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MEMORANDUM

To: Transportation Committee

From: CMAP Staff

Date: March 1, 2013

Re: Proposed Circle Interchange Amendment to GO TO 2040

The Illinois Department of Transportation (IDOT) has requested that CMAP amend GO TO 2040 to include the proposed Circle Interchange improvements as a fiscally constrained major capital project. While the Circle Interchange improvement includes major reconstruction elements, it also adds highway capacity and, under federal law, cannot move forward unless included as a major capital project in GO TO 2040. The purpose of this memo is to summarize the public comments received, present the staff analysis of the Circle Interchange amendment (including the technical analysis and its consistency with GO TO 2040 adopted policies), and the staff's recommendation whether to amend the plan by adding this project.

Public Comments

The following proposed language for the Circle Interchange amendment to GO TO 2040 was out for a 30-day public comment period from January 18 to February 18, 2013:

> The Circle Interchange project – I-90/94 at I-290/Congress Parkway in downtown Chicago – will rehabilitate, improve safety and mobility, and address operational and facility deficiencies of the mainline and interchanges. IDOT proposes making several improvements to this interchange, which has not had a major rehabilitation since its initial design in the late 1950s. IDOT proposes adding one lane each to two ramps – Northbound I-90/94 to westbound I-290 and eastbound I-290 to northbound I-90/94. IDOT will also seek to add one to two lanes to both the northbound and the southbound mainline I-90/94.

CMAP received twelve public comments that are summarized below, and all of the comments can be found here. Six comments opposed spending any funds on the highway aspect of the project but supported the non-motorized and transit-improvement aspects of the project. One comment supported the project as presented by IDOT. Two comments supported tolling and/or congestion pricing as an alternative to the proposed project. Finally, two comments criticized the process that resulted in this project being proposed for inclusion in GO TO 2040 – essentially

that the project arose outside the regional planning process. And one general comment expressed opposition to any highway improvements.

Nine of the comments received were from individuals. The Metropolitan Planning Council and the Chicago Streetcar Renaissance also submitted comments.

The required conformity analysis demonstrates that, if amended to include the Circle Interchange, the GO TO 2040 plan would continue to meet requirements of the Clean Air Act. No comments on the conformity analysis were received.

Technical Analysis

IDOT's proposal to reconstruct the Circle Interchange near downtown Chicago includes modernizing the roadway design. Changes to the original 1950s design include providing an additional lane on several segments of the interchange. While the design modifications are intended primarily to improve safety and traffic flow, federal transportation rules require that *any* capacity additions to the interstate system be specifically included in the region's fiscally-constrained long-range transportation plan, GO TO 2040. Attached at the end of this memo for your reference is the technical analysis, consistent with how other major capital projects were analyzed prior to the adoption of GO TO 2040.

Consistency with GO TO 2040

In addition to the technical analysis, staff has evaluated whether the proposal supports GO TO 2040's thematic goals as well as specifically addressing whether the proposal supports movement in the direction of the plan indicators. Because GO TO 2040 follows the form of a comprehensive regional plan, specific capital recommendations are examined in light of their contribution to a broad variety of planning and policy goals. While evaluating a capital proposal against these goals requires qualitative interpretation, the goals themselves represent a strong regional consensus.

To fortify that interpretative analysis, GO TO 2040 also identifies specific quantifiable indicators and targets. These serve an additional purpose as benchmarks for assessing the progress and success of plan implementation efforts. While the indicators provide tractable examples of implementation success, they are not intended to exclusively or exhaustively represent the impacts of a recommended capital project or policy action, nor are they intended for use as a scoring or prioritization tool.

In evaluating a major capital project proposed as an amendment to GO TO 2040, we begin with an initial high-level screening of the thematic goals and indicators. This screening establishes whether the proposal has a direct, indirect, or negligible impact on the desired outcome of the thematic goal or target. Direct effects are those resulting from the actual implementation of the proposal. For example, travel time savings are expected to be a direct impact of the Circle Interchange proposal. For those goals or targets viewed as being directly impacted by the

proposal, a more thorough discussion of the plan's intent and an analysis of indicators are included. Indirect impacts are those resulting in the course, or as a direct by-product, of project implementation. For example, project construction presents the opportunity to improve the appearance and accessibility of adjacent public open space.

GO TO 2040 is divided into four major themes that are, in turn, comprised of 12 recommendation areas (each of which is expressed as a policy goal). The following table gives a brief summary of the Circle Interchange proposal's impacts relative to these goals, and following the table is a more thorough discussion.

GO TO 2040 Theme	**Recommendation Area**	**Circle Interchange Proposal Impact**
Livable Communities	Achieve Greater Livability through Land Use and Housing	Indirect impact: Land Use Implications.
	Manage and Conserve Water and Energy Resources	Negligible impact
	Expand and Improve Parks and Open Space	Indirect impact: Provide Functional Connections
	Promote Local Sustainable Food	Negligible impact
Human Capital	Improve Education and Workforce Development	Negligible impact
	Support Economic Innovation	Negligible impact
Efficient Governance	Reform State and Local Tax Policy	Negligible impact
	Improve Access to Information	Negligible impact
	Pursue Coordinated Investments	Indirect impact: Guiding Investment Decisions
Regional Mobility	Invest Strategically in Transportation	Direct impact: Safety, Modernization, Prioritization
	Increase commitment to Public Transit	Direct impact: Modernization
	Create a more Efficient Freight Network	Direct impact: Trucking Improvements

Indirect Impacts

Through the development of GO TO 2040, a prioritized short list of major capital projects was developed to support plan's priorities. Part of that initial screening of these projects was an evaluation based on the project's support for the Preferred Regional Scenario, which among other things calls for more compact, mixed-use development and transportation investments targeted to achieve outcomes such as economic growth, environmental protection, and congestion reduction. Ultimately, GO TO 2040 seeks to maintain and strengthen our region's position as one of the nation's few global economic centers and it calls for investment in existing communities and emphasizes development that is more compact and "livable" through coordination of land use and transportation. Major capital projects have a direct impact on land use and we need to ensure that there is appropriate planning to accommodate increased livability while increasing our economic competitiveness.

The Circle Interchange's supports the concepts and these goals of the plan because its physical location is at the heart of the region's core and it is an existing structure. Therefore we are considering the implications of land use, parks, and open space components as indirect impacts. Nonetheless, careful consideration must occur to address the land-use components of this project to ensure supportive land-use planning that will increase transit ridership and enhance the livability principles outlined in the plan. The other indirect impact, coordinated investment, is addressed below as part of "Invest Strategically in Transportation."

Direct Impacts

The Circle Interchange proposal directly impacts the Regional Mobility theme in GO TO 2040. The following provides more detail by chapter/goal and how the project responds to the associated indicators and targets.

Invest Strategically in Transportation

The Circle Interchange is critical to the nation's transportation system, particularly for freight movement on our Interstate and arterial roadways, as well as to regional railroads and waterways. The Circle Interchange was built in the late 1950s and early 1960s, during the same time period as construction of the Kennedy Expressway. Truck traffic has grown and has a far more significant impact on roadway performance than the truck traffic that existed when the Interchange was originally designed (circleinterchange.org).

As stated in GO TO 2040, the transportation network is one of our region's most important assets, however, it is aging quickly and losing stride with 21st Century needs. Furthermore, GO TO 2040 calls for prioritizing spending on system preservation, modernization, and (to a lesser extent) expansion using project and performance evaluation criteria to guide funding decisions. This project clearly has benefits in preserving and modernizing the region's infrastructure as well as improving safety. Our concerns relate mainly to the process and the prioritization of this project amongst the other major capital projects included in the plan, outlined in a memo that was presented to the CMAP Board and MPO Policy Committee at their January meeting.

This is also related to the importance of coordinated investments, as alluded to in the previous section on "Indirect Impacts."

In terms of funding for this project, all major capital projects must be included in the financial plan that must be fiscally constrained given the amount of funding we estimate in the timespan of the plan, which is approximately $10.5 billion (in YOE$) for major capital projects, in addition to the anticipated $385 billion in funding to maintain and modernize our system. The estimated cost for the Circle Interchange is $410 million. IDOT has identified cost savings with three other plan projects -- which are either under construction or well into the design phase -- yielding better cost estimates. These cost savings are detailed in the technical analysis attached to this memo.

Indicators and Targets

GO TO 2040 includes four quantifiable indicators related to the physical quality of arterials, bridges and transit. The Circle Interchange proposal will positively affect each of these indicators by reconstructing and modernizing the primary and supporting infrastructure. GO TO 2040 includes two quantifiable indicators related to highway congestion and transit ridership. The Circle Interchange proposal is expected to reduce the time it takes to pass through the interchange for hundreds of thousands of travelers each day. For example, the estimated 6,000 northbound I-90 travelers that head west on I-290 during the morning peak will save 4.2 minutes.

Increase commitment to Public Transit

The CTA's Blue Line operates in the median of the Eisenhower Expressway and there is a station with entrances at the Halsted, Peoria, and Racine overpasses. In addition, CTA operates bus routes on the roadways crossing through the project area. The project planning states that access to transit is an important consideration in this study.

GO TO 2040 states that the region needs and deserves a world-class transit system. This requires attention to not only how transit operates, but how it is perceived. As stated previously, careful consideration must occur to address the land use components of this project to ensure supportive land use planning that will increase transit ridership and enhance the livability principles outlined in the plan.

Indicators and Targets

GO TO 2040 includes two quantifiable indicators related to transit ridership. Based exclusively on travel time considerations, improving highway travel times typically forecasts a commensurate decline in transit ridership; all other conditions being held equal. The Circle Interchange proposal, however, includes features to improve general walkability as well the overall appearance of the transit environment. This modal integration is consistent with GO TO 2040's primary intent to modernize the transit system and can be expected to offset any travel time advantages accruing exclusively to highway users.

Create a More Efficient Freight Network

GO TO 2040 states that metropolitan Chicago's freight system links the region's industries and consumers to global markets. Not only does the region's freight system provide the goods that improve and sustain the welfare of residents and businesses, it also is a major component of the regional economy. CMAP estimates that between a quarter and a third of all freight tonnage in the U.S. originates, terminates, or passes through the Chicago region. This concentration supports more than 200,000 regional jobs, and over the past decade these freight industries have grown more (seven percent) than the overall regional economy (less than one percent). This growth in regional freight industries also has outpaced New York and Los Angeles, the nation's two other largest freight clusters.

The Circle Interchange serves as a vital hub not only for the region's complex freight system but also national freight flows. Congestion threatens to undermine the economic competiveness of this key node serving the regional freight cluster. Joint research by the American Transportation Research Institute and the Federal Highway Administration analyzed the impact of congestion on truck-based freight along 250 locations across the nation. This research ranked the Circle Interchange as the nation's most congested freight bottleneck, with peak average speeds of 22 mph, and nonpeak average speeds of 32 mph.

Additionally, the interchange lies in close proximity to a concentration of intermodal facilities, container yards, and freight employment centers. Nearly 29,000 daily commercial vehicle trips are estimated to use the Circle in the year 2040, without the proposed improvement. With the improvement, the estimated number of daily commercial vehicle trips using the interchange increases by 2%. Significantly, however, the largest share of additional commercial vehicles using the interchange due to the improvement is expected to be heavy-commercial vehicles, as truck drivers experience reduced delay and faster travel speeds. More commercial vehicle trips choosing to use the system connected to the Circle Interchange also results in congestion on adjacent local arterials being reduced.

Freight's impact on the regional economy is not limited solely to transportation. Over a quarter of all the region's jobs are in industries directly tied to freight, and expansions or contractions in freight industries can substantially impact areas such as manufacturing, wholesale, and retail trade. As such, freight is a cornerstone of our regional economy.

Indicators and Targets

The recommendations of GO TO 2040's freight section seek to improve the economic competitiveness of industry in metropolitan Chicago and address freight safety and travel delay. More goods travel along metropolitan Chicago's freight system by truck than by rail, air and water combined; addressing operational and facility deficiencies in the Circle Interchange has substantial economic impacts for the freight cluster. Freight trucking has been one of the region's fastest growing industries—with employment increasing nine percent between 2001 and 2011—so improving connectivity along this key node is consistent with GO TO 2040's intent to improve economic competitiveness.

Safety is another GO TO 2040 freight indicator. Over 1,100 crashes are reported each year on the Circle Interchange (circleinterchange.org) so there is a large safety element to the project. Finally, GO TO 2040 states the intent to reduce the impacts of freight operations on local communities by addressing travel delay. Estimated time savings of the Circle Interchange proposal are described above in the "Invest Strategically in Transportation" section.

Recommendation

We recognize that the Circle Interchange is a significant bottleneck in the regional and national transportation system. Based on the analysis and evaluation, our guidance is that the Transportation Committee should recommend that the MPO Policy Committee and the CMAP Board approve the proposed amendment for the GO TO 2040 plan to include the Circle Interchange.

Moving forward, staff is recommending that the region and the state work cooperatively to improve the transparency and prioritization of project selection through performance-based funding. This was also echoed in the public comments received. In an era of increasingly constrained resources for the transportation system, it is imperative that meritorious projects are selected for funding based on transparent, defensible criteria. Additionally, as this project moves forward in the planning and engineering phases, IDOT should work closely with relevant stakeholders to ensure that appropriate land use and transit accessibility are appropriately accommodated in an effort to increase transit and mobility within the footprint of the interchange.

ACTION REQUESTED: Recommend approval to the MPO Policy Committee and CMAP Board of the proposed plan amendment.

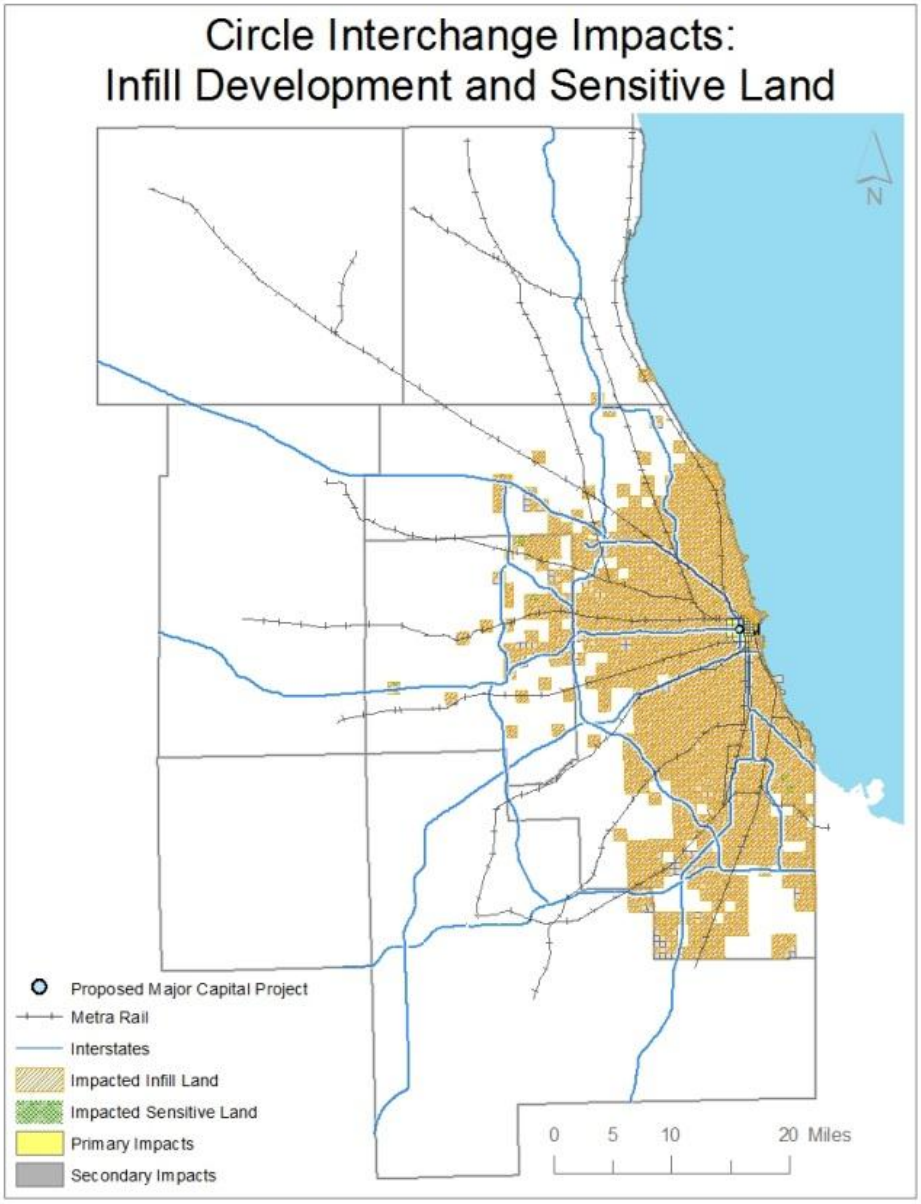
**Please note that the technical analysis is attached.

ATTACHMENT: Technical Analysis of Circle Interchange (I-90/94 at I-290/Congress Parkway)

Project Description

The Circle Interchange – I-90/94 at I-290/Congress Parkway in downtown Chicago – serves as a hub for local, regional, and national freight traffic, connecting the Dan Ryan to the south, the Kennedy Expressway to the north, the Eisenhower Expressway to the west and the Congress Parkway to the east. The purpose of the project is to rehabilitate, improve safety and mobility, and address operational and facility deficiencies of the mainline and interchanges.

Project Map



This map shows the proposed capital project and the subzones surrounding it that are likely to experience increased development pressure, and where the project will increase trip numbers. Sensitive land is environmentally sensitive land that is not otherwise protected by federal, state, county, or local government.

Project Details and Evaluation Outcomes

The Circle interchange currently performs poorly in terms of Level of Service (LOS), annual hours of delay, congested hours of travel and travel time index. To facilitate improved freight movement and to reduce travel delay and improve reliability, IDOT proposes making several improvements to this interchange, which has not had a major rehabilitation since its initial design in the late 1950s. IDOT proposes adding one lane each to two ramps – Northbound I-90/94 to westbound I-290 and eastbound I-290 to northbound I-90/94. IDOT will also seek to add one to two lanes to both the northbound and the southbound mainline I-90/94.

Evaluation measure	Specific Indicator	GO TO 2040 without the Circle Interchange Project	Outcome (change from GO TO 2040 without the Circle Interchange)
Long-term economic development	Jobs in region	5,924,000	0
	Total income in region	$412,724,000,000	$295,000
	Gross Regional Product	$626,828,000,000	$436,000
Congestion	Hours of peak-hour delay (on facility)	3,900	-200
	Hours of congestion systemwide	1,482,000	-1,000
Work Trip Commute Time	Average travel time in minutes, auto	35.06	-0.02
	Average travel time in minutes, transit	45.21	-0.01
Mode Share	Total trips, auto	21,905,000	1,000
	Total trips, transit	1,552,000	-1,000
Jobs-housing access	Average number of jobs accessible within 45 minutes by auto	918,000	2,000
	Average number of jobs accessible within 75 minutes by transit	1,224,000	0
Air Quality	Daily emissions of VOC, tons	45.48	-0.05
	Daily emissions of NOX, tons	76.20	-0.29
	Annual emissions of direct PM, tons	1,767	-77
	Annual emissions of NOX, tons	30,017	-123
Energy use	Annual emissions of CO2 equivalents, metric tons	34,148,000	39,000
Natural resource preservation	Number of impacted subzones in unprotected natural areas (for facility)	n/a	7
	…as % of total impacted subzones	n/a	0.3%
Infill and reinvestment	Number of impacted subzones within municipal boundaries (for facility)	n/a	2,260
	…as % of total impacted subzones	n/a	97%
Peak period utilization	One-Way Traffic Volumes (on facility)	13,200	3,300
	Peak Period One-Way Capacity (on facility)	11,400	3,800
Facility condition	CRS score (on facility)	7.6	9.0

Note: These measures were developed to estimate the impact of major expansion projects in GO TO 2040. The Circle Interchange project has a large reconstruction component, so they are less applicable here.

Cost: The project cost is currently estimated at $410 million. IDOT has provided data showing that the actual costs for the I-80 Add Lanes (US 30 to US 45) is $74 million less than estimated in GO TO 2040; the actual cost for the I-94 Add Lanes North project is $60 million less than estimated in GO TO 2040; and, a refined estimated cost for the I-55 Managed Lanes project is $280 million less than estimated in GO TO 2040. These revised cost figures free up $414 million which is enough to achieve fiscal constraint for the plan.

Connectivity: The project addresses a significant bottleneck in the region's highway system. According to the American Transportation Research Institute and Federal Highway Administration, the Circle Interchange is the slowest and most heavily congested highway freight bottleneck in the nation. More than 300,000 vehicles per day travel through the Circle Interchange.

Safety and security: Approximately 1,000 crashes occur within the project study area each year. The crash data show that the predominant crash types are rear end and sideswipe crashes. These are consistent with congested traffic conditions and substandard facility geometrics. The project will address these deficiencies through improvements to merges and weaves, longer distances between decision points, and additional capacity. However, no specific analysis has been conducted to estimate the reduction in crashes as a result of the project.

Interstate 90/94 and Interstate 290 are also part of the National Highway System and the Strategic Highway Network (STRAHNET), which is a network of Interstate and other major routes. The STRAHNET designation is given to roads that provide "defense access, continuity, and emergency capabilities for movements of personnel and equipment in both peace and war." (DOD Web page at https://www.tea.army.mil/pubs/res/dod/pmd/STRAHNET.htm)

Bicycle and pedestrian accommodation: The local and arterial streets adjacent to and crossing the project site will likely require reconstruction, particularly their bridges. IDOT is currently developing concept geometry for the replacement structures which will consider the City's bicycle and pedestrian programs. IDOT met with CDOT on November 14, 2012 to review these issues.

Consistency with subregional plans: The project is not currently either a constrained or unconstrained major capital project in GO TO 2040. IDOT staff has stated that design of the facility will be forward-looking and consider strategies adopted in GO TO 2040, such as congestion pricing, as well as major capital projects that are part of the constrained projects in GO TO 2040, such as the I-290 Multi-Modal Corridor and West Loop Transportation Center. Planning (Phase I) and Design (Phase II) phases are funded in the IDOT 2013-2018 Multi-Modal Transportation Improvement Program.

Project Status

Phase I engineering is underway; design approval will be sought in the spring of 2013. The two-year planning and design process will identify the final scope of improvements. Since the Circle Interchange is not currently a constrained project in GO TO 2040, its incorporation into the plan will be required before design approval can be given. IDOT requested that the project be amended into the plan in a letter to CMAP on October 16, 2012.

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