introducing a new program? Perhaps Met Council can determine that prior to leaving it open to interpretation by the scoring committee?
3. There were separate discussions amongst all the equity scorers regarding how to think about the equity measure in future applications, which I found really helpful. In particular thinking about broadening the ACP 50 location element to destination as well as point of origin, and other measures.
4. good process but there is a tendency to want to "improve" the process and deal with rare cases and decimal point information, would like to see a reduction in complexity where possible
5. Scoring guidelines were useful.
6. I was the chair and did not score projects. Overall the scoring process went well.
7. Alignment of the scoring approach within our committee could have been better. It would not have changed the outcomes but would have improved cohesion and optics.
8. -
9. -
10. -
11. I basically had to create my own scoring methodology because the guidelines I received didn't directly translate to a methodology. I didn't mind doing this, but from a global standpoint, it might not be desirable to have every scorer determining their own methodology, as people will inevitably come up with very different methods.
12. N/A
13. My applicants had an out-dated form so the form did not match the updated scoring guidelines.
14. Not all applicants seem to recognize scores are intended to be based on review of a single response. For open ended responses, many scorers review the full application but points are not awarded (or may be at a lower value) if not addressed in the specific measure.-
15. Scoring committee c/have been more effective if members had been willing to challenge/debate the veteran traditional scorers on their assumptions/methods. Would recommend alternating scorers for some categories.

16. -
17. We could have used more time, potentially another meeting, to review the more complicated/less quantitative measures. I was not 100% comfortable with some of the scoring methods developed by other scorers and new measures and would have liked more time to discuss and come to consensus.
18. -
19. This scoring measure (4A I believe) is still fairly subjective, which I don't believe we will ever be able to eliminate from the scoring. However, there is a big range of project types in this category, so the ability to evaluate the significance of the gap or deficiency requires the scorer to develop additional guidelines to compare like projects (i.e. trail gaps vs. grade separations, vs. resurfacing/reconstructions etc.). There was also significant variations in the length of the project, with some being very short gap fillers and others more significant. I think this gave the scorer perhaps too much freedom to determine the significance of the deficiency, which could easily be challenged. Some of the applications were not clear or did not provide clear graphics with information on where the existing facilities were and what gaps they were filling, which required me to look at every project on Google Maps to try and assess what it was connecting to and whether it was completely filling a gap. I would like a requirement to include a map of the proposed facility in relation to existing facilities.
20. There needs to be a better understanding of developed criteria for scoring.
21. See #8 below

7. Were there any issues/concerns you raised during the solicitation process that were not addressed? Please provide a brief description of the issue and how the issue was not addressed.

1. -
2. I believe they are being addressed
3. No
4. no
5. No.
6. There was one project in the Ped category that probably should have been eliminated because it was a bundled, multi-site application. This issue was raised with the committee after the appeal period was over, so removing the application from consideration did not happen. While the application did not receive funding, it was high scoring. Going forward, these types of bundled projects should not be allowed for consideration and is communicated to applicants.
7. We discussed a post-mortem discussion...will this be happening? I hope so; I recall lots of questions being deferred to the "after" discussion.
8. –
9. -
10. -
11. None.
12. N/A
13. I feel that scoring on a curve (putting the highest scoring project at full points, regardless of actual score) creates poor accountability to each measure by the applicant. It also gives extra weight to questions where the spread had to be expanded significantly due to low crude scores. --- essentially such applications get perhaps 50-100 "free points" for scoring best among applicants despite deficiently meeting criteria. I find the desire to create greater distance between scores to be inane. If they all score poorly, they all should understand that and know they need to do better. Same with if they all score well. They all should be credited for scoring well on a criteria area.
14. –

15. Yes. I raised Qs about the risk assessment scoring assumptions the scorer was not willing to answer and other members w/not challenge; perfect example of lack of interaction & engagement within the committee.
16. –
17. –
18. –
19. –
20. It did not seem like all areas were scored with similar criteria. Scoring criteria needs to be developed further to address more universal scoring methodologies, especially if there are components that may also relate to other sections.
21. No

8. What one thing would you change about solicitation scoring above all else?
1. -
2. More structure to the scoring methodology. I suppose there are reasonable arguments as to leaving it open to interpretation however
3. Creation of a cloud based site to store applications and score sheets.
4. simplify
5. Average "weekday user" determination utilized varying sources and assumptions by applicants which required scoring a subcategory of support/quality for given method which worked out fine. Requiring applicants to clearly explain how they arrived at their number instead of trying to replicate. Perhaps ask for the equation(s) showing how the number was calculated in more detail.
6. The Ped and SRTS categories went fairly smooth.
7. I think we are ready to articulate a clearer rationale for the equity content and approach.
8. -
9. The items I scored are inherently set up to benefit urban area projects that already see large amounts of traffic and have existing connections to jobs/schools. This makes it harder or rural projects to score well.
10. The scoring for equity should provide incentive for project proposers to include actions and not just do enough to avoid losing a minimum amount of points.
11. -
12. I'd discourage against the use of the Principal Arterial Conversion Study and the CMSP to assign points. Most of the recommended projects from these two studies are not related to a high percentage of Regional Solicitation projects.
13. In addition to my answer to #7, I was surprised by the lack of information and detail required by the applicants. Some understood the question and demonstrated it with their answer, but many did not and just cut & pasted their response from other parts of the application. I have reviewed for proposals responses to State RFPs, and to foundation RFPs, and these were poor, undetailed, and lacked accountability.
14. -
15. Revise the "gaps" scoring criterion to be less subjective.
16. -
17. Some of the measures need clearer scoring guidance for the Committee to reference. In this category, I would look at how Measure 4A is calculated and define guidance for Measure 5-Innovation more clearly.
18. -
19. -
20. Develop better scoring criteria
21.
    - The SRTS usage measure 2B was "student population w/in 1 mile of the elementary school, middle school, or high school served by the project." This measure was not used

in the scoring in the end because of inconsistent methods and data used by applicants that varied to the point where it was comparing apples to oranges and would not have resulted in a fair evaluation process for all. Solicitation staff should talk with local staff involved in SRTS projects and school data to identify what would work best and be consistent and readily available across school districts and communities. The measure wording should also be clarified as to whether the numbers should only be for those students actually attending the schools directly served by the project or for all students within the radius, regardless of age and school attendance.

9. Are there any other things you would change about solicitation scoring?
    1. -
    2. Perhaps each scorer scores along each measure so there is a broader interpretation of each aspect of the application
    3. Hosting a webinar for scorers & applicants prior to the solicitation & for lessons learned.
    4. no
    5. N/A
    6. -
    7.
        - Simpler explanation of all the components of RS funding, from overall goals to criteria to weighting to allocations to adjustments after the awards. Simple!
        - I would engage someone from CD Research or Hannah Gary in Livable Communities in this discussion.
    8. -
    9. -
    10. –
    11. –
    12. The existing usage and forecasted usage have a potential to double reward projects with a high existing traffic volumes. If a roadway already serves 30,000 vpd, and is provided with a growth factor of 0%, the project will likely still receive a high number of points in the Forecasted Usage measure even through no traffic growth is projected.
    13. Just my answers to #7 & #8
    14. -
    15. More definitive criteria/methods w/in the risk assessment measure.
    16. -
    17. Scoring my measure went well. I was able to use the guidance to create a clear scoring rubric for a qualitative measure. I do not feel all scorers take the time to do this with other qualitative measures, and perhaps it should be the task of the Committee or others to assist.
    18. -
    19. The winter maintenance question was not clear this year which created a lot of debate and challenges (which you are all aware of). That needs to be made more clear.
    20. Have more diversity for people that are scoring particular sections. It may be worth placing people with similar backgrounds and experience. There were a couple people scoring sections that did not relate or they had much experience in that area.
    21. For 2A (student population walking, biking, or taking transit to school), applicants do not need to submit individual classroom student arrival/departure tally sheets; they should be submitting that data to the National Center for Safe Routes to School [at http://saferoutesdata.org/] and then submitting the summary report they get from the center with their solicitation application. This report includes the percent of student population that currently bikes, walks, or takes public transit, which is what would be most useful for verification with the application rather than the raw data. The application asks for the copies of all original travel tally documentation and instead should ask for the summary report from the National Center.

10. Please provide any comments you have on your application scoring experience. Please highlight specific issues that can be addressed for the next Regional Solicitation. Examples could include imbalances in score distribution, criteria that are too rigid or lacking in specificity, or lack of clarity in the scoring guidelines.

1. -
2. Perhaps have more time for the scorers to deliberate their scores between each other
3. Additional thought should be put into the equity measure in particular, and expectations should be made clear to applicants and scorers.
4. great process for building trust among competing stakeholders
5. Overall the process was straightforward.
6. I was happy to see that more SRTS projects received funded from TAB than originally recommended. They are low cost projects that can have big impacts to school populations.
7.
    - More Scorers in Equity = Better experience.
    - Clearer expectations for using the full range of scores available (or not) to avoid the appearance of skewing.
8. –
9. –
10. –
11. As a first-time scorer, it would have been helpful to receive more introductory information about the process, the relevant federal and regional policies and expectations of scorers.
12. It would be worthwhile to investigate the potential of StreetLight data replacing the current process for determining vehicle delay and emissions reductions via a Synchro corridor analysis.
13. I think equity and community engagement must have more points and more accountability in the RFP/solicitation.
14. –
    - The scoring process takes a cycle or two to learn so teaming up or using a past method is helpful.
    - Overall, the scorers seem to be united in providing a thoughtful, data-driven review.
    - There seem to be more and more projects that don't fit in the constraints of the categories; consider creative ways/flexibility in scoring interpretation to support new ideas.
15. –
16. It appeared that the "contingencies" were quite large in the "Estimate of TAB-Eligible Project Costs" form. Not sure if they are adding in what they deem as inflation for the year they are constructing the project??? When we review projects, we do not allow "contingencies" in the project cost for authorization/bidding.
17. Scoring my measure went well. I was able to use the guidance to create a clear scoring rubric for a qualitative measure. I do not feel all scorers take the time to do this with other qualitative measures, and perhaps it should be the task of the Committee or others to assist.
18. –
19. We need to clarify how to evaluate trail reconstruction/resurfacing. There were 2 or 3 applications this time that fell into that category. One was not explicit and read like it was providing a new trail and only when you went to Google Maps to view the existing road, was it clear the trails were existing. They did not specify in their application that the trails would be widened or otherwise enhanced with the proposal. These were very difficult to evaluate.
20. This was my first time scoring. It was quite apparent that there was a lack of scoring methodology criteria for determining scores.
21. -

SUMMARY OF TAB RESPONSES TO 2018 REGIONAL SOLICITATION SURVEY
Twelve TAB members replied to the survey.

Themes

- Geographic balance
- Emissions and climate change are key issues to focus on more
- Timing of the process: vote in December before membership turnover.

Replies (12 Respondents)

1. Agency type (check one**)**

	Responses
State	1
County	5
City	2
Citizen representative	2
Transit representative	2
Freight representative	0
Non-motorized representative	0
Total Respondents	**12**

2. Do you have concerns related to any of the following? (Check all that apply)

	Responses	**'16 Responses**	**'14 Responses**
Distribution of funds between the roadways, transit, and bicycle/pedestrian modal categories	5	**4**	2
Weighting/distribution of points	1	3	3
Number and type of sub-categories within the three modal categories	1	0	0
Geographic distribution of funds	5	3	N/A
Criteria/measures used to score applications	**6**	3	**4**
Process to create funding scenarios	**2**	N/A	N/A
Other (2016 response shown below) -1. Need greater MCTC integration of housing & transit -2. Naming of categories reflects a bias	2	2	2
Total Respondents	9	6	7

3. Please provide specific comments to help articulate the concerns alluded to in the above question.

1. The, "on the fly, horse trading proposal," done by Hennepin County etc. was a violation of the process and should not be repeated. The hour car proposal itself also a violated the process.
2. Very concerned about geographic balance in the funding formula.
3. -
4. -
5. With the scoring criteria it makes it virtually impossible to score well enough in the cities on the outer edges of the 7 county metro to be at all competitive.
6. -
7. I feel there should be some set minimum (not necessarily equitable) for each county.
8. I believe the overall funding should be higher for roadways and bus/rapid transit, versus bike and pedestrian access.
9. Equity scoring not working.
10. As a transit rider, I find what makes driving easier makes transit harder, especially at bus stops and transfer points. Road applications to "improve" busy signalized arterial intersections that are also transfer points, for example, should prioritize safety, convenience and efficiency of transfer over vehicle LOS.
11. -

12. Given that transit and roads take so much money (biggest systems), I have concerns about how we can fund pedestrian projects adequately. It seems like infrastructure that's desperately needed, but always swept aside.

4. Are there specific changes you would make to the criteria/measures established?
    1. -
    2. A level of funding guaranteed to each geographic area.
    3. Climate (carbon emissions) and Environmental Impact should have more weight in criteria
    4. No.
    5. Find a way to dedicate a small percentage of the overall funding to the outer edges and have those areas compete with each other vs competing in a futile battle with the inner core.
    6. -
    7. -
    8. To have geographical balance across the metro - We may have to weigh certain areas differently as to keep a good balance.
    9. Specific projects for AOD's.
    10. Criteria that assess whether grants in nontransit categories make using transit easier, safer, faster or the opposite. Would like to see nontransit applicants for transit-related grants -- cities, counties, even school districts, for example, upgrading their own infrastructure at transit stops to make waiting, boarding and deboarding much more attractive and acceptable. Some relationship between city and county applications in any categories and the degree to which applicants themselves, or the local property owners they regulate, clear bus stops not on transit operators' own snow emergency priority lists; assign points based on these ratings to be added or subtracted automatically to application scores in any categories for projects on, at or beside transit stops, especially transfer points.
    11. -
    12. -

5. How well did the regional solicitation process reflect regional policy?
    1. -
    2. -
    3. -
    4. I think it was a success. There was a considerate effort to ensure all parts of the region benefited from the solicitation and geography and equity were top of mind.
    5. -
    6. Staff recommendations followed regional policy guidelines. TAB deliberations resulted in slight variances, but results were agreeable.
    7. Overall I thought it worked well.
    8. –
    9. Not exactly, but reflected actual regional needs. Policy out of wack with safety concerns.
    10. Need basic work on climate change policy vis-a-vis TAB awards. Not sure what, but it seems little of what TAB awards to road projects takes climate change seriously. Link land use and transit closely. Cities control the latter, transit operators control the former, but TAB awards do not really reflect they impact on each other.
    11. -
    12. I think it did this well; it was a lot of discussion, and consideration given to the big regional picture.

6. On a scale from 1 (strongly disagree) to 5 (strongly agree), do you agree with the following?

	1	2	3	4	5	Total	Avg	2016 Avg	2014 Avg
TAB had adequate time to discuss funding options	0	1	1	4	6	12	4.25	4.25	3.13
The funding options provided to TAB by TAC made sense	0	0	5	1	6	12	4.08	4.50	3.88

7. Were there any issues/concerns you raised during the solicitation process that were not addressed? Please provide a brief description of the issue and how the issue was not addressed.

1. -
2. -
3. -
4. -
5. -
6. -
7. -
8. -
9. Need to use TAC's recommendation more.
10. See above.
11. -
12. No.

8. What one item would you change about the solicitation above all else?

1. Following our process without violating it because a couple jurisdictions wanted something. that was outside the process.
2. -
3. -
4. Move the process back one month so we don't lose voting members in January who have been working on this for months-have the vote in December instead of Jan.
5. Geographic balancing
6. -
7. -
8. More weight given to projects focused on the future infrastructure needs versus waiting for congestion to happen and then try to react to the issues.
9. Equity Scoring not working. Ignores poverty in the suburbs.
10. Fit the full timeline into the calendar year.
11. -
12. -

9. Are there any other things you would change about the solicitation?

1. Less bias in the category names.
2. -
3. Reducing carbon emissions from transportation will continue to receive more attention and support from many places and TAB should be prepared to more strongly factor in and support projects that reduce carbon emissions. I would like to see the TAB take a longer view (not be so short sighted) with regard to transportation. EV's are coming and TAB can help ease the transition.
4. Can we get more money to fund more projects please? Maybe and extra few hundred million a year:)
5. -
6. -

7. -
8. -
9. The funding pots to really reflex the needs of the entire region. Not one county dominating the process greatly exceeding their regional share.
10. –
11. -
12. -

Information Item

DATE: March 4, 2019

TO: Transportation Advisory Board

PREPARED BY: Joe Barbeau, Senior Planner (651-602-1705)
Steve Peterson, Manager of Highways and TAB/TAC Process (651-602-1819)

SUBJECT: Sensitivity Analysis of the 2018 Regional Solicitation Measures

This information item presents a sensitivity analysis of the scoring measures used in the 2018 Regional Solicitation. The analysis repeats what was completed after the 2014 and 2016 Regional Solicitations and helps to point to any needed changes to scoring measures for the next Regional Solicitation (2020). If potential changes are needed, then Council staff will work with TAC Funding & Programming to propose any changes.

In this analysis, measures were evaluated on how they impacted application rankings, which ultimately contribute to which projects were funded. The key findings of this analysis include the following:

1. Across most application categories (e.g., Transit Expansion), measures with higher point values such as transit usage tended to have had a larger impact on application rankings. This suggests that these higher point value measures are generally performing as intended.
2. There are a small number of measures (e.g., housing performance) that are having little to no impact on the application ranking and changes may be proposed for the 2020 Regional Solicitation to make the measure more meaningful (see Strategies for Underperforming Measures).
3. In 2016, one of the key obstacles to differentiation was scoring outliers (e.g., when one project scored 100 points on a measure and the rest of the applications only scored one or two points, rendering the measure meaningless) as staff identified 18 measures as outliers. The analysis for 2018 identifies only three measures as outliers in 2018. This improvement was the result of enabling scoring committees to adjust for outliers.

Evaluation Method

There are between 9 and 16 measures per application category. For instance, crashes reduced by the project is a scoring measure in the Roadway Expansion application category. Each of these measures was assigned a point value that was based largely on the results of the Regional Solicitation Evaluation and Redesign in 2013 and 2014. Then, submitted applications were scored on each of the measures. These sub-scores are added up to a total score out of 1,100 possible points. Projects were then awarded funding based on the total points relative to the other projects submitted in the same application category.

Tables 1 through 10 present the measures used to evaluate each application category. Each measure is presented with three statistics:

1. Number of applications that would change their ranked order if the measure was removed
2. Number of applications that would move above or below the TAB-approved funding line if the measure was removed
3. Standard deviation, or a measure of how clustered or spread out application scores are for that measure

Impact on Ranked Order when a Measure is Removed

The primary gauge for evaluating a measure's actual impact in the 2018 Regional Solicitation is how many applications change their rank position within an application subcategory if that measure is removed. Measures that have a large impact on how the applications score relative to each other have more potential to affect a funding decision.

Impact on the Funding Line when a Measure is Removed

Changes in ranked order sometimes cause an application to move above or below the TAB-approved funding line, the frequency of which is also indicated in the tables. However, it is important to note that funding line movement tends to be a fairly arbitrary statistic moving forward, as that line is not predictable. Further, it is not a given that the flipping of two applications across that line would have resulted in funding the application that moved up (or not funding the application that moved down), as point spread, geographic impacts, federal request amounts, and federal funding requests could move funding from one category to another.

Standard Deviation

To further explore the potential for a measure to contribute to an application's funding decision, each measure's standard deviation is calculated. Higher standard deviations usually suggest scores that are widely spaced, though it is possible for outliers to skew standard deviations. Lower standard deviations indicate score clustering. Standard deviation also depends on the number of points allocated to a measure, with higher-value measures expected to have generally higher standard deviations.

Findings

Overall Findings

Overall, the measures create differentiation, as intended.

The 2016 sensitivity analysis identified three under-performing measures worth exploring, the first two of which were addressed with changes to the 2018 application:

- Risk Assessment Work Sheet (part of the scoring in 9 of the 10 application categories): This measure provided little differentiation in most categories in the 2016 Regional Solicitation. For 2018, the measure was changed to capture fewer, more impactful elements. This change seems to have made a minor difference, as standard deviations have only increased by modest amounts (i.e., less than ten) in most categories.
- Deficiencies and Safety (Multi-Use Trails and Pedestrian Facilities): In 2016, both measures (A. Barriers/Gaps and B. Deficiencies/Safety) for each category saw very high scores overall, with only one of the measures (4B, Multiuse Trails) seeing fewer than half of the maximum points for any application. In 2018, 4B became a differentiator, changing the ranking of eight out of 12 applications. In the Multi-Use Trails category, 4A became more impactful, as evidenced by its standard deviation increasing from 9 to 21.
- Housing Performance Score (all application categories): No meaningful change occurred in this measure, as it is based on housing accommodation scores generated by the Council's Community Development Department. Due to cities having similar performance scores, the scores tend to be high. This is particularly true in the transit categories, for which projects tend to be located in Minneapolis or St. Paul, each of which have perfect housing performance scores.

Roadways Findings

Within the Roadways categories, the "Role in the Regional Transportation System and Economy" introduced some new measures in 2018. Added measures awarded points for the Regional Truck Corridor Study, the Principal Arterial Intersection Study, and the Congestion Management Safety Plan. These measures generally provided differentiation expected with their point values.

For the Roadway Expansion and Roadway Reconstruction / Modernization / Spot Mobility application categories, the measures were roughly as difference-making as expected.

The Traffic Management Technologies application category only received three applications and no conclusions are able to be made.

Conclusions were also difficult to draw for the Bridge application category, as there were only eight projects submitted, which included two pairs of tied scores. The tied scores reduce the number of ranking changes.

Transit/Travel Demand Management (TDM) Findings

As expected, the two transit application categories saw the most impact in their 350- and 325-point Usage measures (Measure 2). In Transit Expansion, eight of the nine applications scored 50 points out of 50 in Risk Assessment, with the other scoring 43. In addition, five of the nine measures did not change the ranked order of any projects. Though four of these measures are worth less than 100 points and the fifth was impacted by an outlier.

Bicycle/Pedestrian Findings

In the Multiuse Trails and Bicycle Facilities application category, each of the 10 measures changed the ranking of at least 20 of the 40 applications. While the Pedestrian Facilities application category did not show any irregularity, the Public Engagement Process measure in the Safe Routes to School application category showed almost no impact, as every application scored at least 35 out of 45 points for a standard deviation of 4.

Strategies for Underperforming Measures

While this does not seem to be a significant issue for the 2018 Regional Solicitation, for lower impact measures or measures that are not distinguishing scores as intended, there are several strategies that can be employed:

- Do nothing
- Change the number of points allocated to the measure
- Change the measure
- Change the measure's scoring guidelines or applicant instructions
- Convert the measure to a required qualification instead of a scoring measure
- Remove the measure

Table 1. Summary of Roadway Expansion Measure Performance (17 applications submitted).

Criteria	#	Measures	Max Points	# of applications: Rank order changed	# of applications: Crossed funding line*	St. dev.	Outliers (None)
Regional Role	1A	Congestion/PA Intersection Study	80	**12**	**1**	20	
	1B	Connection to Total Jobs and Manufacturing/Distribution Jobs	50	11	0	16	
	1C	Regional Truck Corridor Study	80	9	**1**	31	
Usage	2A	Daily person throughput	110	8	0	33	
	2B	Forecast 2040 average daily traffic	65	6	0	17	
Equity / Housing	3A	Socio-Economic	30	6	0	9	
	3B	Housing Performance Score	70	9	0	16	
Infra.	4	Date of construction	40	7	0	10	
Congestion / Air Quality	5A	Vehicle delay reduced	100	11	**1**	32	
	5B	Kg of emissions reduced	50	0	0	15	
Safety	6	Crashes reduced	**150**	**12**	**1**	**53**	
Multimodal	7	Transit, bicycle, or pedestrian project elements and connections	100	10	**1**	30	
Risk Assess.	8	Risk Assessment Form	75	6	0	13	
Cost Effect.	9	Cost Effectiveness	100	9	**1**	23	
TOTAL			**1,100**			**155**	

**The number indicates projects that moved above the funding line. For each such instance, another project moved below the funding line. This is the case on Tables 1-10.*

Key:	**Rank order changed:** How many applications changed their ranked order by including that measure	**Crossed funding line:** How many applications would have flipped across the TAB-approved funding line by including that measure	**St. dev.** Standard deviation, a measure of how clustered or spread out application scores are

Comments: Most measures were impactful, with all measures impacting the ranking of at least 8 out of 17 applications. It would be difficult to suggest that any measures are underperforming, though the most valuable measure (6) did change the rankings on the fewest projects.

Key differences from 2016: No outliers; down from four. Measure 6 went from the most projects changing rank order in 2016 to the fewest in 2018.

Sorted by Max Points

#	Measure	Max Pts	Rank Change	Cross Line	St. Dev
6	Crashes reduced	**150**	**12**	**1**	32
2A	Throughput	110	8	0	33
7	Multimodal	100	10	**1**	30
5A	Vehicle Delay	100	11	**1**	32
9	Cost Effectiveness	100	9	**1**	23
1A	Congestion/PA	80	**12**	**1**	20
1C	Reg. Truck Study	80	9	**1**	31
8	Risk Assessment	75	6	0	13
3B	Housing	70	9	0	16
2B	Forecast ADT	65	6	0	17
5B	Emissions	50	0	0	15
1B	Connection to Jobs	50	11	0	16
4	Construction date	40	7	0	10
3A	Equity	30	6	0	9

Table 2. Summary of Roadway Reconstruction / Modernization / Spot Mobility Measure Performance (15 applications submitted).

Criteria	#	Measures	Max Points	# of applications: Rank order changed	# of applications: Crossed funding line	St. Dev.	Outliers (see below)
Regional Role	1A	Congestion/PA Intersection Study/CMSP*	65	11	0	23	
	1B	Connection to Total Jobs and Manufacturing/Distribution Jobs	40	7	1	14	
	1C	Reg. Truck Corridor Study Tiers	65	10	1	25	
Usage	2A	Daily person throughput	110	7	0	32	
	2B	Forecast 2040 average daily traffic	65	9	1	15	
Equity / Housing	3A	Socio-Economic	30	2	0	8	
	3B	Housing Performance Score	70	5	0	18	
Infrastructure Age	4A	Date of construction	50	7	0	9	
	4B	Geometric, structural, or infrastructure deficiencies	100	**12**	1	19	
Congestion / Air Quality	5A	Vehicle delay reduced	50	9	1	15	A
	5B	Kg of emissions reduced	30	8	1	10	B
Safety	6	Crashes reduced	**150**	9	1	**47**	
Multimodal	7	Transit, bicycle, or pedestrian project elements and connections	100	7	0	21	
Risk Assess.	8	Risk Assessment Form	75	8	1	12	
Cost Effect.	9	Cost Effectiveness	100	9	**2**	24	
TOTAL			**1,100**			**138**	

**Congestion Management and Safety Plan*

Comments: No particularly surprising results.

Measures with outliers:

A. 5A. Top application scored 50. Second ranked application scored 40. Others scored from 0 to 14.
B. 5B. Top two applications scored 30. Others scored from 0 to 11.

Key differences from 2016: The most notable difference is that 15 applications were submitted in 2018, versus 34 in 2016. Standard deviations followed a nearly identical pattern as in 2016.

Sorted by Max Points

#	Measure	Max Pts	Rank Change	Cross Line	St. Dev
6	Crashes	**150**	9	1	**47**
2A	Throughput	110	7	0	32
9	Cost Effect.	100	9	**2**	24
4B	Deficiencies	100	**12**	1	19
7	Multimodal	100	7	0	21
8	Risk	75	8	1	12
3B	Housing	70	5	0	18
1A	Con/PA/CMS	65	11	0	23
2B	Forecast ADT	65	9	1	15
1C	Truck Study	65	10	1	25
4A	Construction Date	50	7	0	9
5A	Delay reduced	50	9	1	15
1B	Jobs	40	7	1	14
5B	Emissions	30	8	1	10
3A	Equity	30	2	0	8

Table 3. Summary of Traffic Management Technologies Measure Performance (3 applications)

Criteria	#	Measures	Max Points	# of applications: Rank order changed	# of applications: Crossed funding line	St. Dev.	Outliers (None)
Regional Role	1A	Functional Classification	50	0	0	0	
	1B	Reg. Truck Corridor Study Tiers	50	0	0	14	
	1C	Integration with existing systems	50	0	0	0	
	1D	Coordination with Other Agencies	25	0	0	6	
Usage	2A	Daily person throughput	85	0	0	11	
	2B	Forecast 2040 average daily traffic	40	0	0	6	
Equity / Housing	3A	Socio-Economic	30	0	0	10	
	3B	Housing Performance Score	70	0	0	2	
Infra Age	4	Infrastructure Age	75	0	0	10	
Congestion / Air Quality	5A	Vehicle delay reduced	**150**	**2**	0	36	
	5B	Kg of emissions reduced	50	0	0	0	
Safety	6A	Crashes reduced	50	**2**	**1**	26	
	6B	Safety Issues	**150**	**2**	**1**	**50**	
Multimodal	7	Transit, bicycle, or pedestrian project elements and connections	50	0	0	10	
Risk	8	Risk Assessment Form	75	**2**	0	30	
Cost Effect	9	Cost Effectiveness	100	**2**	**1**	29	
TOTAL			**1,100**			39	

Comments: Given the low number of applications (3) very little can be gleaned.

Key differences from 2016: No key differences are evident, given the minimal number of applications.

Sorted by Max Points #	Measure	Max Pts	Rank Change	Cross Line	St. Dev
6B	Safety Issues	**150**	**2**	**1**	**50**
5A	Vehicle delay reduced	**150**	**2**	0	36
9A	Cost Effectiveness	100	**2**	**1**	29
2A	Throughput	85	0	0	11
4	Infrastructure Age	75	0	0	10
8	Risk Assessment	75	**2**	0	30
3B	Housing	70	0	0	2
1A	Functional Class	50	0	0	0
1B	Truck Study	50	0	0	14
1C	Integration w/Systems	50	0	0	0
6A	Crashes reduced	50	**2**	**1**	26
7	Multimodal	50	0	0	10
5B	Emissions	50	0	0	0
2B	Forecast ADT	40	0	0	6
3A	Equity	30	0	0	10
1D	Coordination/Agencies	10	0	0	6

Table 4. Summary of Bridges Measure Performance (8 applications submitted).

Criteria	#	Measures	Max Points	# of applications: Rank order changed	# of applications: Crossed funding line	St. Dev.	Outliers (None)
Regional Role	1A	Distance to nearest parallel bridge	100	2	0	33	
	1B	Connection to Total Jobs and Manufacturing/Distribution Jobs	30	3	**1**	11	
	1C	Daily heavy commercial traffic	65	0	0	5	
Usage	2A	Daily person throughput	100	2	0	24	
	2B	Forecast 2040 average daily traffic	30	3	0	7	
Equity / Housing	3A	Socio-Economic	30	0	0	10	
	3B	Housing Performance Score	70	2	0	22	
Infrastructure Condition	4A	Bridge sufficiency rating	**300**	**5**	**1**	**61**	
	4B	Load-posting	100	0	0	46	
Multimodal	5	Transit, bicycle, or pedestrian project elements and connections	100	3	0	32	
Risk Assessment	6	Risk Assessment Form	75	0	0	10	
Cost Effectiveness	7	Cost Effectiveness	100	2	**1**	36	
TOTAL			**1,100**			**136**	

Comments: With only eight applications submitted, and two pairs of tied scores, conclusions are difficult to draw.

Key differences from 2016: None.

Sorted by Max Points #	Measure	Max Pts	Rank Change	Cross Line	St. Dev
4A	Sufficiency rating	**300**	**5**	**1**	**61**
1A	Distance to Parallel	100	2	0	33
4B	Load-posting	100	0	0	46
7	Cost Effectiveness	100	2	**1**	36
2A	Throughput	100	3	0	24
5	Multimodal	100	3	0	32
6	Risk Assessment	75	0	0	10
3B	Housing	70	2	0	22
1C	Heavy Commercial	65	0	0	5
2B	Forecast ADT	30	3	0	7
1B	Connection to Jobs	30	3	**1**	11
3A	Equity	30	0	0	10

Table 5. Summary of Transit Expansion Measure Performance (9 applications submitted).

Criteria	#	Measures	Max Points	# of applications: Rank order changed	# of applications: Crossed funding line	St. Dev.	Outliers (see below)
Regional Role	1A	Connection to Jobs and Educational Institutions	50	0	0	16	
	1B	Average number of weekday transit trips connected to the project	50	0	0	14	
Usage	2	New Annual Riders	**350**	**6**	0	**113**	
Equity / Housing	3A	Socio-Economic	130	3	**1**	45	
	3B	Housing Performance Score	70	0	0	6	
Emissions Reduction	4	Total emissions reduced	200	3	**1**	74	
Multimodal	5	Bicycle and pedestrian elements and connections	100	2	**1**	21	
Risk Assessment	6	Risk Assessment Form	50	0	0	2	
Cost Effectiveness	7	Cost Effectiveness	100	0	0	32	A
TOTAL			**1,100**			**189**	

Comments: Measure 2 proved to be a key differentiator, as six of nine applications changed rank with its removal.

Measures with outliers:

A. 7. Top application scored 100. Others scored from 3 to 8.

Key differences from 2016: In 2016, Measure 2 was minimally impactful (two rank-order changes; no funding line crosses) thanks to the presence of an outlier. The 2018 result showing six applications out of nine changing order is more indicative of the measure's weight.

Sorted by Max Points

#	Measure	Max Pts	Rank Change	Cross Line	St. Dev
2	New Riders	**350**	**6**	0	**113**
4	Emissions	200	3	**1**	74
3A	Equity	130	3	**1**	45
5	Multimodal	100	2	**1**	21
7	Cost Effect.	100	0	0	32
3B	Housing	70	0	0	6
1A	Jobs/Edu	50	0	0	16
1B	Trips	50	0	0	14
6	Risk Assessment	50	0	0	2

Table 6. Summary of Transit Modernization Measure Performance (10 applications submitted).

Criteria	#	Measures	Max Points	# of applications: Rank order changed	# of applications: Crossed funding line	St. Dev.	Outliers (see below)
Regional Role	1A	Connection to Jobs and Educational Institutions	50	3	0	16	A
	1B	Average number of weekday transit trips connected to the project	50	2	0	15	
Usage	2	Total existing annual riders	**325**	**8**	0	**122**	
Equity / Housing	3A	Socio-Economic	105	2	0	40	
	3B	Housing Performance Score	70	2	0	3	
Emissions Reduction	4	Description of emissions reduced	50	3	0	18	
Service and Customer Improvements	5	Project improvements for users	200	4	0	84	
Multimodal	6	Bicycle and pedestrian elements and connections	100	6	0	27	
Risk	7	Risk Assessment Form	50	3	0	14	
Cost Effect.	8	Cost Effectiveness	100	5	0	34	
TOTAL			**1,100**			**249**	

Comments: Consistent with expectations, Measure 2 is the most impactful measure both in terms of changing rank order and standard deviation. No measure pushed any projects across the funding line, because the top-four (funded) projects scored at least 327 more points than the bottom-six (unfunded) projects, which is larger than the maximum score in any one measure.

Measures with outliers:

A. 1A. Top application scored 50. Second-ranked application scored 26. Others scored from 1 to 6.

Key differences from 2016: in 2016, one outlier project reduced remaining scores and, therefore, the spread among the scores. In 2018, a clear gap (327 points) is present and serves as the funding line.

Sorted by Max Points

#	Measure	Max Pts	Rank Change	Cross Line	St. Dev
2	Existing Riders	**325**	**8**	0	**122**
5	User Improvements	200	4	0	84
3A	Equity	105	2	0	40
6	Multimodal	100	6	0	27
8	Cost Effectiveness	100	5	0	34
3B	Housing	70	2	0	3
1A	Jobs/Edu	50	3	0	16
1B	Trips	50	2	0	15
4	Emissions	50	3	0	18
7	Risk Assessment	50	3	0	14

Table 7. Summary of Travel Demand Management Measure Performance (13 applications submitted).

Criteria	#	Measures	Max Points	# of applications: Rank order changed	# of applications: Crossed funding line	St. Dev.	Outliers (None)
Regional Role	1	Ability to capitalize on existing regional transportation facilities and resources	**200**	8	**1**	40	
Usage	2	Users	100	6	**1**	22	
Equity / Housing	3A	Socio-Economic	80	4	0	25	
	3B	Housing Performance Score	70	2	0	7	
Congestion Reduction / Air Quality	4A	Congested roadways	150	7	0	31	
	4B	VMT reduced	150	9	**1**	**52**	
Innovation	5	Project innovations and geographic expansion	**200**	**10**	**1**	51	
Risk Assessment	6A	Technical capacity of organization	25	2	0	4	
	6B	Continuation of project after initial federal funds are expended	25	6	0	10	
Cost Effectiveness	7	Cost Effectiveness	100	0	0	26	
TOTAL			**1,100**			**120**	

Comments: Measure 5 was the most impactful measure, due in part to the 200, 100, and 75-point maximums for new programs, replication of programs, and expansion of programs, respectively.

Key differences from 2016: None.

Sorted by max points

#	Measure	Max Pts	Rank Change	Cross Line	St. Dev
5	Innovation/Expansion	**200**	**10**	**1**	51
1	Facilities/Resources	**200**	8	**1**	40
4A	Congestion	150	7	0	31
4B	VMT reduced	150	9	**1**	**52**
7	Cost Effectiveness	100	0	0	26
2	Users	100	6	**1**	22
3A	Equity	80	4	0	25
3B	Housing	70	2	0	7
6A	Technical Capacity	25	2	0	4
6B	Project continuation	25	6	0	10

Table 8. Summary of Multiuse Trails and Bicycle Facilities Measure Performance (40 applications submitted).

Criteria	#	Measures	Max Points	# of applications: Rank order changed	# of applications: Crossed funding line	St. Dev.	Outliers (none)
Regional Role	1	Identify location of project relative to RBTN	**200**	**38**	2	31	
Potential Usage	2A	Existing population and employment within 1 mile	150	34	2	31	
	2B	Snow and Ice Control	50	33	2	23	
Equity / Housing	3A	Socio-Economic	50	28	2	9	
	3B	Housing Performance Score	70	27	1	16	
Deficiencies and Safety	4A	Gaps closed, barriers removed, and / or improved connectivity between jurisdictions	100	28	2	21	
	4B	Deficiencies corrected or safety problems addressed	150	20	1	16	
Multimodal	5	Transit or pedestrian elements and connections	100	25	2	10	
Risk Assessment	6	Risk Assessment Form	130	33	**4**	23	
Cost Effectiveness	7	Cost Effectiveness	100	31	3	24	
TOTAL			**1,100**			**91**	

**Regional Bicycle Transportation Network*

Comments: For the third consecutive cycle, this category has had significant “bunching” of scores near the funding line. This is due at least in part to the number of applications. Measure 6, Risk Assessment, shifted the funding status of eight projects despite only having a standard deviation of 23 points. Each measure changed the rank order of at least 20 applications and no clear cause of the “bunching” problem, aside from volume of applications, is evident.

Key differences from 2016: Measure 4A had a standard deviation of only 9 in 2016 and all applications scored at least 62 out of 100. In 2018 the standard deviation has more than doubled with a scoring point range from five to 100.

Sorted by Max Points

#	Measure	Max Pts	Rank Change	Cross Line	St. Dev
1	RBTN	**200**	**38**	2	31
2A	Pop/Employment	150	34	2	31
4B	Deficiencies	150	20	1	16
6	Risk Assessment	130	33	**4**	23
4A	Gaps/Barriers	100	28	2	21
5	Multimodal	100	25	2	10
7	Cost Effectiveness	100	31	3	24
3B	Housing	70	27	1	16
2B	Snow/Ice	50	33	2	23
3A	Equity	50	28	2	9

Table 9. Summary of Pedestrian Facilities Measure Performance (12 applications submitted).

Criteria	#	Measures	Max Points	# of applications: Rank order changed	# of applications: Crossed funding line	St. Dev.	Outliers (none)
Regional Role	1	Connection to Jobs and Educational Institutions	150	**8**	**1**	**50**	
Potential Usage	2	Existing population within ½ mile	150	3	0	36	
Equity / Housing	3A	Socio-Economic	50	3	0	15	
	3B	Housing Performance Score	70	2	0	21	
Deficiencies and Safety	4A	Barriers overcome or gaps filled	120	2	0	5	
	4B	Deficiencies corrected or safety problems addressed	**180**	**8**	**1**	35	
Multimodal	5	Transit or bicycle elements and connections	150	6	**1**	32	
Risk Assessment	6	Risk Assessment Form	130	6	0	31	
Cost Effectiveness	7	Cost Effectiveness	100	6	0	46	
TOTAL			**1,100**			**126**	

Comments: The most noteworthy measures in this category, Measures 1 and 4B, changed the rank order of eight applications.

Note that measures 4A and 4B, the two qualitative "Deficiencies and Safety" measures, had very different impacts, as 4A had a standard deviation of only five, versus 35 for 4B. The key difference between these measures may be in the approaches of the scorers.

Key differences from 2016: Measure 4B was far more impactful in 2018 than in 2016.

Sorted by Max Points

#	Measure	Max Pts	Rank Change	Cross Line	St. Dev
4B	Deficiencies/Safety	**180**	**8**	**1**	35
1	Jobs/Edu	150	**8**	**1**	**50**
2	Population	150	3	0	36
5	Multimodal	150	6	**1**	32
6	Risk Assessment	130	6	0	31
4A	Gaps/Barriers	120	2	0	5
7	Cost Effectiveness	100	6	0	46
3B	Housing	70	2	0	21
3A	Equity	50	3	0	15

Table 10. Summary of Safe Routes to School Measure Performance (8 applications submitted).

Criteria	#	Measures	Max Points	# of applications: Rank order changed	# of applications: Crossed funding line	St. Dev.	Outliers (None)
SRST Elements	1	Describe how the project addresses 5 E's* of SRST Program	**250**	**6**	**1**	32	
Usage	2A	Average share of student population that bikes or walks	170	**6**	0	**52**	
	2B	Student population within school's walkshed	80	N/A**	N/A**	N/A**	
Equity / Housing	3A	Socio-Economic	50	0	0	13	
	3B	Housing Performance Score	70	2	0	17	
Deficiencies / Safety	4A	Barriers overcome or gaps filled	100	2	0	14	
	4B	Deficiencies corrected or safety or security addressed	150	4	0	24	
Public Engagement / Risk Assessment	5A	Public engagement process	45	0	0	4	
	5B	Risk Assessment Form	85	2	0	11	
Cost Effectiveness	6	Cost Effectiveness	100	3	**1**	30	
	TOTAL		**1,100**			**91**	

**The 5 Es of Safe Routes to School include Evaluation, Engineering, Education, Encouragement, and Enforcement.*
***Measure 2B was eliminated from scoring when it was discovered that applicants had different interpretations of how to answer the question.*

Comments: Measure 5A did not change any rank placement. Each application scored at least 35 out of 45 points.

Key differences from 2016: None.

Sorted by Max Points

#	Measure	Max Pts	Rank Change	Cross Line	St. Dev
1	5 E's	**250**	**6**	**1**	32
2A	Students that walk/bike	170	**6**	0	**52**
4B	Deficiencies/Safety	150	4	0	24
4A	Gaps/Barriers	100	2	0	14
6	Cost Effectiveness	100	3	**1**	30
5B	Risk Assessment	85	2	0	11
2B	Students in walkshed	80	N/A	N/A	N/A
3B	Housing	70	2	0	17
3A	Equity	50	0	0	13
5A	Public engagement	45	0	0	4