

Recommendations for Better Project Scoring

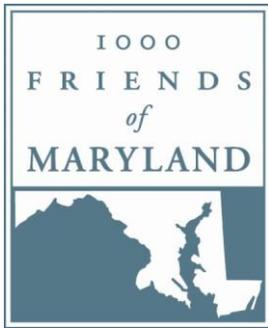
*IMPROVING THE IMPLEMENTATION OF THE MARYLAND OPEN
TRANSPORTATION INVESTMENT DECISIONS ACT OF 2016*

REPORT TO THE JOINT COMMITTEE ON ADMINISTRATIVE,
EXECUTIVE & LEGISLATIVE REVIEW

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As the leading voice for smarter growth since 1994, 1000 Friends of Maryland advocates for a more environmentally and economically sustainable future that creates opportunities for all Marylanders through better development patterns. www.friendsofmd.org



The Central Maryland Transportation Alliance is a diverse coalition of corporate and civic leaders uniting business, philanthropic and institutional sectors around a common agenda: improving and expanding transportation options for the citizens and businesses of Central Maryland. The Transportation Alliance is an initiative of the Baltimore Community Foundation. www.cmtalliance.org

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Intro and Background

During the 2016 Session of the General Assembly, House Bill 1013 (Maryland Open Transportation Investment Decision Act) was enacted to become Chapter 36 of the laws of 2016. The law established certain measures to be used in evaluating to what extent proposed major capital transportation projects achieved state transportation goals. Additionally, the law required the Maryland Department of Transportation (“MDOT” or “the department”) to develop a project-based scoring system using the goals and measures outlined in the law. Specifically, the department is required to develop the scoring system, develop weighting metrics for each goal and measure, adopt the necessary regulations to implement the system, and rank major transportation projects for inclusion in the Consolidated Transportation Program (CTP). The issue currently before the Administrative Executive and Legislative Review (AELR) Joint Committee is the set of regulations MDOT has drafted to implement the scoring system.

Although the committee’s jurisdiction is narrowly focused on the regulations, it is important to take a step back and remind ourselves of the big picture. The state of Maryland spends more than \$1 billion dollars every year on capital transportation projects. The decisions on how we spend those dollars have an impact on the everyday lives of all Marylanders: how they get to work, how they get to school, where they choose to live, how food gets to their grocery stores, whether they can open a new business, how clean is the air they breathe. That’s what the law and these regulations are supposed to be about.

The law is very much a continuation of Maryland’s steady progress in making its transportation spending more accountable. Back in 2000 the General Assembly passed and the Governor signed SB 731 creating the Annual Attainment Report, which now gets submitted to the legislature each year. The Attainment Report is supposed to report on progress toward achieving state transportation goals, establish performance indicators, and set targets for those indicators.

Ten years later, the General Assembly passed and the Governor signed HB 1155 which created new standards for which proposed projects were selected for the capital program and to tie those projects to achieving state transportation goals. Prior to this, the CTP made no mention of the state’s transportation goals and projects were not expected to demonstrate that they would help achieve those goals. As advocacy groups, the Transportation Alliance and 1000 Friends did have higher hopes for HB 1155. In the implementation of the law all that really seems to have happened is that some additional check boxes were added to the project information forms in the CTP. But it was a start.

House Bill 1013 was another step in that evolution and is informed by policies that other states have implemented with goals of improving transparency, accountability, and fiscal stewardship. Most often cited is our neighbor to south,

Virginia, which, in 2014, passed a bill creating a project scoring system that came to be known as Smart Scale. The Virginia system has broad bi-partisan support, is a well-regarded model across the country, and has now gone through two successful rounds of project scoring.

Current Status

House Bill 1013 passed the General Assembly in April 2016 and became effective July 1 of that year. According to HB 1013, the department was tasked with developing the project scoring based on the goals and measures outlined in the law by January 1, 2017. The law provides the department with great latitude in how it develops the system by giving it the discretion to decide the weights and metrics to be used for each measure.

Because the department was not required to establish the system until January 1, 2017 (well after the FY2017-2022 CTP has been developed) it seems reasonable to conclude that the law intended the scoring process to be in place for the development of the FY2018-2023 CTP. However, in late July the department sent a letter to each county giving them two weeks to provide extensive studies and documentation for any major transportation project in their priority letters. The letter threatened to remove from the FY2017-2022 CTP any project that did not include the requested information. An advisory letter from the Attorney General's office clarified the law's intent and the department sent a follow-up letter indicating it will delay implementation until it begins working on the FY2018-2023 CTP.

In September MDOT published the draft regulations required by law to create the Major Transportation Project Scoring and Ranking System, as well as a "Chapter 36 Implementation Analysis" which includes a chart of projects scored and an "Implementation Key". An AELR hearing to discuss the proposed regulations was held November 18. At the start of that hearing Secretary of Transportation Pete Rahn said, "These are regulations we don't like and, frankly, there is no other option to us given the law that is presented to us to develop regulations from than what you have in front of us."

Purpose and Structure of Report

As advocacy organizations that supported HB 1013 and its goals of transparency, accountability, and fiscal stewardship, we respectfully disagree with Secretary Rahn's assertion. We believe that the law does not force MDOT into the regulations it has drafted. Quite to the contrary, we believe the law gives the department a free hand in drafting appropriate regulations and in creating as robust and comprehensive a scoring process as it is willing to undertake. The draft regulations, including the implementation analysis, are the direct result of the

department's choices. To illustrate this point we have undertaken our own effort to create an implementation guide that would be acceptable under the law.

The following report highlights eight of the 23 measures required for the scoring system. For each measure we explain the purpose of the metric, describe how MDOT came up with a score, show an example of a best practice from elsewhere, and recommend how MDOT could have done it better. Finally, we will look at other deficiencies in MDOT's implementation, specifically in how it chose to define "area served by the project" and in its decision to require counties to shoulder the burden on data collection and analysis.

Best Practices and Recommendations for Eight Measures

Measure 1(b). Complete Streets

The extent to which the project implements the Maryland State Highway Administration's Complete Streets policies

Goal I: Safety and security

Purpose

In recent years, transportation agencies throughout the nation have moved from an orientation toward building streets and highways mainly to serve motor vehicles toward a philosophy that considers streets and highways as public ways that should serve the mobility needs of people on foot, in transit vehicles, and using non-motorized vehicles. This "Complete Streets" approach has been incorporated into the policies and procedures of agencies throughout the nation.

Maryland's State Highway Administration adopted its Complete Streets policy in 2012. According to the policy's vision statement:

Complete Streets is the Maryland State Highway Administration's (SHA) approach to achieving an interconnected, multi-modal transportation network throughout Maryland that supports access and travel for all users.

The policy commits SHA to the goal of a "safe, efficient, multi-modal transportation network in Maryland that provides for the access, mobility, and safety needs of motorists, freight carriers, transit users, bicyclists and pedestrians."

Measure 1(b) is intended to measure how individual projects implement the Complete Streets policy.

MDOT Chapter 36 Implementation Analysis

The Implementation Key presents only a yes/no choice for Measure 1(b). No information is provided as to how this choice is made. Of the 73 projects scored in

the Implementation Analysis, 57 are scored “yes” – presumably considered consistent with the Complete Streets policy – and 16 are scored “no.” The 16 “noes” are all projects located on Interstate highways or freeways, and most are highway widening projects. These are likely to have been ruled as exceptions to the Complete Streets policy. However, a number of Interstate and freeway projects are scored “yes.” It seems unlikely that all the 57 projects on the “yes” list incorporate significant Complete Streets features and more likely that a project manager checked a box to indicate that the policy was considered and applied as appropriate.

Best practice

Best practice for scoring projects for incorporating Complete Streets policies can be found in a recent publication from AARP and Smart Growth America, *Evaluating Complete Streets Projects: A guide for practitioners* (2015). This guide provides a list of recommended performance measures, together with data requirements and examples of implementation. Some of the metrics that might be useful for the Maryland context include:

- Auto trips - Driving trips as portion of total trips along project, measured by gender, age, income, race, ethnicity, and disability status
- Bicycle trips - Bicycling trips as portion of total trips along project, measured by gender, age, income, race, ethnicity, and disability status
- Community connections - Percent of persons living or working within ½-mile (for walking) and 3 miles (for bicycling) of facility, by gender, age, income, race, ethnicity, and disability status
- On-street parking - Presence of parking per goals established in process
- Presence of bicycling facilities - Count of new or refurbished facilities by type, e.g., bike lane (and type), advanced stop lines or bike boxes, bike signal heads, bike racks; Percent of intersections with advanced stop lines or bike boxes, painted bike lanes through the intersection, bicycle signal heads, bicycle loop detectors
- Presence of transit facilities - Number of transit stops with new or upgraded shelters; Percent of accessible transit stops and stations; Miles of new or refurbished transit-only lanes; Intersections with transit signal priority
- Presence of walking facilities - Count of new or refurbished facilities by type, e.g., sidewalks, marked crosswalks, islands, curb extensions, countdown signals, Leading Pedestrian Intervals, accessible curb ramps, Accessible Pedestrian Signals; Percent of intersections with marked crosswalks, islands, curb extensions, countdown signals, Leading Pedestrian Intervals, accessible curb ramps, Accessible Pedestrian Signals; Average distance between signalized or protected crosswalks
- Transit trips - Transit trips as portion of total trips along project, measured by gender, age, income, race, ethnicity, and disability status; Scheduled



- headways between transit vehicles; Average speed of transit vehicles; Average wait time for passengers; Number of paratransit trips shifted to fixed-route transit trips
- Transportation connections - Closes gap between existing bike/walk facilities; Makes "last mile" connection to transit: ½-mile for walking, 3 miles for bicycling
 - Trip consistency - Travel time for trips, by mode and purpose; Travel time reliability (reduced non-reoccurring delay), by mode and purpose; Percent of person-hour change in delay, by mode and purpose; Emergency response and travel time to health facilities
 - Walk trips - Walking trips as portion of total trips in community, measured by gender, age, income, race, ethnicity, and disability status; Walking commutes as portion of total commutes, measured by gender, age, income, race, ethnicity, and disability status; Participation in community walking events; Walking trips to primary and secondary school (ages 5 to 18 years)

Recommendation

MDOT should select and adapt performance measure from the document *Evaluating Complete Streets Projects: A guide for practitioners* as the basis for developing much more robust and refined scoring for Measure 1(b), Complete Streets.

Measure 2(a). Increase facility lifespan

The degree to which the project increases the lifespan of the affected facility

Goal II: System preservation

Purpose

Most transportation systems in the United States have been subject to very heavy usage, underfunded maintenance, and the natural deterioration of aging. Appropriately, most transportation agencies have adopted system preservation – or “fix it first” – as the cornerstone of their investment programs. Facility lifespan is simply one way of viewing how a specific proposed project fits in with the overall need to assure that the transportation system is kept in a state of good repair.

MDOT Chapter 36 Implementation Analysis

MDOT, rather than using an asset management approach to this Measure, relies completely on project category:

- Very high (4) – Bridges and Interchanges, because they replace existing bridges, interchanges, or intersections
- High (3) – Capacity/Operation Improvements, Intersections, and BRT (Transit), because they reconstruct a portion of existing roadways or facilities
- Medium (2) – Widen Roadway projects, because they add on to existing roadways and do some reconstruction work on existing facilities
- Low (1) – No categories
- No impact (0) – Transit New Starts, because they are new facilities and do not increase the life of existing facilities

Although this reasoning is plausible, it is overall a very weak surrogate for actual asset preservation assessment. It assumes, for example, that all interchange projects better achieve the goal of asset management than all intersection improvements, regardless of factors such as the condition of the current facility, the expected useful life of the proposed facility, or how the facility is used. As a result, there is no incentive for prioritizing or designing better projects, only for maintaining certain types of transportation assets in Maryland’s system before others.

Best practice

“Transportation asset management” is an approach to System Preservation that has become prevalent in the United States. The most accepted definition is:

Transportation Asset Management is a strategic and systematic process of operating, maintaining, upgrading, and expanding physical assets effectively throughout their lifecycle. It focuses on business and engineering practices for resource allocation and utilization, with the objective of better decision making based upon quality information and well defined objectives.

Federal law now requires state DOTs to develop statewide transportation asset management plans, and MDOT is now in the process of preparing its submission. Ultimately, the statewide transportation asset management plan should be the source for project system preservation measures. In the meantime, there are a number of prioritization systems that have been developed around the country. One system that has been used, tested, and refined over several years is Missouri DOT's "Framework for Transportation Planning and Decision-Making."

The relevant scoring table in the Missouri Framework is Physical System Condition Needs. There is a table for roadways and a table for bridges (Maryland would need to add a table for transit).

The roadway table awards up to 100 points for each project:

- Pavement smoothness – 30 points
- Pavement condition – 20 points
- Functional classification – 10 points
- Daily usage (all vehicles) – 10 points
- Truck usage – 10 points
- District factors/flexible points – 20 points

Each of these metrics, with the exception of District factors/flexible points, is derived from objective data already tracked by MoDOT.

For instance, Pavement smoothness is derived from International Roughness Index scores, which range from 0 to 300, and are then consolidated into 5 categories from Very Good condition (0 points in the roadway table) to Poor condition (the full 30 points in the roadway table).



Recommendation

MDOT should use its Transportation Asset Management Plan process to develop a rigorous score for this Measure. In the meantime, MDOT should look to a standard system, such as that used by the Missouri DOT Planning Framework, which relies on system condition data that is already being tracked.

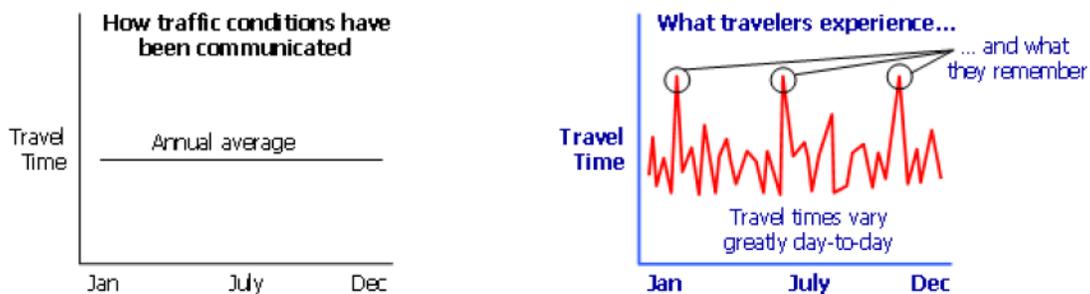
Measure 3(b). Change in travel time reliability

The degree to which the project has a positive impact on travel time reliability

Goal III: Quality of service

Purpose

Reliability of travel time is a key factor in determining how travelers plan their commutes, how businesses plan their operations, and how developers plan their investments. As the Federal Highway Administration has noted, transportation planners may think in terms of average travel times, but travelers tend to remember their worst commutes and plan around those:



Chapter 36 Implementation Analysis

MDOT has developed a 3-point scoring rubric for Measure 3(b):

- Very high – Highway widenings and transit. “New capacity will reduce congestion and enable more reliable travel times.”
- High – Interchange projects. “These projects are choke points and if they are improved congestion would be mitigated.”
- Medium – Intersections, bridges, capacity/operational/safety – “Operational improvements will be realized but not to the magnitude of interchange or roadway projects, which greatly reduce congestion.”

It is clear from these descriptions that MDOT is really measuring *capacity* – or possibly *congestion relief* – but not *reliability*.

Best practice

Reliability involves site-specific and corridor-specific data. FHWA notes, for instance, that for a typical incident management program, the improvement in average travel time may appear to be modest, but reliability measures will show a much greater improvement because they show the effect of improving the worst few days of unexpected delay.

FHWA identifies four measures as best practices for measuring travel time reliability:

- 90th or 95th percentile travel times for specific travel routes or trips – Indicates how bad delay will be on the heaviest travel days.
- Buffer index – represents the extra buffer time (or time cushion) that most travelers add to their average travel time when planning trips to ensure on-time arrival.
- Planning time index – represents the total travel time that should be planned when an adequate buffer time is included.
- Frequency that congestion exceeds some expected threshold.

Recommendation

MDOT should select one of the FHWA-recommended metrics and apply it in Maryland.

Measure 3(c). Support mode connections and choices

The degree to which the project supports connections between different modes of transportation and promotes multiple transportation choices

Goal III: Quality of service

Purpose

Access to non-highway modes and connections between modes provides travelers with choices, improves overall mobility and accessibility, and strengthens the overall resilience of the transportation network to climate change and extreme weather events.

Chapter 36 Implementation Analysis

Measure 3(c), Mode connections, is scored by MDOT in the Chapter 36 Implementation Analysis using a 0 – 4 scale:

- 0 = No impact
- 1 = Low
- 2 = Medium
- 3 = High
- 4 = Very high

No other clues are provided in the Implementation Key as to how MDOT derives these scores. Presumably they are based on some sort of map study, whether using Geographic Information Systems (GIS) data or “eyeballing.”

Of the 8 projects receiving scores of “4”, 7 are transit projects, so these are likely automatically assigned “very high” scores. There is no obvious pattern to the remaining scores.

Without a better key and without doing an independent mapping analysis it is difficult to evaluate MDOT’s scoring.

Best practice

Virginia has a similar measure – A3 (Access to Multimodal Choices) – which uses a much more detailed and transparent scoring system. A GIS analysis is used to award points (up to a maximum of 5) for 7 potential project characteristics:

- Project includes transit system improvements or reduces delay on a roadway with scheduled peak service of 1 transit vehicle per hour – 5 points
- Project includes improvements to an existing or proposed park-and-ride lot. Ex. New lot, more spaces, entrance/exit, technology (payment, traveler information) – 4 points
- Project includes improvements to existing or new HOV/HOT lanes or ramps to HOV/HOT – 2 points

- Project includes construction or replacement of bike facilities. For bicycle projects, off-road or on-road buffered or clearly delineated facilities are required – 1.5 points
- Project includes construction or replacement of pedestrian facilities. For pedestrian projects, sidewalks, pedestrian signals, marked crosswalks, refuge islands, and other treatments are required (as appropriate) – 1.5 points
- Project provides real-time traveler information or wayfinding specifically for intermodal connections (access to transit station or park & ride lot) – 1 point
- Provides traveler information or is directly linked to an existing TMC network/ITS architecture – 1 point



Virginia also scales Measure A3 by multiplying the resulting score by the number of new peak period non-SOV users. Using such a weighting factor gives priority to projects that will provide the greatest relief to traffic congestion.

Recommendation

MDOT should use Virginia Measure A3 as the basis for developing a new Measure 3(c).

Measure 6(b). Enhances access to intermodal locations for movement of goods/services

The extent to which the project is projected to enhance access to critical intermodal locations for the movement of goods and services

Goal VI: Economic prosperity

Purpose

Improving facilities for goods movement – especially ports and other intermodal facilities – promotes economic development while ameliorating the negative impacts of heavy truck traffic on other vehicular flows.

Chapter 36 Implementation Analysis

Measure 6(b), Intermodal access, is scored by MDOT in the Chapter 36 Implementation Analysis using a 0 – 3 scale:

0 = Transit – “These projects are moving people not goods and services.”

1 = On a collector roadway

2 = On an arterial roadway

3 = Listed as a Significant Freight Impact

The “4” cell is not used because “it is difficult to differentiate between high and very high.” (MDOT arranged the math so that a “3” generates the full 30 points allotted to Intermodal Access, and so on.)

“Listed as a Significant Freight Impact” apparently refers to the “Multimodal Freight Projects” section of the CTP, which “highlights projects that have significant freight impacts” in the CTP project listings. That section, however, does not describe the process for determining what is “significant.”

Scores “1” and “2” simply prioritize bigger highways over local roads.

The overall effect of Measure 6(b) is to give highway projects a bonus over transit projects and projects on major highways a bonus over projects on local roads.

The Chapter 36 Implementation Analysis, in fact, does nothing explicit to identify and reward projects that “enhance access to critical intermodal locations for the movement of goods and services.” That is a much more specific objective than merely prioritizing highways that carry high volumes of trucks.

Best practice

MDOT has a “Strategic Goods Movement Plan,” published in 2015, but this plan was not used as an aid in developing a scoring system for Measure 6(b). This Plan identifies the Port of Baltimore and BWI/Marshall Airport as the critical intermodal

goods movement locations in the state, but there is no sign that these locations have been given special attention in project planning or scoring.

Virginia has a corresponding measure in its scoring system: ED2, Intermodal access and efficiency, which is intended to measure “the extent to which the project is deemed to enhance access to critical intermodal locations and/or freight intensive industries and supports increased efficiency for freight movements in congested corridors.”

In contrast to MDOT’s minimal scoring rubric, Virginia devotes a three-page description to this measure in its Technical Guide to the “Smart Scale” system. ED2 awards points based on three criteria:

1. The first Virginia criterion provides points for “enhanced efficiency on a primary truck freight route” and could be seen as roughly equivalent to MDOT’s award of points based on arterial or collector road status. The Virginia measure, however, is more precise, using actual truck route status rather than the broader arterial/collector distinction.
2. The second Virginia criterion provides points to projects that provide direct access (within one mile) or indirect access (within three miles) to ports or airports. This is a clear link to what Virginia (and Maryland!) is actually trying to achieve.
3. The third Virginia criterion uses a similar direct and indirect access measurement for service to “existing or planned distribution centers, intermodal transfer facilities (excluding ports and airports), manufacturing industries or other freight intensive industries.” This criterion would award points, for instance, to a facility for transferring containers between trucks and trains.

Recommendation

MDOT should use its own Strategic Goods Movement Plan as a starting point and use Virginia’s ED2 Measure to develop a new Measure 6(b).

Measure 6(c). Non-speculative economic development strategies

The projected increase in furthering nonspeculative local and state economic development strategies in existing communities

Goal VI: Economic prosperity

Purpose

Maryland was one of the first states to recognize the importance of steering economic development toward existing built-up areas. The 1997 Smart Growth and Neighborhood Conservation Initiative set up a process for designating Priority Funding Areas as a tool for targeting state investment in developed areas. The goals, as articulated by the Department of Planning, were:

- To preserve existing communities;
- To make the most efficient and effective use of taxpayer dollars for costly infrastructure by targeting state resources to build on past investments; and
- To reduce development pressure on critical farmland and natural resource areas by encouraging projects in already developed areas.

Measure 6(c) is intended to advance the same broad goals, by providing a higher priority to those projects that further “nonspeculative” development – development supported by existing infrastructure rather than greenfield, sprawl development – in “existing communities.”

MDOT Chapter 36 Implementation Analysis

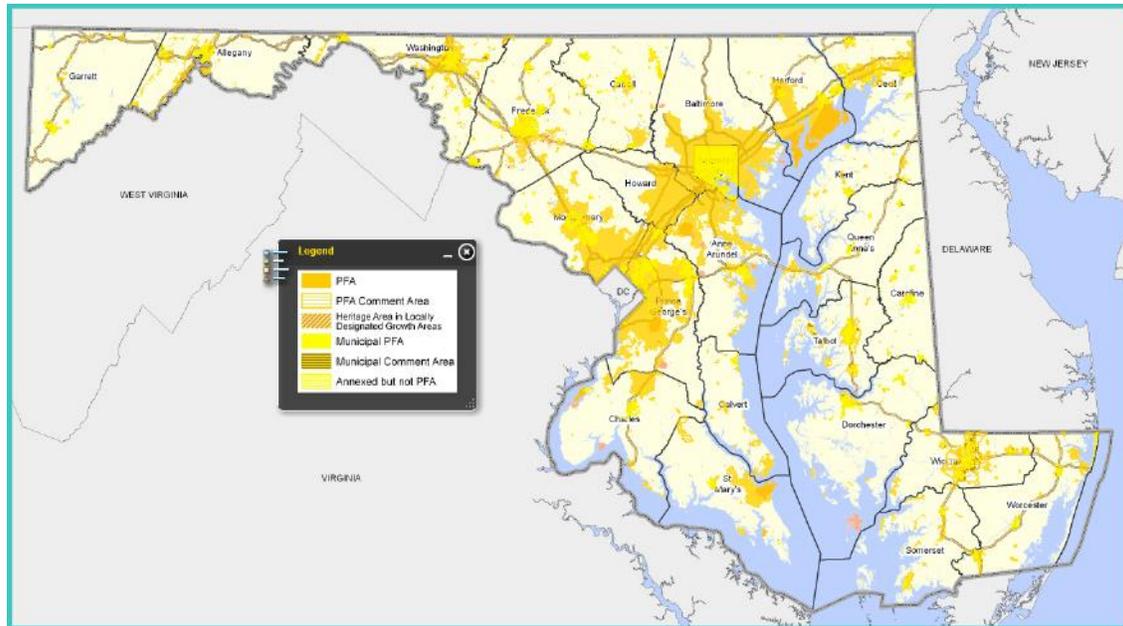
MDOT’s Implementation Key for Measure 6(c) uses a 5-point scale:

- 4 = Very high
- 3 = High
- 2 = Medium
- 1 = Low
- 0 = No impact

MDOT provides no information as to how these scores were derived. A review of the 73 projects scored does not reveal an obvious solution.

A logical approach to implementing Measure 6(c) would be to use the Priority Funding Area designations already in place. The CTP is required to identify whether a project is inside or outside a Priority Funding Area or whether its status is to be determined. A review of the 16 Prince George’s County projects scored in the Implementation Analysis, using the PFA determinations shown in the CTP, revealed the following breakdown:

- 4 (Very high): 1 Inside PFA
- 3 (High): 3 Inside PFA, 1 To be determined
- 2 (Medium): 3 Inside PFA
- 1 (Low): 5 Inside PFA, 2 Outside PFA, 1 To be determined



Maryland’s existing Priority Funding Area designations would be a logical starting point for scoring Measure 6(c)

Clearly, PFA status was not a key determinant for scoring Measure 6(c).

There also does not appear to be any direct link to project category, although curiously the seven transit projects in Prince George’s County were all rated “4 – Very High.”

Best practice

The Pacific Northwest is a leading region for growth management. The Puget Sound Regional Council, the metropolitan planning organization for the Seattle area, has a measure they call “Support for Centers”:

This measure addresses the extent to which projects support existing and new population and employment in centers. In addition, the measure addresses the extent to which projects support transit oriented development, development of housing in centers, accessibility to/from/within the center, and compatibility with the character of the community in which a project is located.

The measure utilizes a 10-point scale, with 5 points available for “Access to Regional Growth Centers” and 5 points available for “Access to transit supportive land use.”

The 5 points for Access to Regional Growth Centers are awarded as follows:

5 = Provides increased mobility and accessibility within a regional growth center

3 = Provides increased mobility and accessibility by connecting two or more regional growth centers (or connects to a regional manufacturing industrial center)

2 = Provides increased mobility and accessibility by connecting into one regional growth center

The 5 points available for transit supportive land use are scored as follows:

- 2 points are available for a project where development densities support transit (1 point for slightly lesser densities)
- 1 point is available where a local plan calls for transit supportive growth
- 1 point is available when the project area is designated as a high capacity transit station area
- 1 point is available for a project where mixed use zoning is in effect

The Puget Sound measure is relatively simple to implement, using mapped data and straightforward qualitative judgment, and connects clearly to the desired goal.

Recommendation

MDOT should use the existing Priority Funding Area designations as a starting point and evaluate the Puget Sound – or similar measure – for constructing a more robust Measure 6(c).

Measure 8(a). Travel time savings divided by project cost

The estimated travel time savings divided by the project cost

Goal VIII: Cost effectiveness and return on investment

Purpose

The purpose of Measure 8(a) is to prioritize projects that improve the mobility of Marylanders in a cost effective way. The measure was constructed as a ratio, with travel time savings as the numerator and project cost the denominator.

Chapter 36 Investment Analysis

MDOT has chosen to decline to develop any scoring mechanism for Measure 8(a) at all. The scoring rubric in the Chapter 36 Implementation Key rewards 2 points to *all* projects. In calculating the scores for Cost Effectiveness and Return on Investment, where Measure 8(a) should award up to 34 points to projects (out of a total of 100), each project is given 17 points – half the maximum. No information is provided concerning why MDOT has neglected to develop a score.

Developing a score for this measure is definitely possible and has been done elsewhere.

Best practice

One measure that could be looked at as a model has been developed by North Carolina. The Strategic Transportation Investment system prioritizes Mobility/Expansion and Modernization projects for all modes. One measure used to measure highway projects is Highway Benefit-Cost, which is designed to measure the expected benefits of the project over a 10-year period against the estimated project cost to NCDOT. The Benefit-Cost measure has two elements that don't fit with Maryland's Measure 8(a): safety benefits and the "other funds" element. Maryland addresses these two issues separately in the Chapter 36 measures.

$$\left[\frac{(\text{Travel Time Savings over 10 years in \$} + \text{Safety Benefits over 10 years in \$})}{\text{Project Cost to NCDOT at time of submittal}} \right] + \left[\left[\frac{\text{Other Funds}}{\text{Total Project Cost}} \right] \times 100 \right]$$

North Carolina Strategic Transportation Investment Highway Benefit-Cost measure

The two elements which *can* be translated to the Maryland system are Project Cost and Travel Time Savings.

Project Cost is a piece of information readily available to any transportation agency.

North Carolina's Travel Time Savings calculation uses NCDOT's Statewide Travel Demand Model (NCSTM) to calculate travel time savings over 10 years for projects classified as Statewide Mobility and Regional Impact. A simpler formula is used for projects with local impacts. MDOT can use its own traffic models and data for the same purpose.

Recommendation

MDOT should use the North Carolina system as the basis for developing a robust and rigorous Measure 8(a).

Measure 8(b). Leverages additional federal, state, local and private sector investment

The degree to which the project leverages additional federal, state, local, and private sector transportation investment

Goal VIII: Cost effectiveness and return on investment

Purpose

State transportation funds are always constrained. Projects that attract other funding expand the transportation investment “pie” while involving more partners in the transportation capital investment process.

MDOT Chapter 36 Implementation Analysis

The Implementation Key for Measure 8(b) indicates that all projects are scored either as a “yes” or a “no.” No information is provided as to how this determination was made for the Implementation Analysis. Of the 73 projects scored, 13 received a “yes” and 60 received a “no.” All 7 transit project received a “yes,” for reasons that are not clear. Of the 6 highway projects scored “yes,” 2 are shown on the CTP to be receiving significant county financial contributions, so clearly meet the intent of the Measure. The CTP reveals no reason why the other 4 highway projects scored “yes.”

Best practice

MDOT already has a procedure in place that would require only minimal revisions to fully achieve the intent of the Measure. Performance Measure 2.2, “Percent of Projects Leveraging Other Funding Sources,” in the MDOT Excellerator Performance Management System addresses essentially the same issue. According to the most recent Performance Management report, Measure 2.2 is intended “to track and highlight opportunities to leverage Transportation Trust Fund (TTF) dollars with local and private dollars.” The result is a count of projects receiving significant “other” funding (interpreted as a 10% share or better), as well as the percentage of “other” dollars.



Recommendation

MDOT should look to its own Performance Management System to develop a more robust scoring rubric for Measure 8(b). The following modifications should be considered:

1. Add “federal discretionary” (for instance, TIGER funds) and “other state” (sharing from other agencies) funding categories to the existing “local” and “private” categories.
2. Provide extra points to projects with “other” funding greater than 10%.

Other areas for improvement

The Area Served by the Project

Under the new law, Section 2-103.7(c)(3) of the Transportation Article reads as follows:

“The department shall multiply the total combined score of each major transportation project by a weighting factor equal to one plus the results of dividing the population in the area served by the project, **as determined in regulations adopted by the department**, by the population of Maryland.” [Emphasis added.]

The purpose of applying a population-based weighting factor to project scores is to give an edge in the scoring to the projects that would benefit the most Marylanders.

In accordance with this section, the regulations proposed by the department define the “area served by the project” as the county or counties in which a project is located. This is a crude and problematic definition. Major transportation projects come in all shapes and sizes. Some will address needs in a small area while others could impact multiple counties. The legislation asks the department to determine the project area so that projects in rural areas can be fairly scored against projects in more populous areas.

The legislative history also clearly shows that the legislators amended out a reference to weighting the project score by a county’s population and instead asked the department to develop regulations to determine the most accurate and fair way to weight these projects. The law does not force the department to use an entire county as the project area. MDOT chose to do so, but has the authority under the law to define “area served by the project” differently.

Other states that score transportation projects have defined the area served by a project using methods that include identifying the traffic shed of the project or defining the traffic impact study area. Such methods more accurately measure a project’s impact and more fairly compare projects in urban and rural jurisdictions.

Responsibility for Providing Data

A final concern comes not from the draft regulations, but from the letters MDOT sent to each of the counties in July 2016. The letters required local jurisdictions to submit a dozen different studies and analyses for each major transportation project listed in their priority letters. There is no provision in the law which says that counties have to shoulder the entire burden of collecting the appropriate data to score the projects. The department chose to put the onus on the

counties. A more equitable way to implement the law would be to divide the work load between the local jurisdiction and the counties. Virginia's Smart Scale Technical Guide shows how easily this could be done. The guide includes a "Data Responsibility" table that lists 28 data items and who the responsible party is for providing that data (the state or the project applicant).

Conclusion

The purpose of transportation scoring laws like the Maryland Open Transportation Investment Decision Act and similar laws in Virginia, Texas, North Carolina, Louisiana, Massachusetts, Washington and elsewhere is to improve the transparency of transportation decisions and to get better projects more cost effectively.

Despite periodic stimulus or investment packages, Federal transportation funding has become scarcer. Infrastructure costs have continued to rise faster than inflation. In response, state governments have assumed a greater share of the cost of building and maintaining bridges, highways, rail lines and other parts of their transportation systems.

Project scoring programs help Departments of Transportation, lawmakers and governors show their taxpayers that they are making careful, strategic and accountable use of their tax dollars to improve state transportation facilities. And they show that there is a transparent process in place for making difficult decisions about which projects to plan, fund and build.

We want to see a system like that in Maryland and we supported the Maryland Open Transportation Investment Decisions Act to make it possible. But we also recognize that it is up to MDOT to implement the law, set up the scoring program, and make it work as intended.

Based on our review of the law, our analysis of MDOT's draft regulations and implementation key, and our review of best practices in states that have implemented similar project scoring tools, we find that MDOT's implementation needs significant improvement.

We raise concerns where MDOT has declined to develop any scoring mechanism at all (see the Travel time savings divided by project cost measure) or has placed the burden of providing data and analysis onto counties. We recommend improvements where MDOT has already developed an effective performance measure for internal use, but chose for these draft regulations to instead use a crude yes/no check box (see the Leverages additional federal, state, local and private sector investment measure). And we recommend improvements where applying

best practices from other states would result in fairer scores and better projects here.

With more than \$1B in annual spending at stake, it is imperative to improve what is currently drafted. Not doing so will result in a scoring system that is unfair and ineffective.

If we continue with the regulations as drafted a bridge widening project on Falls Road at Indian Run would score lower than a bridge widening project a quarter mile down Falls Road at Grave Run, simply because one project happens to be in Carroll County and one happens to be in Baltimore County. If we continue with the regulations as drafted the score a project receives will have more to do with the type of project, whether it's a new highway interchange or a road widening, than with how much it would make our travel times more reliable.

If done well Maryland's scoring program will result in better projects. The draft regulations are not currently set up to do that. Working within the existing law, and by drawing from best practices within MDOT and from Departments of Transportation around the country, MDOT could make regulations that work to achieve the purpose of the Maryland Open Transportation Investment Decisions Act.