



# Chicago Metropolitan Agency for Planning

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## MEMORANDUM

**To:** MPO Policy Committee

**From:** CMAP Staff

**Date:** July 30, 2013

**Re:** Proposed Amendment to GO TO 2040 – Illiana Corridor

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On April 10, 2013, CMAP received a formal request from the Illinois Department of Transportation (IDOT) to consider inclusion of the proposed Illiana Expressway as a fiscally constrained major capital project (MCP) in the GO TO 2040 comprehensive regional plan. Under federal regulation, this proposed new highway facility would need to be included in GO TO 2040 in order to complete the upcoming Tier 2 Environmental Impact Statement (EIS).

Consistent with how other MCPs were analyzed prior to GO TO 2040's approval, CMAP is evaluating the Illiana against a set of various performance criteria, including consistency with GO TO 2040-adopted policies. CMAP will present the results of this evaluation, a summary of the public comments received, and a staff recommendation to the CMAP Board and MPO Policy Committee in October 2013, at which point those committees will make a decision about whether or not to amend the region's plan with this project.

In anticipation of this request, CMAP had published general [guidelines](#) that establish the required process and timeline for evaluating any proposal prior to staff presenting a recommendation to the CMAP Board and MPO Policy Committee. Using these guidelines, a [timetable](#) for completion of CMAP's Illiana evaluation was established. On May 10, 2013, IDOT submitted to CMAP a [detailed assessment of the Illiana Corridor](#) specifically tailored to addressing GO TO 2040. In their assessment, IDOT describes progress-to-date on preparing an Environmental Impact Statement (EIS) for the Illiana Corridor.<sup>1</sup> IDOT staff presented this information to the CMAP Transportation Committee, CMAP Board, and MPO Policy Committee in early June. IDOT has also transmitted information and data resources for CMAP's use in its evaluation. These include documentation on [IDOT's alternative household and job forecasts](#), [IDOT's travel forecasting](#), and [geographic data](#) on the proposed alignment and footprint for the facility. Please review these documents for IDOT's complete assumptions and analysis of this project.

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<sup>1</sup> The complete Tier One EIS and further progress on Tier Two can be found at the project website: [www.illianacorridor.org](http://www.illianacorridor.org).

The purpose of this document is to describe the status of this proposed MCP and evaluate it within the context of GO TO 2040's socioeconomic forecasts. Since this facility would add considerable new highway capacity in a largely undeveloped portion of the region, this document will also describe the status of local land use planning in the corridor.

We are seeking public comment on this proposed capital plan amendment. The Transportation Committee is asked to release the language below for a 30-day public comment period from **August 2 to September 3, 2013**.

## **Project Description**

The Illiana Corridor was initiated in 2006 by the States of Indiana and Illinois through their respective Departments of Transportation. Subsequent legislation was passed in both states enabling a public-private partnership (P3) as a potential mechanism to finance the project. In 2010, the governors of both states signed a Memorandum of Agreement pledging mutual commitment to the project. In January 2013, IDOT and the Indiana Department of Transportation (INDOT) completed the [Tier One Final EIS](#). In preparing the Tier One EIS, IDOT and INDOT established the project's [purpose and need](#) and also arrived at the selected corridor. According to the Tier One EIS, "a transportation system improvement(s) is needed in the Study Area to address the following needs: 1. Improve Regional Mobility; 2. Alleviate local system congestion and improve local system mobility and 3. Provide for efficient movement of freight."<sup>2</sup>

The selected corridor, named B3, extends for 47 miles from I-55 in Illinois to I-65 in Indiana and is the southernmost alignment considered within the CMAP region; portions of the corridor lie just over a mile away from the Will and Kankakee County Line. Corridor B3 generally starts at I-55 north of Wilmington, Illinois, passes the southern edge of the Midewin National Tallgrass Prairie, passes south of the proposed South Suburban Airport, and connects with I-65 north of Lowell, Indiana. Corridor B3 includes seven potential interchanges at the following locations: I-55, US 45/52, I-57, IL 1, US 41, SR 55, and I-65. In addition, there are three design concepts for an additional interchange in the vicinity of IL 53. Also, according to IDOT, due to recent Tier Two stakeholder input and technical analysis, interchanges are also being considered at IL-50 near Peotone, and Wilton Center Road (CH-43, connecting to US-52 south of Manhattan).

## **Project Status**

IDOT frequently refers to pursuing an "aggressive schedule" for finalizing the engineering phase of this project. Funds to complete Phase I Engineering of the Illiana Corridor Project were included as a major capital project recommendation in GO TO 2040. IDOT and INDOT are currently undertaking Tier 2 of the process and expect to release a draft EIS in fall 2013 and a final EIS in March 2014. Simultaneously, the implementing agencies are evaluating potential funding and financing strategies for implementing the Illiana Corridor, including P3s. The schedule for P3s includes a Request for Qualifications in summer 2013, a Request for Proposals in fall 2013, and a financial close in fall 2014. IDOT has stated that construction of the facility could begin, at the earliest, in 2015.

On July 10, 2013, a lawsuit was filed by Openlands, the Midewin Heritage Association, and Sierra Club in the U.S. District Court for the Northern District of Illinois against the Secretary of the U.S.

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<sup>2</sup> Illiana Tier One Final Environmental Impact Statement, pages 1-6.

Department of Transportation, the Administrator of Federal Highway Administration (FHWA), and the Illinois Division Administrator of FHWA. The complaint reads that that the Defendants violated the National Environmental Policy Act in the FHWA's approval of the Tier 1 Final EIS and Record of Decision for the proposed facility.

### **GO TO 2040 Fiscal Constraint**

GO TO 2040 includes a financial plan for transportation investments, which is a requirement under federal regulation. This compares the estimated revenue from existing and proposed funding sources with the estimated costs of constructing, maintaining, and operating the total transportation system. This process is known as the plan "fiscal constraint." As GO TO 2040 states, constraint for plans is important because it reminds regional decision makers to set priorities and make trade-offs rather than including an extensive list of projects and activities that may not be affordable or sustainable. In order for GO TO 2040 to be amended, the public costs for the Illiana Corridor, a new MCP, would need to be included within the plan's fiscal constraint.

In general, the plan strongly recommends a focus on maintenance and modernization of the existing system. GO TO 2040 estimates a total revenue envelope of \$385 billion for transportation investments in northeastern Illinois between 2011 and 2040. Of this amount, only \$10.5 billion (2.7 percent of total funding) can be allocated to the MCPs specifically named in the plan. This policy direction results from the level of resources required to operate and maintain the system safely and adequately, as well as modernize the system and move it toward a state of good repair.

### **Project Cost**

IDOT has published an estimated project cost of **\$1.25 billion**, of which the Illinois share would be **\$950 million**.<sup>3</sup> According to the Tier 1 Record of Decision, the estimate includes costs for construction, utility relocations, right of way,<sup>4</sup> mitigation, and engineering.<sup>5</sup> According to IDOT's documentation, the Illiana cost estimate is "based on a detailed item quantity takeoff based upon profile and cross sections along with approximate bridge/culvert sizing for a relatively straightforward rural typical section."<sup>6</sup> Unit prices were developed from historical unit prices in Indiana and Illinois. On May 10, 2013, CMAP requested a description of the funding/financing scenarios considered, including estimates of federal funding, state taxes or fees, tolling (potentially in combination with federal credit assistance), cost sharing with local governments, or other revenue sources. On May 24, 2013, citing the need for confidentiality during its solicitation for private investment in the project, IDOT responded that financial information would be provided to CMAP as it became publicly available.

The construction of new expressways requires a considerable outlay of resources. Rigorous, upfront, and conservative cost projections are vital for delivering projects on time and on budget, as well as for

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<sup>3</sup> IDOT's presentation to the CMAP Transportation Committee on June 7, 2013, presents these cost estimates in terms of "year of expenditure" for the facility.

<sup>4</sup> Land acquisition is currently included in the northeastern Illinois [FY 13-16 Transportation Improvement Program \(TIP\)](#) at \$10 million. A TIP change for an additional \$70 million in land acquisition has been submitted and will be considered for approval in October 2013.

<sup>5</sup> Tier 1 Final Environmental Impact Statement, pages 4-18.

<sup>6</sup> See [Appendix G](#) of the Tier 1 Environmental Impact Statement.

protecting the public interest, particularly in agreements with private entities. At the planning level, capital and operating cost projections for new toll facilities typically utilize a methodology that includes a look back at recent bid tabulations and a look forward at comparable cost estimates for other facilities, as well as tested and accepted industry assumptions.

Given the available information, CMAP's observation is that IDOT's estimate of the project cost is low relative to other comparable projects. CMAP gathered construction cost information for several other comparable facilities in the region and across the U.S. CMAP then estimated a per-lane mile cost, escalated to 2020 dollars, for these facilities. Using this methodology and IDOT and INDOT's cost projection, the Illiana's per-lane mile cost is estimated to be \$8.1 million in 2020 dollars.<sup>7</sup> This can be compared to other regional highway projects, including the recently constructed I-355 south extension (\$18.9 million per lane mile) and the planned IL 53 extension in Lake County (\$25.3 million per lane mile).<sup>8</sup>

Outside the region and the state, CMAP finds that other recently constructed highway projects have had higher costs as well. For example, the rural SH 130 (Austin, TX, \$12.9 million), the suburban Triangle Expressway (North Carolina, \$14.9 million), the exurban South Bay Expressway (San Diego, \$35.4 million), the suburban Intercounty Connector (Maryland, \$36.2 million), and the suburban President George Bush Turnpike Western Extension (Dallas, \$37.1 million) all have higher per-lane mile costs.<sup>9</sup> CMAP was unable to locate an example of a recently constructed highway in the U.S. with lower per-lane mile costs than IDOT's cost estimate for the proposed Illiana Corridor.

IDOT and INDOT recently supplied CMAP with a comparison of the Illiana's capital cost to the I-69 project in Indiana. According to IDOT, "this construction represents the most current and adjacent project of comparable scale and character to the Illiana Corridor. Based on actual bid prices, the cost per lane mile for Section 3 of I-69 was \$2.1 million per lane-mile as compared to \$5.9 million per lane-mile for the Illiana project. The geographic difference between the I-69 area and the Will County/Lake County area unit prices is approximately 25-30% higher based upon IDOT and INDOT cost data from recent projects. Also, IDOT's US-67 project in Morgan County was let in June 2011 and had a cost of \$6.1 million per mile for a new 6.5-mile four-lane expressway facility."<sup>10</sup>

In summary, a more detailed cost estimate would be required to perform a robust evaluation of the proposed project's financial viability and its impact on GO TO 2040's fiscal constraint. The cost estimation methodology used to-date is described above and in [Appendix G](#) of the Tier One EIS.

### **Other Highway Expansion Costs**

The [Tier One EIS](#) also assumes approximately 33 miles of nearby expressway will add lanes to accompany the Illiana. These are I-80 from I-355 to Minooka and I-55 from I-80 to Braidwood. Neither of these two projects is included in GO TO 2040. While CMAP has not received any cost

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<sup>7</sup> The facility is proposed to be four lanes and 47 miles in length. CMAP assumed a capital cost of \$1.25 billion for midpoint of construction (2016 dollars) and then escalated to 2020 dollars using an annual growth rate of 5 percent. CMAP applied the same growth rate for the other comparable projects.

<sup>8</sup> While the costs for I-355 and IL 53 are considerably higher relative to the Illiana, I-355 and IL 53 traverse a more urban footprint, which typically increases complexity and costs.

<sup>9</sup> Cost estimates for comparable projects were derived from [http://www.fhwa.dot.gov/ipd/project\\_profiles/](http://www.fhwa.dot.gov/ipd/project_profiles/).

<sup>10</sup> This information was provided by IDOT in a letter to CMAP dated July 29, 2013.

estimates from IDOT for these facilities, CMAP staff prepared very basic unit cost estimates for all proposed MCPs during the GO TO 2040 process. At that time, CMAP estimated the total cost for reconstruction and adding a lane to both these facilities to be \$1.5 billion, in 2009 dollars.<sup>11</sup>

### **Financing and Public-Private Partnership**

IDOT's stated goal is to pursue a P3 for the Illiana Corridor, and the expectation is it would operate as a tolled facility. Construction of this facility is not included in the Illinois Tollway's most recent 15-year capital program.

In public forums, IDOT officials have stated that two potential P3 models are under consideration. The first would be a more traditional full concession toll model in which a private partner would design, construct, operate, and maintain the facility and be repaid through toll revenues. The second is an "availability payment" model, in which the public sector would pay a private concessionaire an agreed-upon sum (usually this is done via an annual outlay), over the period of a contract as compensation for design, construction, operations, and maintenance work.

Until a decision is made regarding the preferred P3 model, CMAP cannot evaluate the extent to which either proposed method would clarify elements like facility ownership, financing, performance standards, non-compete clauses, toll rates, or workforce issues, which are all necessary components for assessing how a proposed P3 facility would affect public costs.

Of the two potential models, the availability payment model is fairly new to the U.S., though it has been used more extensively in other parts of the world. In availability payment arrangements, the private entity is not exposed to toll revenue risks, and the public sector can budget for predetermined expenditures spread over many years. While the specific details of these agreements differ, availability payments generally shift risk toward the public sector (which retains tolling authority but runs the risk of outlaying more in availability payments than what the facility can generate in tolls) and away from the private concessionaire (which is guaranteed annual revenues.) On the other hand, this method could also give the public sector more control over performance requirements of the system, toll charges, and other operational decisions. Should the facility generate more revenues than originally anticipated, those revenues could stay with the public sector.

Since CMAP is unable to make any assessment on the specific P3 arrangements being proposed for this facility, we can only observe that the national experience with P3 projects has been mixed. Generally speaking, P3s have often been shown to offer cost and time savings resulting from the private sector's better cost containment, more efficient project delivery, and incentives to apply life-cycle analyses to construction and maintenance costs. Additionally, and perhaps most fundamentally, P3s allow greater access to private capital. Substituting private for public dollars allows the public investment to be stretched further, supporting more projects than would otherwise be possible.

However, construction of a new private toll facility also involves a high level of risk for both the public and private sectors. Most fundamentally, there is no "free money." Private loans must be

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<sup>11</sup> [GO TO 2040 Major Capital Projects, Updated October 2010](#). On I-80, the numbers reflect reconstruction and adding a third lane in each direction from the Grundy County Line to US 30 (\$750 million). On I-55, the numbers reflect reconstruction and adding a third lane in each direction from I-80 to Coal City Road (\$750 million).



repaid, and private partners will require a reasonable rate of return for their investors. To achieve these objectives, private partners will require a project of this type to generate a reasonable cash flow through tolling or public subsidy. Traffic levels must be projected with accuracy many years into the future, and the financial underpinning of a project is based on these projections. To date, CMAP has not had access to any of the specific information about costs, revenues, or the specific structure of any potential agreements to enable an analysis of how the Illiana Corridor will be financed or how the nature of the proposed P3 would protect the public interest.

## **Project Evaluation**

### *Scenario Definitions and Assumptions*

The following sections describe CMAP's analysis of the proposed Illiana Corridor within the context of [GO TO 2040 socioeconomic forecasts](#). The analysis measures the facility's impacts on a set of comprehensive regional indicators found in GO TO 2040. Review of these outputs as compared to the IDOT analyses reveals considerable differences in the distribution and totals of socioeconomic indicators. The dissimilarities between GO TO 2040 and IDOT analysis results are due to a substantive difference in the intent and assumptions underlying the two forecasts.

The socioeconomic forecasts in GO TO 2040 are based on a [Preferred Regional Scenario](#) that was developed in cooperation with stakeholders and decision-makers across northeastern Illinois as a response to the challenges the region faces. The GO TO 2040 socioeconomic forecasts and fiscally constrained capital projects build on this Preferred Regional Scenario and reflect the plan's emphasis on investment in existing communities, maintenance and modernization of our current transportation and infrastructure assets, and targeted expansion.

IDOT's socioeconomic forecasts assume a substantially different outcome for the region, placing more of the region's growth in outlying, undeveloped areas. According to IDOT, the Illiana Corridor [socioeconomic] forecasts were developed using: "2010 Census data, 90 years of historic population and employment data for the region, current and previous CMAP/CATS socioeconomic forecasts, land availability for development, population holding capacity, demographic data and trends (household size, migration patterns, etc.), local land use policies, and independent Woods & Poole economic forecasts for the region."<sup>12</sup> More detailed discussion of socioeconomic and transportation modeling approaches is provided in the appropriate sections.

To allow readers to review both sets of analyses in a single location, this document presents results for a 2010 "Base" existing condition plus four scenarios. For the EIS, IDOT must analyze both a "no-build" scenario, which assumes socioeconomic changes and transportation improvements that would occur regardless of the facility, and a "build" scenario that includes the Illiana and socioeconomic and transportation changes related to the facility. IDOT's "build" scenario includes the B3 corridor chosen in the Tier 1 EIS, as well as IDOT's "committed" widening of I-80 and I-55. CMAP's "no-build" scenario is GO TO 2040, while its "build" scenario is GO TO 2040 with the inclusion of the Illiana B3 corridor. For reference in interpreting the data, The table below outlines each scenario and its underlying assumptions.

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<sup>12</sup> IDOT. May 10, 2013. "Illiana Corridor Request for Inclusion in the Fiscally Constrained CMAP GO TO 2040 Comprehensive Regional Plan, Supporting Documentation." Presented to the CMAP Transportation Committee on June 7, 2013, and available at <http://tinyurl.com/ldve3p5>.

**Figure 1. Illiana Evaluation Scenarios**

Scenario Name	Scenario Description	Year	Socioeconomic and Land Use Assumptions	Transportation Network Assumptions
<b>2010 Base</b>	Existing Conditions	2010	U.S. Census and employment security data	Existing
<b>CMAP No-Build</b>	GO TO 2040	2040	GO TO 2040 Preferred Scenario	Fiscally Constrained MCP
<b>CMAP Build</b>	GO TO 2040 with Illiana B3	2040	GO TO 2040 Preferred Scenario with Illiana influence	Fiscally Constrained MCP plus Illiana B3 Corridor
<b>IDOT No-Build</b>	IDOT Existing plus "Committed"	2040	IDOT Alternative Scenario	Fiscally Constrained MCP plus additional un-constrained "committed" MCP
<b>IDOT Build</b>	IDOT Existing plus "Committed" plus Illiana B3	2040	IDOT Alternative Scenario with Illiana Influence	Fiscally Constrained MCP plus additional un-constrained MCP plus Illiana B3 Corridor

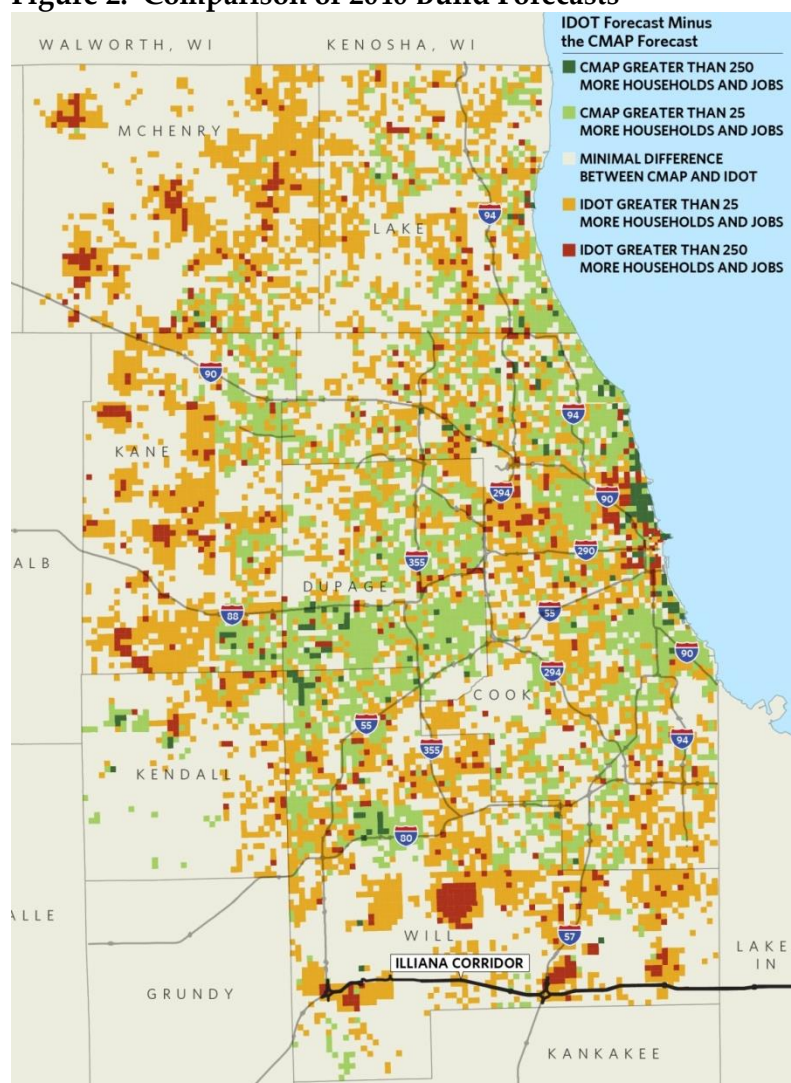
Source: Chicago Metropolitan Agency for Planning. Note: MCP stands for major capital projects.

### *Population and Employment Forecasts*

The GO TO 2040 population and employment forecasts were produced from integration of land use policy and physical transportation projects and are based on implementation of the key principles of the Preferred Regional Scenario. This scenario calls for more compact, mixed-use development and transportation investments targeted to achieve outcomes such as strategic investment, economic growth, environmental protection, and congestion reduction. Specifically, the Preferred Scenario recommends that much of the region's growth occur within existing communities that are already served by infrastructure, while recognizing that some development in currently undeveloped areas will also be necessary to support expected growth."<sup>13</sup>

<sup>13</sup> CMAP [Preferred Regional Scenario](#). Updated January 2010.

**Figure 2. Comparison of 2040 Build Forecasts**



Source: Chicago Metropolitan Agency for Planning

IDOT's socioeconomic forecasts are based on historic demographic and development trends, local land use policies, and estimated population capacity. They generally represent continued build-out of the region and study area in patterns and densities similar to those in recently-developed suburban areas of the region. Figure 2 compares the two sets of forecasts for the 2040 "build" scenarios. In the green areas, IDOT forecasts have fewer jobs and households than the CMAP forecasts. In the orange and red areas, IDOT forecasts have more jobs and households than the CMAP forecasts. This illustrates the different forecast assumptions about how the region will develop over the next 30 years<sup>14</sup>.

During the development of GO TO 2040, CMAP assessed the land use and transportation impacts of development scenarios by manipulating 12 land use and transportation management policies to affect the distribution of households and jobs.<sup>15</sup> Combining these policies with network-

modeled additions of transportation infrastructure directly results in the new geographic distribution of households and jobs found in the Preferred Scenario. For the Illiana evaluation, CMAP prepared a "build" forecast by applying the accessibility changes resulting from Illiana to our "no-build" (GO TO 2040) forecast via the identical technique used to quantify the effects of land use and transportation strategies in the Preferred Scenario. These two forecasts allow for a parallel comparison to IDOT's "no-build" and "build" forecasts.

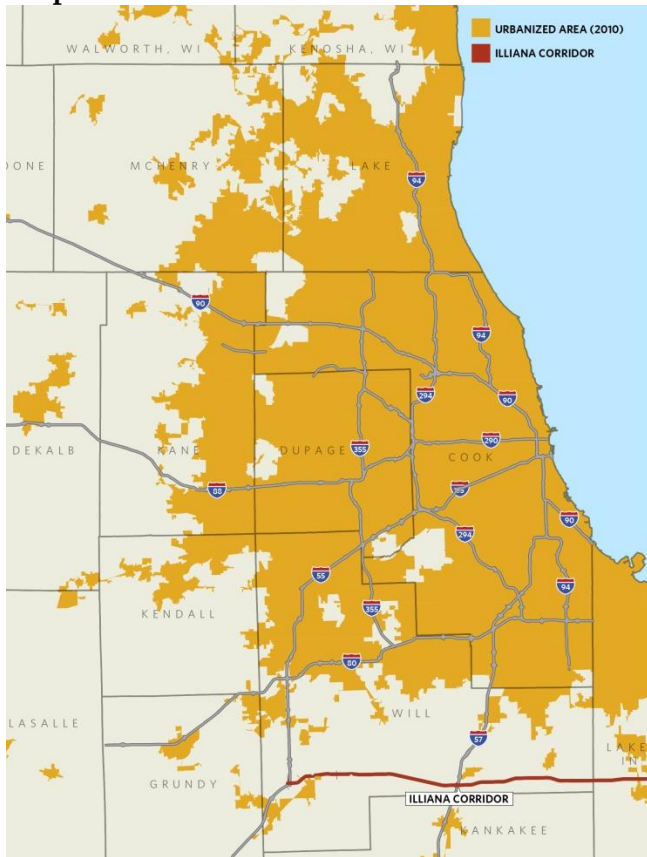
<sup>14</sup> Both sets of forecasts were prepared under the general guidance of the [CMAP Forecast Principles](#). These provide direction for forecast developers, users and policy makers in using and interpreting the GO TO 2040 preferred scenario data. Consistent with these principles, in 2011, CMAP reviewed and concurred that IDOT's forecasting **methodology** was transparent and consistent with accepted practice. The principles, however, are clear that CMAP cannot concur with **assumptions** of any forecasts that do not conform to the policy direction of GO TO 2040.

<sup>15</sup> The four modeled land use strategies are open space preservation, brownfield reinvestment, transit-oriented development, and improved urban design/pedestrian environment. The eight transportation strategies are reduced transit wait time, variable-priced expressways, additional bus routes, increased transit speeds, transit signal priority and arterial rapid transit, advanced arterial signal systems on transit signal priority/arterial rapid transit segments, parking fees, and transportation demand management. See the [CMAP Forecast Principles](#) for more information.



## 2010 Urbanized Area

**Figure 3. CMAP Region 2010 Urbanized Areas and Proposed Illiana Corridor**



Source: Chicago Metropolitan Agency for Planning

Because GO TO 2040 emphasizes development within existing communities, the forecasts are provided for the 2010 urbanized area and non-urbanized areas of the region. The current urbanized boundary roughly corresponds with today's existing communities. The proposed Illiana alignment is located about 10 miles south of the current contiguous urbanized area.

### Population Forecast

CMAP forecasts a minimal regional population difference between GO TO 2040 and the CMAP "build" scenario, with an increase of approximately 7,100 residents. Most of the new growth occurs in the southern portion of Will County, capitalizing on the new transportation access provided by the Illiana.

Figure 4 outlines the forecasted regional population impacts under the CMAP and IDOT scenarios.

**Figure 4. 2040 Population Forecasts by Urbanized and Non-Urbanized Areas**

	<b>2010 Base<sup>16</sup></b>	<b>CMAP No-Build</b>	<b>CMAP Build</b>	<b>IDOT No-Build</b>	<b>IDOT Build</b>
<b>Non-Urbanized</b>	156,095	632,863	637,125	1,080,530	1,079,896
<b>Urbanized</b>	8,207,250	10,495,706	10,498,594	9,932,568	9,925,758
<b>Total</b>	8,363,344	11,128,570	11,135,719	11,013,097	11,005,653
<b>% of 2010-40 Population Growth Outside the Urbanized Area</b>	N/A	17%	17%	36%	36%

Source: Chicago Metropolitan Agency for Planning analysis.

<sup>16</sup> CMAP does not report institutionalized persons in its population totals as these are not included in the travel demand model inputs. The 2010 base population above is the 2010 Census total, less institutionalized persons. IDOT does include institutionalized persons when reporting population totals, but like CMAP, does not include these in the travel demand model inputs.

In the CMAP “build” scenario, all of the counties in the region besides Will County experience minimal population change as a result of the inclusion of the Illiana. **Figure 5** provides “build” and “no-build” population forecasts by county.

**Figure 5. 2040 Build and No-Build Population Forecasts by County**

<i>County</i>	<i>2010 Base<sup>17</sup></i>	<i>CMAP No-Build</i>	<i>CMAP Build</i>	<i>IDOT No-Build</i>	<i>IDOT Build</i>
<b>Cook</b>	5,148,673	6,239,232	6,240,455	5,774,388	5,770,755
<b>DuPage</b>	910,884	1,160,418	1,160,484	1,022,251	1,021,742
<b>Kane</b>	511,885	804,325	804,472	953,533	949,746
<b>Kendall</b>	114,574	207,802	207,812	262,442	261,379
<b>Lake</b>	698,616	971,048	971,084	941,616	940,042
<b>McHenry</b>	307,454	527,773	527,841	692,208	690,522
<b>Will</b>	671,260	1,217,973	1,223,571	1,366,659	1,371,468
<b>Total</b>	<b>8,363,344</b>	<b>11,128,570</b>	<b>11,135,719</b>	<b>11,013,097</b>	<b>11,005,653</b>

Source: Chicago Metropolitan Agency for Planning

### Employment Forecast

Similar to the population forecasts, minimal regional employment difference is forecasted between GO TO 2040 and a CMAP “build” scenario, with an increase of approximately 3,800 jobs. Please note that IDOT’s forecasted employment projections utilize a different definition of a job that results in a 2010 employment count that is 29 percent higher.<sup>18</sup> The IDOT 2010 employment base is shown in the following table, and the higher employment counts have been utilized in IDOT traffic models.

**Figure 6. 2040 Employment Forecasts by Urbanized and Non-Urbanized Areas**

	<i>2010 Base</i>	<i>CMAP No-Build</i>	<i>CMAP Build</i>	<i>IDOT 2010 Base<sup>19</sup></i>	<i>IDOT No-Build</i>	<i>IDOT Build</i>
<b>Non-Urbanized</b>	68,666	292,850	295,388	88,677	483,627	492,176
<b>Urbanized</b>	3,734,967	5,047,859	5,049,087	4,823,458	6,142,554	6,125,813
<b>Total</b>	3,803,633	5,340,709	5,344,475	4,912,135	6,626,181	6,617,989
<b>% of 2010-40 Job Growth Outside the Urbanized Area</b>	N/A	15%	15%	N/A	23%	24%

Source: Chicago Metropolitan Agency for Planning analysis.

Most of the increased employment accrues to Will County, which gains approximately 2,900 of the forecasted jobs in the CMAP “build” scenario. The remaining counties in the region are minimally

<sup>17</sup> See footnote 16.

<sup>18</sup> CMAP uses Bureau of Labor Statistics (BLS) job definitions to estimate commuting behavior and remain consistent with U.S. Census definitions. IDOT uses Bureau of Economic Analysis (BEA) job definitions that result in a higher total job count. These added jobs are a mix of secondary jobs, interns, and part-time student workers, farm workers, private home workers, and similar unique job categories. Use of BEA job definitions results in a 29 percent higher employment count in the 2010 IDOT employment base. The travel models used by both CMAP and IDOT are estimated using the BLS definition as input.

<sup>19</sup> IDOT’s data for its 2010 employment base was taken from the Tier One EIS documentation. To adapt it to an analysis of urbanized and non-urbanized areas, the CMAP 2010 employment figures for urbanized and non-urbanized areas were adjusted by 29 percent. This is the total percentage difference between the 2010 CMAP base and the 2010 IDOT base. See footnote 18 for more information.

impacted, with small gains or losses from the inclusion of the Illiana in a GO TO 2040-derived scenario. For further comparison, the following table also includes IDOT's 2010 employment by county.

**Figure 7. 2040 Build and No-Build Employment Forecasts by County**

<i>Jobs</i>	<i>CMAP 2010 Base</i>	<i>CMAP No-Build</i>	<i>CMAP Build</i>	<i>IDOT 2010 Base</i>	<i>IDOT No-Build</i>	<i>IDOT Build</i>
<b>Cook</b>	2,380,215	2,978,217	2,978,898	3,125,720	3,528,299	3,521,505
<b>DuPage</b>	608,757	780,339	780,508	689,770	861,218	858,495
<b>Kane</b>	186,714	368,464	368,467	255,778	509,619	504,666
<b>Kendall</b>	22,080	73,187	73,178	29,462	94,492	93,401
<b>Lake</b>	314,896	470,902	470,912	427,450	638,086	633,859
<b>McHenry</b>	88,999	187,781	187,747	134,274	321,513	319,199
<b>Will</b>	201,972	481,819	484,766	249,681	672,954	686,864
<b>Total</b>	<b>3,803,633</b>	<b>5,340,709</b>	<b>5,344,475</b>	<b>4,912,135</b>	<b>6,626,181</b>	<b>6,617,989</b>

Source: Chicago Metropolitan Agency for Planning analysis.

### *Transportation Performance*

As with the socioeconomic forecast, CMAP included the Illiana B3 corridor in a “build” scenario to assess transportation performance impacts.

### Freight

IDOT has devoted considerable effort to developing a travel demand model that provides an improved sensitivity to truck travel that passes through the region, effectively expanding the data inputs to include national-scale truck flows. Because of GO TO 2040's emphasis on development of advanced freight models, CMAP took an early interest in the Illiana truck modeling techniques. Well before release of the Tier 1 EIS, IDOT provided CMAP with computer code and data to permit implementation of these techniques in-house. To improve the comparability of the freight-relevant performance measures between the Illiana forecasts and the improved scenario, CMAP has applied the IDOT truck modeling method to the quantitative elements of this evaluation. The net effect is to isolate the components of truck demand that are incidental to national freight flows and are generated by forecasted socioeconomic change.

### Tolling

All transportation performance analyses in this document, from both IDOT and CMAP, assume an untolled Illiana facility. While the facility would likely be tolled, IDOT has not yet made publicly available willingness to pay toll rates or the impact that varying toll rates may have on travel demand for the facility. To meet the requirements of the federal EIS process, IDOT is performing a diversion analysis to assess the potential impact on local roads if Illiana users divert from the facility as a reaction to tolls.

Willingness to pay a toll on the Illiana will likely be found among travelers seeking to entirely bypass the most congested portion of the region because the Illiana provides no significant congestion relief for travelers within the urbanized area. Since the Illiana is intended to primarily serve freight movement, assessment of heavy truck users passing through the region will be a critical component of any tolling analysis.

### Impact on Regional Transportation Performance

CMAP analyzed the transportation performance impacts of the Illiana B3 corridor for the region as a whole. The project would add 36 miles, or 144 lane miles, of expressway within the region, increasing the MCP roadway miles from 409 to 445.<sup>20</sup> Please note in the table below that IDOT includes a higher mileage for MCPs due to inclusion of I-80 and I-55 expansion projects, which are not included in GO TO 2040.

The regional transportation performance differences between GO TO 2040 and a CMAP “build” scenario are minimal. With respect to GO TO 2040 indicators, the Illiana has varied impacts. It has an insignificant impact on transit mode share. Regional congestion remains the same, but vehicle miles traveled (VMT) in the region are increased. These minimal differences are consistent with other region-wide analyses of the impact of a single capital project. Substantive differences between the CMAP and IDOT analyses are due to the different underlying socioeconomic assumptions.

**Figure 8. 2040 Regional Transportation Performance Impacts of Illiana**

<i>Regional Travel Demand (All facilities)</i>	<i>2010 Base</i>	<i>CMAP No-Build</i>	<i>CMAP Build</i>	<i>IDOT No-Build</i>	<i>IDOT Build</i>
<b>Vehicle Miles Traveled (000)</b>	153,355	211,401	213,107	226,017	226,360
<b>% Congested VMT</b>	5%	9%	9%	14%	13%
<b>Vehicle Hours Traveled (000)</b>	4,528	6,632	6,592	7,252	7,156
<b>% Congested VHT</b>	10%	20%	20%	27%	26%
<b>% Transit to Work</b>	12%	12%	12%	11%	11%
<b>Major Capital Project Miles</b>		409	445	444	480

Source: Chicago Metropolitan Agency for Planning

On a regional basis, the Illiana Corridor provides more measurable benefits to heavy trucks when the CMAP “build” and “no-build” scenarios are compared. There is a one percentage point reduction in the percentage of VMT in congestion for heavy trucks. Overall, heavy trucks travel fewer hours and more miles in the region in the CMAP “build” scenario.

**Figure 9. 2040 Regional Transportation Performance Impacts of Illiana—Heavy Trucks**

<i>Regional Travel Demand (Heavy Trucks)</i>	<i>2010 Base</i>	<i>CMAP No-Build</i>	<i>CMAP Build</i>	<i>IDOT No-Build</i>	<i>IDOT Build</i>
<b>Vehicle Miles Traveled (000)</b>	24,040	37,547	37,698	40,284	39,556
<b>% Congested VMT</b>	9%	12%	11%	19%	17%
<b>Vehicle Hours Traveled (000)</b>	222	425	420	440	422
<b>% Congested VHT</b>	16%	29%	29%	36%	35%

Source: Chicago Metropolitan Agency for Planning

The Illiana also provides a one percentage point reduction in the percentage of VMT in congestion when only the region’s expressways are analyzed. The facility increases expressway VMT and vehicle hours travelled (VHT) overall. The proportion of VHT in congestion does not change.

<sup>20</sup> The major capital projects miles total includes reconstruction or add-lane projects such as I-90 and expressway extensions such as IL 53/120. The major capital project miles total is the sum of the length of each project rather than a lane-mile total.

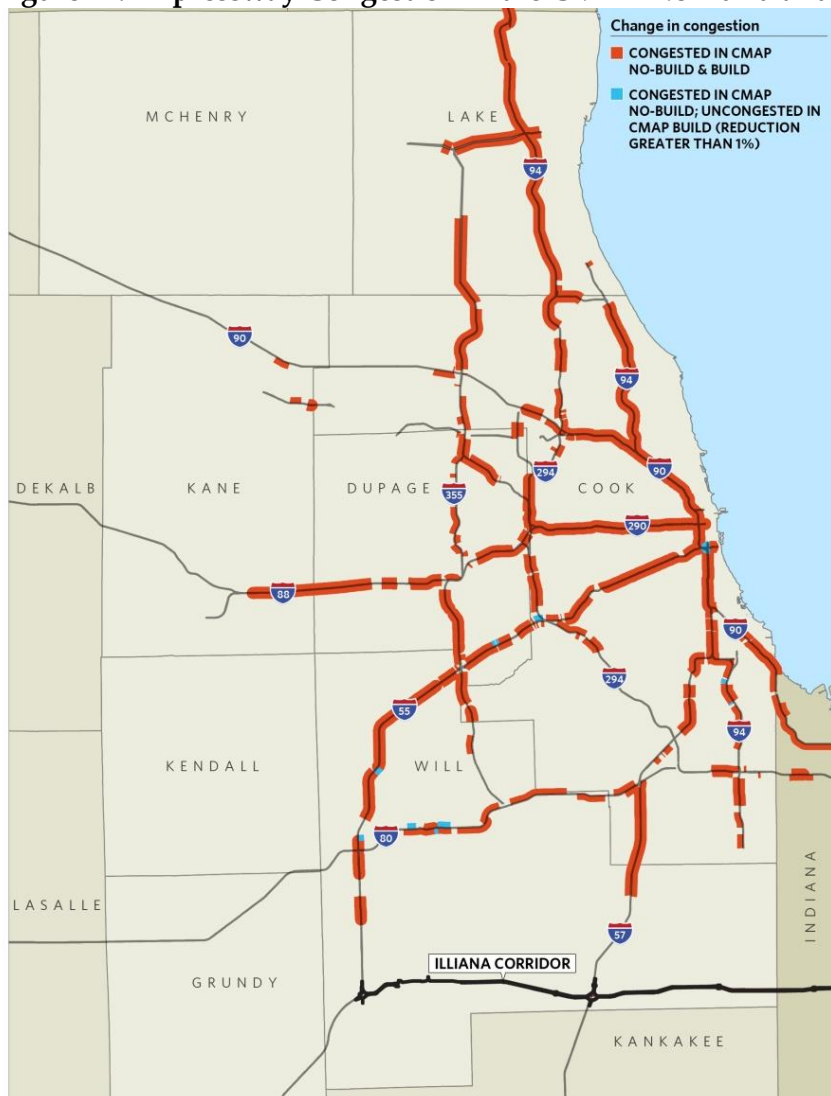
**Figure 10. 2040 Regional Transportation Performance Impacts of Illiana—Expressways**

<i>Regional Travel Demand (on Expressways)</i>	<i>2010 Base</i>	<i>CMAP No-Build</i>	<i>CMAP Build</i>	<i>IDOT No-Build</i>	<i>IDOT Build</i>
<b>Vehicle Miles Traveled (000)</b>	61,701	79,124	81,172	87,326	90,235
<b>% Congested VMT</b>	7%	10%	9%	17%	16%
<b>Vehicle Hours Traveled (000)</b>	1,030	1,522	1,534	1,604	1,642
<b>% Congested VHT</b>	11%	22%	22%	33%	30%

Source: Chicago Metropolitan Agency for Planning analysis.

The **Figure 11** map compares congestion on the region’s expressways in the CMAP “no-build” and “build” scenarios. Congestion is defined as the forecast traffic on a segment exceeding its design capacity. Red areas are congested in both scenarios, and blue areas are congested in the “no-build” scenario but not in the “build” scenario. These benefits generally accrue to sections of I-80, with minimal congestion reduction benefits to the rest of the region’s expressway network. As described previously, any benefits are most likely due to the diversion of heavy trucks from other expressways in the region.

**Figure 11. Expressway Congestion in the CMAP No-Build and Build Scenarios**



Source: Chicago Metropolitan Agency for Planning



### Comparison to GO TO 2040 Fiscally Constrained Major Capital Projects

CMAP also assessed the impact of the Illiana on the expressway MCPs in GO TO 2040. These impacts are generally related to the redirection of a portion of heavy truck traffic from the MCPs to the Illiana. In line with its stated intent, the Illiana Corridor will carry significantly more freight traffic than the other MCPs. The Illiana's heavy truck mode share of 47 percent is significantly higher than all other MCPs. I-90 and I-80 have the next-highest heavy truck percentages in the CMAP "build" scenario: The I-90 managed lanes project is 26 percent heavy truck and the I-80 add-lanes project is 18 percent heavy truck.

Overall, inclusion of the Illiana in the CMAP "build" scenario reduces heavy truck volume on all MCPs. As a result, total volume increases on some of the MCPs as automobiles backfill the space vacated by trucks. Therefore, overall congestion impacts are minimal for most MCPs.

**Figure 12. 2040 Illiana Impact on GO TO 2040 Expressway Major Capital Project Performance**

	<b>Daily Vehicle Miles Traveled (000)</b>		<b>% Heavy Truck</b>		<b>% Congested</b>	
	CMAP No-Build	CMAP Build	CMAP No-Build	CMAP Build	CMAP No-Build	CMAP Build
GO TO 2040 Major Capital Projects	13,605	13,597	15%	13%	7%	6%
Illiana Corridor		1,504		47%		6%
<b>MCPs with Illiana</b>	<b>13,605</b>	<b>15,101</b>	<b>15%</b>	<b>17%</b>	<b>7%</b>	<b>5%</b>

Source: Chicago Metropolitan Agency for Planning

### *Economic Impacts*

A new expressway is typically associated with higher economic output, both because of the short-term expenditures from construction activity and—more importantly—the long-term gains in efficiency due to shorter travel times and better market access. Based on an analysis using economic impact software, CMAP estimates the Illiana to increase gross regional product by \$425 million in 2040, compared to a "no-build" scenario.<sup>21</sup> These impacts are mostly due to improvements in market access, or the number of customers that a business can reach within a certain drive time. Will County sees almost all of the improvement in market accessibility. The economic impact analysis also estimates annual total travel cost savings of \$3.6 million, of which \$2.1 million is attributable to freight travel.

**Figure 13. Illiana Impact on 2040 Gross Regional Product**

<b>Economic Impacts</b>	<b>2010</b>	<b>2040 Baseline</b>	<b>2040 CMAP Build</b>	<b>2040 IDOT Build</b>
<b>Gross Regional Product (Billions)</b>	\$437.0	\$802.5	\$802.9	\$804.5

Source: Chicago Metropolitan Agency for Planning

In contrast, IDOT's "build" scenario assumptions estimate a \$2-billion increase in GRP in 2040

<sup>21</sup> Note that the economic impact analysis model uses only one set of economic assumptions to establish a single 2040 economic baseline. The difference between CMAP Build and IDOT Build estimates is explained by the effect of varying travel time savings on this baseline found under the two sets of forecast alternatives.

compared to the “no-build” scenario. Again, the change is due mostly to market access improvements, with the largest change in Will County. Kane and Kendall Counties see their market access reduced. The impact is higher using IDOT’s “build” scenario because the baseline and “build” scenarios assume more population and employment in the area served by the Illiana, and therefore more travel time savings from building the Illiana, than does the CMAP “build” scenario. The IDOT ‘build’ scenario results in estimated total travel cost savings of \$10.2 million per year, about half of which accrues to freight

### *Environmental Indicators*

CMAP assessed the impact of the Illiana on several environmental indicators from GO TO 2040. A new roadway has the potential to spur significant new development, increase VMT, decrease congestion, and decrease travel times, all of which impact the region’s natural resources. The following provides a discussion of the Illiana’s potential impact on selected GO TO 2040 environmental indicators, as well as mitigation and impact reduction options.

The Tier 1 EIS compared the expected impacts of alternative corridors for the Illiana at the corridor level using standard GIS techniques. The Tier 2 EIS is expected to investigate many of these impacts at a finer level of detail, with field surveys and the benefit of additional information about facility design. The purpose of CMAP’s analysis is not to reexamine these impacts, but to analyze the project relative to the regional indicators identified in GO TO 2040. Nevertheless, there are a number of rare, unique, and special resources in the corridor, and these are being considered to varying extents in the Tier 2 study. Examples include the Kankakee River and Forked Creek, which are considered biologically significant streams in Illinois, as well as the Midewin National Tallgrass Prairie. Natural resource agencies [reviewing](#) the Illiana have called attention to the need to protect grassland birds and expand grassland bird habitat in the area, as called for in the Illinois Wildlife Action Plan, since grassland birds are declining in Illinois. Among other detailed studies for Tier 2, the Fish and Wildlife Service recommended studies of the impacts of highway noise on breeding birds at Midewin related to increased truck traffic on Illinois Route 53.

### Impervious Surface

GO TO 2040 uses imperviousness as a regional indicator of the potential impact of development on water resources. Based on the Tier 1 EIS, the pavement that is part of the Illiana Corridor is expected to add about 766 acres of total impervious surface to the study area (approximately 450 acres within Illinois). Under the CMAP forecasts, the development associated with the expressway is forecast to result in an increase of 1,500 more acres in the Illinois portion of the Illiana study area by 2040. Under the IDOT forecasts, the increase is 2,400 acres.

No information in either case is available as to the amount of “effective” impervious area, that portion that directly runs off into surface waters. Imperviousness is most meaningful at a watershed level. The level of 10 percent imperviousness is often considered a rule-of-thumb threshold for maintaining watershed health. Under both the CMAP “build” and “no-build” scenarios, five watersheds are expected to go from less than 10 percent impervious to greater than 10 percent impervious. Under the IDOT scenarios, an additional nine watersheds are expected to be more than 10 percent impervious. In general, IDOT projects more population and employment in the area, which tends to increase imperviousness relative to the base year and relative to the CMAP scenarios.

**Figure 14. No-Build and Build Forecast impact on 2040 Impervious Surface**

<i>Impervious Surface</i>	<i>2010 Base</i>	<i>CMAP No-Build</i>	<i>CMAP Build</i>	<i>IDOT No-Build</i>	<i>IDOT Build</i>
<b>Total Impervious Acres in Illiana Study Area</b>	15,832	39,613	41,111	67,729	70,155
<b>Number of Watersheds &gt;10% Impervious</b>	9	14	14	23	23

Source: Chicago Metropolitan Agency for Planning

Note that design can compensate for some of the increase in imperviousness. For instance, low impact development practices, such as rain gardens, swales, and infiltration basins, can be used to capture and treat runoff. Local communities in the corridor would need to review their development codes to ensure that they encourage or require such practices.

### Regional Green Infrastructure

Regional green infrastructure is a planned landscape of connected open spaces—parks, forest preserves, and so forth linked by open space corridors.<sup>22</sup> The concept played an important role in the GO TO 2040 plan, and following the publication of the plan, CMAP collaborated with Chicago Wilderness to delineate a regional green infrastructure network in more detail (the [Green Infrastructure Vision](#) or GIV). Potential impact on the GIV is measured by counting households located in areas identified as part of the GIV. By this measure, constructing the Illiana would increase the potential for impact to the GIV from spinoff development. The overall level of potential impact is higher under the IDOT forecasts because they assume more growth in households and jobs in the study area than do the CMAP forecasts.

**Figure 15. Illiana Impact on Regional Green Infrastructure**

<i>Potential Green Infrastructure Impact</i>	<i>2010 Base</i>	<i>CMAP No-Build</i>	<i>CMAP Build</i>	<i>IDOT No-Build</i>	<i>IDOT Build</i>
<b>Households in Green Infrastructure Vision Areas in Illiana Study Area</b>	4,924	5,767	6,245	11,108	11,215

Source: Chicago Metropolitan Agency for Planning

Besides the potential impacts from spinoff development, some resources identified in the GIV are within the Illiana Corridor and potentially within the eventual Illiana right-of-way. Approximately 280 acres of the GIV are within the 400-foot Illiana Corridor. Neither the Illiana Tier 1 EIS nor IDOT's documentation for its plan amendment request mentions the Chicago Wilderness GIV, although many of the resources considered in the development of the GIV were also reviewed in the Tier 1 EIS. As with imperviousness, a number of different strategies can be utilized by local governments to help ensure that regional green infrastructure is protected during development, including conservation design ordinances, strategic land acquisitions, and other techniques.

<sup>22</sup> "Green infrastructure" has actually emerged as a term to refer to two different but related planning concepts. As opposed to regional green infrastructure, which is the focus of this discussion, site-scale green infrastructure is a suite of practices to handle stormwater that emphasize using vegetation, soils, and natural processes to mimic natural hydrology. These practices are also known as best management practices or low-impact development techniques.

Figure 16.

Illiana Corridor in the context of the Chicago Wilderness Green Infrastructure Vision



Source: Chicago Metropolitan Agency for Planning analysis.

Water Use

GO TO 2040 notes that our water resources are expected to grow more constrained, and the region should take steps to conserve them. Water use is one of the indicators used to track the region’s progress over time. The difference in households and jobs between the CMAP “no-build” and “build” forecasts would result in roughly 0.6 millions of gallons per day (MGD) of additional water demand within the study area in 2040. With IDOT’s forecasts, the change is 1.4 MGD. These increments are small and are essentially redistributed from elsewhere in the region. Overall, IDOT assumes more population and employment in the study area, translating into a predicted increase in water demand of 21 MGD relative to CMAP’s forecasts, or about the same amount of water as Kendall or Grundy Counties use currently.

Figure 17. Illiana Impact on Water Usage

	2010 Base	CMAP No-Build	CMAP Build	IDOT No-Build	IDOT Build
Water Use (MGD) in Illiana Study Area	10.7	22.2	22.8	42.0	43.4

Source: Chicago Metropolitan Agency for Planning analysis.

The most likely source of water to serve the population and employment increase is groundwater. At the same time, the Illinois State Water Survey has found that parts of Will County face considerable groundwater drawdowns. In the Illiana Corridor, communities have some flexibility in water sources. While groundwater is most often used, the Kankakee River serves Wilmington and some communities in Kankakee County in Illinois. The Kankakee River has the capacity to provide more water to serve existing and projected future population, although additional infrastructure investments would have to be made to take advantage of it.

### Greenhouse Gases

GO TO 2040 notes the importance of reducing greenhouse gas emissions from the transportation sector. At the regional scale, the 2040 traffic associated with the “build” forecast would slightly increase carbon dioxide (CO<sub>2</sub>) emissions from the “no-build” forecast. Under IDOT’s alternative forecast, CO<sub>2</sub> emissions are essentially unchanged between “no-build” and “build.” The overall level of CO<sub>2</sub> emissions is higher with the IDOT scenarios because overall automobile travel is higher than in the CMAP scenarios.

**Figure 18. Illiana Impact on Carbon Dioxide Emissions**

<b>Annual CO<sub>2</sub> Equivalent (million metric tons)</b>	<b>2010 Base</b>	<b>CMAP No-Build</b>	<b>CMAP Build</b>	<b>IDOT No-Build</b>	<b>IDOT Build</b>
<b>Total</b>	33.2	33.9	34.0	37.4	37.4

Source: Chicago Metropolitan Agency for Planning

## **Local Planning**

### *Technical Task Force Meetings*

Development of a new limited-access highway can have significant impacts on surrounding land uses. This is particularly true in areas where there is significant undeveloped and available land, as is the case with the Illiana Corridor, which has 217,000 acres of agricultural land and 14,000 acres of vacant land within the Study Area. As part of the Illiana Tier 2 EIS process, IDOT created a Technical Task Force (TTF) to discuss land use considerations and context-sensitive solutions for the corridor. The major outcome of this work was a set of visions, goals, and strategies for communities to consider when planning for the corridor. The TTF was convened for three workshops over the period of April to May, 2013. IDOT is providing a \$500,000 grant to Will County and the affected municipalities to develop and update their land use plans to better reflect the Illiana project.

### *Local Comprehensive Plans*

CMAP has reviewed the comprehensive plans of Crete, Elwood, Manhattan, Peotone, University Park, and Wilmington, as well as the 2002 Will County Land Use Policy Plan. Symerton does not have a comprehensive plan, and a copy of Monee’s comprehensive plan could not be obtained. The plans have a number of goals in common, including preservation of community character and open space, preparing for suburban expansion, and targeted economic development. All of these plans also devote substantial space to preparing for the impacts and opportunities presented by the South Suburban Airport. However, the majority of the plans either do not acknowledge the potential Illiana Corridor or provide minimal discussion of its potential impacts. Traditionally, communities will plan for major transportation improvements and orient land uses to take advantage of those facilities. This



has not been done for the Illiana even though the majority of the study area plans were published in 2007-08. This has occurred not because of a lack of diligence on the part of local municipalities, but due to the accelerated nature of the Illiana approval process.

Specifically, three of the municipal comprehensive plans describe the potential for the Illiana in its current configuration, and only one of those provides a discussion of its impact on land use or transportation. Beecher's comprehensive plan notes that there is potential for a limited-access expressway from I-57 to I-65, but does not address the topic further. University Park notes the potential for the Illiana Corridor, but states that the Village's existing access to I-57 is more critical. Manhattan's plan discusses the potential for the Illiana, describes the two main northern and southern alignment sets that were being analyzed in 2008, and notes that the expressway will have considerable impact on future development patterns. It designates all areas around the potential Illiana for agriculture and rural residential on its official map and outlines potential commercial development on the margins of the area in its text. Crete would like to update its comprehensive plan and has applied to CMAP's most recent call for projects for its Local Technical Assistance program to complete this task.

CMAP's observation is that the chosen alignment traverses many areas that have not planned for a major new expressway and do not have plans and policies in place to address the development pressures that a new roadway will generate. In contrast, these communities have been assessing and planning for the potential impact of the South Suburban Airport and suburbanization for some time. Their comprehensive plans orient planned commercial and industrial facilities toward the proposed airport and arterial roads that would access the airport. Strategies are provided to minimize negative impacts on residential, agricultural, and natural areas. In most cases, key expansions of existing road networks and proposed new roadways are identified. However, to date, the communities have not planned in this way, or to this extent, for the proposed Illiana.

### **Next Steps**

CMAP has analyzed the regional impacts of this proposed new facility based on available information. As this document makes clear, a number of details on aspects including the project cost, financing, environmental mitigation, and impact reduction options have not been made available. As the Tier 2 EIS process continues to unfold, it is possible that more of this information may become available. CMAP will incorporate all available information into its regional analyses as the agency prepares its staff recommendation.

The public comment period for amending the GO TO 2040 plan to include the Illiana Corridor runs from August 2 to September 3, 2013. Following the public comment period, CMAP staff will make a recommendation on whether the Plan should be amended to include the Illiana. The Transportation Committee, Regional Coordinating Committee, CMAP Board, and MPO Policy Committee will consider this recommendation in October 2013.

**ACTION REQUESTED: Release of the proposed plan amendment for public comment.**