Chicago Metropolitan Agency for Planning

233 South Wacker Drive
Suite 800, Sears Tower
Chicago, IL 60606

312-454-0400 (voice)
312-454-0411 (fax)
www.cmap.illinois.gov

MEMORANDUM

To: **Planning Coordinating Committee**

Date: **May 6, 2009**

From: **Ross Patronsky, Senior Planner**

Re: **Major Transportation Capital Project Evaluation Measures**

Since it will incorporate the long-range transportation plan for the region, *GO TO 2040* will identify major transportation capital projects that will be pursued between now and 2040.

There are four major steps in this process:

1. Identifying potential projects for inclusion
2. Determining financial constraints, or the amount of funding that is likely to be available for major capital projects
3. Developing evaluation measures to be used to characterize projects and evaluate systems of projects
4. Applying the evaluation measures to identify a financially constrained system of projects that supports the adopted long-range scenario

The first two steps are underway, but decision points have not yet been reached; this memo focuses on the third step. The Planning Coordinating Committee will be requested to endorse evaluation measures for major capital projects at its June 10 meeting.

Draft recommended evaluation measures

For each project, two types of information are recommended to be reported. The first type includes basic project information such as location, limits, cost, and type of improvement. This will also include information such as new transit hours of service and service area. This is considered basic project information because it describes what the project is, rather than its impact.

The second type of information, "evaluation measures," requires either quantitative or qualitative analysis of a project's impacts. A table with more information on each of these is attached to this memo. The currently recommended measures include:

- Long-term economic development (as differentiated from short-term construction effects), including impacts in terms of jobs, income, and output. The economic impacts of projects on the freight industry will be specifically broken out and reported.
- Safety features. Project sponsors will be asked to describe how their project will address and improve safety.
- Security features. Project sponsors will be asked to describe how their project will contribute to transportation security.
- Congestion, both systemwide and in the specific corridor in which the project is located. This will be reported in terms of the hours of vehicle travel that are spent in congestion.
- Transit service area. This information will be reported as part of the basic project information; a richer measure of transit impact is being sought in collaboration with the RTA.
- Provision of bicycle and pedestrian facilities. Project sponsors will be asked to describe how their project will accommodate and support bicycle and pedestrian travel.
- Mode share. This measure breaks out the effect of the project on transit ridership and the number of trips in automobiles.
- Jobs-housing access. A weighted regional average will be created for the number of jobs accessible within certain travel times (proposed as 75 minutes for transit and 45 minutes for automobile).
- Air quality. The impacts on criteria pollutants regulated by the USEPA will be reported.
- Energy and greenhouse gas emissions. It is expected that change in fuel consumption will be estimated based on vehicle volumes and speeds, and that both this figure and the resulting change in greenhouse gas emissions will be reported. However, please note that there may be other guidance from USEPA on the measurement of greenhouse gases that may change the calculation method.
- Preservation of natural resources and land consumption. The amount of sensitive lands, including natural areas with high environmental value and prime agricultural land affected by projects will be evaluated (see attached map for the location of these features). This will involve a two-step process which identifies areas in close proximity to projects as well as areas that are expected to become more accessible for development as a result of the project.
- Support for infill development and existing densely-developed areas. Similar to the above measure, the extent to which the project supports potential for growth in infill locations will be estimated (see attached map for the location of infill areas). Please note that this may indicate both support for infill development and the potential need for mitigation of community impacts.
- Mutual consistency between regional and sub-regional plans, including municipal and county plans. Project sponsors will be asked to describe the consistency of their projects with the plans of local governments in the project area.
- Peak period utilization and demand. This measure compares facility volume and capacity at peak periods.
- Facility condition. The method of calculating this evaluation measure is still under discussion (this is not included in the attached table).

In addition to these, staff is investigating whether a measure related to water may be appropriate, based on feedback from the Environment and Natural Resources committee.

Two additional measures will be used to evaluate systems of projects, but will not be part of the evaluation of individual projects. These include environmental justice, or ensuring that the benefits and burdens of investment decisions are shared across geographies and socioeconomic groups; and cost, which is addressed as part of the financial constraint described earlier.

Development process for draft recommended evaluation measures
The first step in developing these measures involved a contract with the Volpe Center, the research branch of USDOT, to perform two tasks:

- Scan the approaches of other regions to evaluating transportation projects and summarize a selected group of these regions that represent the best practices in this area.
- Recommend, based on the results of the best practices summary, a candidate set of measures to consider for use in evaluating projects and scenarios in northeastern Illinois.

The best practices summary is available online at:
http://www.goto2040.org/WorkArea/DownloadAsset.aspx?id=15110

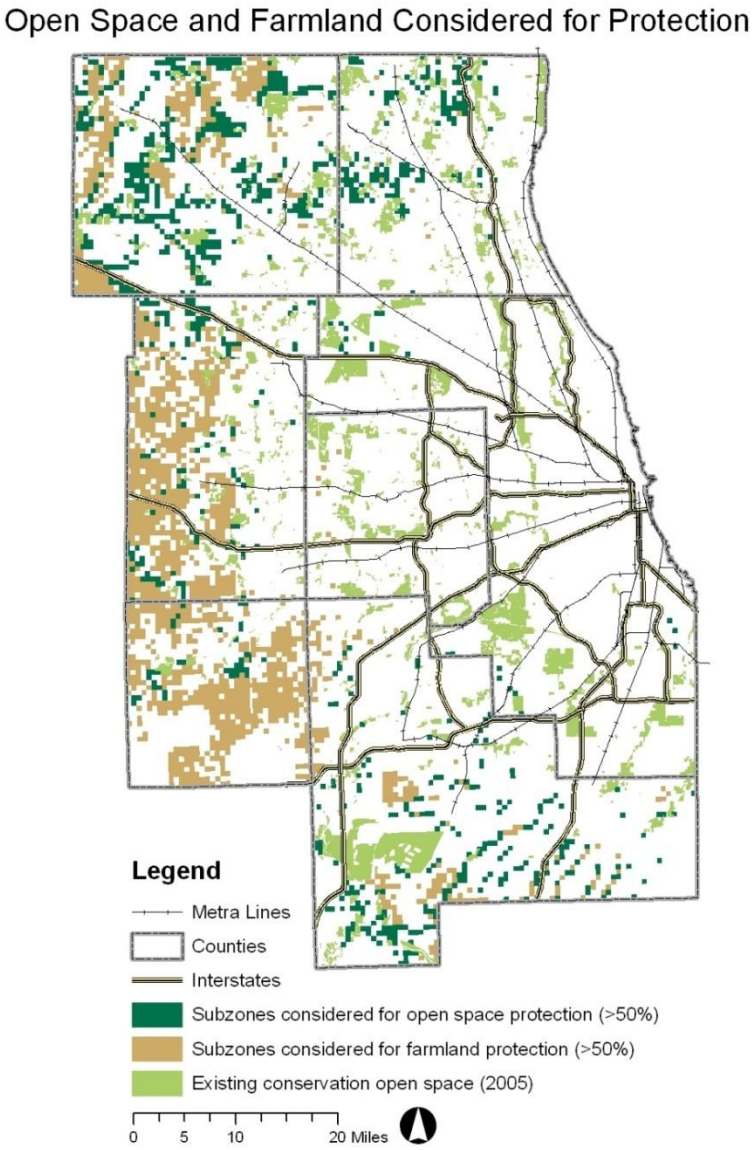
The draft recommended measures represent the results of this best practices review, in addition to additional screening to ensure consistency with the areas of the *GO TO 2040* Regional Vision as well as the eight factors laid out in USDOT's planning regulations. In particular, measures were sought that were consistent with the regional indicators that were preliminarily adopted in late 2008. The table at the end of the this document identifies, for each recommended measure, the other regions that have used this measure, the indicator set it aligns with, and the USDOT planning factor(s) that it responds to.

CMAP's working committees were asked for comment in April and early May. Changes were proposed by the Transportation Committee in April, and these are noted in the bulleted list on the previous page. The Environment and Natural Resources committee also expressed strong interest in considering water among the capital project evaluation measures. Staff is currently investigating how this could be accommodated.

The Transportation Committee will be asked to recommend endorsement of a set of evaluation measures at its May 15 meeting. The Planning Coordinating Committee will be asked for a similar action at their June 10 meeting. Comments and discussion are requested from the Planning Coordinating Committee at their May 13 meeting, so that any suggestions for changes can be communicated to the Transportation committee.

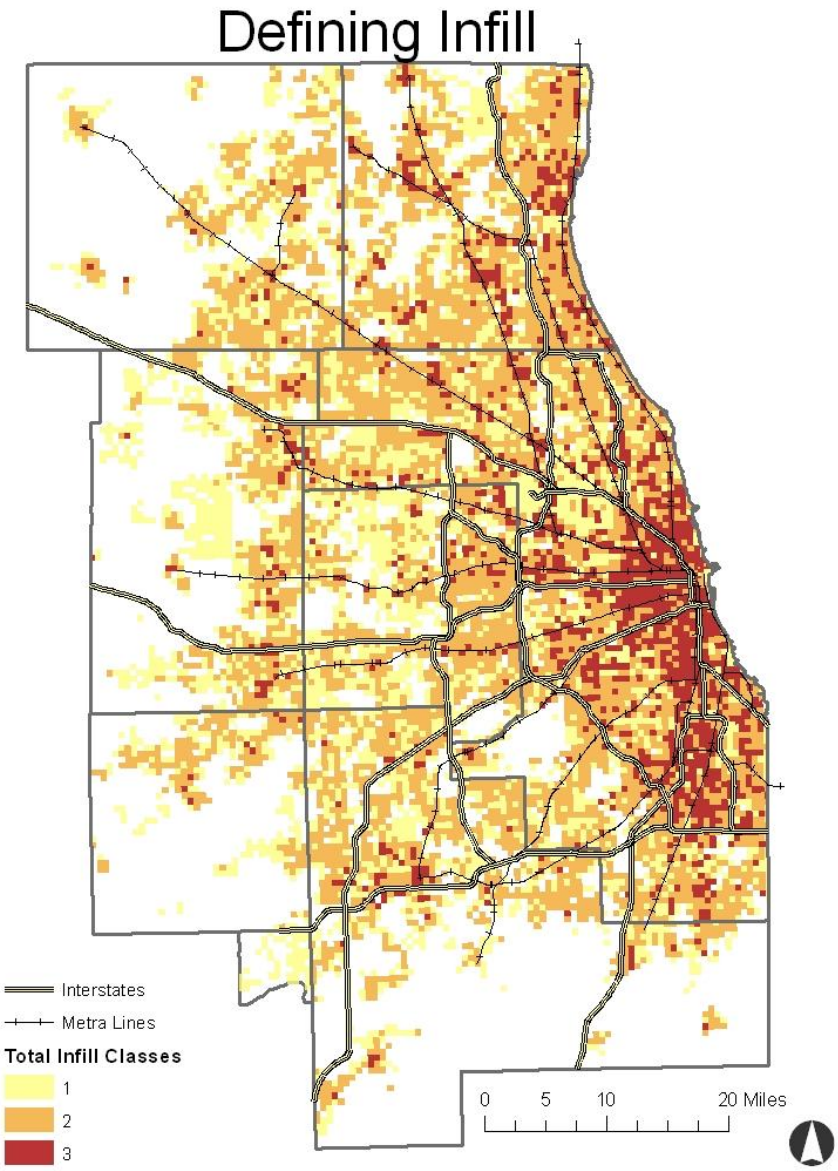
Proposed definitions of infill, open space, and agricultural areas
The measures listed above include two that require further geographic definition. The first measure, "preservation of natural resources and land consumption," is meant to indicate whether the project may create growth pressure in areas that are either unprotected natural areas with high environmental value or prime agricultural lands. CMAP has previously

prepared reports on open space (http://www.goto2040.org/uploadedFiles/RCP/Test/OS_memo_010209.pdf) and agricultural preservation (http://www.goto2040.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=14796) that define these areas. The map below shows areas of the region that have particularly high concentrations of these lands, and staff recommend that this be used as part of this evaluation measure.



The second measure, "support for infill development and existing densely-developed areas," is meant to show whether a project supports redevelopment in infill areas where infrastructure and services already exist. Three ways of defining infill are being considered. The first is to include any land within current municipal boundaries. The second involves using tax assessor data to identify land that is vacant or underutilized (defined in the infill snapshot, http://www.cmap.illinois.gov/snapshot.aspx). The third includes areas where there is more

than one potential brownfield, defined in a paper on that subject (http://www.goto2040.org/uploadedFiles/RCP/Test/CMAP_brownfields_panel_memo.pdf). The map shows how many of these characteristics apply to each area.



Because of the complexity of defining what constitutes infill, staff recommends that the measure be reported using two separate geographies; the first including all land within municipal boundaries, and the second including land within municipal boundaries that also has another infill characteristic (five or more acres of potential infill land, or two or more potential brownfields). Taken together, these measures can be used as high and low definitions of infill.

ACTION REQUESTED: Discussion.

###

Chicago Metropolitan Agency for Planning

GO TO 2040 Major Capital Program Element

Potential Evaluation Measures

Updated April 17, 2009

Measure	Case Studies					CMAP Indicator(s)	FHWA Planning Factor(s)	Data Source	Method
	Boston	Baltimore	Los Angeles	San Francisco	Portland				
Long-Term Economic Development, Including Freight System		X		X	X	EC 1, EC 2, EC 4, EC 5, He 3, R 1, Tr 1	1	TDM, TREDIS	estimated jobs, income and output
Safety Features	X	X	X	X		He 6, S 7, Tr 7	2	Descrip-tion	project as described addresses safety concerns (yes/no)
Security Features			X			He 6, S 7	3	Descrip-tion	project as described addresses security concerns (yes/no)
Congestion - Targeted Facilities or Corridors	X		X		X	EC 5, Tr 1, Tr 2	4, 6	TDM	vehicle hours of travel under congested conditions - within identified corridor
Congestion - System	X	X	X		X	EC 5, Tr 1, Tr 2	4, 6	TDM	vehicle hours of travel under congested conditions
Transit Service Area		X		X	X	EC 5, Ho 1, R 1, Tr 3	4, 6	GIS	population within buffered area around transit facilities
Provision of Bicycle and Pedestrian Facilities				X	X	He 4, Tr 3, Tr 9	4, 6	Descrip-tion	project as described addresses bicycle and pedestrian accommodation (qualitative)
Mode Share (Travel by Mode)		X			X	Tr 2, Tr 4	4, 6	TDM	trips by mode
Jobs-Housing Access		X	X		X	EC 5, Ho 1, R 1, Tr 9	4, 6	TDM, GIS	number of jobs within specified travel times
Air Quality	X	X	X	X	X	ENR 1, He 4, Tr 9	5	TDM, MOBILE	conformity - emissions estimates
Energy Consumption and Greenhouse Gas Emissions						EC 5, ENR 5, ENR 6, Tr 6, Tr 9	5	TDM, MOVES	MOVES model - estimate of GHG emissions
Preservation of Natural Resources, Land Consumption	X	X			X	ENR 4, ENR 7, R 4	5	TDM, GIS	amount of sensitive or undeveloped lands in areas where project directs growth
Support for Infill Development and Existing Densely-Developed Areas	X			X	X	ENR 4, R 1	5, 8	TDM, GIS	amount of infill potential and current density in areas where project directs growth
Mutual Consistency Between Regional and Sub-Regional Plans	X					Coord	5	Plans	Sponsor documentation of support for project in sub-regional land-use and transportation plans
Peak Period Utilization/Demand	X	X	X	X	X	Tr 4	7	TDM	volume/capacity ratios at peak hours

Overall Effectiveness of Fiscally-Constrained Scenarios will be Evaluated
Overall Distribution of Environmental Burdens and Benefits for Scenarios will be Evaluated

CMAP Indicator Key:

Coord	Coordinated Planning and Government (note that indicators in this area are not yet determined)
EC	Economic Competitiveness
ENR	Environment and Natural Resources
He	Health
Ho	Housing
R	Reinvestment
S	Safety and Security
Tr	Transportation

The full list of indicators is available online at:
http://www.goto2040.org/indicators.aspx

Data Source Abbreviations

TDM	Travel Demand Model
GIS	Geographic Information System
MOBILE	MOBILE 6.2 emissions model
MOVES	MOVES emissions model (not yet released)
TREDIS	Transportation Economic Development Impact System

FHWA Planning Factors

§ 450.306 Scope of the metropolitan transportation planning process.

(a) The metropolitan transportation planning process shall be continuous, cooperative, and comprehensive, and provide for consideration and implementation of projects, strategies, and services that will address the following factors:

(1) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
(2) Increase the safety of the transportation system for motorized and non-motorized users;
(3) Increase the security of the transportation system for motorized and non-motorized users;
(4) Increase accessibility and mobility of people and freight;
(5) Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
(6) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
(7) Promote efficient system management and operation; and
(8) Emphasize the preservation of the existing transportation system.