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MEMORANDUM

To: Transportation Committee

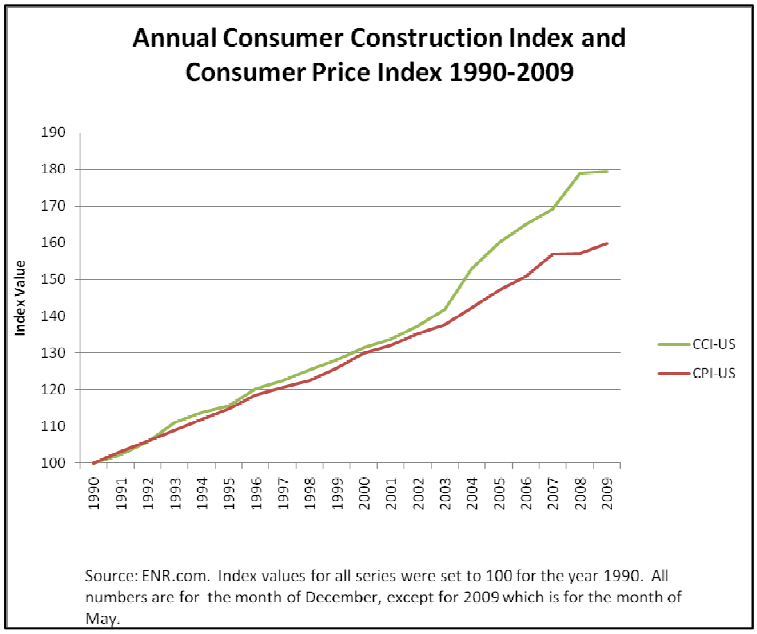
Date: July 24, 2009

From: Matt Maloney, Senior Manager Program and Policy Development

Re: Approach to Transportation Expenditures for *GO TO 2040* Financial Plan

Background

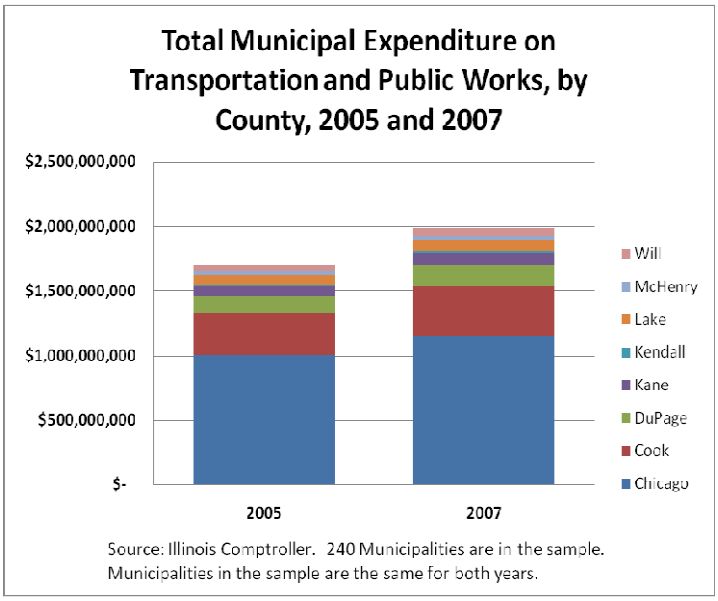
As the region's long-range transportation plan, *GO TO 2040* is required to demonstrate "fiscal constraint" under federal law. The expectation is that the costs of maintaining, operating, enhancing, and expanding the system should be equal to or less than the revenues that can be reasonably projected for the purposes of financing transportation in the metropolitan region.



As the members of the Committee are surely aware, costs associated with transportation, particularly construction, have grown sharply in recent years. From 1990 to 2002, construction costs rose roughly in tandem with other prices in other sectors of the economy. During this period, the consumer price index represented a reasonable proxy for the increase in the cost of construction materials. However, since 2002, construction costs have escalated far above and beyond the consumer price index. Volatile oil and steel prices appear to be largely to blame for this escalation[1].

[1] Parsons Brinckerhoff, Economic Forecasting Review. Volume 3, Issue 1, May 2009.

The outlook for construction cost materials beyond 2009 is difficult to predict. While the average prices of steel and aluminum have shown some decrease in 2009 as compared to 2008, concrete prices are still expected to rise. The transportation industry depends on materials that are expected to increase in worldwide demand, due to the expanding economies of China and India. These materials are usually heavy and costly to transport. Price spurts and swings in upcoming years are anticipated, and some experts forecast 6 to 8% annual increases in the cost of these materials moving forward[2].



Transportation implementers have been adversely affected by these cost increases. As the graph to the left demonstrates, municipalities have been particularly affected. Expenditure on transportation and public works projects increased nearly 25% between the years 2005 and 2007 for a large sample of municipalities in the Chicago metropolitan area.

Operating costs have also been on the rise. For instance, the transit service boards have recently faced a number of operating shortfalls related to security costs, fuel expenses, increased service costs, and other fiscal challenges[3].

As costs continue to rise, various revenue sources such as the Federal Highway Trust Fund and State Motor Fuel Tax have not kept pace with inflation over recent years. Given these financial constraints, CMAP believes that it is vital for *GO TO 2040* to reflect regional priorities. While the expectation is that our region will continue to require a full spectrum of future transportation investments, the prioritization of these investments is important for fulfilling the vision of *GO TO 2040* and regional sustainability.

Approach to Analyzing Transportation Expenditures in *GO TO 2040*

Maintenance, operations, and smaller-scale enhancement costs will be presented as part of the *GO TO 2040* preferred scenario. Major capital projects will be selected in an accompanying process that will involve project evaluation in fall 2009 and project recommendations by early 2010. Major capital project costs will be estimated in partnership with implementers.

Financial capacity analysis in *GO TO 2040* will break expenditures into four basic categories. The following visual conveys the concept as currently envisioned:

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[2] Simonson, Ken. "Construction Materials Trends and Outlook". The Associated General Contractors of America (AGC). June 19, 2009.
[3] Regional Transportation Authority, Moving Beyond Congestion – Regional Transportation Strategic Plan. February 7, 2007.

Conceptual Cost Categories for Transportation Financial Plan

Preservation and maintenance of a safe and adequate system:
Includes resurfacing, reconstruction, bridge rehabilitation, vehicle replacement, other projects that do not add capacity to the system

"State of Good Repair" beyond safe and adequate maintenance:
Includes more frequent preservation and maintenance projects, or construction to a higher standard

Strategic or systematic improvements and enhancements:
Includes capacity additions that are not major capital projects (arterial expansions, for example), ITS improvements, new bicycle and pedestrian facilities

Major capital projects:
Includes rail or expressway additions, expansions, or new facilities – see list of proposed projects at www.goto2040.org/scenarios/capital/main

While many activities fit comfortably into only one of these categories, it is not always straightforward to make perfect distinctions in every case. Sometimes, it will be necessary for staff to make judgment calls, as the line separating activities among "safe and adequate", "state of good repair" and "systematic enhancement" will blur from time to time. CMAP does not seek or expect universal agreement on the appropriate category for every activity. Rather, the purpose of this approach is to reflect the reality that transportation investment decisions require tradeoffs, especially against the backdrop of real financial constraints.

The following sections address these cost categories in more detail, list the types of activities likely associated with each category, and CMAP's approach to quantifying the expenditures in each.

Preservation and Maintenance of a Safe and Adequate System

This first category is a necessity. The region has 3,233 miles of expressway, 18,719 miles of arterial and collector roads, 17,781 miles of local roads, nearly 1,500 miles of passenger rail track, over 6,000 vehicles of rolling stock, 311 full interchanges, 3,281 bridges, and 7,732 traffic signals. Much of the system is very old and will require major reconstruction or rehabilitation work at some point over the next thirty years. Basic maintenance such as resurfacing, bridge deck overlay, signal retiming, maintenance of rolling stock and track and structure, and maintenance of signals, electrical, and communications, is required to maintain a safe and adequate system for all users.

Types of Activities in this Section:

- Resurfacings of Expressways, Arterials and Collectors, and Unclassified and Local Roads.
- Reconstructions of some, but not all of the above.
- 1st and 2nd Deck Bridge Overlays, deck replacements and rehabilitation, and bridge replacements for some bridges.
- Retiming of Traffic Signals.
- Replacing and rehabilitating rolling stock.
- Maintaining track and structure.
- Maintaining transit signals, electrical, and communications.
- Maintenance of transit passenger facilities.

CMAP Approach to Estimating Cost:

CMAP staff has consulted with various agencies such as IDOT, the Tollway, RTA, the transit service boards, and county and municipal agencies to collect unit costs and lifecycles for these types of activities. Based upon these estimates, CMAP staff is constructing a full estimate of this cost category for the 30-year planning cycle. An important assumption is that the "safe and adequate" category does not necessarily address the entire backlog of deferred maintenance needs on the system. Rather, the system is assumed to remain in roughly the same condition in 2040 as it is today. No capacity additions are assumed in this category.

"State of Good Repair" (Additional Maintenance and Preservation Activities)

The "State of Good Repair" category includes similar types of activities to those described above. However, these types of activities would either occur with more frequency or be constructed to a higher standard. The primary assumption inherent in this category is that all maintenance and rehabilitation backlogs will be addressed by the year 2040. While there is currently no industry-wide adopted definition of "state of good repair", the Federal Transit Administration has recently addressed this issue by bringing together representatives from 14 public transportation providers and State Departments of Transportation to discuss the state of good repair of the Nation's transit system. The resulting report offers this starting point for an operational definition of this term:

> "An asset or system is in a state of good repair when no backlog of capital needs exists- hence all asset life cycle investment needs (e.g. preventive maintenance and rehabilitation) have been addressed and no capital asset exceeds its useful life."[4]

In other words, "state of good repair" is achieved when capital components are replaced on a schedule consistent with their life expectancy. Again, CMAP fully appreciates that the line between "safe and adequate" and "state of good repair" is not always straightforward to define.

Types of Activities in This Section:

Essentially, the types of activities in this section will be similar to those in "safe and adequate". The main distinction is that "state of good repair" necessitates a greater frequency of maintenance and rehabilitation investments. It may also necessitate construction to a higher standard. Thus, types of activities include:

- More frequent road resurfacings or resurfacings using different materials.
- More frequent rehabilitation and replacement of rolling stock.
- More frequent retiming and modernization of traffic signals.
- More frequent rehabilitation of structures, trackwork, and other transit facilities, or reconstruction of these asset categories to a higher standard.

CMAP Approach to Estimating Cost:

This cost category assumes that by 2040, all capital components will be replaced on a schedule consistent with their life expectancy. This assumes a more aggressive maintenance and rehabilitation schedule consistent with addressing all asset life-cycles. CMAP staff has consulted with various agencies such as IDOT, the Tollway, RTA, the transit service boards, and county and municipal agencies to collect unit costs and lifecycles for these types of activities, and will prepare a full estimate of this cost category for the 30-year planning cycle.

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[4] Federal Transit Administration. *State of Good Repair: Beginning the Dialogue*. October 2008.

Strategic or Systematic Improvements and Enhancements

GO TO 2040's scenarios include descriptions and analysis of systematic improvements or "enhancements" to the transportation system. This cost category reflects the activities modeled in these scenarios. The preserve, reinvest, and innovate scenarios have been described for the Transportation Committee, and reports describing the evaluation assumptions and results are located on the CMAP Web site. Upon the release of the Plan scenarios, CMAP also released preliminary costs associated with these strategies, using a "cost-band" approach. This approach was employed to give our partners and the general public an estimate of the relative levels of investment across all major planning strategies, including transportation, land use, housing, environment, economic development, and human services. The transportation costs are based on internal staff analysis which calibrated unit or systems costs to travel model outputs. *GO TO 2040*'s preferred scenario will include a select quantity of these systematic transportation improvements and enhancements.

Types of Activities in this Section:

- Transit System Operations Improvements
- Other Systematic Capital Improvements to Transit Facilities (e.g. Queue Jump Lanes, Designated Bus Only Lanes, Transit Signal Priority)
- Pedestrian and Bicycle Improvements
- Expansion of Paratransit Service
- Arterial Improvements in Redeveloping and Congested Areas
- Traveler Information Services
- Variable Pricing on Expressways
- Roundabouts and Other Intersection Treatments

CMAP Approach to Estimating Cost:

The types of activities listed above will be presented in more detail as part of *GO TO 2040*'s preferred scenario. CMAP staff is preparing more robust estimates for the costs associated with these types of activities. These costs are based primarily on internal staff research on the recent costs of deploying these types of strategies, both in our region and across the country.

Major Capital Projects

Only a small subset of transportation projects are considered "major capital projects". They are large projects with significant effect on the capacity of the region's transportation system, including extensions or additional lanes on the interstate system, entirely new expressways, or similar changes to the passenger rail system. Arterial expansions and intersection improvements are not defined as major capital projects; neither are bus facilities, unless they involve a dedicated lane on an expressway. This definition is consistent with federal guidance as well as the definition of major capital projects used in past regional transportation plans prepared by CATS.

A list of major capital projects under consideration for inclusion in *GO TO 2040* is available online at http://www.goto2040.org/ideazone/default.aspx?id=15130. Many of these projects were considered in developing the CATS 2030 Regional Transportation Plan, and have been updated with new information from project sponsors when available. New project suggestions are welcome and will be solicited through the public engagement activities over the summer.

Types of Activities in This Section:

- Extensions or Additional Lanes on the Interstate System
- New Expressways
- Transit System Extensions
- Major New Expressway Interchanges

CMAP Approach to Estimating Cost:

Each major capital project must be accompanied by a cost estimate. CMAP staff requests these estimates from project sponsors. If no estimate is received, CMAP staff will utilize unit costs and other recent historical information to estimate project costs.

CMAP staff welcomes and appreciates all feedback from the Transportation Committee during the construction of the Plan's fiscal constraint.

ACTION REQUESTED: Discussion.

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