



# Chicago Metropolitan Agency for Planning

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## MEMORANDUM

**To:** CMAP Board  
MPO Policy Committee

**From:** CMAP Staff

**Date:** October 3, 2012

**Re:** Performance-Based Evaluation Criteria for Transportation Funding

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Since the passage of GO TO 2040, CMAP has articulated the need for the State and regional stakeholders to implement performance-based funding for transportation. One year ago, CMAP introduced this concept as a high priority to a joint meeting of the CMAP Board and MPO Policy Committee. Since then, CMAP staff has engaged state, regional, and local partners in a far-reaching conversation about the benefits of a more transparent process for allocating scarce capital dollars. The specific details of CMAP's past work and outreach are outlined at the end of the memo. Furthermore, the recently-passed federal transportation reauthorization bill, Moving Ahead for Progress in the 21<sup>st</sup> Century (MAP-21), signals a new federal emphasis on outcome-based performance measurement.

At the joint meeting, CMAP staff proposes specific next steps to further explore performance-based funding, focusing on the Illinois Department of Transportation's multiyear highway program. The specific recommendations for the Board and MPO's consideration appear directly below. The remainder of the memo provides background, including a formal definition for performance-based funding as used by CMAP staff and illustrates one potential step-by-step process, including specific evaluation criteria, for how a performance-based funding system could operate in Illinois, based on the experience of peer states.

To advance performance-based funding for transportation projects in Illinois, CMAP staff makes the following two requests of the CMAP Board and MPO Policy Committee:

- 1) IDOT should form a technical advisory group for implementing performance-based funding.**

Staff asks that the Board and MPO Policy Committee request IDOT to convene a state technical advisory group. The group should form at the beginning of state FY 2014 and produce a report

by the end of state FY 2014. This group would consist of IDOT staff and staff from the state's MPOs. The state technical advisory group would focus on four main themes:

- First, this group would consider organizing the state highway program into broad programmatic categories or “buckets” —for example highway maintenance, highway modernization, and highway expansion. This effort would include definitions for each category, as well as mechanisms to classify projects with multiple or ambiguous work types.
- Second, this group would be charged with determining performance measures for the programmatic categories as well as formal scoring procedures.
- Third, this group would set broad parameters for the inclusion of MPO input into the prioritization process. CMAP stresses that MPOs should have flexibility to develop their own prioritization methodologies.
- Fourth, this group would be charged with developing an overall timeline for the new performance-based funding system, with a goal of implementing the new system in state FY 2015.

**2) CMAP should initiate a regional process for developing the agency's internal prioritization and selection methodology to evaluate candidate projects.**

This work would be coordinated through CMAP's committee structure and would be delivered by the end of state FY 2014. This exercise would engage the region in a formal process on how to measure and prioritize projects, and would provide an opportunity for CMAP staff to organize the appropriate data. This work will require considerable reorientation of CMAP staff resources in FY 2014 across the policy, planning and programming, and research and analysis departments.

This timeline aligns with new federal requirements. MAP-21 requires the U.S. Department of Transportation to determine performance measures and state departments of transportation, in consultation with metropolitan planning organizations, to set performance targets for those measures. CMAP's proposal would assist the State not only to satisfy these upcoming requirements, but transcend them to implement a true performance-based system for allocating dollars and projects. In other words, this process should strive for much more than what MAP-21 mandates.

CMAP staff recommends that State Planning and Research (SPR) dollars, the federal Unified Work Program (CMAP and other MPOs' primary source of funding), or some combination of the two be used to finance the research activities of the state technical advisory group. This effort will require dedicated staff resources from the MPOs and IDOT, and could also be supported by a consultant's services.

**ACTION REQUESTED:** Approval by the CMAP Board and the MPO Policy Committee of the staff recommendation to advance performance-based funding for transportation projects in Illinois

## BACKGROUND AND FURTHER INFORMATION

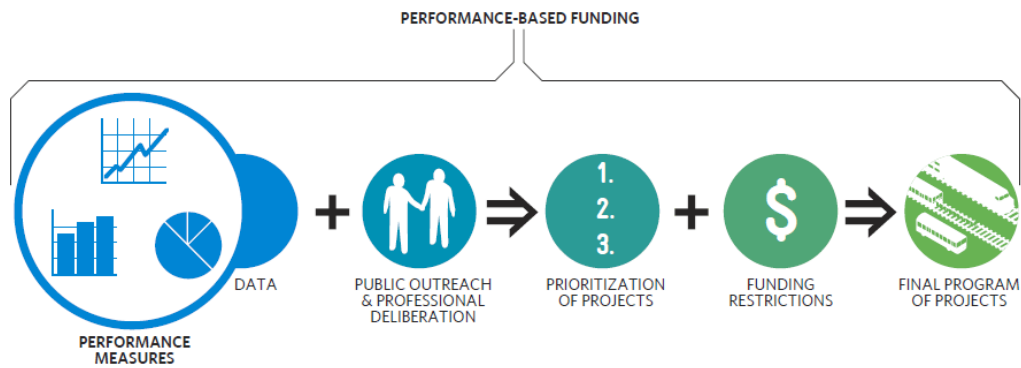
### What is “Performance-Based Funding”?

Clear, consistent definitions are crucial when discussing this topic. CMAP’s work in this area focuses on performance-based funding, that is, the effort to tie the prioritization of projects and the allocation of funding to performance measures. It is also important to note that CMAP, as well as IDOT and other regional partners, has been active in the area more commonly known as “performance measures.” However, it is important to draw a distinction between the two, as follows:

- **Performance measures** are data about the use, condition, and impact of the transportation system. These measures are best thought of as indicators – data that is publicly reported for illustrative purposes or to demonstrate progress made toward established targets. Several state departments of transportation (DOTs) are active in performance measurement, as illustrated by the Missouri DOT’s [Tracker](#) tool, the Minnesota DOT’s annual [performance reports](#), and the North Carolina DOT’s [organizational performance](#) website. CMAP is also active in performance tracking through its dissemination of data via the [MetroPulse](#) portal, the various indicators included in [GO TO 2040](#), its [Congestion Management Process](#), and other [transportation programs](#). Additionally, the Regional Transportation Authority reports various performance measures on its [website](#), as does IDOT (e.g. the annual [Travel Statistics](#) publication).

**Performance-based funding** uses a variety of performance measures to assist in prioritizing and selecting projects for funding. This data is used as part of a transparent, public process that also relies on the professional judgment of transportation stakeholders and, in some cases, the general public. Project scores built from quantitative and qualitative input must be reconciled against available funds. Note that not all performance measures can be immediately applied to the programming process; many indicators are developed at the system level, not the project level, and would need to be gathered in greater detail to be useful in programming. CMAP’s [Issue Brief](#) on the use of performance-based evaluation criteria for transportation funding falls under this category, as do the experiences of peer states and metropolitan regions that participated in the Federal Highway Administration (FHWA)/Federal Transit Administration (FTA) [Transportation Planning Capacity Building](#) program peer exchange CMAP hosted in July 2012. The draft final report of this peer exchange can be found at <http://www.cmap.illinois.gov/regional-coordinating/minutes>.

The following image illustrates the sequence of a performance-based funding process and emphasizes that performance measures play a critical role in such a process as a source of data.



Note: This image illustrates that performance measures are a form of data, and just one component of a larger performance-based funding process.  
Source: Chicago Metropolitan Agency for Planning.

## Outlining a Performance-Based Funding System for Illinois

This section outlines CMAP's best thinking on how a state performance-based funding process, once implemented, would actually work. The details shown below are similar to CMAP's earlier [issue brief](#) on the subject, which was presented to the CMAP Board in February 2012. Since that time, CMAP has learned a great deal about best practices from other states. This section attempts to illustrate a way forward, although final details should be fleshed out via the state technical advisory group recommended at the beginning of the memo.

### *Guiding Principles*

CMAP proposes the creation of a new, inclusive, and transparent process for allocating state highway dollars via the IDOT Highway Improvement Program. A new process should be based on a brief set of guiding principles, which describe overall intent. In short:

- 1) The process should be well-communicated and the data should be transparent – all stakeholders should know the “rules of the game” and understand why some projects are programmed and others are not.
- 2) The process should lead to more effective decision-making, even within existing statutory or non-statutory funding constraints such as the 55/45 split.
- 3) IDOT retains its programming authority, but the process must formalize the input of metropolitan planning organizations into the process for a subset of projects.
- 4) Implementation should start small on a subset of project types, chiefly capacity expansion and modernization projects, that will benefit from more evaluation and regional buy-in. Other project types, such as maintenance work, require engineering expertise and considerably less formal involvement from other entities or the public.

### *IDOT's Highway Improvement Program Today*

IDOT is responsible for constructing, operating, and maintaining a large highway network, and spends billions annually to do so. IDOT's current highway program, included in the multi-

modal [Transforming Transportation for Tomorrow](#) program, budgets \$9.2 billion in improvements across the state for FY 2013- FY 2018. This program includes \$6.5 billion in federal funds, \$2.2 billion in state funds, and \$0.5 billion in local funds. The six-year highway improvement program schedules \$2.4 billion for District 1<sup>1</sup>, not including statewide line items.

Much of IDOT's highway program is devoted to highway and bridge maintenance. IDOT utilizes evaluation criteria to prioritize these kinds of projects, and IDOT provides information about how this part of the process works. IDOT's Condition Rating Survey (CRS) measures pavement conditions and conducts bridge inspections every other year through the Bridge Analysis and Monitoring System. From this data, IDOT develops lists of backlog and accruing needs, and also determines which assets are in acceptable condition. In developing its highway program, IDOT sets a performance target of at least 90 percent of the road system in acceptable condition and at least 93 percent of bridges in acceptable condition. At this stage, CMAP supports IDOT's current practice in highway maintenance, and would make no recommendation to change how maintenance or bridge projects are evaluated and selected.

Rather, CMAP would propose to focus on highway modernization and highway expansion projects. Projects such as additional lanes, new interchanges, grade separations, and Intelligent Transportation Systems typically have more sizable impact on the regional economy and the development of our local communities. As such, they lend themselves to more extensive regional buy-in, including an evaluation of their alignment with GO TO 2040. However, to date CMAP and the MPO Policy Committee have had no formal role in evaluating these projects prior to their inclusion in the state Highway Improvement Program (and subsequent amendment into the regional Transportation Improvement Program). CMAP staff and committees have experience in evaluating complex projects across multiple criteria, for example through the [selection](#) of major capital projects for inclusion in GO TO 2040.

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<sup>1</sup> IDOT District 1 includes Cook, DuPage, Kane, Lake, McHenry, and Will Counties. Kendall County is located in IDOT District 3.

### Prioritization buckets

IDOT could organize its highway funds into three broad categories: maintenance, modernization, and expansion.



HIGHWAY MAINTENANCE



HIGHWAY MODERNIZATION



HIGHWAY EXPANSION

CMAP supports IDOT's current approach to evaluating and selecting maintenance projects. Rather, CMAP proposes to focus a new performance-based process on highway expansion and modernization projects.



HIGHWAY MAINTENANCE



HIGHWAY MODERNIZATION



HIGHWAY EXPANSION

Source: CMAP staff.

CMAP believes that IDOT's current practice in these areas could be improved, specifically by incorporating a more rigorous, systematic approach to evaluating and prioritizing these projects. IDOT reports that it currently considers economic needs, safety needs, congestion relief, local support, and political support in evaluating system expansion and congestion mitigation projects, but does not provide any data or documentation showing how those factors influence the development of the final program. CMAP believes that the evaluation criteria used to assess these projects should be broadened to more formally incorporate topics such as economic development, environmental impacts, and other quality of life considerations, including alignment with the livability principles of GO TO 2040.

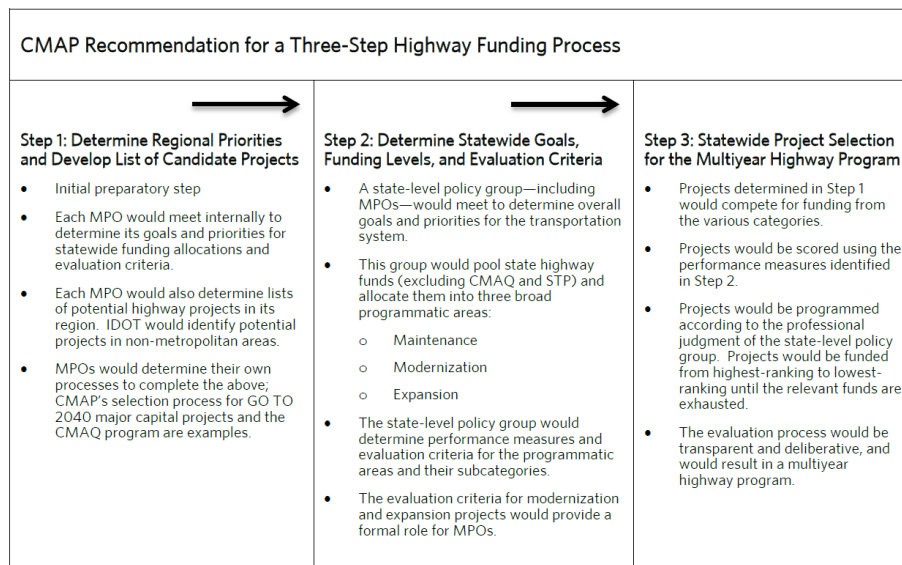
### *An Illustration of Performance-Based Funding in Illinois*

CMAP recommends a new outcome-driven process to allocate state highway funds. CMAP stresses that a new approach would continue the current state practice of developing a multiyear highway program, currently done through the five-year Highway Improvement Program. IDOT would also continue to award highway funds and deliver projects under the proposed process; there would be no change in current programming authority or construction oversight. The Congestion Mitigation and Air Quality (CMAQ) Improvement and local Surface Transportation Program (STP) programs would be exempted from a new approach, which would apply only to the fund sources that currently finance the state Highway Improvement Program.

IDOT could organize the funds included in its highway improvement programs into three broad programmatic areas, or "buckets", and apply tailored performance criteria to evaluate

projects within each of the three areas. In this example, these buckets would include highway maintenance, highway modernization, and highway expansion. These categories are broadly consistent with current practice at IDOT, which recognizes four strategic goals of roadway maintenance, bridge maintenance, congestion mitigation, and system expansion, along with an overarching goal of highway safety.

CMAP presented a hypothetical three-step state highway programming process in its February 2012 [issue brief](#). As mentioned, that example is broadly similar to the one offered here, and the following flow chart from that document provides a high-level illustration of how such a system might operate.



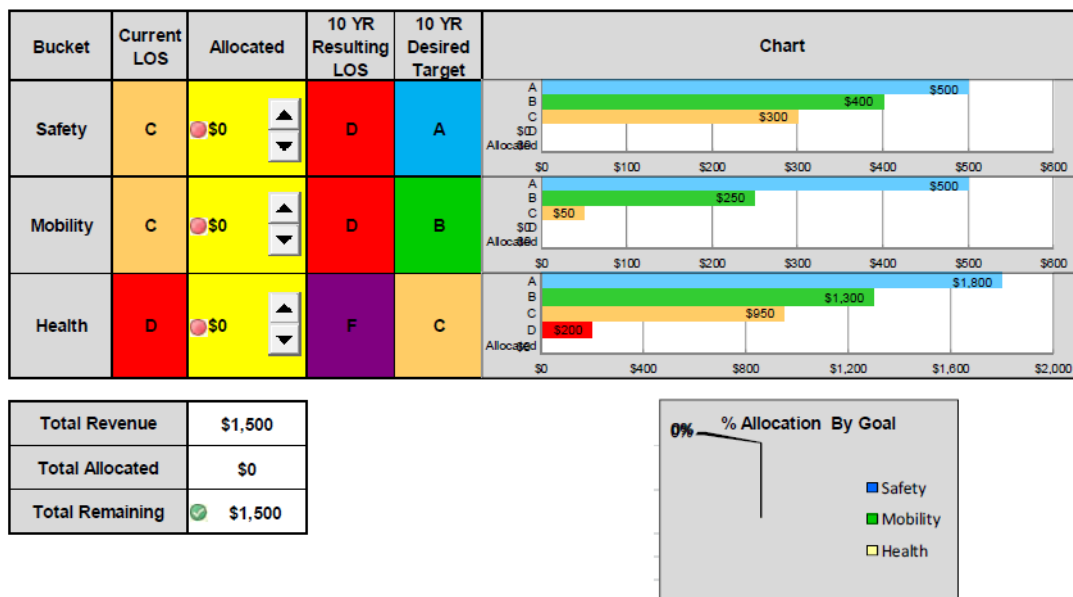
The next three subsections describe CMAP’s current thinking on how a performance-based funding system could operate in Illinois. First, funding levels to each programmatic area would be determined through extensive outreach to transportation stakeholders and the public. Second, projects would be scored used explicit evaluation criteria tailored to highway modernization and highway expansion projects; again, IDOT would continue to evaluate and select highway maintenance projects according to its existing processes. Third, projects would be programmed based on a combination of their quantitative scores and professional judgment.

Step 1: Determine Statewide Funding Levels

In the first step, IDOT would reach out to transportation stakeholders and the public to determine funding allocations to the three major programmatic areas, or program “buckets”. CMAP recommends that IDOT develop an interactive spreadsheet-based tool that allows stakeholders and the public to develop different funding scenarios given a budget constraint. This tool would estimate the impacts of the various funding scenarios on the transportation system’s level of service, and compare these results to current conditions and desired targets. The North Carolina Department of Transportation has developed and currently operates such a tool.

Below is a screenshot from an NCDOT presentation that demonstrates how the tool operates<sup>2</sup>. The leftmost columns show the Department’s broad programmatic categories and their current levels of service (LOS). In the yellow column, stakeholders or other members of the public can allocate funding across the various budgets, subject to the overall budget constraint shown in the bottom-left corner of the screen. The fourth column displays the resulting LOS from the investment level allocated to each programmatic category, and the fifth column shows the targeted level of service from the State’s long-range planning documents. The bar charts on the right show the amount of funding that would need to be allocated to each programmatic category to meet LOS A, B, C, or D. For example, an investment level of \$500 million would be required to achieve LOS A for the “Safety” category, \$400 million to achieve LOS B, and \$300 million to achieve LOS C.

### Investment Strategy Summits – Example Only



Such a tool allows transportation stakeholders and the public to understand the tradeoffs inherent in funding allocations, and to demonstrate their priorities given fiscal constraint. As in North Carolina, CMAP recommends that IDOT conduct outreach across the state, employing this tool in public information meetings but also in more formal meetings with the state’s metropolitan planning organizations. IDOT would then allocate funding across its programmatic areas using the input from the public and stakeholders’ preferred funding scenarios.

#### Step 2: Develop List of Candidate Projects and Score Projects

In the second step, candidate projects would be determined and scored using transparent evaluation criteria. IDOT and MPOs would first develop candidate projects through their internal processes. These projects would be compiled by IDOT and grouped into the three

<sup>2</sup> North Carolina Department of Transportation, [Strategic Prioritization Process](#) website. “Prioritization 2.0 Presentation (Jan 2012)”, slide 48 of 52.



broad programmatic categories (highway maintenance, highway modernization, and highway expansion).

Each broad programmatic category would have its own evaluation criteria. IDOT would continue to evaluate and select highway maintenance projects according to its existing processes. Rather, this example focuses on highway modernization and expansion projects. For those “buckets”, MPOs and IDOT district offices would provide formal input into the scoring process, and more weight would be placed on this local input for projects of regional and subregional scale.

Although the final criteria and weights would need to be determined through the deliberation of a new state technical advisory group, CMAP offers the following scoring system for the highway modernization “bucket” as an illustrative example. In this example, each cell shows the total points possible for a given criterion.

Illustrative Example: Highway Modernization Projects (≈ IDOT’s “Congestion Mitigation” projects)

Tier of State Jurisdiction Highway	Quantitative Data	Local Input	
		IDOT District Rank	MPO Rank
Statewide (Interstates, expressways)	Facility geometrics – 20 points Congestion – 20 points Safety – 10 points Environmental impact – 10 points Facility condition – 10 points	20 points	10 points
Regional (Major U.S. and Illinois routes)	Facility geometrics – 15 points Congestion -- 15 points Safety – 10 points Environmental impact – 5 points Facility condition – 5 points	25 points	25 points
Subregional (Minor U.S. and Illinois routes)	Facility geometrics – 20 points Safety – 10 points	30 points	40 points

In this example, highway modernization projects would receive additional points outside of the above scoring methodology for including multimodal components. Again, a new state technical advisory group would decide the precise evaluation criteria and scoring. CMAP offers the following as illustrative examples.

Criterion: Providing Multimodal Options (maximum number of additional points)

- Project includes HOV/HOT lanes, light rail, heavy rail, commuter rail, bus rapid transit, bus-on-shoulder, bicycle or other multimodal options provided within the highway right of way.

Criterion: Providing Multimodal Connections (medium number of additional points)

- Project provides direct connection to a terminal for an alternative mode of transportation (e.g. train or bus station).

Criterion: Accommodating Multimodal Features (minimum number of additional points)

- Project includes sidewalks, pedestrian crossings, bicycle lanes, and other Complete Street elements and/or transit signal prioritization, bus shelters, transit bypass lanes, or bus pullouts.

Although the final criteria and weights would need to be determined through the deliberation of a new state technical advisory group, CMAP offers the following scoring system for the highway expansion “bucket” as an illustrative example. In this example, each cell shows the total points possible for a given criterion.

Illustrative Example: Highway Expansion Projects (≈ IDOT’s “System Expansion” Projects)

Tier of State Jurisdiction Highway	Quantitative Data	Local Input	
		IDOT District Rank	MPO Rank
Statewide (Interstates, expressways)	Congestion – 20 points Travel time reliability – 20 points Economic Competitiveness – 20 points Environmental impact – 10 points	20 points	10 points
Regional (Major U.S. and Illinois routes)	Congestion – 20 points Travel time reliability – 15 points Economic Competitiveness – 10 points Environmental impact – 5 points	25 points	25 points
Subregional (Minor U.S. and Illinois routes)	Congestion – 20 points Travel time reliability – 5 points Environmental impact – 5 points	30 points	40 points

As described above, highway expansion projects would also receive bonus points for including multimodal components.

For both the highway modernization and highway expansion projects listed above, the new state technical advisory group would be responsible for determining specific performance measures and scoring procedures to determine points for each topic. In other words, this group would determine transparent, objective mechanisms to calculate a project's "congestion points" or "safety points". Further, MPOs and IDOT district offices would need to determine their internal processes for determining scores. In translating their local priorities into evaluation processes, CMAP only recommends that these groups be transparent in their use of data and throughout the overall process. All scoring decisions must be based on a clear, defensible rationale.

While the final decisions on evaluation methodology would be determined by a new state technical advisory group, CMAP stresses that the evaluation of modernization projects should incorporate measures of safety, condition, geometrics, and environment, while the evaluation of expansion projects should incorporate measures of congestion, travel time reliability, economic impact, and environmental impact. CMAP also stresses that more weight be allowed for local input on projects of regional or subregional importance.

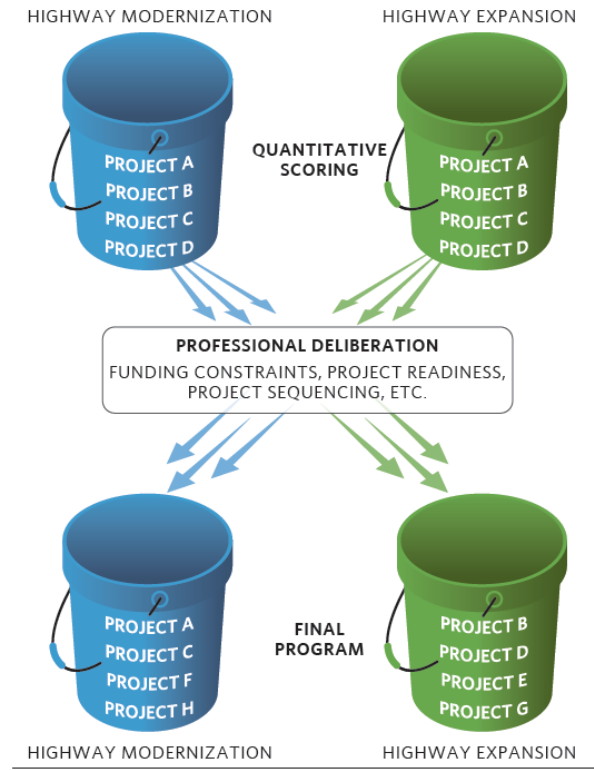
### Step 3: Project Selection

Transparency in decision-making is paramount in the actual programming of projects. In the third step, IDOT staff would reconcile the project scores determined in the second step with the funding allocations developed in the first step to develop the highway improvement program, which in turn determines the federally-required State Transportation Improvement Program. Through a deliberative, transparent process, IDOT staff would apply its professional judgment to incorporate into the programming process funding restrictions, project readiness, and other factors that affect project delivery.

To promote transparency, the final program would be published showing each project's score from Step 2, along with a narrative description or other explanation of the other non-quantitative factors that influenced the programming decision. For example, IDOT could develop a series of "Yes/No"-type checkboxes to indicate the presence of other programming factors such as project special funding eligibility or restrictions, deliverability, schedule, project cost, departmental cash flow, logical sequencing of projects, etc., and summarize those findings with a short narrative description. Where appropriate, IDOT should providing supporting documentation to reinforce its narrative descriptions.

CMAP stresses that the project scores developed in the first step would not solely determine final programming decisions. This approach would allow IDOT the flexibility to incorporate real-world conditions that influence programming decisions. To illustrate, consider the image below. Projects are first scored and sorted into programmatic categories. However, the projects included in the final program are not a sequential list of highest- to lowest-scoring.

**From quantitative scoring to a final program**



Source: CMAP staff.

## Appendix I. CMAP's Past Efforts on Performance-Based Funding

Since the adoption of GO TO 2040 in October 2010, the CMAP Board, MPO Policy Committee and the Regional Coordinating Committee have addressed the “55/45 split” issue in more detail, as articulated in this [Issue Brief](#) from March 2011. These committees directed staff to conduct more research and outreach, specifically with downstate partners, to create a broader-based constituency for altering the current allocation system. Since then, CMAP staff has reached out to various entities including IDOT, the Governor’s office, numerous Councils of Governments, County Board Chairs, Metro Counties, the Metropolitan Mayors Caucus, the Illinois MPO Advisory Council, the Transportation for Illinois coalition, and others.

At the October 2011 meeting of the Regional Coordinating Committee, CMAP staff [presented](#) initial research on the use of performance-based evaluation measures for transportation in the context of the 55/45 issue. The CMAP Board and MPO Policy Committee discussed this issue at their October 2011 joint meeting, as did the Regional Coordinating Committee at its December 2011 meeting. In general, all three committees expressed an interest in moving toward a more performance-based funding allocation system.

The CMAP Board and MPO Policy Committee again reviewed this material at their January 2012 meetings. At that time, **the CMAP Board directed CMAP staff to send a letter**, along with this [memorandum](#), to IDOT and RTA **requesting to work cooperatively to implement a new performance-based funding system**. CMAP staff published this [Issue Brief](#) in February 2012 summarizing the research findings to date and offering a high-level proposal for a performance-based funding system in Illinois.

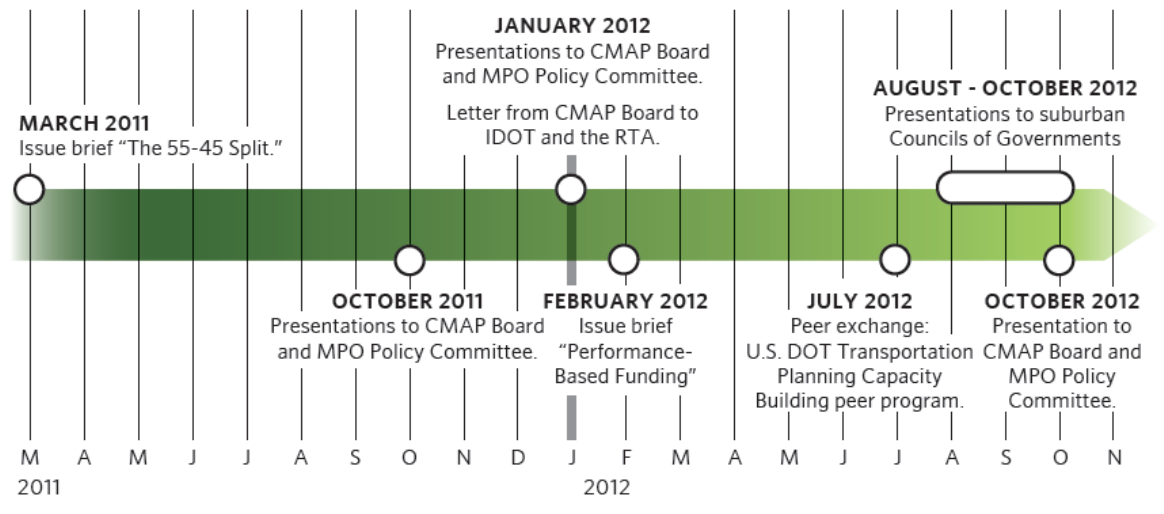
In spring 2012, CMAP staff applied for funding through the U.S. DOT Transportation Planning Capacity Building Program to host a peer exchange. The application was approved, and CMAP hosted visiting officials from IDOT, the Illinois MPO Advisory Council, and departments of transportation and metropolitan planning organizations from three peer states (Minnesota, North Carolina, and Pennsylvania). The peer exchange was held from July 10-11, 2012, and the findings are summarized in this [Policy Update](#), as well as a later section of this memorandum.

In the late summer and fall of 2012, CMAP staff continued its outreach efforts, presenting the key takeaways from the July peer exchange to the various Councils of Mayors, as well as the CMAP Transportation Committee and the Regional Transportation Operations Coalition. Additionally, CMAP staff analyzed the newly-passed MAP-21 bill for its language on performance measurement. That work is contained in this [Policy Update](#) from August 2012.

In September 2012, CMAP staff hosted a Regional Peer Exchange as a follow-up event to the July peer exchange. The regional event brought together regional highway and transit implementing agencies to discuss their capital programming processes. Participating agencies included IDOT District 1, the Illinois Tollway, the region’s six largest counties, the Council of Mayors, CMAP, the City of Chicago, the City of Naperville, RTA, CTA, Metra, and Pace. The findings from that event will soon be posted as a Policy Update.

The following timeline summarizes the various presentations made by CMAP staff, key staff meetings with IDOT, and various Policy Updates and Issue Briefs posted by CMAP on the topic of performance-based funding for transportation:

**CMAP's past efforts on performance-based funding**



Source: CMAP staff.

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