



MEMORANDUM

To: Transportation Committee

Date: May 8, 2009

From: Ross Patronsky, Senior Planner

Re: Major Transportation Capital Project Evaluation Measures

At the last Transportation Committee meeting the draft evaluation measures were discussed. As a result of that discussion, the draft measures have been revised. The revised evaluation measures are attached for your review and recommendation to the Planning Coordinating Committee. The Planning Coordinating Committee will be requested to endorse evaluation measures for major transportation capital projects at its June 10 meeting. The MPO Policy Committee and CMAP Board endorsements will also be sought at that time.

Revised 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 evaluation measures, as discussed previously, require either quantitative or qualitative analysis of a project's impacts. The recommended measures are shown in the attached table. (Green shading indicates revisions from the draft discussed at the April 24 meeting.) The measures are:

- 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. Staff is investigating the use of quantitative tools for this purpose,

but the data and analytic requirements are substantial, and it is not clear the results will be applicable for making choices among transportation investments.

- 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.
- Travel time savings. This measure is being recommended following discussions with the RTA to identify a richer measure of transit impact than transit service area. Transit service area will be reported as part of the basic information.
- 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, automobile trips. Although non-motorized projects are not directly part of the travel demand model, non-motorized trip impacts will also be estimated.
- Jobs-housing access. A weighted regional average of the number of jobs accessible within certain travel times is recommended. The travel times proposed are 75 minutes for transit and 45 minutes for automobile.
- Air quality. The impacts on criteria pollutants regulated by the USEPA will be reported, using the conformity analysis required by federal planning regulations.
- Energy and greenhouse gas emissions. Change in fuel consumption will be estimated based on vehicle volumes and speeds. This figure and the resulting change in greenhouse gas emissions will be reported. Staff continues to investigate the measurement of greenhouse gases via the MOVES model. If it proves feasible, this model will be used for the analysis.
- 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. The attached map shows 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. The map locating infill areas is shown below, with an explanation of how the areas are defined. 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, including the degree to which those plans commit resources to the project and identify complementary land use (such as transit-oriented development).
- Peak period utilization and demand. This measure compares facility volume and capacity at peak periods.

- Facility condition. Following the discussion at the last Transportation Committee meeting, this measure has been restored to the recommended list. The method of calculating this evaluation measure is still under discussion.

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.

Recommended definitions of infill, open space, and agricultural areas

The 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,

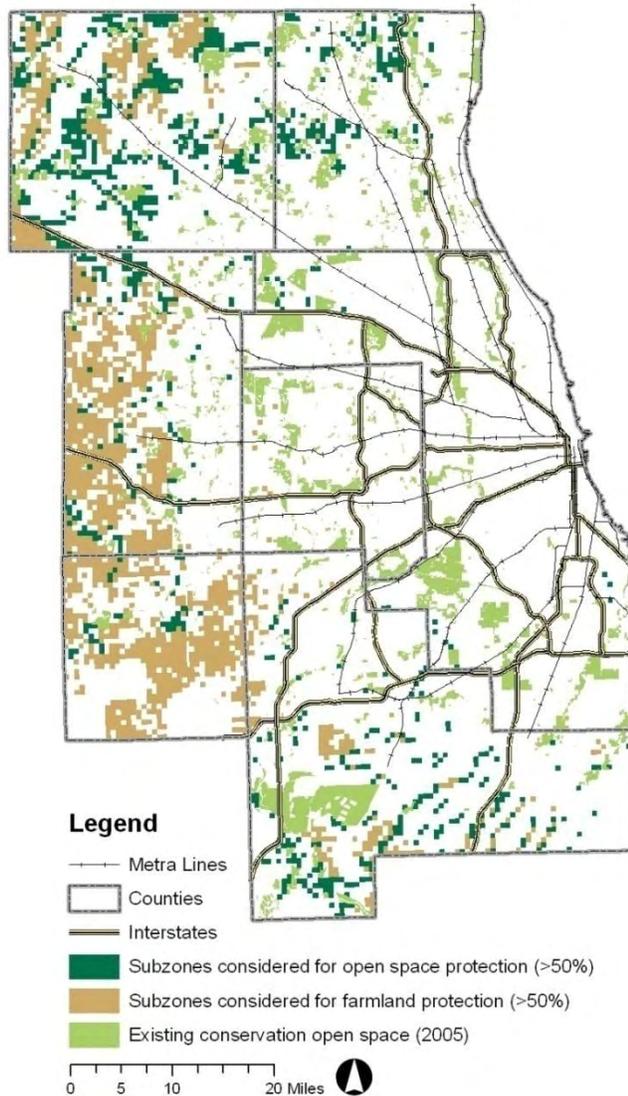
http://www.goto2040.org/uploadedFiles/RCP/Test/OS_memo_010209.pdf

and agricultural preservation,

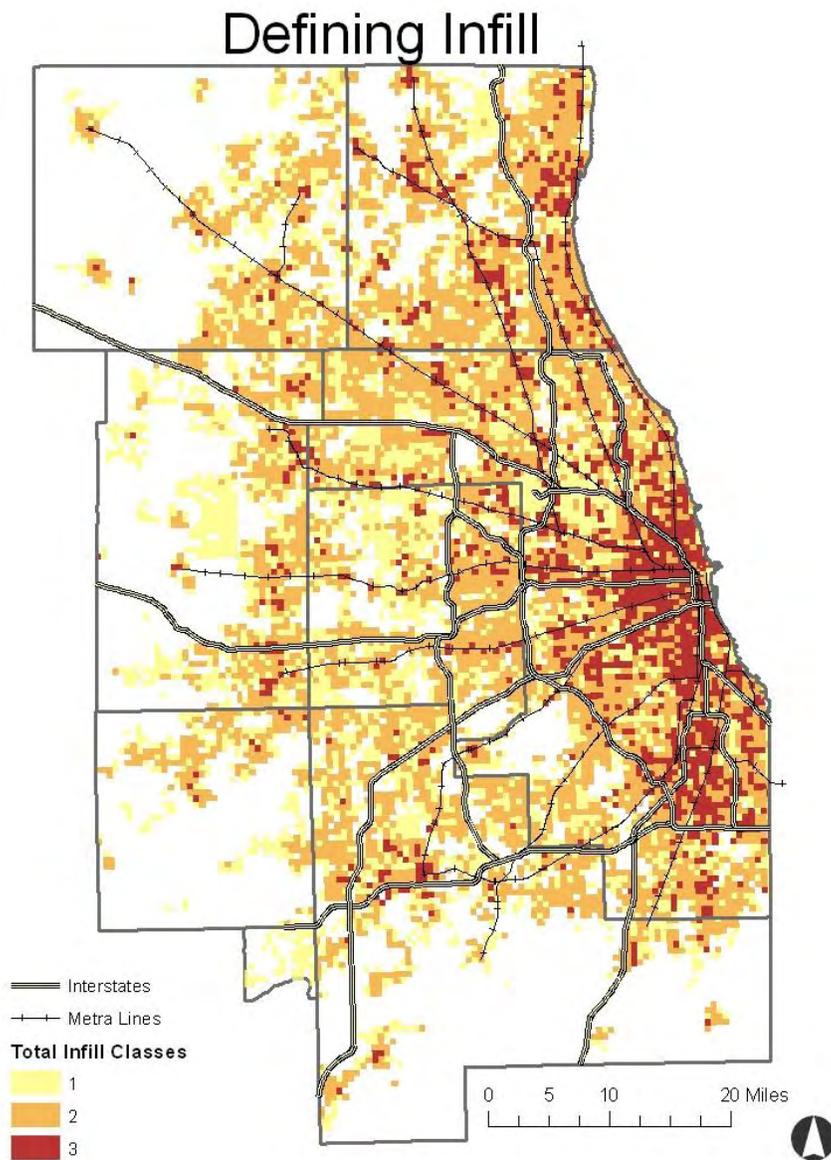
<http://www.goto2040.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=14796>

that define these areas. The map below shows areas of the region that have particularly high concentrations of these lands, and staff recommends that this be used as part of this evaluation measure.

Open Space and Farmland Considered for Protection



The 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.



GO TO 2040 Major Transportation Capital Program Element

Potential Evaluation Measures

Updated May 8, 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	Description	degree to which project improves safety or address safety concerns (qualitative)
Security Features			X			He 6, S 7	3	Description	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
Travel Time Savings		X		X	X	EC 5, Ho 1, R 1, Tr 3	4, 6	TDM	average trip time
Provision of Bicycle and Pedestrian Facilities				X	X	He 4, Tr 3, Tr 9	4, 6	Description	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 (for both auto and transit)
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
Preservation of Water Quality						ENR 2	5	TDM, GIS	under consideration
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 (qualitative)
Peak Period Utilization/Demand	X	X	X	X	X	Tr 4	7	TDM	volume/capacity ratios at peak hours
Facility Condition				X	X	Tr 5	8	Description	degree to which project addresses anticipated facility condition (qualitative)
Overall Cost-Effectiveness of Fiscally-Constrained Sets of Projects will be Evaluated									
Overall Distribution of Environmental Burdens and Benefits for Sets of Projects will be Evaluated with Respect to Disadvantaged Groups									

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.