ON TO 2050 update regionally significant projects benefits report appendix

September 2022 draft

Contents

Introduction

As northeastern Illinois's Metropolitan Planning Organization (MPO), the Chicago Metropolitan Agency for Planning (CMAP) is required by federal law to develop a list of major transportation projects every four years. The list identifies regionally significant projects that are to be implemented between now and 2050 (the horizon year of ON TO 2050, the region's long-range plan). These projects represent capital investments in the region's expressways, arterials, and transit system. This group of regionally significant projects (RSPs) are large enough to warrant additional discussion through the regional planning process. This group of projects also must be fiscally constrained, meaning sufficient revenues must be reasonably available in the future to implement them. This document describes the RSPs and the process CMAP employed to identify and evaluate them. The final list of selected RSPs to be included in the ON TO 2050 update is not a part of this document.

RSPs support ON TO 2050' s principles of inclusive growth, prioritized investment, and resilience. These projects emphasize the need to use the region's limited resources to invest, modernize, and improve existing infrastructure to achieve a state of good repair. Projects are prioritized into two categories: "constrained" and "unconstrained". Only constrained projects are eligible to receive federal transportation funds and obtain certain federal approvals. These constrained projects can help the region meet today's needs, adapt to changing mobility patterns, and support the region's economic success. Projects that are categorized as "unconstrained" require further action, such as additional study or a determination that the projects cannot be completed within the limits of the region's forecasted revenues. Because the region has limited funds available for expansions or improvements, the RSP evaluation process is intended to generate a list of prioritized projects that help the region meet its goals.

More than 70 projects have been identified through the RSP process, representing more than $84 billion in year of expenditure dollars. CMAP staff estimates $485 billion in core revenues will be available over the planning horizon of 2023-2050. After adding reasonably expected revenues, the region is forecasted to have approximately $520 billion in revenues verses a need of $429 billion just to maintain and operate infrastructure in current condition. The remaining revenue would be split between projects that can reach a state of good repair, enhance, and expand the transportation system. However, the expenditures needed to achieve a state of good repair have tripled since ON TO 2050 because of declines in the system's overall condition. This highly constrained environment generates the need for strong understanding and evaluation of the tradeoffs between projects, policies, and revenue recommendations.

Northeastern Illinois does not currently meet national ambient air quality standards for ozone. To be included in the plan, RSPs also are evaluated for their conformity to air quality standards. A future transportation system that includes the RSPs must demonstrate that it does not produce pollutants exceeding a pre-set standard (known as the motor vehicle emissions budget). The pre-set standard helps the region meet national air quality standards, and it is one part of an overall air pollution reduction strategy. When these conditions are met, the plan is considered to be in air quality conformity. While this document reports changes in air pollution emissions associated with each project individually, the official conformity analysis will ultimately be based on all of the projects that are fiscally constrained in the plan and the Transportation Improvement Program (TIP).

Process

Because it is not practical to itemize all projects expected over a multi-decade planning horizon, MPOs typically list only projects of a certain size or type. The update to ON TO 2050 maintains the same definition of RSPs. The definition covers:

1. Projects that cost at least $100 million and (a) change capacity on the National Highway System (NHS) or is a new expressway or principal arterial; or (b) change capacity on transit services with some separate rights-of-way or shared right-of-way where transit has priority over other traffic.
2. Projects that cost at least $250 million, regardless of the facility type or work type.

Candidate projects are compared to the cost thresholds based on current dollars (any conversion to year-of-expenditure, or YOE, cost is carried out by CMAP when necessary to meet federal rules). The entire project cost, not just the cost of the added capacity, is used to determine whether the project is regionally significant.

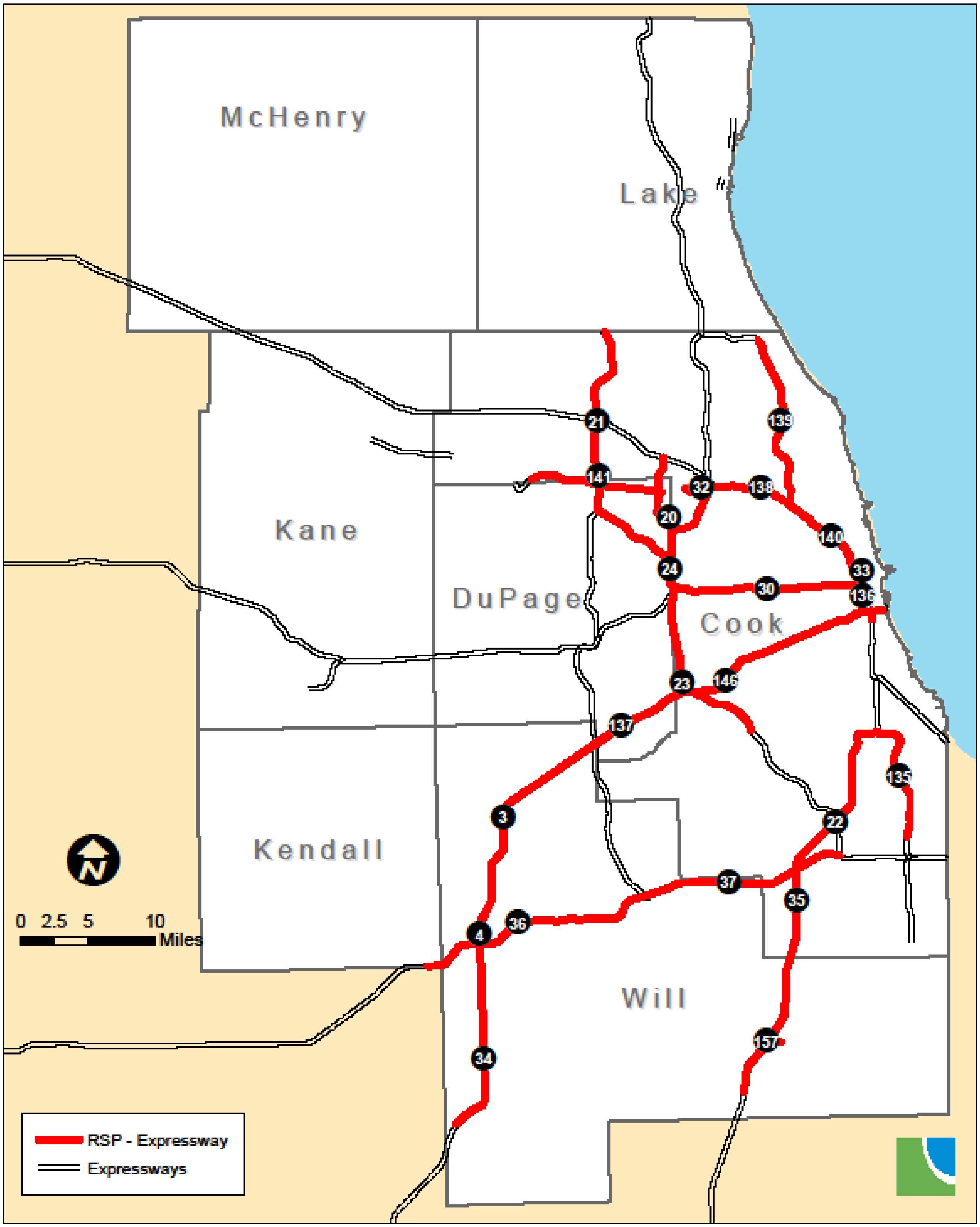
Note: Project submitters may develop a project proposal comprising a program of similar projects if individual projects would not meet the proposed thresholds. Projects that change capacity are those with non-exempt TIP work types[1]. In other words, projects that already are considered under federal rules to demonstrate air quality conformity.

To identify candidate RSPs, CMAP solicits projects from partner agencies. Regional transportation implementors submitted both unconstructed projects previously identified in ON TO 2050 and new projects that were considered for the first time under the plan update process. A total of 75 projects were considered.

The final universe of projects to be considered for inclusion in the ON TO 2050 update is shown in **Figures 1** through **Figures 3**. They are listed under the "Project descriptions" section in this report.

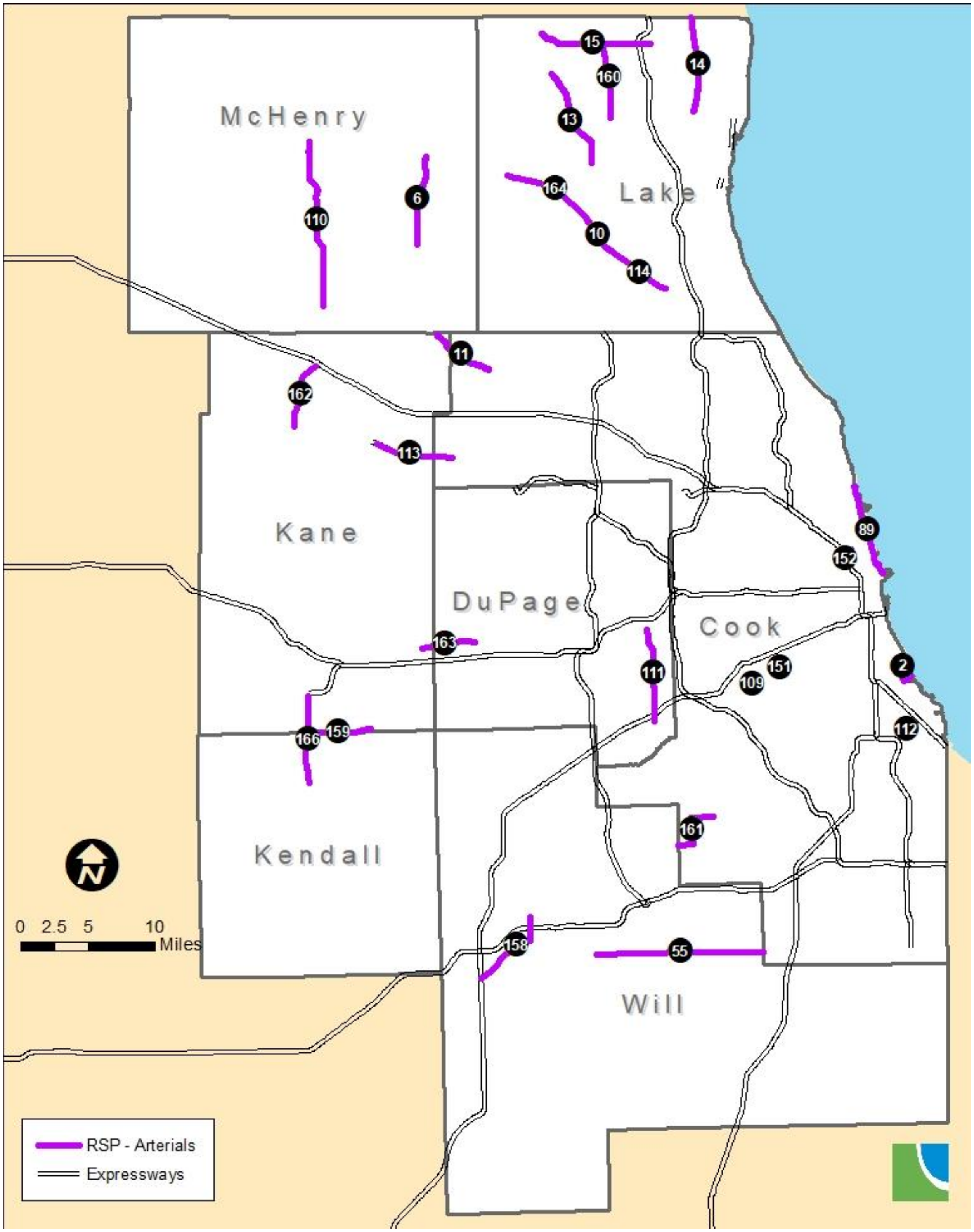
[1] Chicago Metropolitan Agency for Planning, "Transportation Improvement Program Work Types," April 2022, http://www.cmap.illinois.gov/documents/10180/33012/TIP+Work+Types_Updated+2-19-13.pdf/780844b6-4d26-4c00-9eeb-0a19e296b9f7.

Figure 1. Proposed Regionally Significant Projects – Expressways



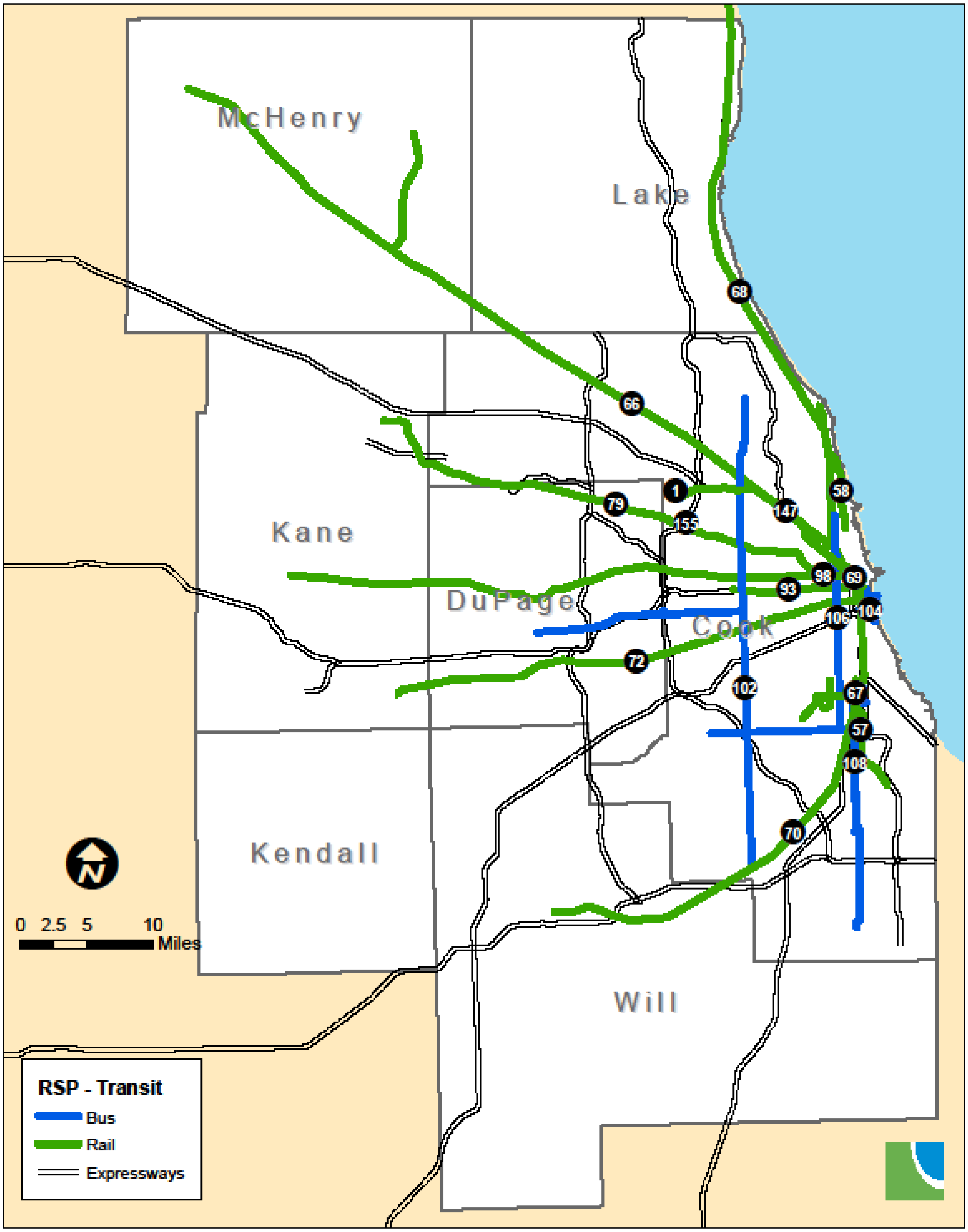
Source: Chicago Metropolitan Agency for Planning.

Figure 2. Proposed Regionally Significant Projects – Arterials



Source: Chicago Metropolitan Agency for Planning.

Figure 3. Proposed Regionally Significant Projects – Transit



Source: Chicago Metropolitan Agency for Planning.

Project evaluation

Project cost estimates

This section presents the estimated cost of all the major capital projects considered and documents the estimation methodology. Federal rules on fiscal constraint require costs to be in year-of-expenditure dollars (YOE) and include capital, as well as operations and maintenance (O&M) costs. Estimates of both types of costs are needed, as well as the years in which these expenditures are expected to take place. CMAP staff worked with implementers to update project information including scope, costs, phasing plans, and the portion of the project cost that would involve the addition of new capacity. The need to understand the project cost for adding capacity versus the amount needed for maintenance also is important in this process. The two cost categories have different budgetary constraints within the planning process.

Capital costs

In most cases, capital costs were provided by the project submitter. The level of analysis and engineering completed varies greatly between projects, meaning some costs and benefits presented in proposals are better understood than others.

When provided in current or earlier year dollars, costs were escalated to YOE by assuming a 2.5 percent annual cost of inflation — the same assumption used in the Financial Plan for Transportation for the ON TO 2050 update. Project phasing also was considered when that information was available. When the project submitter provided costs in YOE but used a different cost escalation factor, costs were deflated using the project submitter's factor to the base year and then escalated at 2.5 percent.

In CMAP's Financial Plan for Transportation for the ON TO 2050 update, the constrained cost of RSPs is only the amount needed to build and operate new capacity. Many RSPs, however, include elements of reconstruction, as well as capacity addition. For example, Projects that add lanes frequently include reconstruction of the existing facility along with addition of the new traffic lane. The proportion of capital costs required for new capacity and reconstruction was provided directly by the project submitter.[2] The Financial Plan for Transportation for the ON TO 2050 update separately includes the cost to reconstruct existing facilities under the operations and maintenance and the system enhancement allocation categories.

Operating costs

Operating costs for highway projects were estimated by applying costs per year and per lane-mile to the amount of new capacity, then inflating the cost each year by 2.5 percent. The unit cost estimate for non-tolled highways was derived from IDOT District 1's costs for fiscal year

[2] The definition of "new capacity" is not necessarily the same as that used for programs such as FTA core capacity.

2009-13 operations on the interstate and arterial system. The estimate for tollway projects was derived from the Illinois Tollway's operating costs for the Elgin-O'Hare Western Access project.

Transit operating costs were estimated using the revenue service hours calculated from modeled service, and unit costs taken from the National Transit Database (NTD). Again, transit operating costs were inflated by 2.5 percent each year. In a few cases, improvements to existing lines are expected to decrease operating costs, generally by making service faster and reducing the revenue hours required for a given number of runs. Anticipated fares associated with a project — calculated as the service board-specific average fare from NTD multiplied by the annual number of new riders on the project — were subtracted from the operating cost.

Cost summary for projects

The full list of projects with costs is presented in **Table 1**. The table below contains the new capacity costs considered for fiscal constraint, while the last column contains the project reconstruction costs. Costs for new capacity are shown in YOE and are calculated from the project costs provided by the submitter, implementation years, and percent of cost for new capacity. Ultimately, some projects will have revenues associated with them from tolling and value capture that help offset their costs in the Financial Plan for Transportation for the ON TO 2050 update.

Table 1. Costs of Regionally Significant Projects

Project	Project Information				Cost for new capacity			
	RSP ID	Project submitter	Est. start year for construction	Percent of cost for new capacity	Capital cost, YOE (billon $)	Operating costs to 2050, YOE (billon $)	Total project cost, YOE (billon $)	Reconstruction costs, YOE (billon $)
Arterial Projects								
Elston-Armitage-Ashland-Cortland Intersection Improvement	152	CDOT	2027	0%	0.00	0.000	0.00	0.30
South Lakefront Improvements-Roadway and Path Improvements	A2	CDOT	2023	20%	0.04	0.000	0.04	0.15
IL 31/Front St from IL 120 to IL 176	6	IDOT	2026	50%	0.06	0.003	0.07	0.06
IL 60/IL 83 from IL 176 to Townline Rd (IL 60)	10	IDOT	2030	50%	0.08	0.001	0.08	0.08
IL 62/Algonquin Rd from IL 25 to IL 68	11	IDOT	2035	50%	0.09	0.001	0.09	0.09
IL 83 Milwaukee Ave from Petite Lake Rd to IL 120	13	IDOT	2035	50%	0.14	0.002	0.14	0.14
IL 131 Green Bay Road from Russell Road to Sunset Ave	14	IDOT	2030	50%	0.04	0.003	0.05	0.04
IL 173 Rosecrans Rd from IL 59 to US 41	15	IDOT	2035	50%	0.19	0.002	0.19	0.19
Caton Farm Bruce Road Corridor from US 30 to IL 7/159th St	53	Will Co	2040	69%	0.61	0.004	0.62	0.28
Laraway Road from US 52 to IL 43 Harlem Ave	55	Will Co	2040	50%	0.07	0.003	0.07	0.07
North DuSable Lake Shore Drive Improvements	89	IDOT	2035	10%	0.62	0.002	0.62	5.59
IL 43 (Harlem Avenue) at 65th Street / BRC RR	109	IDOT	2030	5%	0.01	0.000	0.01	0.15
IL 47 from Charles Rd to Reed Rd - RSP 110	110	IDOT	2025	50%	0.24	0.006	0.25	0.24
IL 83 Kingery Hwy from 31st St to N of 55th St, 63rd St to Central Ave	111	IDOT	2036	50%	0.10	0.002	0.10	0.10
US 12/US 20 at Stony Island Ave	112	IDOT	2025	5%	0.01	0.001	0.01	0.10
US 20 Lake St from W of Randall Rd to E of Shales Parkway	113	IDOT	2026	5%	0.01	0.003	0.01	0.12

	Project Information				Cost for new capacity			
Project	RSP ID	Project submitter	Est. start year for construction	Percent of cost for new capacity	Capital cost, YOE (billon $)	Operating costs to 2050, YOE(billon $)	Total project cost, YOE(billon $)	Reconstruction costs, YOE(billon $)
Arterial Projects								
US 45/IL 83/Old Half Day Rd from IL 60 to Ill 22	114	IDOT	2030	50%	0.10	0.001	0.10	0.10
Central Av at BRC RR (CREATE)	151	IDOT	2021	0%	0.00	0.000	0.00	0.18
US 6 from I-55 to US 52	158	IDOT	2040	50%	0.14	0.000	0.14	0.14
US 30 from IL 47 to Albright Rd	159	IDOT	2040	50%	0.09	0.000	0.09	0.09
US 45 and Milburn By-Pass from IL 173 to IL 132	160	IDOT	2040	50%	0.08	0.001	0.09	0.08
IL 47 from s/o I-90 to s/o Old Plank Rd	162	IDOT	2040	50%	0.11	0.001	0.11	0.11
IL 56 from Kirk Rd to IL 59	163	IDOT	2040	50%	0.11	0.001	0.11	0.11
IL 60 from IL 120 to IL 176	164	IDOT	2040	50%	0.15	0.001	0.16	0.15
IL 7/143rd St from Will-Cook Line to IL 7/Southwest Hwy	161	IDOT	2023	40%	0.07	0.006	0.08	0.11
IL 47 from Cross St to Kennedy Rd	166	IDOT	2026	33%	0.05	0.002	0.05	0.10
Expressway Projects								
I-294 Tri-state Tollway at I-57 Interchange Addition	22	IDOT	2010	50%	0.03	0.001	0.03	0.03
I-290 Eisenhower Expy from US 12/45/20 Mannheim Rd to Racine Ave	30	IDOT	2028	20%	0.76	0.012	0.77	3.04
I-190 Access Improvements	32	IDOT	2026	20%	0.21	0.003	0.21	0.82
I-90/I-94 Circle Interchange from I-290 Congress Parkway to Adams St	33	IDOT	2023	20%	0.00	0.001	0.00	0.00
I-55 from IL 129 to Lorenzo Rd, I-55 Frontage Rds from Kavanaugh Rd to Lorenzo Rd	34	IDOT	2040	20%	0.04	0.000	0.04	0.18
I-55 from I-80 to Coal City Rd	34	IDOT	2041	20%	0.25	0.009	0.25	0.98

	Project Information				Cost for new capacity			
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Expressway Projects								
I-57 Reconstruction (I-80 to Kankakee County)	35	IDOT	2045	0%	0.00	0.000	0.00	1.63
I-80 Reconstruction from Ridge Rd to US 30 Lincoln Hwy	36	IDOT	2030	20%	0.28	0.014	0.30	1.13
I-80 from US 30 to I-294	37	IDOT	2040	80%	2.88	0.008	2.89	0.72
I-94 Bishop Ford Expressway Reconstruction (I-57 to US 6)	135	IDOT	2030	0%	0.00	0.000	0.00	1.13
I-90/1-94 Kennedy and Dan Ryan Expressways Reconstruction (Hubbard ST to 31st)	136	IDOT	2030	0%	0.00	0.000	0.00	5.03
I-55 Stevenson Expressway Reconstruction (LSD to I-80 excluding RSP 146 limits)	137	IDOT	2035	0%	0.00	0.000	0.00	5.20
I-90 Kennedy Expressway Reconstruction (Jane Addams to I-94 merge)	138	IDOT	2035	0%	0.00	0.000	0.00	2.80
I-94 Edens Expressway Reconstruction (Tollway spur to Lawrence Ave)	139	IDOT	2035	0%	0.00	0.000	0.00	2.92
I-90/I-94 Kennedy Reconstruction (Edens Junction to Hubbard ST)	140	IDOT	2045	0%	0.00	0.000	0.00	3.23
I-290/IL-53 Reconstruction (I-88 to Lake-Cook RD)	141	IDOT	2045	0%	0.00	0.000	0.00	5.89
I-57 Reconstruction (I-94 to I-80)	142	IDOT	2045	0%	0.00	0.000	0.00	2.47
I-55 Managed Lane from I-355 to I-90 I-94 (I-55 Stevenson Express Toll Lanes)	146	IDOT	2040	80%	0.71	0.021	0.73	0.18
I-57 @ Eagle Lake Rd	157	IDOT	2026	100%	0.23	0.000	0.23	0.00

	Project Information				Cost for new capacity			
Project	RSP ID	Project submitter	Est. start year for construction	Percent of cost for new capacity	Capital cost, YOE (billon $)	Operating costs to 2050, YOE (billon $)	Total project cost, YOE (billon $)	Reconstruction costs, YOE (billon $)
Expressway Projects								
I-55 from Weber Road to US 30; I-55 At Airport/Lockport Rd & At IL 126	A3	IDOT	2028	13%	0.03	0.000	0.03	0.19
I-55 from I-80 to US 52 and @ ILL 59; US 52/Jefferson St from River Rd to Houbolt Rd	A4	IDOT	2028	16%	0.04	0.009	0.05	0.20
Elgin O'Hare Western Access	20	Tollway	2023	100%	0.70	0.063	0.76	0.00
I-290/IL 53 Interchange Improvement	21	Tollway	2032	0%	0.00	0.001	0.00	0.45
I-294 Central Tri-State Reconstruction and Mobility Improvements	23	Tollway	2018	10%	0.07	0.026	0.10	0.62
I-290/I-88/I-294 Interchange Improvement	24	Tollway	2018	0%	0.00	0.004	0.00	0.41
Transit Projects								
Chicago Union Station Master Plan Implementation	85	CDOT	2026	100%	1.13	0.026	1.16	0.00
Chicago Union Station Master Plan Implementation-Phase II	88	CDOT	2041	100%	2.00	0.051	2.05	0.00
South Lakefront-Museum Campus Access Improvements	104	CDOT	2025	100%	0.22	0.174	0.20	0.00
Ashland-Ogden Metra Infill Station	153	CDOT	2030	100%	0.34	-0.022	0.31	0.00
O'Hare Express Service	A1	CDOT	2025	100%	0.00	0.000	0.00	0.00
Red Line Extension (South)	57	CTA	2025	95%	2.31	0.320	2.63	0.12
Red Purple Modernization Phase One	58A	CTA	2019	62%	0.39	0.000	0.39	0.24
Red Purple Modernization Future Phases	58B	CTA	2030	60%	3.60	-0.117	3.48	2.40

	Project Information				Cost for new capacity			
Project	RSP ID	Project submitter	Est. start year for construction	Percent of cost for new capacity	Capital cost, YOE (billon $)	Operating costs to 2050, YOE (billon $)	Total project cost, YOE (billon $)	Reconstruction costs, YOE (billon $)
Transit Projects								
Blue Line Forest Park Reconstruction	93	CTA	2023	15%	0.26	0.034	0.29	1.47
Ashland Avenue BRT (Irving Park to 95th)	106	CTA	2027	75%	0.12	0.271	0.39	.04
Blue Line Core Capacity	147	CTA	2030	54%	0.59	0.392	0.99	0.51
Brown Line Core Capacity	165	CTA	2032	50%	1.72	0.085	1.81	1.70
South Halsted BRT	108	CTA/Pace	2026	75%	0.18	0.082	0.21	0.04
Southwest Service Improvements / 75th Street Corridor Improvement Project	67	IDOT	2013	25%	0.33	-0.046	0.28	0.99
BNSF Extension-Oswego/Plano	71	Kendall Co	2045	100%	1.27	0.029	1.30	0.00
UP NW Line New Start	66	Metra	2026	50%	0.30	-0.139	0.16	0.30
UP North Line Improvements	68	Metra	2036	25%	0.14	0.343	0.49	0.43
UP West Line - New Start	69	Metra	2033	25%	0.17	-0.118	0.05	0.52
Rock Island Line Improvements	70	Metra	2029	25%	0.15	0.101	0.25	0.46
BNSF Improvements	72	Metra	2040	25%	0.11	0.042	0.15	0.32
Milwaukee District West Improvements	79	Metra	2040	25%	0.25	0.058	0.31	0.75
A-2 Crossing Rebuild	98	Metra	2028	25%	0.33	0.046	0.37	0.98
Milwaukee Corridor Improvements	156	Metra	2030	75%	N/A	N/A	N/A	N/A
I-294 Tri-State Express Bus Stations	155	Pace	2026	100%	0.13	0.157	0.28	0.00
Pulse Near Term	102A	Pace	2019	100%	0.11	-0.006	0.11	0.00

Evaluation measures

The planning process identifies projects that help the region meet its transportation, economic, land use, environmental, and quality-of-life goals. The evaluation framework for the update is the same one used for ON TO 2050; however, several important differences exist from the original ON TO 2050 project evaluations. These include:

- **Revised socioeconomic forecast**: New population and employment forecasts were developed for the plan update to take advantage of more recent census data on the regional population and account for the impacts of the COVID-19 pandemic on the region's economy. A new land-use model (UrbanSim) helped develop the spatial distribution of households, population, and jobs in 2050. This local area allocation of people and employment provides the foundation for the analysis of the RSPs. More information about UrbanSim and the regional socioeconomic forecast is available in the Regional Socioeconomic Forecast Appendix. The socioeconomic data used for the RSP evaluations was a draft version of the 2050 forecast for the plan update.

- **Travel demand model update:** CMAP's trip-based travel demand model was one of the primary tools used to conduct the RSP evaluations. The travel model was updated to reflect the travel behavior captured in the most recent household travel survey (My Daily Travel), which concluded data collection in spring 2019. Additionally, other procedural improvements, such as expanding the number of transportation mode options and including a work-from-home allocation model, were implemented in the model. More information can be found in the Travel Demand Model Documentation Appendix.

- **Updated data inputs:** Data input files used to conduct the evaluations were updated in instances where more recent data were available. In addition to the population and employment data, this included revised information on green infrastructure, water resources, bridge and pavement condition, traffic safety and reliability, and transit asset conditions.

The RSP evaluation framework classifies performance metrics into three categories. Those categories cover addressing today's needs, improving 2050 travel, and implementing ON TO 2050 planning priorities. The following part of this section describes the project evaluation measures within those three categories.

Addressing today's needs

Given the region's scarce resources and the significant deficiencies on the system — ranging from safety problems on highways to capacity constraints on the rail system — ON TO 2050 evaluates projects based on the severity of existing needs at a project location. If a proposed highway capacity project addresses an area with high congestion, high crash rate, and poor pavement condition, then it should be a higher priority than a project where these needs are not as great. Different measures are used to evaluate the needs that transit (**Table 2**) and highway (**Table 3**) projects address. For more details on the evaluation measures, see Appendix A.

Table 2. Current need measures for transit project evaluation

Average asset condition	Individual assets or groups of assets across the system have been assigned a numerical rating based on age and FTA's asset condition scale where 5 is "like new" and 1 is "in need of immediate repair." These conditions are averaged across each line and weighted by estimated replacement cost in to develop this measure. Low numbers indicate that a line has many old assets in need of replacement; high numbers indicate that a particular line is newer. A project that addresses assets in poorer condition is considered a higher priority.
Capacity constraint	Capacity constraints limit the amount of service that can be provided and lead to crowded conditions. Capacity is measured as the ratio of maximum passenger loads to capacity on CTA rail and, on Metra, the number of trains each day where 95% or more of the seats are occupied. Projects that address more significant capacity constraints are considered higher priority. The raw capacity constraint values were also rescaled to compare more easily between Metra and CTA in a way described in the Appendix A.
Reliability	Reliability is measured as route on-time performance (Metra) or headway adherence (bus, CTA rail). The source is transit agency data.
ADA improvement	ADA compliance is a significant need on the existing transit system and an area where the transit agencies will be making significant investments. This measure is "Yes" if a project significantly reduces or eliminates an existing ADA deficiency. Otherwise, the rating is "No."

Table 3. Current need measures for highway project evaluation

Structural deficiency of bridges	Measured as square feet of bridge deck on bridges along a project that are categorized as deficient. Projects that address a greater amount of structurally deficient bridge deck area are considered higher priority.
Pavement condition	For expressways and arterials, a combination of Condition Rating System (CRS) and International Roughness Index (IRI) is used, scaled 1-100 from best-to-worst condition for the NHS system. Projects that address pavements in worse condition are considered higher priority and receive a higher index value.
Safety	The severity of safety problems addressed by a project is measured by the rate of serious injury and fatal crashes occurring per VMT on the project segments, scaled 1-100. A project addressing a more severe safety problem is considered a higher priority and receives a higher index value.
Mobility	Mobility is measured as a combination of the intensity of congestion (measured with the Travel Time Index, or TTI) and the duration of congestion (measured as hours of congestion throughout the day). The measures are weighted equally and rescaled 1-100. A capacity project addressing a more severe congestion problem is considered a higher priority and receives a higher index value.
Reliability	This measure rates the severity of existing travel time unreliability using the planning time index (PTI), scaled to a value 1-100. A capacity project addressing a more severe reliability problem is considered a higher priority and receives a higher index value.

2050 performance

Projects also are evaluated based on how they are expected to perform in the year 2050 (**Table 4** and **Table 5**). CMAP's trip-based travel demand model was used to model each expressway and transit project and estimate reductions in congestion, changes in crash rates, and changes in other measures expected from implementing candidate projects. The evaluation was supported by generic modeling on the NHS arterials, using the travel model rather than on a project-by-project basis. For ON TO 2050, the Regional Transportation Authority (RTA) computed 2050 transit project performance using a combination of the FTA's Simplified Trips on Projects (STOPS) model developed and calibrated for northeastern Illinois and the RTA Access Tool that was created to measure the accessibility of jobs by transit. For the ON TO 2050 update, those processes were replaced with comparable ones that relied on the travel demand model.

Travel conditions in the year 2050 were modeled with and without each of the proposed expressway or transit RSPs. The change between no-build (without the project) and build (with the project) measures was calculated by using the difference between the appropriate scenarios. All projects were evaluated using the region's existing and committed network, which includes the existing 2019 road and transit network along with projects from the Northeastern Illinois TIP[3] that are expected to exist in 2050. Each build scenario included the existing and committed network plus the project in question. For phased transit projects (such as CTA's Red Purple Modernization), later phases had their no-build scenarios adjusted to include earlier phases in addition to the 2019 base network. The characteristics of individual projects were coded into the model based on information supplied by the project submitters. More details on the evaluation measures are available in Appendix A.

In addition to reporting absolute project benefits, project cost-effectiveness also was computed using the current year (2021) capital cost of the project plus 10 years of operating cost, divided by each evaluation measure. This results in an estimated cost per unit of change, such as dollars per new rider or dollars per minute of travel time change.

Table 4. 2050 performance measures for transit project evaluation

Project ridership (daily)	The number of boardings on the project in 2050, reflecting the total number of users benefitted by the project.
Regional trips (daily)	The incremental change in transit use, measured as linked transit trips per day, caused by the project in 2050. This shows how much a project increases overall regional trip making.
Work trip transit travel time (minutes)	This measure computes the difference in average commute time for workers region wide. Commute time includes in-vehicle transit time, wait time, walk transfer time, and auto time to access transit.
Project user commute time (minutes)	This measure computes the difference in average commute time for project users where transit could be used in both build and no-build scenarios. It excludes areas

[3] The TIP, available at https://etip.cmap.illinois.gov/, is a compendium of funded projects on which some phase of work is expected in the next five years.

	where transit was not available in the no-build scenario. The components of commute time are the same as above.
Job accessibility (count of jobs)	Measures the change in the average number of jobs each household in the region can reach by transit within both 60 and 90 minutes. The time thresholds include in-vehicle transit time, wait time, walk transfer time, and auto time to access transit.
Fatalities and serious injuries per year	This is an estimate of fatalities and serious injuries (type K and A) avoided due to mode shift from auto to transit.

Table 5. 2050 performance measures for expressway project evaluation

Congested vehicle hours traveled (VHT) in region (hours daily)	Congested VHT measures the time all vehicles in total spend in congestion. If a project reduced a typical trip time in congested conditions by five minutes for 10,000 cars, then the change in congested VHT would be five minutes * 10,000 cars ÷ 60 minutes/hour = 833 hours saved.
Congested VHT in corridor (hours daily)	Because in some cases a project may have a modest impact on performance at the regional scale but a large impact in the vicinity of the project, this measure assesses the reduction in congested VHT for all vehicles within a five-mile buffer around the project.
Regional work trip travel time (minutes)	Measures the change in the average travel time for commutes beginning within the CMAP seven-county area.
Work trip travel time within corridor (minutes)	Measures the change in the average travel time for commutes beginning only within the five-mile buffer around the project.
Job accessibility (count of jobs)	Measures the change in the average number of jobs each household can reach by auto within 45 minutes.
Fatalities and serious injuries per year	This measure estimates the change in fatalities and serious injuries (type K and A) resulting from the project based on five-year crash rates for interstates and non-interstates.

Planning priorities

The projects were assessed for their contributions to priorities of the ON TO 2050 update (**Table 6**). Given the important role of inclusive growth in ON TO 2050, the evaluation looks closely at how well projects would benefit residents of Economically Disconnected Areas (EDAs), places with high concentrations of residents with low income, persons of color, or residents with limited English language proficiency. To assess a project's ability to help the region grow economically, the analysis also examines aspects of the economic impact and support of freight movement of proposed projects. To support ON TO 2050's reinvestment recommendations, the analysis examines how well a project supports infill development in already-developed parts of the region. For highway investments, the analysis examines how projects might encourage development in priority conservation areas and sensitive water resources, or if they place additional burdens on areas with groundwater scarcity. More details on the evaluation measures are available in Appendix A.

Table 6. Planning priorities for transit projects

Project use by residents of Economically Disconnected Areas (EDAs)	This is the proportion of project ridership estimated to come from EDAs and measures the degree to which a project directly benefits residents of those areas.
Support for infill development	Captures the degree to which a project supports growth in areas that are appropriate for infill development based on a 1-100 index. Projects that serve areas that are highly supportive of infill receive up to 100, while projects that serve areas that minimally support infill score as little as 0.
Economic impact due to industry clustering	Annual dollar value of increased labor productivity by enhanced businesses-to-business interaction and access to larger labor pool brought about by a project's changes to transit travel times.
Freight improvement	Measures the impact the project will have on critical freight supporting infrastructure such as truck routes and freight rail. Benefits to freight are rated on a -25 to 100 scale, with -25 representing potential disbenefits and 100 representing significant improvements to freight movement.
Number of low barriers to entry jobs accessible for residents of EDAs	This measure assesses the average number of higher-wage jobs that do not require a college degree that are accessible to households living in EDAs within 60 and 90 minutes by transit.
Greenhouse gas emissions (metric tons/day in 2050)	By reducing auto vehicle miles traveled (VMT), transit projects tend to reduce greenhouse gas emissions.

Table 7. Planning priorities for highway projects

Congested VHT for heavy trucks in region (hours daily)	To estimate project benefits to freight, this measure captures the change in congested VHT for heavy commercial vehicles.	Expressway
Congested VHT for heavy trucks in corridor (hours daily)	Measures the change in congested VHT for heavy commercial vehicles only within a five-mile buffer around the project.	Expressway
Freight improvement	Measures the impact the project will have on freight based on specific changes the project will include. This is the same measure used to evaluate transit projects, listed in Table 6.	Expressway, Arterial
Greenhouse gas (GHG) emissions (metric tons/day)	Emissions of GHGs by autos is sensitive both to total VMT and vehicle speed.	Expressway
Development pressure in conservation areas (count of new households)	By increasing highway access, highway projects may encourage development in important conservation areas. For expressways, this measure estimates the potential increase in households in conservation areas. For arterials, the measure of impact is simply the number of acres of priority conservation area within the project's travel shed, converted to a 1-100 score.	Expressway
Direct impact on conservation areas	Conservation areas close to a transportation project can be damaged in the process of roadway expansion, or by increased traffic volumes. For expressway projects that add capacity through new roadway or expansion of existing roadway, this measure indicates the level of direct impact a project has on nearby natural areas. The measure is a function of the amount of conservation area overlapped by a project and a new lane factor. This measure uses a relative index to evaluate projects against each other.	Expressway
Development pressure in areas at risk of groundwater	Like development pressure in conservation areas, this measure evaluates the potential increase in number of households in areas with groundwater desaturation.	Expressway

desaturation (count of new households)		
Impervious area (acres)	Increased impervious surface is a proxy for negative impacts on water resources. This measure estimates total new impervious surface created either as a direct result of the road project or based on the projected spinoff development.	Expressway
Project use by residents of EDAs (percent of VMT)	This is the proportion of VMT on a project from trips originating in EDAs, and reflects the degree to which a project directly benefits the residents those areas.	Expressway, Arterial
Fine particulate matter emissions in EDAs (g/day)	Fine particulate emissions have a negative impact on public health. This measure determines the degree to which a project would cause changes in fine particulate matter emissions in EDAs where health impacts are expected to be especially high.	Expressway
Accessibility of low barrier to entry jobs for residents of EDAs (count of jobs)	This measure assesses the average number of higher-wage jobs that do not require a college degree that are accessible to households living in EDAs within 45 minutes by auto.	Expressway
Economic impact due to industry clustering (dollars per year)	Dollar value of increased labor productivity by enhanced businesses-business interaction and access to larger labor pool brought about by a project's changes to transit travel times. For arterial projects, this is an indexed value rather than a dollar value.	Expressway, Arterial
Support for infill development	Captures the degree to which a project supports growth in areas that are appropriate for infill development based on a 1-100 index. Projects that serve areas that are highly supportive of infill receive up to 100, while projects that serve areas that minimally support infill score as little as 0.	Expressway
Benefit to key industries	This measure assesses the degree to which projects benefit key industries. Key industries were identified by the number of jobs in regionally specialized, export-oriented industries with higher than average in-region transportation costs. This value is indexed 1-100, with 100 representing the best score for a project.	Expressway, Arterial
Benefit to areas with industrial vacancy	This measure identifies the degree to which projects benefit distressed industrial areas. Distressed industrial areas were identified by current vacancy. Projects serving distressed industrial areas are considered to be higher priority because of their ability to improve these area's competitiveness. This value is indexed 1-100, with 100 representing the best score for a project.	Expressway, Arterial
GIV impact score	Percentile rank of conservation areas in project travel shed.	Arterial
Expected traffic growth (percent)	Expected percent growth in traffic from 2019 to 2050 using existing and committed transportation networks.	Arterial

Full evaluation results

The following projects were not evaluated, as they are already in the construction phase or are funded:

- RSP 24 – I-290/I-294 Interchange Improvement
- RSP 33 – Jane Byrne Interchange Reconstruction
- RSP 58A – North Red/Purple Line Modernization Phase One

- RSP 67 – Southwest Service Improvements/75th Street Corridor Improvement Program
- RSP 69 – UP-West Upgrade
- RSP 85 – Chicago Union Station Master Plan Implementation Phase 1
- RSP 93 – Forest Park Reconstruction Phase 1

The following tables present the performance data collected for each transit, expressway, and arterial project.

Transit

Table 8. Transit project evaluation for today's needs (projects with no data are excluded)

				Capacity constraint			
Project submitter	**RSP ID**	**Description**	**Avg. Asset condition***	**Raw****	**Rescaled**	**Reliability**	**ADA Improvement**
CTA	58A	Red Purple Modernization Phase One	2.47	1.15	9	97.0%	Yes
CTA	58B	Red Purple Modernization Future Phases	2.47	1.15	9	97.0%	Yes
Metra	66	UP NW Line New Start (3870)	N/A			93.0%	No
Metra	68	Metra UP North Improvements	2.87	3	3	95.3%	No
Metra	69	UP West Line - New Start (3869)	2.98			92.3%	No
Metra	70	Metra Rock Island Improvements	3.44			92.0%	No
Metra	72	BNSF Improvements	N/A	6	6	95.0%	No
Metra	79	Milwaukee District West Improvements	3.33			95.1%	No
CDOT	88	Chicago Union Station Master Plan Implementation-Phase II	N/A	TBD		N/A	Yes
CTA	93B	Blue Line Forest Park Reconstruction	2.56	1.00	6	92.0%	Yes
Metra	98	A-2 Crossing Rebuild	N/A			N/A	No
CTA	147	Blue Line Core Capacity Project	2.87		6	93.0%	No
Metra	156	Metra Milwaukee Corridor Improvements	N/A			93.6%	TBD
CTA	165	Brown Line Core Capacity	N/A	1.10	8	96.0%	No

*2016 average asset condition data used

Table 9. Transit project 2050 performance

			Modeled Characteristics		2050 Performance						
Project submitter	RSP ID	Description	Change in annual bus revenue hours ('000s)	Change in annual fixed guideway revenue hours ('000s)	Project daily ridership ('000s)	Change in daily regional transit trips ('000s)	Change in work trip travel time (minutes)	Change in project user commute time (minutes)	Change in # of jobs accessible within 90 min, for avg. resident ('000s)	Change in # of jobs accessible within 60 min. for avg. resident ('000s)	Change in Fatalities and Serious Injuries per year
CTA	57	Red Line Extension (South)	(18)	14	132	0.8	(0.10)	(0.49)	8	6	-2.2
CTA	58B	Red Purple Modernization Future Phases	0	(1)	216	7.5	(0.08)	(0.01)	4	4	-14.6
Metra	66	UP NW Line New Start (3870)	0	4	3	1.0	(0.02)	(5.72)	17	9	-8.1
Metra	68	Metra UP North Improvements	0	21	31	4.7	(0.19)	(4.95)	12	8	-10.7
Metra	70	Metra Rock Island Improvements	0	7	19	3.5	(0.03)	(3.69)	8	8	-6.3
Kendall County	71	BNSF Extension-Oswego/Plano	0	2	35	0.2	0.02	(0.15)	6	5	-3.9
Metra	72	BNSF Improvements	0	8	55	6.8	(0.28)	(6.60)	24	20	-9.7
Metra	79	Milwaukee District West Improvements	0	3	31	5.9	(0.10)	(1.86)	11	5	-13.0
CDOT	88	Chicago Union Station Master Plan Implementation-Phase II	0	53	129	2.5	(1.04)	(3.36)	21	23	-7.0
CTA	93B	Blue Line Forest Park Reconstruction	0	(2)	99	7.3	(0.12)	(0.44)	5	5	-10.5
Metra	98	A-2 Crossing Rebuild	0	(1)	57	NB	(0.02)	(0.24)	4	4	-7.0
Pace	102	Pace Short Term ART	45	0	5	2.6	(0.04)	(8.04)	13	9	-6.6
CDOT	104	South Lakefront-Museum Campus Access Improvements	(2)	0	33	NB	(0.10)	(1.83)	5	5	-7.4
CTA	106	Ashland Avenue BRT (Irving Park to 95th)	54	0	15	6.6	(0.17)	(3.39)	9	9	-8.3

			Modeled Characteristics		2050 Performance						
Project submitter	RSP ID	Description	Change in annual bus revenue hours ('000s)	Change in annual fixed guideway revenue hours ('000s)	Project daily ridership ('000s)	Change in daily regional transit trips ('000s)	Change in work trip travel time (minutes)	Change in project user commute time (minutes)	Change in # of jobs accessible within 90 min, for avg. resident ('000s)	Change in # of jobs accessible within 60 min. for avg. resident ('000s)	Change in Fatalities and Serious Injuries per year
CTA	108	South Halsted BRT	11	0	3	0.6	0.01	(0.98)	5	5	-3.3
CTA	147	Blue Line Core Capacity Project	0	27	95	NB	(0.29)	(1.58)	11	11	-1.6
CDOT	153	Ashland-Ogden Metra Infill Station	0	0	61	2.8	0.07	(0.01)	3	4	-3.4
Pace	154	South Halsted Bus Enhancements	12	0	0.4	NB	(0.03)	(5.39)	5	5	-3.5
Pace	155	I-294 Tri-State Express Bus Stations	36	0	3	3.6	0.04	(33.01)	37	15	- 5.1Fixed
Metra	156	Metra Milwaukee Corridor Improvements	0	9	1	6.2	(0.05)	(5.88)	4	4	-14.4
CTA	165	Brown Line Core Capacity	0	(5)	114	4.4	(0.12)	(0.49)	5	4	-11.3
CDOT	A1	O'Hare Express Service	0	94	3	0.7	(1.38)	(21.02)	498	276	1.0

NB = no benefit

Table 10. Transit project 2050 cost effectiveness

Project submitter	RSP ID	Description	Project cost characteristics		Cost-effectiveness of 2050 performance				
			2021 Capital cost $M	10 Years incremental operating cost $M	Dollars per project rider ('000s)	Dollars per change in regional ridership ('000s)	Dollars per change in work trip transit travel time $M	Dollars per change in jobs accessible in 60 minutes $M	Dollars per change in jobs accessible in 90 minutes $M
CTA	57	Red Line Extension (South)	2.43	0.14	19	3,096	(26)	0.43	15.98
CTA	58A	Red Purple Modernization Phase One	0.62	-	Not evaluated				
CTA	58B	Red Purple Modernization Future Phases	6.00	(0.05)	28	794	(74)	1.57	141.57
Metra	66	UP NW Line New Start (3870)	0.53	(0.05)	182	460	(24)	0.06	2.28
Metra	67	Southwest Service Improvements / 75th Street Corridor Improvement Project	1.14	-	Not evaluated				
Metra	68	Metra UP North Improvements	0.40	0.09	16	103	(3)	0.06	5.36
Metra	69	UP West Line - New Start (3869)	0.51	(0.06)	Not evaluated				
Metra	70	Metra Rock Island Improvements	0.50	0.04	29	154	(18)	0.07	1.73
Kendall County	71	BNSF Extension-Oswego/Plano	0.70	0.05	21	3,141	37	0.14	7.26
Metra	72	BNSF Improvements	0.27	0.04	6	45	(1)	0.02	0.45
Metra	79	Milwaukee District West Improvements	0.63	(0.03)	19	100	(6)	0.11	2.94
CDOT	85	Chicago Union Station Master Plan Implementation	1.00	0.01	Not evaluated				
CDOT	88	Chicago Union Station Master Plan Implementation-Phase II	2.00	0.05	16	812	(2)	0.09	1.87
CTA	93B	Blue Line Forest Park Reconstruction	1.73	(0.08)	17	226	(14)	0.34	71.83
Metra	98	A-2 Crossing Rebuild	1.10	0.02	20	NB	(56)	0.30	16.70
Pace	102	Pace Short Term ART	0.15	(0.00)	32	57	(4)	0.02	0.21
CDOT	104	South Lakefront-Museum Campus Access Improvements	0.20	(0.01)	6	NB	(2)	0.09	1.87
CTA	106	Ashland Avenue BRT (Irving Park to 95th)	0.16	0.04	13	30	(1)	0.02	0.76

Project submitter	RSP ID	Description	Project cost characteristics		Cost-effectiveness of 2050 performance				
			2021 Capital cost $M	10 Years incremental operating cost $M	Dollars per project rider ('000s)	Dollars per change in regional ridership ('000s)	Dollars per change in work trip transit travel time $M	Dollars per change in jobs accessible in 60 minutes $M	Dollars per change in jobs accessible in 90 minutes $M
CTA	108	South Halsted BRT	0.15	0.03	67	310	18	0.04	1.72
CTA	147	Blue Line Core Capacity Project	1.10	0.18	13	NB	(4)	0.12	3.24
CDOT	153	Ashland-Ogden Metra Infill Station	0.27	(0.01)	4	91	4	0.06	4.40
Pace	154	South Halsted Bus Enhancements	0.04	0.02	141	NB	(2)	0.01	0.49
Pace	155	I-294 Tri-State Express Bus Stations	0.11	0.06	56	48	4	0.01	0.21
Metra	156	Metra Milwaukee Corridor Improvements	-	0.04	80	7	(1)	0.01	0.73
CTA	165	Brown Line Core Capacity	2.43	(0.06)	21	542	(20)	0.55	17.95
CDOT	A1	O'Hare Express Service	1.00	-	294	1,395	(1)	0.00	0.09

NB = no benefit

Table 11. Transit project planning priorities

Project submitter	RSP ID	Project	Project use by residents of EDAs	Support for infill development	Economic impact due to industry clustering ($M)	Freight Improvement	Change in access to low barrier to entry jobs for residents of EDAs in 60 minutes	Change in access to low barrier to entry jobs for residents of EDAs in 90 minutes	Change in greenhouse gas emissions (metric tons/day)
CTA	57	Red Line Extension (South)	32%	77%	$50	-	161	326	(42)
CTA	58B	Red Purple Modernization Future Phases	25%	72%	$165	-	42	82	(124)
Metra	66	UP NW Line New Start (3870)	4%	34%	$45	-	209	218	(58)
Metra	68	Metra UP North Improvements	24%	64%	$42	-	91	660	(71)
Metra	70	Metra Rock Island Improvements	31%	56%	$33	50	314	519	(44)
Kendall County	71	BNSF Extension-Oswego/Plano	24%	59%	$44	-	103	107	(56)
Metra	72	BNSF Improvements	35%	66%	$185	25	676	864	(71)
Metra	79	Milwaukee District West Improvements	22%	67%	$52	25	202	725	(99)
CDOT	88	Chicago Union Station Master Plan Implementation-Phase II	30%	75%	$288	-	1,096	1,413	(48)
CTA	93B	Blue Line Forest Park Reconstruction	29%	79%	$57	-	23	170	(85)
Metra	98	A-2 Crossing Rebuild	34%	66%	$67	-	67	179	(51)
Pace	102	Pace Short Term ART	28%	83%	$3	-	713	1,289	(44)
CDOT	104	South Lakefront-Museum Campus Access Improvements	45%	81%	$0.4	-	150	247	(50)
CTA	106	Ashland Avenue BRT (Irving Park to 95th)	55%	88%	$7	-	258	288	(68)
CTA	108	South Halsted BRT	67%	83%	$0	-	105	124	(50)

Project submitter	RSP ID	Project	Project use by residents of EDAs	Support for infill development	Economic impact due to industry clustering ($M)	Freight Improvement	Change in access to low barrier to entry jobs for residents of EDAs in 60 minutes	Change in access to low barrier to entry jobs for residents of EDAs in 90 minutes	Change in greenhouse gas emissions (metric tons/day)
CTA	147	Blue Line Core Capacity Project	30%	79%	$86	-	395	534	(36)
CDOT	153	Ashland-Ogden Metra Infill Station	25%	66%	$56	-	59	(157)	(30)
Pace	154	South Halsted Bus Enhancements	77%	73%	$0	-	122	130	(22)
Pace	155	I-294 Tri-State Express Bus Stations	47%	62%	$3	-	804	3,071	(18)
Metra	156	Metra Milwaukee Corridor Improvements	13%	83%	$1	-	56	140	(108)
CTA	165	Brown Line Core Capacity	23%	72%	$114	-	132	163	(96)
CDOT	A1	O'Hare Express Service	1%	57%	$4	-	10,827	19,473	23

NB = no benefit

Expressways

Table 12. Expressway project evaluation for today's needs

Project submitter	RSP ID	Description	Structural deficiency of bridges (thousands	Pavement condition	Safety	Mobility	Reliability
IDOT	22	I-294/I-57 Interchange Addition	New facility				
IDOT	30	I-290 Eisenhower Reconstruction and Managed Lane	0	33	9	91	92
IDOT	32	I-190 Access Improvements	57	33	12	57	48
IDOT	33	Jane Byrne Interchange Reconstruction	Not evaluated				
IDOT	34	I-55 Add Lanes and Reconstruction	0	23	74	22	40
IDOT	36	Western I-80 Reconstruction and Mobility Improvements	278	46	30	21	18
IDOT	37	I-80 Managed Lanes	0	30	43	23	22
IDOT	146	I-55 Stevenson Managed Lanes	65	29	32	63	62
IDOT	157	I-57 at Eagle Lake Road	New facility				
IDOT	A3	I-55 from Weber Road to US 30; I-55 at Airport/Lockport Road & at IL 126	0	66	32	11	14
IDOT	A4	I-55 - I-80 to US 52 and at IL 59; US 52 - River Road to Houbolt Road	0	66	5	6	2
Tollway	20	Elgin O'Hare Western Access	New facility				
Tollway	21	I-290/IL 53/I-90 Interchange Improvement	0	18	6	72	100
Tollway	23	I-294 Central Tri-State Reconstruction and Mobility Improvements	33	38	1	45	50
Tollway	24	I-290/I-294 Interchange Improvement	Not evaluated				

Table 13. Expressway project 2050 performance

Project submitter	RSP ID	Description	Change in congested vehicle hours traveled (VHT) in region ('000s hours daily)	Change in congested VHT in corridor (1000's hours daily)	Change in regional work trip travel time (minutes)	Change in work trip travel time in corridor (minutes)	Change in job accessibility ('000s)	Change in fatalities and serious injuries per year
IDOT	22	I-294/I-57 Interchange Addition	0.6	0.4	0.01	-0.01	0.0	1.1
IDOT	30	I-290 Eisenhower Reconstruction and Managed Lane	3.1	6.0	-0.09	-0.28	51.5	-2.3
IDOT	32	I-190 Access Improvements	-5.6	-5.5	0.00	-0.01	1.1	0.8
IDOT	33	Jane Byrne Interchange Reconstruction	Not evaluated					
IDOT	34	I-55 Add Lanes and Reconstruction	-10.6	-7.0	0.00	0.03	1.0	-4.5
IDOT	36	Western I-80 Reconstruction and Mobility Improvements	-22.8	-7.1	-0.05	-0.47	2.1	-10.0
IDOT	37	I-80 Managed Lanes	-26.9	-4.6	-0.09	-0.52	11.8	-16.7
IDOT	146	I-55 Stevenson Managed Lanes	-30.9	-11.7	-0.20	-0.56	47.8	-13.4
IDOT	157	I-57 at Eagle Lake Road	-0.3	0.2	0.00	-0.08	-0.4	0.8
IDOT	A3	I-55 from Weber Road to US 30; I-55 at Airport/Lockport Road & at IL 126	-2.8	0.3	-0.01	0.03	2.7	-1.1
IDOT	A4	I-55 - I-80 to US 52 and at IL 59; US 52 - River Road to Houbolt Road	-0.6	-0.7	0.00	-0.02	0.9	0.0
Tollway	20	Elgin O'Hare Western Access	-28.7	-23.1	-0.05	-0.21	8.6	-9.4
Tollway	21	I-290/IL 53/I-90 Interchange Improvement	6.9	-0.5	0.01	0.03	1.0	-5.5
Tollway	23	I-294 Central Tri-State Reconstruction and Mobility Improvements	-24.2	-13.9	-0.07	-0.15	16.4	-8.0
Tollway	24	I-290/I-294 Interchange Improvement	Not evaluated					

Table 14. Expressway project 2050 performance cost-effectiveness

Project submitter	RSP ID	Description	2021 capital cost $M	10 years Incremental operating Cost $M	Dollars per change in congested VHT in region ('000s)	Dollars per change in Congested VHT in corridor ('000s)	Dollars per change in regional work trip travel time $B	Dollars per change in work trip travel time in corridor $B	Dollars change in job accessible in 45 minutes ('000s)
IDOT	22	I-294/I-57 Interchange Addition	50	0.23	NB	NB	NB	5	NB
IDOT	30	I-290 Eisenhower Reconstruction and Managed Lane	3,200	5.2	NB	NB	36	11	62
IDOT	32	I-190 Access Improvements	911	1.1	163	165	NB	91	868
IDOT	33	Jane Byrne Interchange Reconstruction	1	0.3	Not evaluated				
IDOT	34	I-55 Add Lanes and Reconstruction	890	8.8	84	128	NB	NB	914
IDOT	36	Western I-80 Reconstruction and Mobility Improvements	1,131	6.4	50	160	23	2	550
IDOT	37	I-80 Managed Lanes	2,250	7.0	84	491	25	4	191
IDOT	146	I-55 Stevenson Managed Lanes	556	18.4	18	48	3	1	12
IDOT	157	I-57 at Eagle Lake Road	206	0.1	638	NB	NB	3	572
IDOT	A3	I-55 from Weber Road to US 30; I-55 at Airport/Lockport Road & at IL 126	183	0.2	65	NB	18	NB	68
IDOT	A4	I-55 - I-80 to US 52 and at IL 59; US 52 River Road to Houbolt Road	199	4.0	307	277	NB	10	234
Tollway	20	Elgin O'Hare Western Access	666	21.8	23	29	13	3	78
Tollway	21	I-290/IL 53/I-90 Interchange Improvement	326	0.6	NB	717	NB	NB	343
Tollway	23	I-294 Central Tri-State Reconstruction and Mobility Improvements	659	9.0	27	47	9	4	40
Tollway	24	I-290/I-294 Interchange Improvement	388	1.3	Not evaluated				

NB = No Benefit

Table 15. Expressway project planning priorities

Project submitter	RSP ID	Description	Change in congested VHT for heavy trucks in region ('000s daily hours)	Change in congested VHT for heavy trucks in corridor ('000s daily hours)	Freight improvement	Change in greenhouse gas emissions (metric tons/day in 2050)	Change in development pressure in conservation areas (count of new households)	Direct impact on conservation areas	Development pressure in areas at risk of groundwater desaturation (count of new households)	Change in impervious area (acres)	Project use by residents of EDAs (% of VMT)	Change in fine particulate Matter emissions in EDAs (g/day in 2050)	Change in access to low barrier jobs for EDAs (job count)	Economic impact due to industry clustering ($M)	Support of infill development	Benefit to key industries	Benefits to areas with industrial vacancy
IDOT	22	I-294/I-57 Interchange Addition	0.04	0.21	100	-28.1	0	Low	0	0	29	-56	0	$1.5	22	25	33
IDOT	30	I-290 Eisenhower Reconstruction and Managed Lane	-0.79	-0.01	88	-24.7	115	Medium Low	126	49	30	1,071	3,572	$97.1	64	75	75
IDOT	32	I-190 Access Improvements	-0.33	0.00	38	-54.9	145	Medium Low	170	17	8	-134	-13	$9.1	50	91	91
IDOT	33	Jane Byrne Interchange Reconstruction	Not evaluated														
IDOT	34	I-55 Add Lanes and Reconstruction	-1.47	-1.47	89	-4.4	132	Medium High	295	38	3	-569	50	$1.6	5	16	16
IDOT	36	Western I-80 Reconstruction and Mobility Improvements	-5.13	-2.43	100	-96.4	100	Medium	39	52	10	-1,278	130	$6.1	16	33	25
IDOT	37	I-80 Managed Lanes	-1.39	0.40	100	-130.3	97	Medium High	217	53	13	-954	581	$13.9	22	50	58
IDOT	146	I-55 Stevenson Managed Lanes	-1.21	-0.27	100	-34.1	171	High	316	110	23	-927	2,622	$79.0	45	66	66

Project submitter	RSP ID	Description	Change in congested VHT for heavy trucks in region ('000s daily hours)	Change in congested VHT for heavy trucks in corridor ('000s daily hours)	Freight improvement	Change in greenhouse gas emissions (metric tons/day in 2050)	Change in development pressure in conservation areas (count of new households)	Direct impact on conservation areas	Development pressure in areas at risk of groundwater desaturation (count of new households)	Change in impervious area (acres)	Project use by residents of EDAs (% of VMT)	Change in fine particulate Matter emissions in EDAs (g/day in 2050)	Change in access to low barrier jobs for EDAs (job count)	Economic impact due to industry clustering ($M)	Support of infill development	Benefit to key industries	Benefits to areas with industrial vacancy
IDOT	157	I-57 at Eagle Lake Road	-0.31	-0.02	80	-22.6	0	Low	0	0	7	-125	-117	$0.05	5	8	8
IDOT	A3	I-55 from Weber Road to US 30; I-55 at Airport/Lockport Road & at IL 126	-0.50	-0.11	92	-39.2	113	Medium	130	48	6	-385	129	$1.0	16	41	50
IDOT	A4	I-55 - I-80 to US 52 and at IL 59; US 52 - River Road to Houbolt Road	-0.54	-0.21	92	-37.3	139	Low	204	11	5	-178	-33	$0.6	8	0	0
Tollway	20	Elgin O'Hare Western Access	-2.27	-1.57	77	12.7	117	High	184	157	13	300	744	$50.4	50	100	100
Tollway	21	I-290/IL 53/I-90 Interchange Improvement	-0.25	-0.05	87	-79.6	0	Low	0	0	14	-370	15	$0.3	34	58	41
Tollway	23	I-294 Central Tri-State Reconstruction and Mobility Improvements	-3.15	-1.45	100	-23.1	104	High	83	51	10	-1,845	896	$28.1	45	83	83
Tollway	24	I-290/I-294 Interchange Improvement	Not evaluated														

Arterials

Table 16. Arterial project evaluation for today's needs

Project submitter	RSP ID	Description	Structural deficiency of bridges (1000 ft2)	Pavement condition	Safety	Mobility	Reliability
CDOT	152	Elston-Armitage-Ashland-Cortland Intersection Improvement	0	41	32	77	86
CDOT	A2	South Lakefront Improvements	14	44	55	50	45
IDOT	6	IL 31/Front Street	0	33	8	42	27
IDOT	10	IL 60/IL 83	0	66	5	64	67
IDOT	11	IL 62/Algonquin Road	0	47	8	41	39
IDOT	13	IL 83/Milwaukee Avenue	0	20	18	43	49
IDOT	14	IL 131/Green Bay Road	0	14	6	38	21
IDOT	15	IL 173/Rosecrans Road	0	35	13	45	42
IDOT	89	North DuSable Lake Shore Drive Improvements	16	44	27	79	82
IDOT	109	IL 43/Harlem Avenue	0	51	28	66	38
IDOT	110	IL 47	2	28	11	44	31
IDOT	111	IL 83/Kingery Highway	0	18	15	66	68
IDOT	112	US 12/US 20	0	39	79	80	92
IDOT	113	US 20/Lake Street	59	38	41	27	21
IDOT	114	US 45/IL 83/Old Half Day Road	0	22	13	60	39
IDOT	151	CREATE - Central Avenue	0	42	18	75	85
IDOT	158	US 6	0	36	10	33	30
IDOT	159	US 30	0	45	9	45	49
IDOT	160	US 45 and Milburn By-Pass	0	28	3	24	18
IDOT	161	IL 7/143rd Street	0	20	4	50	30
IDOT	162	IL 47	0	33	7	40	26
IDOT	163	IL 56	0	43	7	41	41
IDOT	164	IL 60	0	51	9	38	45
IDOT	166	IL 47	0	37	10	51	34
Will	53	Caton Farm-Bruce Road Corridor	0	27	25	53	54
Will	55	CH 74/Laraway Road	0	20	20	39	26

Table 17. Arterial project planning priorities

Project submitter	RSP ID	Description	GIV impact index	Expected traffic growth (percent)	Project use by residents of EDAs (percent VMT)	Economic impact due to industry clustering	Benefits to key industries	Benefits to areas with industrial vacancy	Freight improvement
CDOT	152	Elston-Armitage-Ashland-Cortland Intersection Improvement	56	8	27	45	96	87	5
CDOT	A2	South Lakefront Improvements	8	14	35	8	88	91	5
IDOT	6	IL 31/Front Street	84	10	3	5	12	29	33
IDOT	10	IL 60/IL 83	52	10	8	6	20	16	27
IDOT	11	IL 62/Algonquin Road	28	10	12	3	68	70	34
IDOT	13	IL 83/Milwaukee Avenue	32	17	8	6	24	25	28
IDOT	14	IL 131/Green Bay Road	16	19	19	1	32	0	28
IDOT	15	IL 173/Rosecrans Road	80	28	7	2	60	54	28
IDOT	89	North DuSable Lake Shore Drive Improvements	48	N/A	21	58	84	83	3
IDOT	109	IL 43/Harlem Avenue	44	13	33	44	80	75	77
IDOT	110	IL 47	92	33	3	3	40	41	27
IDOT	111	IL 83/Kingery Highway	100	5	7	59	100	100	37
IDOT	112	US 12/US 20	24	33	41	4	56	58	67
IDOT	113	US 20/Lake Street	96	16	13	10	92	95	38
IDOT	114	US 45/IL 83/Old Half Day Road	68	11	10	22	64	45	27
IDOT	151	CREATE - Central Avenue	12	30	35	18	52	62	25
IDOT	158	US 6	40	75	15	12	0	8	67
IDOT	159	US 30	36	84	7	3	16	33	29
IDOT	160	US 45 and Milburn By-Pass	0	25	3	0	28	4	26
IDOT	161	IL 7/143rd Street	4	110	6	13	4	12	1
IDOT	162	IL 47	88	51	2	0	72	66	29
IDOT	163	IL 56	60	12	14	6	76	79	27
IDOT	164	IL 60	72	15	10	6	44	37	3
IDOT	166	IL 47	76	86	3	2	48	72	71
Will	53	Caton Farm-Bruce Road Corridor	20	58	12	6	8	20	28
Will	55	CH 74/Laraway Road	64	38	11	7	36	50	27

Project descriptions

Projects are sorted first by transit, expressway, and arterial, and then by project submitter and RSP ID number.

Transit

West Loop Transportation Center Phase I (CDOT, RSP ID# 85)

Project description

This project would improve the existing facilities east of and within Union Station. The project would increase the capacity within the existing footprint of the station by creating new platforms and tracks, and repurposing inactive tracks and platforms. It also expands the passenger-carrying capacity of existing platforms by reconfiguring the station's internal spaces to increase passenger capacity and creating the capability to through-route some intercity trains.

West Loop Transportation Center Phase II (CDOT, RSP ID# 88)

Project description

This project would construct the West Loop Subway component of the West Loop Transportation Center. This project would include a new underground transitway along Clinton and/or Canal streets with key transfer stations located between the Eisenhower Expressway and Lake Street in Chicago. The subway may also include multiple levels or alignments within the West Loop area to accommodate additional tracks and platforms for inter-city and/or commuter trains.

South Lakefront-Museum Campus Access Improvement (CDOT, RSP ID# 104)

Project description

This project would add new access points and stations to the existing McCormick Place Busway, transforming it into the South Lakefront Busway. The project also considers alternatives for linking Museum Campus institutions with each other, as well as CTA's Red and Green Lines, the proposed South Lakefront Busway, and the rapidly redeveloping Cermak Road corridor that extends from McCormick Place to Motor Row and Chinatown. CTA bus routes #2, #6, #J14, #26, and #28 are expected to use the McCormick Place Busway.

Ashland-Ogden Metra Infill Station (CDOT, RSP ID# 153)

Project description

This will construct a new Metra station between Ashland and Ogden avenues, serving the UP-W, MD-N, MD-W, and NCS lines, as well as potentially Amtrak.

O'Hare Airport Express Service (CDOT, RSP ID# A1)

Project description

Express train service between O'Hare International Airport and Chicago's central business district. As currently envisioned, this would be constructed and operated by a private entity but neither the exact scope of service nor the alignment have been determined.

Red Line Extension (South) (CTA, RSP ID# 57)

Project description

The CTA Red Line Extension Project will extend the Red Line south from the 95th Street terminal to the vicinity of 132nd Street in Chicago. The proposed 5.6-mile heavy rail extension will include four new stations near 103rd Street, 111th Street, Michigan Avenue, and 130th Street. Multimodal connections at each station would include bus, bike, pedestrian, and park and ride facilities. The project also would include a new railyard and shop near 120th Street. The project is a major component of CTA's Red Ahead program, a comprehensive initiative for maintaining, modernizing, and expanding Chicago's most traveled rail line.

Red Purple Modernization Phase One (CTA, RSP ID# 58)

Project description

The Red Purple Modernization Phase One project will expand capacity along the CTA's Red and Purple heavy rail lines. The project includes several elements that will allow CTA to expand service in the corridor. The Lawrence to Bryn Mawr Modernization (LBMM) will modernize, expand, and strengthen ADA accessibility at four Red Line stations (Lawrence, Argyle, Berwyn, and Bryn Mawr). The LBMM project will reconstruct six miles of track and structure from Leland Avenue on the south to near Ardmore Avenue on the north. The Red-Purple Bypass (RPB) will construct a grade-separated bypass for the Brown Line at Clark junction, just north of the Belmont station. This would remove the largest physical capacity constraint in the RPM corridor, where three separate services on six tracks merge onto four tracks. This work also will realign and replace approximately 1.4 miles of associated mainline (Red and Purple line) tracks from Belmont station on the south to the stretch of track between Newport and Cornelia avenues on the north. This work would increase speed, reliability, and capacity in the project corridor. Work also includes a new signal system from Belmont to Howard, covering over 23 miles of track. This new signal system would allow for increased throughput of trains and increased reliability of operation, as well as a pre-stage work and upgrades to the Broadway substation.

Red Purple Modernization Future Phases (CTA, RSP ID# 58)

Project description

This project would continue the modernization and expansion of the Red and Purple Lines, from the Addison to Sheridan stations and from the Thorndale to Linden stations. Work would include reconstructing track, structures, viaducts, expanded stations and platforms, and adding ADA accessibility. This phase may also include addressing capacity constraints at Howard Yard, construction of infill power substations (based on power needs), and other related infrastructure improvements within the corridor. The project will seek funding from the federal Core Capacity program.

Blue Line Forest Park Reconstruction (CTA, RSP ID# 93)

Project description

This project would reconstruct the Forest Park branch of the Blue Line. It includes full modernization of existing infrastructure, rehabilitation of all track and ballast, ADA accessibility and modernization of stations, and upgrades to power systems and future capacity increases. The project will reconstruct and reconfigure the Forest Park terminal and yard. The Forest Park Branch Program will be delivered in phases. The first phase is funded ($360,992,660). It includes track work (subway portal to IMD), Racine station, and the Hermitage substation.

Ashland Ave BRT (CTA, RSP ID# 106)

Project description

This project would construct a Bus Rapid Transit line in the Ashland Avenue corridor between Irving Park Road and 95th Street.

South Halsted BRT (CTA/Pace, RSP ID# 108)

Project description

This project would add Bus Rapid Transit service or other bus improvements to the Halsted corridor between the 79th Street Red Line station and the Harvey Transportation Center.

Blue Line Core Capacity (CTA, RSP ID# 147)

Project description

This project will use results from a comprehensive planning study that will recommend a package of capacity improvements for CTA's Blue Line from the Forest Park terminal to the O'Hare terminal. This package will be intended to meet Core Capacity CIG requirements. Work may include rehabilitating stations and platforms to allow for longer trains, upgrading ADA accessibility, identifying turnback locations or storage tracks to allow for feeder trains, modifying track geometry, upgrading power systems, reconfiguring and reconstructing the rail yard and shop, modifying signal systems, and enhancing other technology to improve operations. Upgrades to existing infrastructure based on current condition may be recommended, if required, even if it does not meet Core Capacity requirements.

Brown Line Core Capacity (CTA, RSP ID# 165)

Project description

The project would address capacity issues on the Brown Line that have emerged since the Brown Line Capacity Expansion project was completed in 2009. It would add capacity by reconstructing the yard and shop, reconfiguring the Kimball terminal, constructing new turnback track west of the Western Brown Line station, reconstructing tight radius curves, and upgrading signal and power systems. Additional state of good repair projects could be coupled with this project (but are not included in this estimate and are not eligible for federal 5309 Core Capacity funds).

BNSF Extension-Oswego/Plano (Kendall County, RSP ID# 71)

Project description

This project would extend Metra BNSF service from its current terminus in Aurora to Oswego in Kendall County. Preliminary engineering and environmental analysis have been initiated. It has been exempted from the New Starts evaluation process by federal action. The project involves an extension of RTA service since Kendall County falls outside of RTA's service area. Project financing requires special attention as a result. Metra has identified Kendall County as the sponsor for this project. The total cost is dependent on the final stop and several other variables that will be determined as the engineering work continues.

UP Northwest Line Extension (Metra, RSP ID# 66)

Project description

This project would extend the Union Pacific Northwest line to Johnsburg in McHenry County, improve signals and tracks, and add two infill stations at Prairie Grove and the eastern side of Woodstock, as well as new coach yards in Woodstock and Johnsburg.

SouthWest Service Improvements / 75th St CIP Elements (Metra, RSP ID# 67)

Project description

This project, which is part of the CREATE 75th Steet Corridor Improvement Project, would allow Metra's SouthWest Service to move from Union Station to the LaSalle Street station. This change would increase the frequency of service on the SouthWest Service line. The project would also construct a new track that improves reliability and reduces operational conflicts.

UP North Line Improvements (Metra, RSP ID# 68)

Project description

This project would install additional crossovers and track improvements, construct an outlying coach yard, upgrade existing stations for increased capacity, construct a new station at Peterson Avenue, and improve the existing UP-N Hubbard Woods station.

UP West Line Improvements (Metra, RSP ID# 69)

Project description

This project would construct a third mainline track for segments that are double tracked. It also would upgrade the signal system, enhance safety through various improvements, and add new crossovers.

Rock Island Line Improvements (Metra, RSP ID# 70)

Project description

This project would construct a third mainline track to the nine-mile, double-track portion between Gresham junction and a point north of the 16th Street junction. The project builds on the CREATE P12 Project, a rail flyover that eliminates the conflict between Metra trains and freight and Amtrak trains.

BNSF Line Improvements (Metra, RSP ID# 72)

Project description

This project would improve tracks, signals, and other elements along the BNSF Line to support growth in ridership and upgrades to the capacity of the line.

Milwaukee District West Line Improvements (Metra, RSP ID# 79)

Project description

This project would improve tracks, signals, and other elements along the Milwaukee District West Line to support increased capacity.

A-2 Crossing (Metra, RSP ID# 98)

Project description

This project would build a flyover to replace the A2 Crossing near Western Avenue and Kinzie Street between Union Pacific and Milwaukee District tracks. The rebuilt flyover will help reduce conflicts between Metra's Milwaukee District North, Milwaukee District West, North Central Service, and Union Pacific West trains. It also will help passengers save travel time.

Metra Milwaukee Corridor Improvements (Metra, RSP ID# 156)

Project description

This project would provide a direct, high-quality transit link between downtown Chicago and O'Hare, the region's busiest airport. This would involve portions of new dedicated track to best serve the growth in the express and local markets. Metra is studying this project to refine the scope, costs, and benefits.

Pulse-ART Expansion – Near Term (Pace, RSP ID# 102)

Project description

This project would expand the Pulse Network (Arterial Rapid Transit) at various locations. Pace currently operates the Milwaukee Line and is in the process of implementing the Dempster Line. Other expansions include the Halsted and 95th Street Lines, both currently in the environmental review phase of the project development process, with engineering design and construction funding for the 95th Street Line anticipated through the CMAQ program. More information on the Halsted Line is included separately in the South Halsted Bus Enhancements project (Pace, RSP ID# 154). The Cermak Line is planned as the next Pulse corridor to advance. Other existing and potential Near-Term Priority Pulse corridors such as Harlem Avenue and North Avenue are currently being evaluated by Pace and will be identified in future updates to the RSP list as applicable.

South Halsted Bus Enhancements (Pace, RSP ID# 154)

Project description

This project would expand the Pulse Network (Arterial Rapid Transit). Pace and CTA are coordinating on the South Halsted Bus Corridor Enhancement project, an 11-mile corridor along South Halsted Street between 79th Street in Chicago and Pace's Harvey Transportation Center. It includes both 79th and 95th streets between Halsted Street and the CTA Red Line. This corridor is shared by CTA and Pace bus service between 95th Street and 127th Street in Chicago. CTA solely provides service north of 95th Street along the corridor, while Pace solely provides service south of 127th Street. Project improvements include the construction of the Pulse Halsted Line, CTA bus station improvements north of 95th Street, queue jumps and bus-only lane segments, CNG-powered Pulse buses, and transit signal upgrades within Chicago.

Transit signal priority (TSP) locations at suburban intersections is being pursued separately through an RTA regional TSP grant.

I-294 Tri-State Express Bus Stations (Pace, RSP ID# 155)

Project description

This project will construct two new in-line bus rapid transit stations along the 1-294 Tri-State Tollway at various locations, including: O'Hare oasis in Schiller Park, south of Irving Park Road and east of Mannheim Road; and just north of Cermak Road in Oak Brook at the former toll plaza facility. Improvements include new bus shelters, platforms, transfer opportunities to local Pace fixed route services, passenger amenities, and pedestrian infrastructure and ADA upgrades, as well as connections to a new Pace Express service proposed along the Tri-State corridor. Additional improvements at the Cermak Road location in Oak Brook include bus-only ramps, platforms a park-and-ride lot, and a pedestrian bridge spanning the tollway, as well as potential connections to the Pulse Cermak and/or Roosevelt Lines. At the O'Hare oasis location, buses would use the existing ramps and passengers may benefit from a pedestrian bridge planned by the Illinois Tollway Authority. Total project cost on this sheet includes additional facility upgrades currently being considered in this corridor. The costs are being finalized as coordination with the Tollway on this project and the proposed station designs continues.

Expressway

I-290 Managed Lane (IDOT, RSP ID# 30)

Project description

This project would reconstruct and modernize the I-290 (Eisenhower Expressway) from the I-88 interchange to Racine Avenue. The project includes an express toll lane from Mannheim Road to Racine Avenue and coordination with the Forest Park Blue Line reconstruction project.

I-190 Access Improvements (IDOT, RSP ID# 32)

Project description

This project consists of reconfiguring arterial access to I-190 and O'Hare International Airport to improve mobility and reduce collisions, as well as ultimately reconstruct and add capacity to mainline I-190.

Jane Byrne Interchange (IDOT, RSP ID# 33)

Project description

This project would reconstruct and modernize the Jane Byrne Interchange (interchange of I-90/I-94 with I-290). While mostly involving reconstruction, the project would add capacity in the form of an additional lane on the east-north and north-west ramps, as well as three new flyovers. A new through-lane also will be added on I-90/I-94 through the interchange.

I-55 Add Lanes and Reconstruction (IDOT, RSP ID# 34)

Project description
This project would reconstruct I-55, add a lane in each direction, and improve interchanges through western Will County from the I-80 interchange south to Coal City Road.

I-57 Add Lanes (IDOT, RSP ID# 35)

Project description
This project would reconstruct I-57 and interchanges from I-80 to the Kankakee County border.

I-80 Add / Managed Lanes (IDOT, RSP ID# 36)

Project description
This project would add a lane to I-80 through southwestern Cook and Will counties from Ridge Road to U.S. Route 30.

I-80 Managed Lanes (IDOT, RSP ID# 37)

Project description
This project would add a managed lane in each direction to the existing six-lane cross section between U.S. Route 30 and I-294.

I-94 Bishop Ford Expressway (IDOT, RSP ID# 135)

Project description
This project would reconstruct the Bishop Ford Expressway (I-94), including interchanges, from I-57 to U.S. Route 6, and implement bus on shoulders, and add auxilliary lanes from I-57 to Stoney Island.

I-90/1-94 Kennedy and Dan Ryan Expressways (IDOT, RSP ID# 136)

Project description
This project would reconstruct the Kennedy and Dan Ryan Expressways (I-90/I-94) from Hubbard Street to 31st Street. The work would include widening the road for managed lanes, reconstructing and widening Hubbards Cave, reconstructing interchanges, and replacing bridges.

I-55 Stevenson Expressway (IDOT, RSP ID# 137)

Project description

This project on I-55 would reconstruct all general purpose lanes from Lake Shore Drive to I-80; rehabilitate pavement on managed lanes; add lanes from Lake Shore Drive to I-90/I-94; add an auxiliary westbound lane from I-355 to Illinois Route 53; reconstruct I-90 and I-294 interchanges; allow buses on shoulders south of I-355 to Illinois Route 126; and preserve various other interchanges.

I-90 Kennedy Expressway (IDOT, RSP ID# 138)

Project description

This project on I-90, from Jane Adams tollway to the I-94 merge, would add managed lanes, reconstruct the road, reconstruct and preserve interchanges, and reconstruct bridges.

I-94 Edens Expressway (IDOT, RSP ID# 139)

Project description

This project on I-94, from the tollway spur to Lawrence Avenue, would reconstruct the road, widen and convert bus-on-shoulder lanes to managed lanes, reconstruct and replace bridges, and reconstruct and preserve service interchanges.

I-90/I-94 Kennedy Expressway (IDOT, RSP ID# 140)

Project description

This project on I-90/I-94, from the Edens junction to Hubbard Street, would convert express lanes to managed lanes, and reconstruct the road and service interchanges.

I-290/IL-53 (IDOT, RSP ID# 141)

Project description

This project would reconstruct I-290 and Illinois Route 53 from I-88 to Lake Cook Road. It includes widening the road for auxiliary lanes southbound from Illinois Route 390 to I-355 and from Illinois Route 56 to South York Street. It also would reconstruct interchanges and bridges.

I-57 (IDOT, RSP ID# 142)

Project description

This project would reconstruct I-57 from I-94 to I-80 and add lanes from 95th Street to 111th Street. It also would allow for bus on shoulder implementation and reconstruct interchanges.

I-55 Stevenson Managed Lane (IDOT, RSP ID# 146)

Project description

The project would add managed lanes within the existing median of I-55 between I-90/I-94 and I-355. The corridor is anticipated to include Intelligent Transportation Systems (ITS), which would help manage congestion.

I-57 at Eagle Lake Road (IDOT, RSP ID# 157)

Project description

This project will construct a new full interchange at Illinois Route 57 and Eagle Lake Road to improve accessibility.

I-55 from Weber Road to US 30; I-55 at Airport/Lockport Rd & at IL 126 (IDOT, RSP ID# A3)

Project description

This project would improve access to I-55 by reconstructing and transforming the partial interchange at Illinois Route 126 to a full interchange. It also would construct a new interchange at Airport Road/Lockport Street and make ancillary improvements. The interchanges at Illinois Route 126 and Airport/Lockport are separated by approximately two miles.

I-55 - I-80 to US 52 (Jefferson St) and at IL 59; US 52 Jefferson St - River Rd to Houbolt Rd (IDOT, RSP ID# A4)

Project description

This project would improve regional mobility and provide better local interstate access. The portion of the project involving I-55, from I-80 to U.S. Route 52, would convert a partial interchange to a full-access interchange at I-55 and Illinois Route 59. This work would include a new structure over I-55 and add auxiliary lanes from Route 59 to U.S. Route 52. The portion of the project involving Route 52, from River to Houbolt roads, includes reconstruction, bridge widening and repair, widening pavement, and adding turn and through lanes.

Elgin O'Hare Western Access (Tollway, RSP ID# 20)

Project description

This project would provide a new, limited-access facility to reduce congestion and improve access to O’Hare International Airport. The project includes three main components. It would reconstruct and widen the existing Elgin-O'Hare Expressway (Illinois Route 390). It would extend the expressway east to O'Hare. It also would add an expressway around the western side of O'Hare from I-90 to I-294 (the western bypass). All three components would be tolled.

I-290/IL 53 Interchange Improvement (Tollway, RSP ID# 21)

Project description

This project would reconfigure the existing system interchange to alleviate the bottleneck between I-290/Illinois Route 53 and I-90.

I-294/I-57 Interchange Addition (IDOT, RSP ID# 22)

Project description

This project would construct a full-access interchange between I-294 and I-57, improve accessibility to and from the south suburbs, and improve north-south regional travel. The project has been divided into two phases. The first phase involves constructing new ramps to connect northbound I-57 to northbound I-294 and southbound I-294 to southbound I-57. It also would construct an entrance and exit ramp from I-294 to 147th Street. The second phase of the project involves the remaining interchange connections.

I-294 Central Tri-State Mobility Improvements (Tollway, RSP ID# 23)

Project description

This project would reconstruct and improve the Central Tri-State from Balmoral Avenue to 95th Street. The project would upgrade pavement, integrate flex lanes, implement SmartRoad technology, widen roads where needed, and reconfigure the interstate interchanges. It also potentially could add local access interchanges, as well as add barriers to reduce noise, improve stormwater management, and better accommodate truck and freight activity. This project would bring the corridor into a state of good repair.

I-290/I-294 Interchange Improvement (Tollway, RSP ID# 24)

Project description

This project would reconfigure the existing system interchange between I-290 and I-294.

Arterial

Elston-Armitage-Ashland-Cortland Intersection Improvement (CDOT, RSP ID# 152)

Project description

This project will realign Elston Avenue to the Mendell Street right-of-way. This will increase intersection spacing to improve traffic safety and capacity for all modes. The project will relocate one existing railroad viaduct over Elston and replace and expand two existing railroad viaducts over Armitage Avenue. It also will build an Armitage Avenue bridge over North Branch to strengthen the street grid and improve traffic safety and circulation in this congested area.

South Lakefront Improvements (CDOT, RSP ID# A2)

Project description

The project would involve closing certain road segments and improving others. Improvements include adding a southbound travel lane on South DuSable Lake Shore Drive from 57th Drive to Hayes Drive. Specifically, the project will remove sections of Cornell Drive, Midway Plaisance, and Marquette Drive. It would add capacity on Stony Island Avenue, DuSable Lake Shore Drive, and small remaining sections of Cornell and Midway. The project's bicycle and pedestrian improvements include new and improved trails, pedestrian refuge islands and curb extensions, and five new underpasses. Transit improvements include bus stop relocation and consolidation, bus bulbs, and traffic signal modernization to allow for future implementation of interconnected signals or transit signal priority.

IL-31 Front Street (IDOT, RSP ID# 6)

Project description

This project would add lanes to Illinois Route/Front Street from Illinois Route 120 to Illinois Route 176.

IL-60 (IDOT, RSP ID# 10)

Project description

This project would add lanes to Illinois Route 60, from Illinois Route 176 to the CN Railroad tracks. It also would create a grade separation, dettaching Illinois Route 60 from the railroad tracks.

IL-62/Algonquin Road (IDOT, RSP ID# 11)

Project description

This project would add lanes to Illinois Route 62/Algonquin Road from Illinois Route 125 Illinois Route 68.

IL-83/Barron Boulevard (IDOT, RSP ID# 13)

Project description

This project would add lanes to Illinois Route/Barron Boulevard from Petite Lake Road to Ilinois Route 120/Belvidere Road.

IL-131/Greenbay Road (IDOT, RSP ID# 14)

Project description

This project would add lanes to Illinois Route 131/Green Bay Road from Russell Road to Sunset Avenue.

IL-173/Rosecrans Road (IDOT, RSP ID# 15)

Project description

This project would add lanes to Illinois Route 173/Rosecrans Road from Illinois Route 59 to U.S. Route 41/Skokie Highway.

North DuSable Lake Shore Drive Reconstruction (IDOT, RSP ID# 89)

Project description

This project would reconstruct U.S. Route 14/DuSable Lake Shore Drive from Hollywood Avenue to Grand Avenue. The project could will improve safety and make it easier for all users to reach neighboring communities. This well-traveled corridor also has high bus transit ridership and provides a key travel facility for bicyclists and pedestrians. The corridor is limited in size, making high quality transit options with enough capacity essential. This project will ensure the corridor can accommodate growing travel demand now and in to the future.

IL-43/Harlem Avenue (IDOT, RSP ID# 109)

Project description

This project would separate Illinois Route 43 from the BRC Railroad tracks at 65th Street.

IL-47 (IDOT, RSP ID# 110)

Project description

This project would add lanes to Illinois Route 47, north of Charles Road, to U.S. Route 14. It also would improve and replacetheUP Railroad bridge.

IL-83/Kingery Highway (IDOT, RSP ID# 111)

Project description

This project would add lanes to Illinois Route 83 from 31st Street to 55th Street, as well assouth of 63rd Street to south of Central Avenue.

US-12/95th Street (IDOT, RSP ID# 112)

Project description

This project would improve the intersection of U.S. Route 12/95th Street and Stony Island Avenue. It will relcoate bridge and railroad tracks.

US-20/Lake Street (IDOT, RSP ID# 113)

Project description

This project would reconstruct U.S. Route/Lake Street, west of Randall Road to east of Shales Parkway. The project involves replacing bridges and improving safety and intersections.

US-45/Olde Half Day Road (IDOT, RSP ID# 114)

Project description

This project would add lanes to U.S. Route 45/Olde Half Day Road from Illinois Route60/Townline Road to Illinois Route 22/Half Day Road.

Central Avenue (IDOT, RSP ID# 151)

Project description

This project would separate Central Avenue from the Belt Railway of Chicago tracks at 54th Street. The project is GS2 in the CREATE program.

US 6 from I-55 to US 52 (IDOT, RSP ID# 158)

Project description

This project will increase the capacity of U.S. Route 6 from I-55 to U.S. Route 52.

US 30 from IL 47 to Albright Road (IDOT, RSP ID# 159)

Project description

This project will add lanes and reconstruct existing ones on U.S. Route 30 from Illinois Route 47 to Albright Road. The bridge also will be replaced.

US 45 and Milburn By-Pass from IL 173 to IL 132 (IDOT, RSP ID# 160)

Project description

This project will add lanes and reconstruct existing ones on U.S. Route 45, north of Milburn Bypass to north of Illinois Route 173.

IL 7/l43rd Street from Will-Cook Line to IL 7/Southwest Highway (IDOT, RSP ID# 161)

Project description

This project will reconstruct Illinois Route 7 (143rd Street) from the Will-Cook line to Illinois Route 7 (Southwest Highway).

IL 47 from south of I-90 to south of Old Plank Road (IDOT, RSP ID# 162)

Project description

This project will add lanes and reconstruct existing ones on Illinois Route 47, south of I-90 to south of Plank Road.

IL 56 from Kirk Road to IL 59 (IDOT, RSP ID# 163)

Project description

This project will add lanes and reconstruct existing ones on Illinois Route 56 (Butterfield Road) from Illinois Route 25 to Illinois Route 59 (Joliet Road)..

IL 60 from IL 120 to IL 176 (IDOT, RSP ID# 164)

Project description

This project will add lanes and reconstruct existing ones on Illinois Route 60 from Illinois Route 120 (Belvidere Road) to Illinois Route 176.

IL 47 from Cross Street to Kennedy Road (IDOT, RSP ID# 166)

Project description

This project will add lanes and reconstruct existing ones on Illinois Route 47 from Cross Street to Kennedy Road.

Caton Farm-Bruce Road Corridor (Will County, RSP ID# 53)

Project description

This project will address a new east/west corridor within north central Will County. The work involves upgrading existing roads and adding and aligning new roads. Improvements include adding a new crossing over the Des Plaines River Valley, adding and upgrading a dozen signals, and creating a number of new structures.

Laraway Road (Will County, RSP ID# 55)

Project description

This project would add lanes to Laraway Road from U.S. Route 52 to Harlem Avenue.

Appendix A. Evaluation measure details

Addressing today's needs: Transit

Asset condition

Transit asset condition is measured using the Federal Transit Administration's (FTA) asset condition scale (**Table A1**). The score for a project is the value-weighted average for the assets that will be improved or replaced as part of the project. Projects that do not have a state-of-good-repair element receive a score of "N/A." Data comes from transit agencies.

Table A1. FTA condition scale

Rating	Condition	Description
Excellent	4.8—5.0	No visible defects, near-new condition
Good	4.0—4.7	Some slight defective or deteriorated components
Adequate	3.0—3.9	Moderately defective or deteriorated components
Marginal	2.0—2.9	Defective or deteriorated components in need of replacement
Poor	1.0—1.9	Seriously damaged components in need of immediate repair

Capacity constraint

There are several ways to measure capacity, including line capacity, signal capacity, electrical system capacity, etc. While all these measures are important, passenger capacity utilization is the most straightforward to estimate and align with FTA Core Capacity requirements. Capacity is only considered for rail projects in the context of ON TO 2050. Bus route capacity tends to be more limited by roadway capacity, which is addressed through improvement projects, such as adding lanes, or through operational treatments, such as transit signal priority. Bus route capacity, therefore, is not a driver of major transit capital project selection.

FTA considers commuter rail to be over capacity when cars are 95 percent full. Consequently, rail lines that frequently carry over-capacity trains are considered to have the highest need for capacity improvements. For example, in **Figure A1** below, BNSF has six trains a day with over 95 percent capacity. Metra lines were ranked based on relative capacity need using information from 2019.

Figure A1. Metra capacity utilization

Capacity Utilization of Peak Period/Peak Direction Trains

	% CAP UTIL		Distribution of December 2019 Trains by Capacity Utilization					
	2018	2019	0-49.9	50-74.9	75-89.9	90-94.9	95+	TOTAL
BNSF	73.1%	65.9%	11	27	12	0	6	56
Elec-Main	48.8%	46.2%	26	16	0	0	0	42
Elec-Blue Island	30.4%	23.3%	13	0	0	0	0	13
Elec-So. Chicago	30.8%	27.8%	13	0	0	0	0	13
Heritage	56.0%	52.3%	3	3	0	0	0	6
Milw-N	63.0%	56.0%	10	14	2	0	0	26
Milw-W	60.6%	54.1%	10	16	1	0	0	27
NCS	54.8%	51.7%	5	4	0	0	0	9
Rock Island	56.6%	48.2%	19	16	1	0	0	36
SWS	65.2%	56.2%	2	9	0	0	0	11
UP-N	80.6%	76.8%	4	7	15	1	3	30
UP-NW	78.6%	71.5%	2	16	10	5	0	33
UP-W	68.8%	61.3%	8	12	7	0	0	27
SYSTEM*	64.9%	58.5%	126	140	48	6	9	329
% OF TOTAL			38.3%	42.6%	14.6%	1.8%	2.7%	100%

Source: Capacity Utilization of Trains: Commuter Rail System, December 2019.

Heavy rail utilization is measured by the FTA and based on usable space per passenger. Table 21 of the CTA's System Wide Rail Utilization and Capacity Analysis[4] provides the number of passengers relative to vehicle capacity (which is like usable space per passenger) at each hour of the day. The most congested period for each train was used to rank the magnitude of capacity constraint on CTA rail.

[4] Chicago Transit Authority, "System Wide Rail Capacity Study," 2017, https://www.transitchicago.com/assets/1/6/RP_CDMSMITH_RCM_Task2AExecutiveSummary_20170628_FINAL.pdf.

Figure A2. Chicago Transit Authority rail capacity utilization

	HOUR																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Blue Line																							
To O'Hare	0.16	0.16	0.24	0.19	0.33	0.43	0.55	0.39	0.23	0.31	0.35	0.44	0.48	0.58	0.59	0.69	0.65	0.61	0.49	0.44	0.33	0.44	0.35
To Forest Park	0.12	0.17	0.20	0.28	0.50	**0.89**	**0.99**	**0.98**	0.71	0.57	0.52	0.50	0.50	0.49	0.35	0.47	0.46	0.34	0.34	0.30	0.26	0.41	0.25
Red Line																							
To Howard	0.26	0.16	0.23	0.43	0.38	0.55	0.79	0.65	0.38	0.41	0.46	0.50	0.56	0.73	0.69	**0.92**	**0.88**	**0.91**	0.62	0.59	0.47	0.38	0.43
To 95th	0.18	0.09	0.10	0.32	0.32	0.73	**0.94**	**0.90**	0.72	0.52	0.50	0.53	0.51	0.54	0.68	**0.99**	0.77	0.48	0.42	0.41	0.43	0.32	0.36
Brown Line																							
To Kimball	0.15	0.00	0.00	0.11	0.08	0.15	0.30	0.27	0.18	0.24	0.40	0.49	0.64	0.56	0.48	0.68	**1.10**	0.71	0.41	0.35	0.52	0.38	0.42
To Loop	0.02	0.00	0.00	0.10	0.35	**1.12**	**1.03**	0.57	0.36	0.53	0.45	0.43	0.49	0.20	0.25	0.18	0.32	0.20	0.15	0.21	0.22	0.22	0.12
Purple Line																							
To Linden	0.00	0.00	0.00	0.00	0.30	0.32	0.40	0.43	0.20	0.15	0.27	0.22	0.29	0.21	0.37	**1.17**	**1.16**	0.68	0.40	0.17	0.33	0.00	0.18
To Howard/Loop	0.00	0.00	0.00	0.00	0.37	0.57	**1.06**	0.45	0.14	0.12	0.19	0.19	0.22	0.36	0.39	0.37	0.48	0.24	0.17	0.15	0.20	0.16	0.13
Green Line																							
To Harlem	0.00	0.00	0.00	0.12	0.33	0.45	0.82	0.74	0.47	0.42	0.46	0.53	0.58	0.64	0.68	0.84	0.83	0.56	0.48	0.40	0.42	0.35	0.27
To 63rd	0.03	0.00	0.00	0.09	0.21	0.37	0.66	0.59	0.54	0.39	0.37	0.40	0.46	0.30	0.36	0.75	0.43	0.37	0.30	0.30	0.18	0.26	0.15
Orange Line																							
To Loop	0.02	0.00	0.00	0.35	0.40	0.58	**0.87**	0.65	0.38	0.52	0.43	0.46	0.54	0.23	0.28	0.17	0.16	0.14	0.12	0.14	0.18	0.11	0.06
To Midway	0.20	0.00	0.00	0.29	0.32	0.65	0.53	0.39	0.18	0.22	0.34	0.46	0.58	0.46	0.60	0.85	0.71	0.53	0.45	0.60	0.66	0.59	0.41
Pink Line																							
To Loop	0.00	0.00	0.00	0.20	0.47	0.76	**0.89**	0.73	0.46	0.47	0.46	0.46	0.48	0.48	0.65	0.57	0.38	0.23	0.22	0.11	0.11	0.13	0.09
To 54th/Cermak	0.00	0.00	0.00	0.10	0.13	0.24	0.57	0.44	0.29	0.23	0.32	0.43	0.41	0.57	0.68	0.71	0.67	0.53	0.36	0.33	0.34	0.34	0.31
Yellow Line																							
To Dempster	0.00	0.00	0.00	0.08	0.04	0.13	0.19	0.33	0.22	0.22	0.20	0.27	0.24	0.18	0.24	0.39	0.63	0.65	0.44	0.33	0.33	0.41	0.26
To Howard	0.00	0.00	0.00	0.00	0.18	0.35	0.47	0.40	0.21	0.17	0.19	0.20	0.19	0.12	0.16	0.28	0.34	0.23	0.12	0.11	0.12	0.09	0.01

Source: Chicago Transit Authority System Wide Rail Utilization and Capacity Analysis*,* November 2016.

Note: Projects are matched to the utilization of the line with the maximum capacity constraint. For example, moving the Metra SouthWest Service (SWS) to LaSalle Street station would impact all trains on the congested south concourse of Union Station. While this project is on the SWS infrastructure, it would receive a higher value for its impact on the capacity of the BNSF.

In the project evaluation, the capacity utilization on the line is provided both in raw form (ratio of passenger utilization to capacity for CTA and the number of trains per day with more than 95 percent of seats occupied for Metra), as well as in the following rescaled form. The data available for each mode was used to set relative need on a 10-point scale, with "10" having the highest passenger capacity utilization and "0" having no capacity issues. Most lines with current capacity issues would be scored between 1 and 9, as shown in the table below. No line received a score of 10 to accommodate future ridership growth or revised data from the operators. Rail lines not listed would receive a score of 0, indicating they do not have passenger utilization issues.

Table A2. Need scoring for capacity utilization

	Metra		CTA	
Score	**# Trains with >95% seats occupied per day**	**Lines**	**Passenger Utilization Ratio**	**Lines**
10	10		1.20	
9	9		1.15	Purple
8	8		1.10	Brown
7	7		1.05	
6	6	BNSF	1.00	Red, Blue
5	5		0.95	
4	4		0.90	
3	3	UP-N	0.85	Pink, Orange
2	2		0.80	Green
1	1		0.75	
0	0	All other	<0.75	Yellow

Source: Chicago Metropolitan Agency for Planning analysis based upon Metra and CTA rail capacity utilization data.

Reliability

For Metra rail, the latest published on-time report is used. For CTA rail, agency information on headway adherence is used. Pace Suburban Bus also provided on-time route statistics which were referenced for locations where projects were proposed.

Addressing existing ADA deficiency

This measure indicates if an existing ADA deficiency is significantly reduced or resolved because of a project. The measure is either "Yes" or "No." For example, a reconstruction project that rebuilt a rail line and several stations would be rated as "Yes" because ADA non-compliant stations would be upgraded during the reconstruction with improvements such elevators. Extension projects and new service do not address an existing deficiency regardless of their design and are categorized as "No." BRT and ART projects that significantly improve station boarding and information access are rates as "Yes."

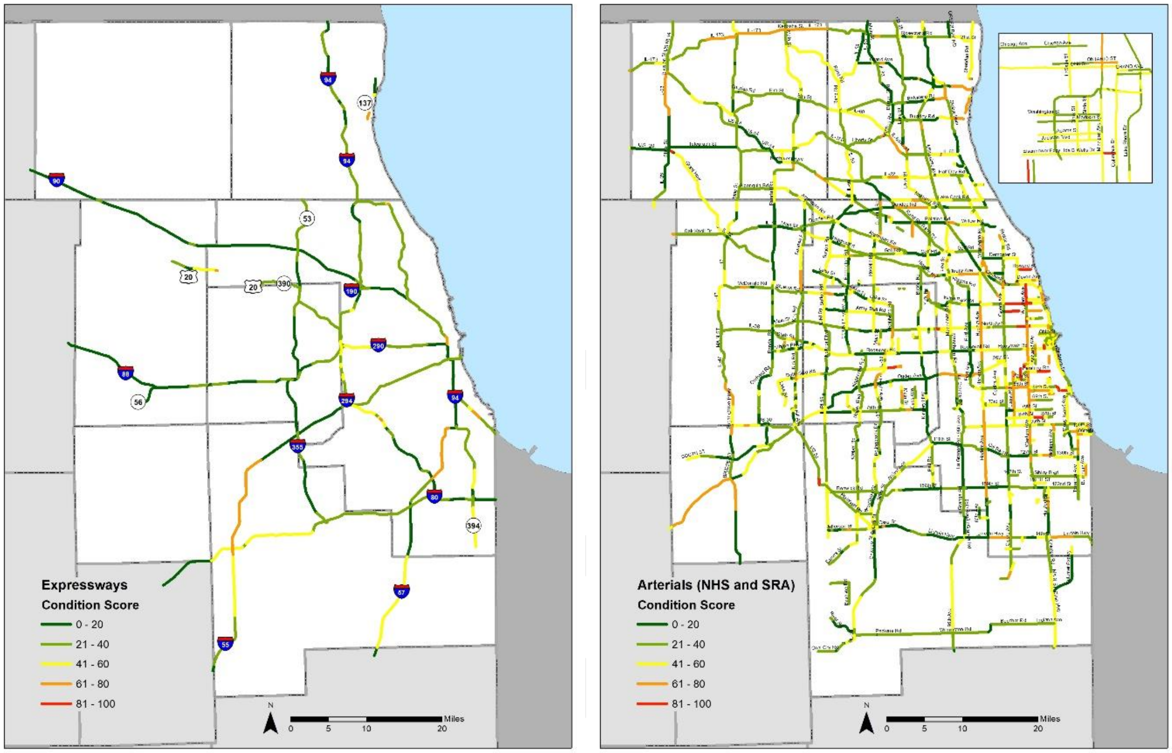
Addressing today's needs – Highways

Pavement condition

For expressways and arterials, condition is assessed based on information about the International Roughness Index (IRI) and the Condition Rating System (CRS) available from the Illinois Roadway Information System (IRIS). IRI measures ride quality while CRS is a more holistic measure of condition. CRS was rescaled from 1 – 9 to 100 – 0, while IRI was rescaled 100 – 0 using the 95th percentile as the maximum. The resulting condition need score is weighted as

(0.8 * CRS score) + (0.2 * IRI score). The project score is the lane-mileage weighted average of the scores of the segments included in the project. A higher number indicates worse condition and more need. Both the expressway and arterial measures are shown in Figure A3.

Figure A3. Expressway condition score (left) and arterial pavement condition score (right)



Source: Chicago Metropolitan Agency for Planning analysis of IRIS data.

Bridge condition

For both expressways and arterials, bridge condition is measured by the area of bridge deck that is structurally deficient. For projects with reconstruction elements, the total deck area of the structurally deficient bridges on the project segment is reported. In other words, a project that addresses more structural deficiency is better than one that addresses less — all else being equal.

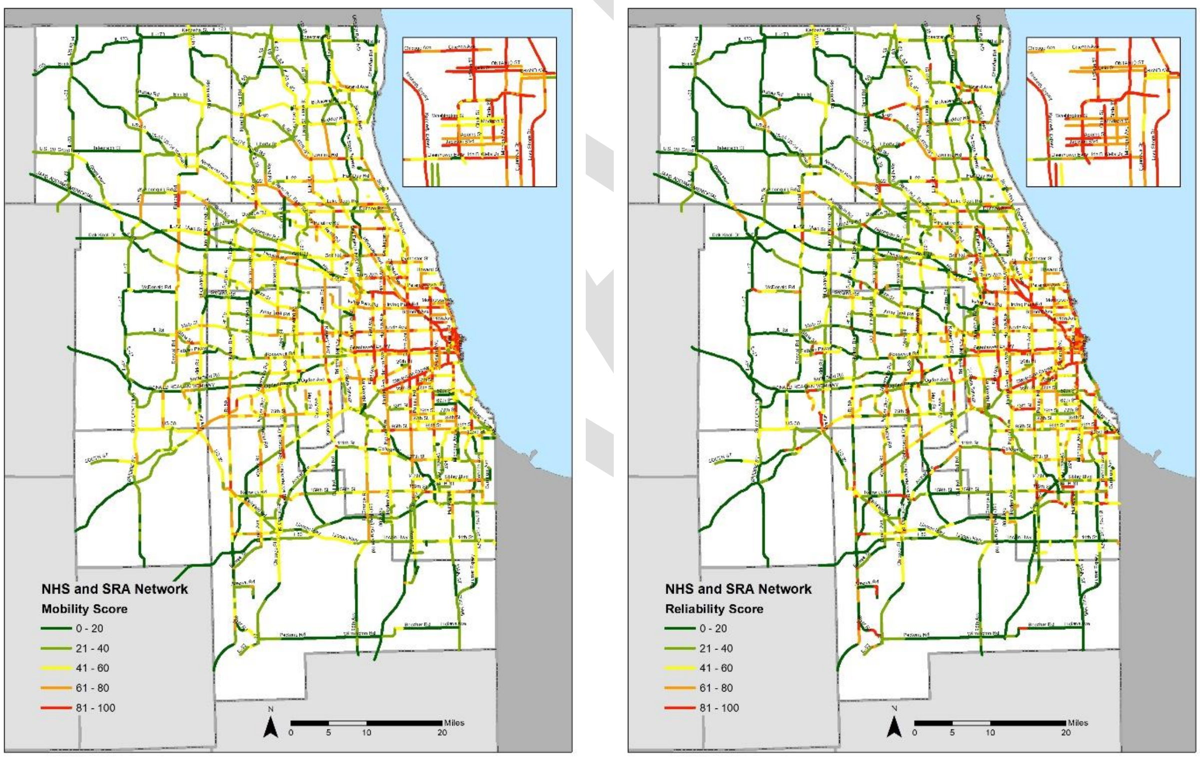
Mobility

Mobility is a composite of the Travel Time Index (TTI) and the congested hours on a segment that represents the intensity and duration of congestion. TTI is congested travel time divided by the free flow travel time, while congested hours is the number of hours each day that a segment is at least lightly congested (i.e., has a TTI ≥ 1.1). Both measures result from the HERE probe-based travel time data. The score is based on the worst road direction and the worse of the AM or PM peak. To convert the TTI and congested hours segment measurements into scores, the segment measurement was divided by the 95th percentile value of all the observations and multiplied by 100. Any measurement above the 95th percentile received a score of 100. The final mobility need score is equal to (0.5 * TTI score) + (0.5 * congested hours score). The project score is the lane-mileage weighted average of the scores of the segments included in the project. A higher score indicates more need and, therefore, a higher priority location.

Reliability

Reliability is based on the planning time index (PTI), or 95th percentile travel time divided by uncongested travel time. The planning time index also results from the HERE probe-based speed data. Segment scores were developed using the same assumptions for the mobility score (i.e., using the worst road direction and the worst of the AM or PM peak index). The reliability need is equal to the planning time index score, indexed 1-100. The project score is the lane-mileage weighted average of the scores of the segments included in the project. A higher score indicates more need and a higher priority location.

Figure A4. Mobility score (left) and reliability score (right)



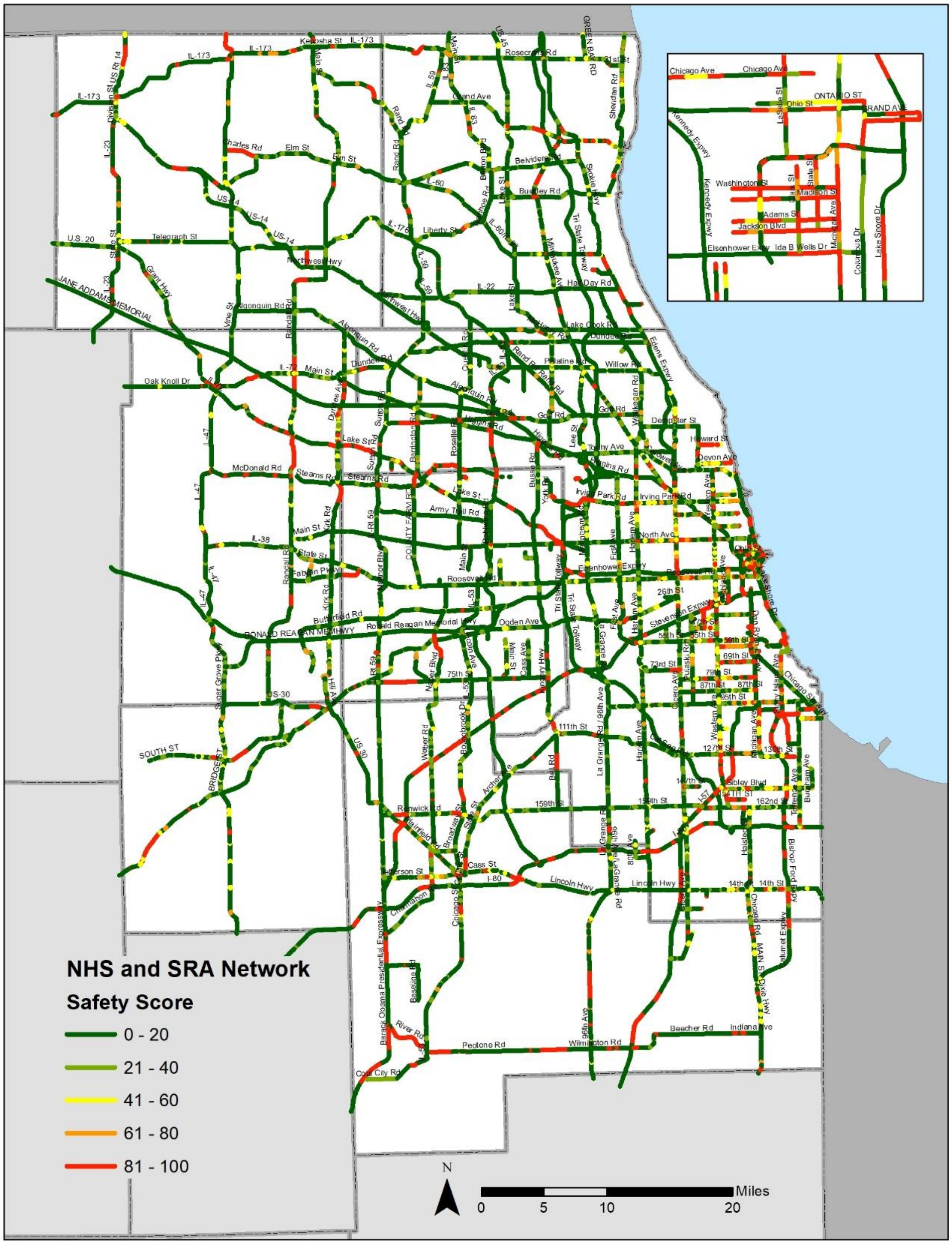
Source: Chicago Metropolitan Agency for Planning analysis of IRIS and HERE data.

Safety

The degree to which a project addresses safety needs is based on the severity of the safety problems on the project segments, as measured by the 2015 total crash serious injury and fatality rate per VMT. It is assumed that safety issues will be addressed during the design process. Rates for each segment were rescaled by dividing the segment measurement by the

95th percentile value of all the observations and multiplying by 100. Any measurement above the 95th percentile received a score of 100. The project score was the lane-mileage weighted average of the scores of the segments included in the project. A higher score indicates more need and a higher priority at the location.

Figure A5. Safety score



Source: Chicago Metropolitan Agency for Planning analysis of IRIS and IDOT Safety Portal data.

2050 Performance: Transit

Travel benefits are estimated using CMAP's travel demand model. Travel benefits are reported for the seven-county CMAP region only, not the larger modeling region. The measures include:

Project ridership (daily)

This measure is the model estimate of the total number of daily boardings expected for the project. Every passenger using a project will get some benefit from the project.

Change in regional ridership (daily)

This measure is the estimate of new regional transit trips expected because of the project. This is a measure of regional travelers who switch to the transit mode.

Change in vehicle revenue hours (annual)

This metric is based on schedules used for modeling. Daily revenue hour values are annualized to inform annual operating cost. Some values are negative, usually indicating that one mode is being replaced by another.

Change in VMT (daily)

This measure is the expected increase or decrease in auto vehicle miles traveled (VMT) each day because of the project, as estimated by the model. It considers the change in auto person miles traveled (PMT) converted to auto VMT based on a regional average vehicle occupancy. This may decrease when a transit project attracts former auto drivers but may occasionally increase in circumstances when a new transit project induces park-and-ride customers to travel longer distances to access an improved service.

Change in average regional work trip transit travel time (minutes)

This measure is the average build time minus average no-build times, where the times are calculated by multiplying transit work trips by access type (walk, kiss and ride, park, and ride) and by corresponding access type transit trip times, and then divided by total transit trips. Travel time includes both the line-haul portion of the trip as well as access time (park and ride, kiss and ride, walk, bike, transit transfer). Work trip travel time is estimated by processing model outputs.

Change in project user commute time (minutes)

For work trips using the project, average transit trip time is calculated for the build and no-build scenarios only including trip interchanges where making a transit trip was possible in both scenarios. Newly served areas which did not allow a transit trip under the no-build condition are excluded from the calculation as "new markets." Travel time includes both the line-haul portion of the trip as well as access time (park and ride, kiss and ride, walk, bike, transit transfer). Work trip travel time is estimated by processing model outputs.

Change in fatality and serious injuries per year

Transit travel has a much lower rate of fatal crashes and somewhat lower rate of serious injury crashes. By reducing auto travel, transit is estimated to avoid be fatalities or serious injuries by reducing opportunities for crashes.

Change in jobs accessible within 90 minutes and 60 minutes for average resident

The model is used to determine the average number of jobs that can be reached by a household from anywhere in the region within both a 90- and a 60-minute transit travel time. To estimate the change in jobs accessible, the average number of jobs accessible to a household in the no-build condition is subtracted from the average number of jobs accessible to a household in the build condition. The difference measures the regional improvement in accessibility the transit project provides based on improved travel times.

2050 Performance: Expressways

2050 travel conditions with and without the project are compared to estimate project travel benefits. All projects were evaluated using an "existing and committed" network, which includes the 2019 network with Northeastern Illinois TIP projects expected to be existing in 2050. Most TIP projects are small arterial improvements. However, the Elgin-O'Hare Western Access is under construction today, and it is expected to be completed soon. The project is tested by adding it to the existing and committed network, running the regional trip-based model, and extracting desired results. The change between no-build and build measures was calculated accordingly, using the difference between the appropriate scenarios. The characteristics of individual projects were coded into the model based on information supplied by the project submitters.

Congestion reduction

Congestion reduction is measured by change in daily vehicle-hours traveled in congested conditions ("congested VHT"), both in the CMAP region and in a five-mile corridor around the facility. It includes all network traffic occurring within the CMAP area, even if it originates or is destined to areas outside the CMAP area. Congested highway links were identified with a volume/capacity ratio exceeding 0.9 and located within the CMAP area. Total volume was multiplied by the congested travel time for each of eight time periods of the day. This calculation includes all vehicles, both autos and trucks. The change between build and no-build was calculated by simple subtraction of one total from the other.

For the corridor congested VHT, only links within the five-mile buffer of the project were considered. These links were identified through a GIS exercise for both build and no-build conditions. The total for the corridor includes traffic on the new project. For heavy truck regional and corridor congested VHT, the calculations were carried out in the same way, but only heavy truck vehicles were multiplied by link travel time.

Change in work trip travel time

Average work travel time is calculated for both the build and no build scenarios by multiplying home based work auto person trips originating within the CMAP area by the A.M. peak congested highway time and then dividing by total CMAP area home-based work person trips. The no-build average is subtracted from build average.

Job access

To estimate the number of jobs per household that can be reached by auto within 45 minutes, the AM Peak auto travel time was used. This measure is a weighted average per household, so the households at the origin are multiplied by the employment accessible within 45 minutes at the destination. These zonal origin values are summed, the divided by the total number of CMAP area households. The measure is the build average minus the no-build average number of jobs.

Change in number of fatal and serious injuries per year

A project's effect on fatalities and serious injuries is estimated by calculating the total VMT on expressways, arterials, and collectors and then multiplying those values by the appropriate 5-year crash rate for the facility types. The rates only include K and A crashes. On average, arterials are the most dangerous facility per vehicle mile of travel and expressways are the least dangerous. Typically, building additional expressway capacity will draw motorists off of the arterial system and on to the safer expressway system, reducing fatalities and serious injuries. The measure was build minus the no-build expected number of fatalities and injuries.

Planning priorities

Equity impact (project use by EDAs)

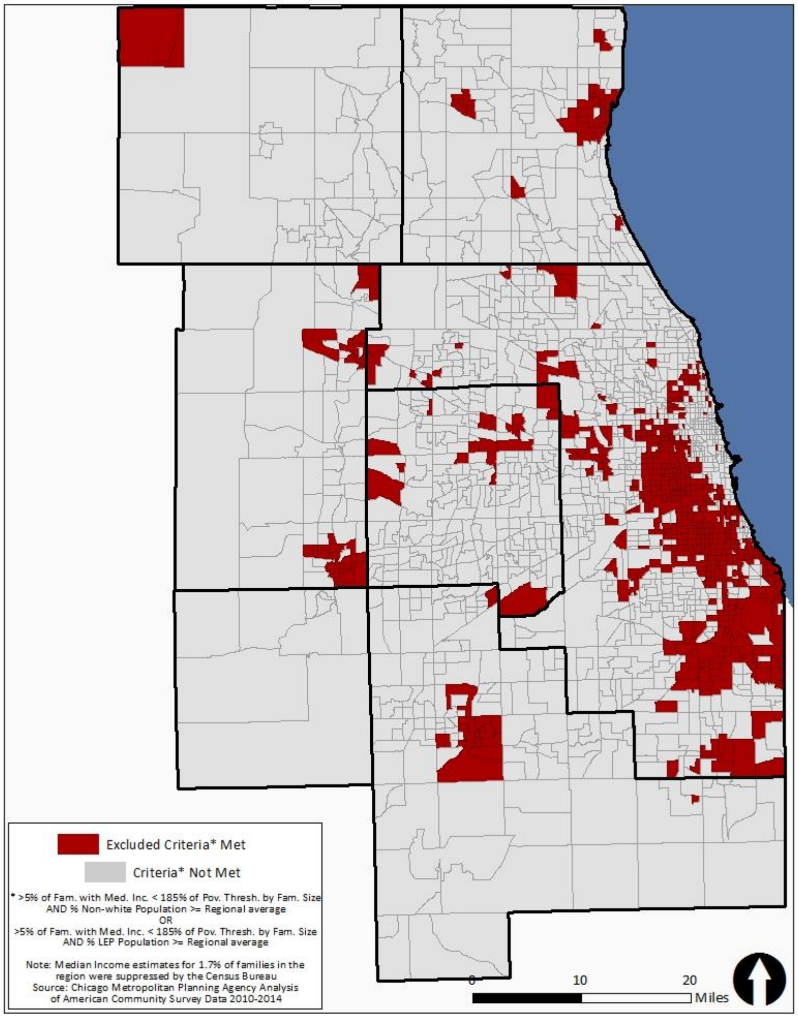
CMAP is pursuing an inclusive growth[5] strategy that is meant to help the Chicago region achieve stronger, more sustained prosperity. The emphasis on inclusive growth is reflected in the regionally significant project evaluation. Like in many regions across the nation, minority populations and populations of low income in northeastern Illinois often are geographically

[5] Chicago Metropolitan Agency for Planning, "Inclusive Growth," 2017, http://www.cmap.illinois.gov/documents/10180/515753/Inclusive+Growth+strategy+paper/0f01488d-7da2-4f64-9e6a-264bb4abe537.

concentrated. Segregation by race and income has a deleterious impact on the residents who are secluded within these areas. It also has a negative impact on the entire region.[6] CMAP has identified these areas within the region, calling them "economically disconnected areas" (EDAs).

To be considered an EDA, a census tract must have a concentration of either low-income population and persons of color, or low-income population and limited-English speaking population. The inclusive growth strategy paper explores this methodology in more detail and provides analysis of the differential outcomes for residents of EDAs.

Figure A6. Economically Disconnected Areas in the Chicago region



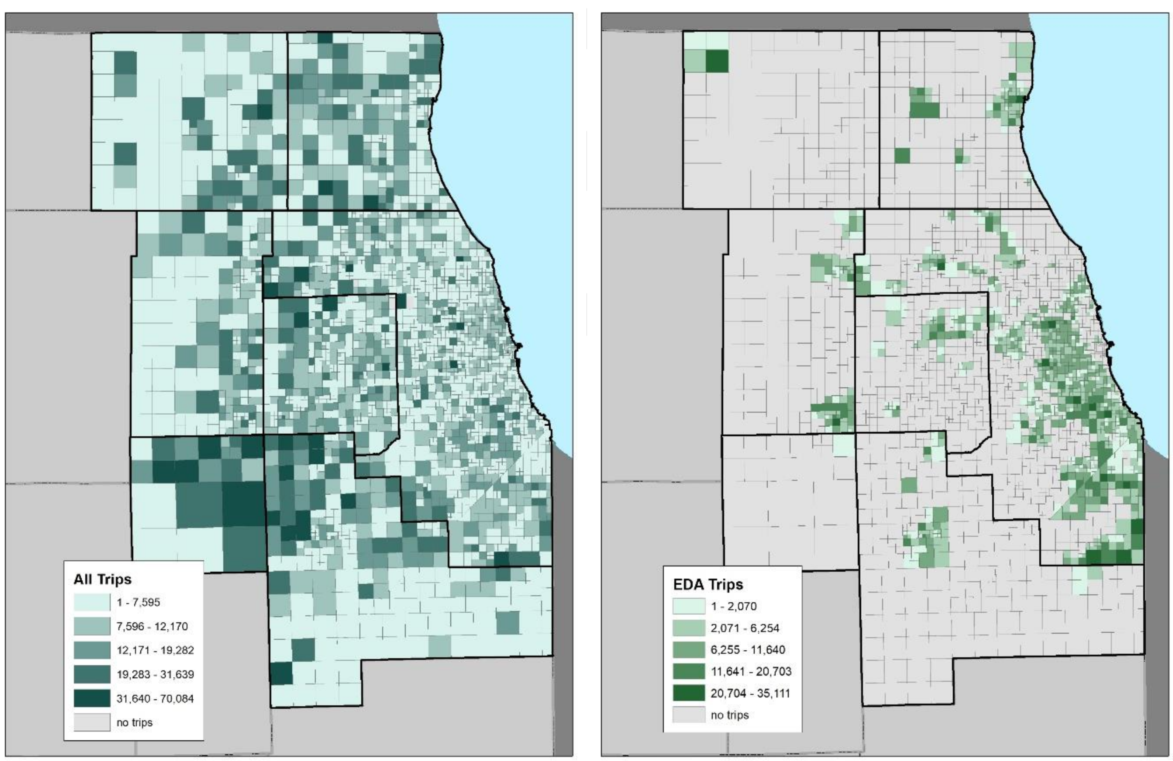
Source: Chicago Metropolitan Agency for Planning analysis.

[6] Chicago Metropolitan Agency for Planning, "Fair Housing and Equity Assessment: Metropolitan Chicago," 2013, http://www.cmap.illinois.gov/livability/housing/fair-housing.

Transit project benefits to EDAs (“equity impact”) are measured as the estimated percent of trips on a project that originate from a model zone within the EDAs layer. This layer is based on census tracts, which are then apportioned to travel model subzones and then summed to the traffic analysis zone level. The zonal proportion of economically disconnected area population is applied to the origin of the project trip table, which tracks the origins and destinations of trips using the identified project. The origin zone values are summed, resulting in an estimate of the total of such community trips using the project. This number is divided by total project ridership to arrive at the percent of ridership from EDAs. This is the evaluation measure. For highway projects, the analogous evaluation measure is the percent of VMT on the project that originates in an EDA.

The map in **Figure A7** shows an example analysis for the I-290 Managed Lanes project. The map on the left shows the number of total trips using the project by origin zone, while the map on the right shows just the trips expected to originate within EDAs.

Figure A7. Total trips (left) and trips from Economically Disconnected Areas (right) using I-290 Managed Lanes project



Source: Chicago Metropolitan Agency for Planning analysis.

Low barrier to entry jobs accessible to EDAs

While the percent of trips or percent of VMT on a project originating in EDAs is one measure of benefit to these communities, another important question is the degree to which a project provides these communities with access to jobs. This gives rise to the secondary question of whether residents of disadvantaged communities can take advantage of accessible jobs given their education and training. These questions were analyzed in combination by determining the number of low-barrier but relatively high-paying jobs accessible to EDAs within 60- and 90-minute commutes (transit projects) or 45 minutes (highway projects) with and without a candidate project.

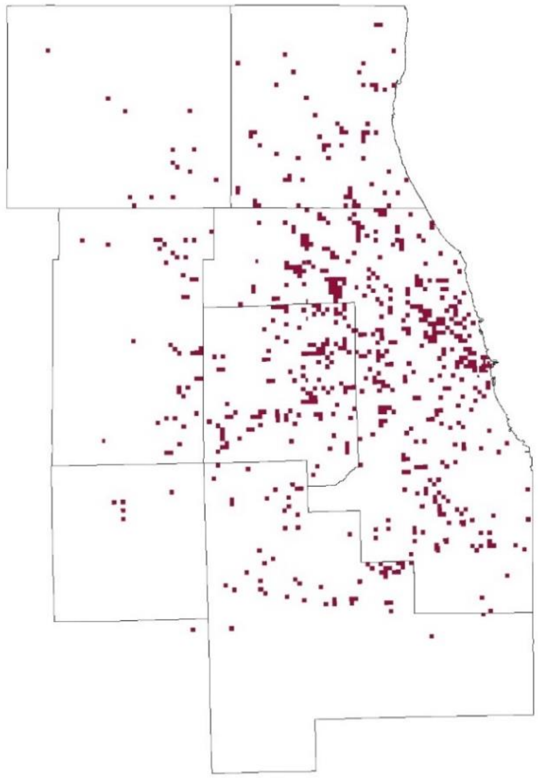
The starting point for this analysis is occupational employment and job openings data (2014 and projected 2024) and worker characteristics (2014) data from Table 1.7 of the Employment Projections program[7] of the U.S. Bureau of Labor Statistics. The table was filtered to identify jobs with:

- Positive projected growth 2014-24
- Median annual wage higher than the national median ($36,200)
- Educational requirements for entry, including:
  - no formal educational credential,
  - high school diploma or equivalent, or
  - postsecondary non degree award
- Less than five years of work experience required

Next, using a crosswalk between occupations and industries, the percent of jobs for each six-digit North American Industrial Classification System (NAICS) code that fall into the middle-skill category was calculated. Then Dun and Bradstreet point GIS data were used to identify the locations and counts of jobs by industry. The map in **Figure A8** shows subzones expected to have 50 or more jobs in low-barrier industries.

[7] U.S. Bureau of Labor Statistics, "Employment Projections and Occupational Outlook Handbook," accessed May 2018, https://www.bls.gov/news.release/ecopro.toc.htm.

Figure A8. Concentrations of jobs with low barriers to entry by subzone



Source: Chicago Metropolitan Agency for Planning analysis of U.S. Bureau of Labor Statistics and Dun and Bradstreet data.

A transit project's ability to improve access to low-barrier jobs for EDAs is estimated by first running the trip-based model for each candidate project to determine the change in total jobs accessible to households in the region in aggregate. In these results, the subset of origin-destination (O-D) pairs with origins in excluded community subzones is flagged. The number of low-barrier jobs by destination subzone is also appended to the table. Finally, the table is queried to determine the change in the number of low-barrier jobs accessible within 60 and 90 minutes for workers living in economically disconnected area model zones.

A highway project's ability to improve access to low-barrier jobs for EDAs is estimated by an analogous method based on the CMAP regional travel model, only using a 45-minute travel time.

Infill support

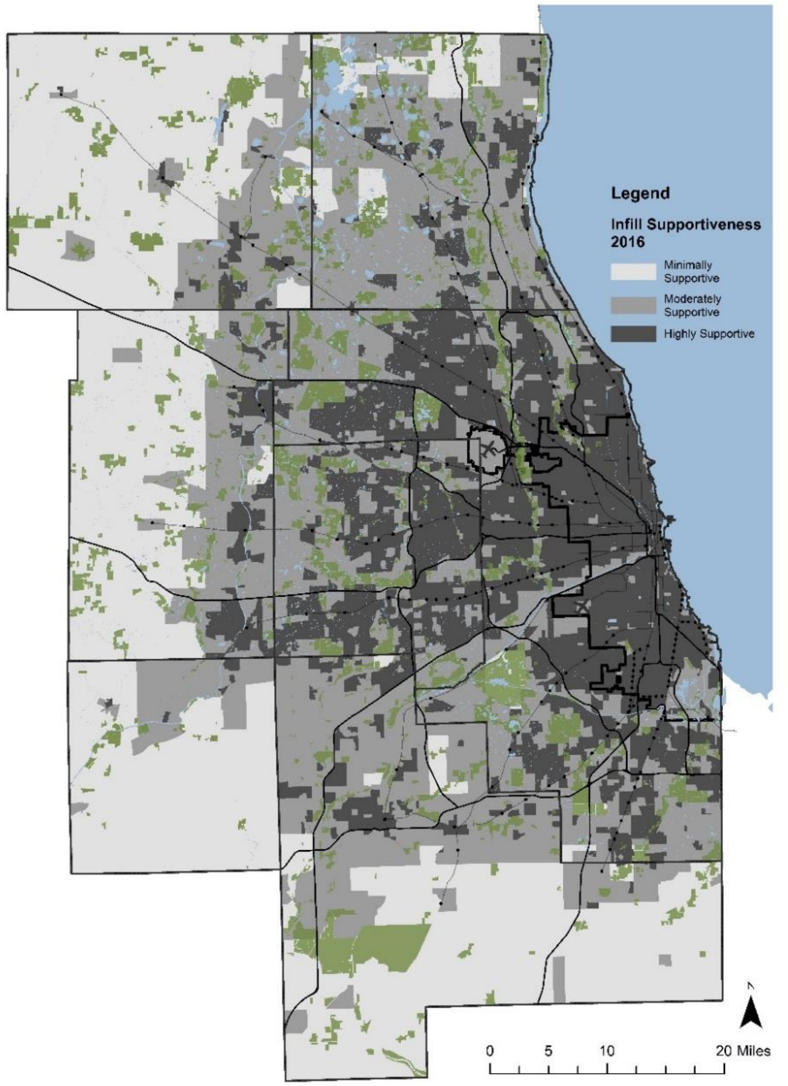
This measure captures the degree to which a project supports growth in areas that are appropriate for infill development. Based on work done for the CMAP Infill and TOD Snapshot

Report,[8] the region is divided into three categories: minimal, moderate, and highly supportive of infill development (as shown in the map below). The zonal acres in each category are calculated in GIS based on four inputs: housing density, road density, employment density, and land cover.

- Housing unit density — Housing units per square mile (2010-14 ACS)
- Employment density — Employment per square mile (2015 Illinois Department of Employment Security)
- Road density — Road miles per square mile (2016 Navteq)
- Land cover — Percent of a block group that is not agriculture or natural land (2011 National Land Cover Data set and 2010-15 data CMAP's Northeastern Illinois Development Database)

[8] Chicago Metropolitan Agency for Planning, "Infill and TOD," 2018, http://www.cmap.illinois.gov/documents/10180/0/Infill+and+TOD+Snapshot+Report.pdf/4273b7d1-0a16-4c2f-a93e-dce1c2a472fd.

Figure A9. Infill supportiveness



Source: Chicago Metropolitan Agency for Planning analysis.

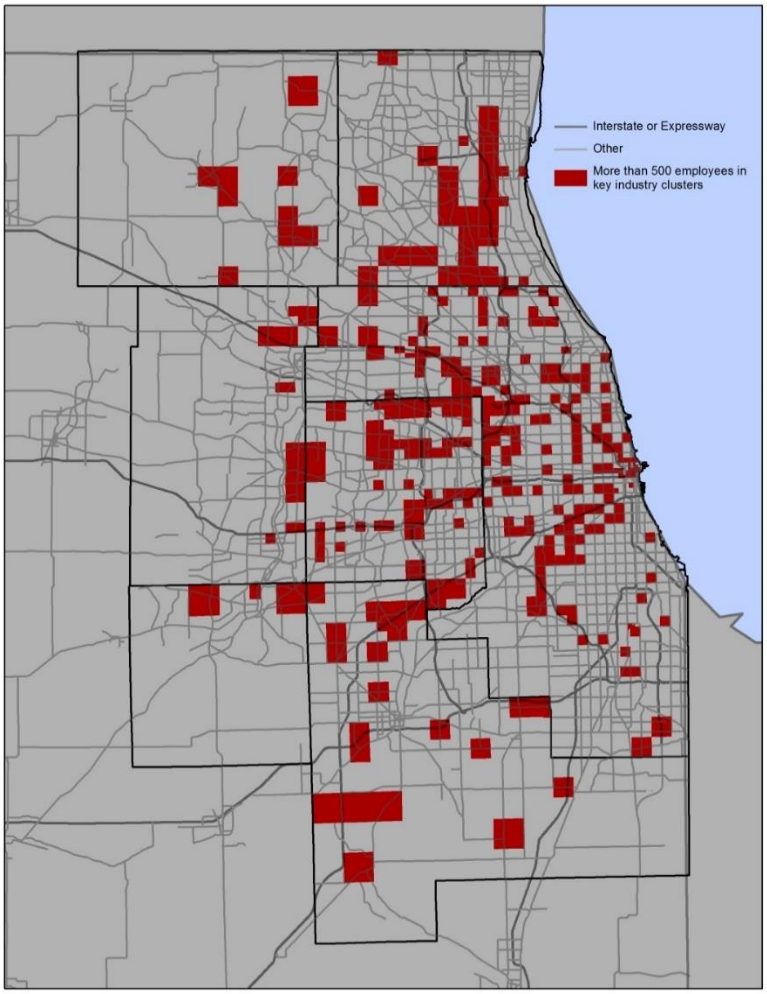
To calculate the infill support score, the project travel shed is identified. This is a table of all the trips using the project derived from the travel model analyses. To determine how well the project serves an origin or destination, the proportion of trips using the project/total trips is calculated. A zone with a high proportion of trips using the project is better served than one with a small proportion. This proportion is applied separately to the acres of high, medium, and low supportive land use acres by origin and destination. Finally, a weighted score is calculated based on the fraction of the acreage in each category where minimally supportive = 0 points, moderately supportive = 50 points, and highly supportive = 100 points. The mix of land uses is the critical characteristic, thereby eliminating the risk that a large project gets a better score merely because it has a larger market.

Benefits to key industries and addressing disinvested industrial areas

While direct mobility benefits of transportation projects are widely understood to have positive economic impacts, the broader changes in economic productivity triggered by transportation investments are a relatively new direction in transportation and economic research. New or improved transportation in an area allows those who live there to access more destinations in a shorter time and allows people from other parts of the region to access the area more quickly and easily. In areas where transportation projects increase access to new customers or labor pools, land values may increase, vacant properties may be developed for new use, and existing businesses may become more profitable.

To evaluate the potential economic impact of arterial transportation projects, CMAP identified the travel shed for each project and calculated the number of jobs in “key industries” within each travel shed. Key industries are industries that are export-oriented, regionally specialized, and sensitive to changes to in-region road transportation costs. Export-oriented industries bring money into the region from national and international markets and have been identified through past CMAP analysis on traded clusters. Regionally specialized industries are clusters with special strength and prominence in northeastern Illinois as compared to the nation, measured as a location quotient greater than 1.0. Industries that spend a higher-than-average percent of their expenditures on in-region transportation are most likely to see profitability and productivity gains from transportation improvements. CMAP also calculated the square footage of vacant flex and industrial rentable building area (RBA) in each project’s travel shed as a measure of a project’s potential to generate new economic activity. Key industry employment and industrial vacancy are each indexed 1-100, with 100 being the best score for a project.

Figure A10. Concentrations of jobs in key industry clusters



Source: Chicago Metropolitan Agency for Planning analysis.

Economic impact from industry clustering

As documented by CMAP[9] and others, there are widely known benefits to geographical clustering by industry. For instance, industries requiring specialized skills benefit from having a large common labor pool. Individual businesses cab draw from a larger supply of labor, while the labor pool itself is more productive because of "knowledge spillovers" as workers interact and move from firm to firm, introducing improvements to business processes. In another example, businesses in an industry cluster may serve as suppliers to one another.

[9] Chicago Metropolitan Agency for Planning, "Industry clusters in the Chicago metropolitan region," September 2015, https://www.cmap.illinois.gov/updates/all/-/asset_publisher/UIMfSLnFfMB6/content/industry-clusters-in-the-chicago-metropolitan-region

Benefits of clustering

Sources: Chicago Metropolitan Agency for Planning and U.S. Cluster Mapping project.

This is connected to transportation infrastructure because roads and transit help encourage this clustering or agglomeration effect. For instance, a new road or new transit line that shaves a few minutes off typical travel times near a particular industry cluster effectively has expanded the common labor pool by making more workers available within a certain drive time. It also has increased the possibility of knowledge spillovers, making workers more productive. These changes in the business landscape can be measured as the change in available workers within a certain travel time and then as the "effective density" of employment (that is, the number of jobs in a zone plus the number of jobs located in nearby zones, scaled by the travel time between these zones). As the travel time decreases due to a transportation investment, effective density increases. The change in effective density is then translated into an increase in economic output through a method refined by researchers in the United States with the second Strategic Highway Research Program[10].

Effective density, again, is the number of jobs in a zone plus the number of jobs located in nearby zones, scaled by the travel time between these zones. In other words:

$$D = \frac{E_i}{t_{ii}^{\alpha}} + \sum_{j}^{i \neq j} \frac{E_j}{t_{ij}^{\alpha}}$$

In this equation, D is effective density, E_i is the employment in zone i (the analysis zone), E_j is the employment in each zone j, t_{ij} is the travel time between zones i and j, and α is a factor that measures "decay" in the importance of changes in travel time as travel times get shorter. Travel

[10] Economic Development Research Group, "SHRP2 Project C11: Accessibility Analysis Tools: Technical Documentation and User's Guide," July 2013, https://planningtools.transportation.org/files/3.pdf.

time between zones is taken from the CMAP travel demand model. The first term of the equation is referred to as the scale factor and represents travel time within a model zone. Travel times within a zone used in the scale factor are determined by averaging the travel times to the neighboring zones and dividing the average by two. The effective density is calculated for the build and no-build condition.

Once the change in effective density resulting from a project is calculated, the next step is to estimate how this affects productivity. Numerous studies have estimated how productivity increases with increased effective density in various industries. CMAP's review of the literature suggests that the general categories of production, construction, consumer services, and producer services had different responses to industry clustering mediated by transportation, as measured by the elasticity of productivity — the percent change in productivity resulting from a 1 percent change in effective density. This is shown below:

Table A3. Industrial groupings used for the calculation of wider transportation economic benefits

Industry group	NAICS codes	Elasticity of productivity
Production	11, 21, 31, 32, 33	0.021
Construction	23	0.034
Consumer Services	42, 44, 45, 48, 71, 81	0.024
Producer Services	51, 52, 53, 54, 55, 56	0.083
General	All others	0.043

Source: Daniel Graham, Stephen Gibbons, and Ralf Martin, "Transport Investment and the Distance Decay of Agglomeration Benefits," (February 2009).

The total increase in economic output is calculated from the change in productivity resulting from the transportation project and the regional average output per worker, as follows:

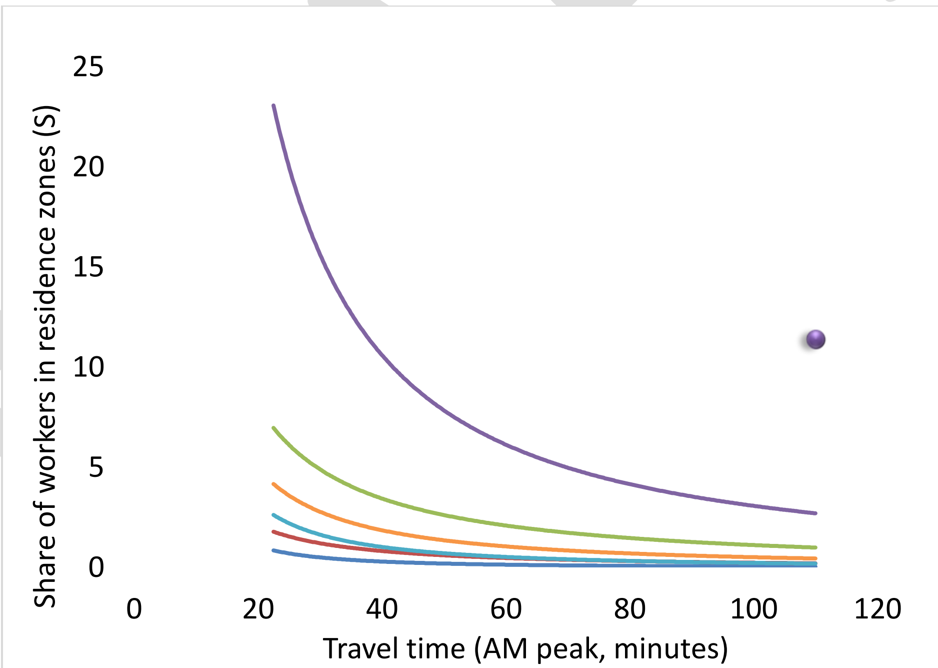
$$\Delta Y = \sum_i \sum_k \left(\frac{D_{b,k}}{D_{nb,k}} - 1 \right) \mu_k \, w_k Z E_{i,k}$$

In this equation, ΔY is change in gross regional product, $D_{b,k}$ is effective density in industry group k with the project and $D_{nb,k}$ is without the project, μ_k is the elasticity of productivity for industry group k, $E_{i,k}$ is the number of employees of industry group k in the zone i, w_k is the wages per worker in the industry, and Z is a factor that relates wages to gross regional product. Wages are a proxy for economic output, as GRP has additional factors included that are missed by the simple aggregation of wages. To estimate the total effect on GRP, a multiplier is used. In the CMAP region, $Z = 3.11$. The data on employment are from the unemployment insurance file (ES-202) from Illinois Department of Employment Security, 1st quarter 2015. Each zone is processed five times using the five elasticities of productivity in the table above.

In addition to increasing the productivity of the labor force through effective density, a second effect from a transportation project is increased economic output due to an increase in the total supply of workers available to businesses in a zone. In other words, if commute times are reduced for the workforce, a business could attract workers at a lower cost. The lower commute times will increase the labor pool who might work at a location. The concept behind this estimate of economic impact due to transportation projects is that, by shortening commutes, employers in a zone will be able to capture more of these potential workers, increasing the labor supply.

To estimate this effect, CMAP used a method based on techniques developed originally by the Department for Transport in Britain[11]. Using data from the Census Longitudinal Employer-Household Dynamics (LEHD) dataset[12], the first step is to determine the zones of residence for the employees in each zone in the region. Then, based on the no-build travel times between these zones (the morning peak period of 7:00 a.m. to 9:00 a.m. was used), the fraction of the workers in each residence zone who travel to a given employment zone was plotted against the travel time between these zones. As in **Figure A11** below, six groups were determined empirically to represent varying degrees of sensitivity to commute time.

Figure A11. Distance decay of employment zones



Source: Chicago Metropolitan Agency for Planning analysis.

[11] Department for Transport, "TAG UNIT A2.1: Wider Impacts," January 2014, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/427091/webtag-tag-unit-a2-1-wider-impacts.pdf.

[12] U.S. Census Bureau, "Longitudinal Employer-Household Dynamics," accessed May 2018, https://lehd.ces.census.gov/.

The points in the chart above were fit with curves of the form *S = at*$^{\beta}$ where *S* is the share of workers in residence zones who work in an employment zone, *t* is travel time, *a* is a constant used to fit the curve, and β is a curve-fitting parameter that measures sensitivity to travel time savings. The parameters for each group are as follows:

Group	a	β	Group	a	β
1	1542.6	-1.35	4	326.88	-1.401
2	315.45	-1.224	5	117.45	-1.344
3	421.97	-1.631	6	249.48	-1.823

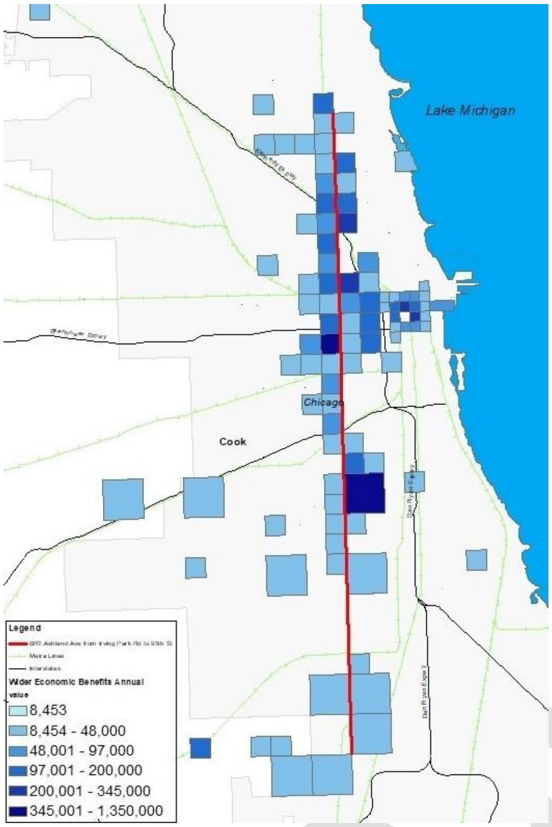
To translate this into economic output, the travel time for each O-D pair is put into the formula for employment share sensitivity to commute time (one of the 6 versions) for the build and no-build conditions. If the travel time decreases, a greater share of a residential zone's workers would be attracted to working in an employment zone. The potential workers for each employment zone from all zones containing households was summed, and then the resulting values for all employment zones were summed.

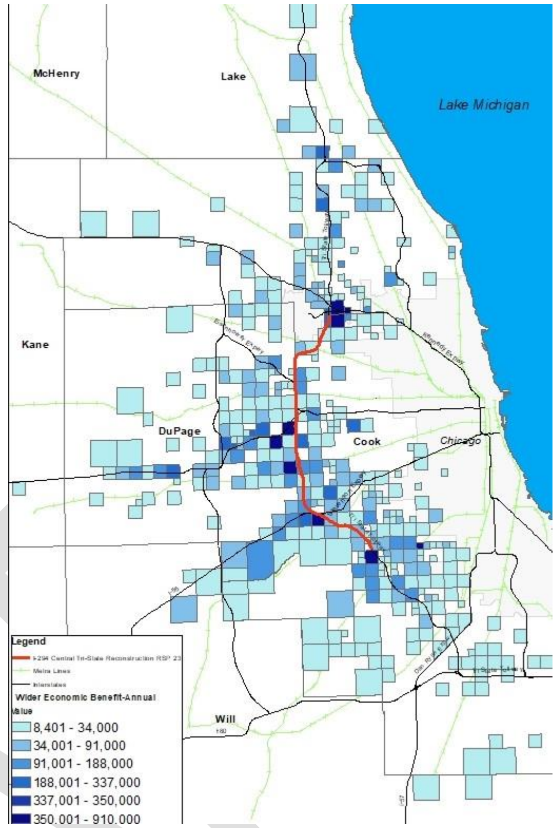
$$\Delta Y = \sum_{i} \sum_{k} \left(\frac{S_b}{S_{nb}} - 1 \right) \mu_k \, w_k ZE_{i,k}$$

In this formula, S_{nb} is the share of workers in all residence zones who work in an employment zone *i* in the no-build condition, S_b is the share who potentially would work in employment zone *i* given improved commute times, and the other symbols are as defined previously. The elasticity of productivity was applied to the ratio of potential workers with the project and without the project to translate the increase in labor supply into an increase in economic output.

The results of analyzing two projects – Ashland Bus Rapid Transit and the I-294 Central Tri-State Mobility Improvements – are shown in Figure A12. As expected, increased economic output tends to be clustered most near the project itself because travel time savings are greatest there – improvements tend to "wash out" further away from the project. But the results also depend on the industry mix and the existing output per worker in the area, as well as the number of employees nearby.

Figure A12. Example economic impacts for Ashland BRT (left) and I-294 Mobility Improvements (right)

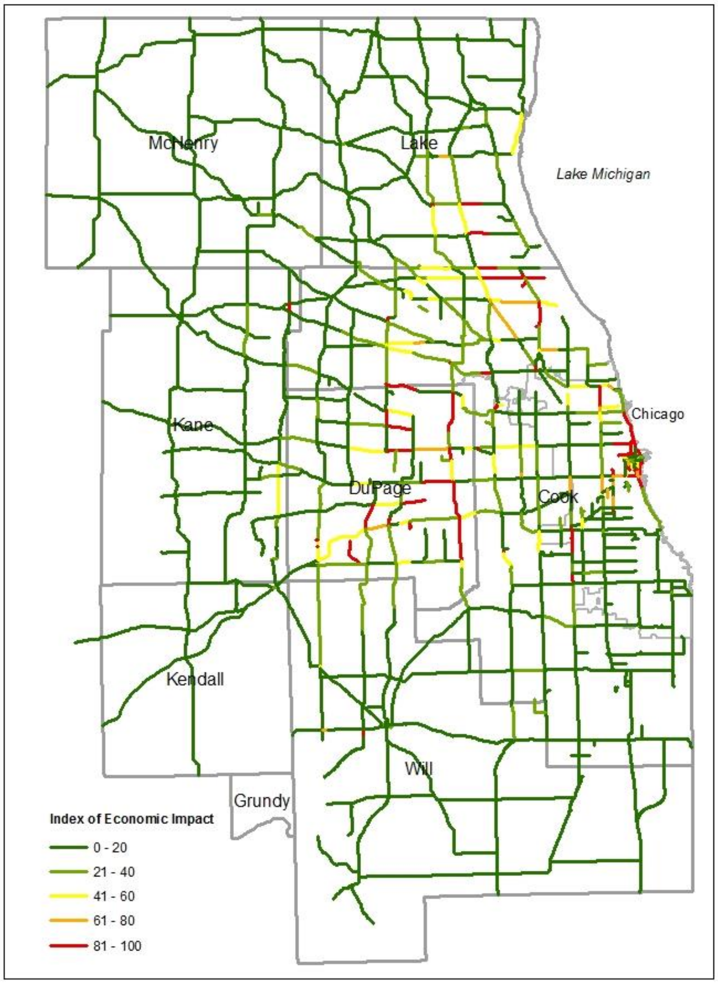




Source: Chicago Metropolitan Agency for Planning analysis of model outputs.

Because arterial projects were not modeled directly, the economic impacts of added capacity were modeled indirectly based on a network analysis. All segments of the NHS were coded in the CMAP travel demand model with a 10 percent increase in capacity. Then, the traffic assignment portion of the model was run for each segment sequentially. The resulting changes in zone-to-zone travel times within the travel shed of that segment were then used to estimate economic impact as described above. The economic impact for each segment was then converted to a 0 – 100 proportional score and mapped as in Figure A13. Individual RSPs were evaluated by overlaying the proposed project. New arterials were scored based on the parallel routes.

Figure A13. Economic impact network scoring for arterial projects.



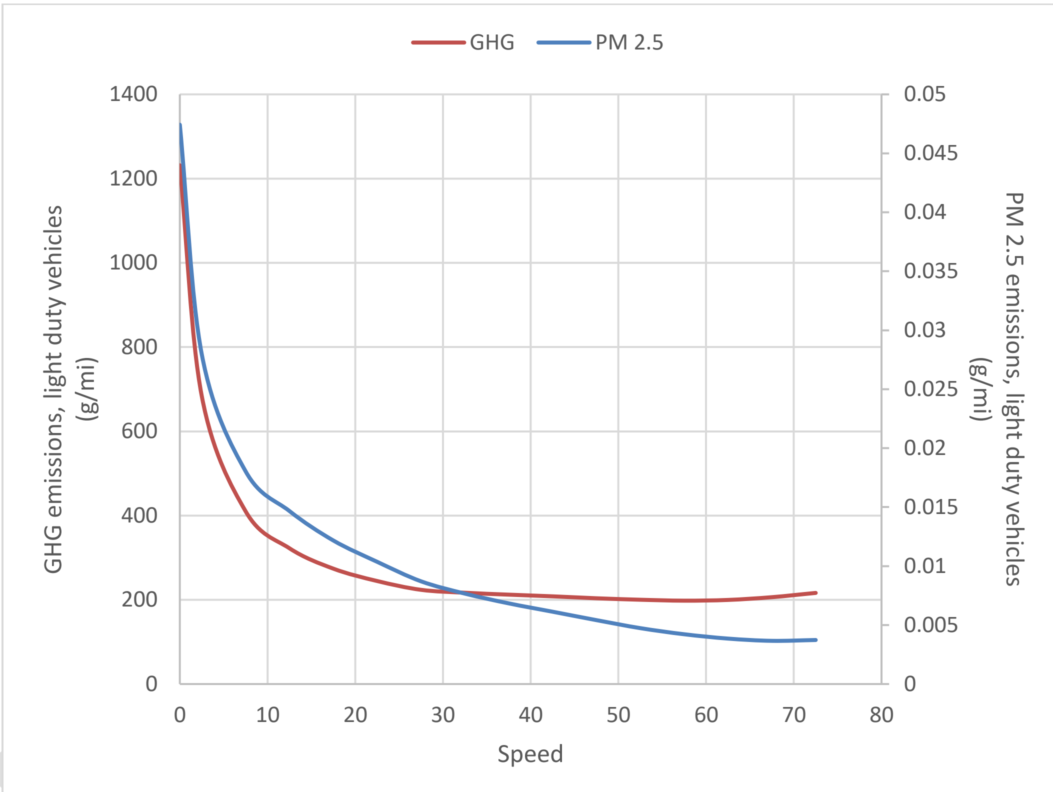
Source: Chicago Metropolitan Agency for Planning analysis.

In general, the technique provides a reasonable way to estimate the comparative economic impacts of candidate transportation projects by their effects on labor productivity. This ties well into CMAP's policy work in industry clustering. It does not capture benefits to shippers, the benefits of having a larger customer base within a certain area, or the macroeconomic effects of reduced household and business transportation costs. In project evaluations for GO TO 2040, CMAP had used the commercial economic impact software TREDIS, which does attempt to account for these additional benefits. As a result, economic impact estimates for projects in the ON TO 2050 update are considered partial estimates and are generally smaller than estimated in GO TO 2040.

Greenhouse gas and particulate matter emissions

Greenhouse gas and particulate matter emissions estimates are based on changes in regional VMT and vehicle speed caused by the project. The VMT change is multiplied by an emissions factor for vehicles in grams per mile derived from the U.S. Environmental Protection Agency's Motor Vehicle Emissions Simulator (MOVES) model, which is the model used in air quality conformity analysis. The GHG emissions reduction benefit of reducing VMT depends on the speed of the vehicles comprising the eliminated VMT. A chart depicting the influence of speed on emissions rates is shown below.

Figure A14. GHG and PM2.5 emissions rates by speed



Source: Rate table developed by Chicago Metropolitan Agency for Planning from U.S. Environmental Protection Agency MOVES model.

The CMAP travel model is used to tabulate VMT by speed bin and vehicle type. VMT is then multiplied by the appropriate emissions factor from a rate table. CMAP applied this method to estimate the effect of expressway and transit projects on regional greenhouse gases. This method also was used to determine the change in PM 2.5 emissions within excluded communities for expressway projects.

Natural resource impact

To estimate the impact of transportation projects on critical natural resources, CMAP calculates the potential spinoff household and employment development caused by changing accessibility. This information is used to estimate the potential additional impervious surface caused by the project. This does not include the project itself. CMAP then compares the location of new development with important natural resources, identified as the conservation areas layer. This includes conservation areas, high-quality watersheds, and aquifers experiencing unsustainable rates of groundwater drawdown.

CMAP uses the regional travel demand model to estimate a project's potential impact to the transportation network. Specifically, the model estimates the change in relative accessibility of each model subzone — quarter-section sized geographies that CMAP uses for household and employment forecasting. For each project, the difference in commute travel times between build and no-build is calculated for each zone-to-zone trip interchange. The probability of household change was based on the change in zonal accessibility.

For all projects, the ON TO 2050 update draft household and employment forecasts for 2050 are the no build forecast. The accessibility is increased by adding the project to the network to represent the build condition. The resulting probability of increase in households is applied to the forecast 2050 households or employment. The difference between build and no build households is included in a GIS file for comparison with conservation areas and aquifers at risk of partial or complete desaturation. The direct impact of expressway projects on natural resources is highly dependent on detailed engineering, but a planning-level estimate of impact is calculated by creating a 500-foot buffer around each project and calculating the amount of conservation area contained within the buffer. To account for the greater impact on nearby natural areas of new construction versus reconstruction of existing facilities, the conservation area within the buffer was multiplied by the ratio of new lane miles to total proposed lane miles.

Measures of impervious cover change are a proxy measure of water pollution, erosion, and the urban heat island effect. Impervious surface creation is estimated from a subzone-level statistical relationship between imperviousness in the 2006 National Land Cover Dataset and the density of households and jobs. This statistical relationship is applied to the change in potential households and jobs in 2050 resulting from the project's accessibility improvement, as previously described. The total acres of impervious surface created because of each project is tallied, as is the acreage of impervious surface created in high quality sub-watersheds (those with less than 10% existing impervious cover). The direct impervious surface created because of the project construction is calculated based on the assumption that additional lanes are 12 feet wide and that new projects would also have 10-foot paved outside shoulders and 4-foot paved inside shoulders, consistent with AASHTO interstate design standards.

Freight impact

The freight impact measure captures potential positive and negative impacts on the region's freight capacity. For highway projects, we consider whether the project improves the National Highway Freight System (including proposed Critical Urban Freight Corridors), the truck volume on the highway to be improved, and whether the highway improvement is on a Class I/Class II designated truck route. For transit projects, we considered the implementation of CREATE, operations or infrastructure improvements on rail lines with substantial freight use (more than 12 freight trains per day), and how the project might potentially increase or decrease freight-passenger conflicts on the region's rail system. For both transit and highway projects, the benefits to freight are rated on a -25 to 100 scale, with -25 representing potential disbenefits and 100 representing significant improvements to freight movement.

Appendix B. Glossary

ACS - American Community Survey
ADA – Americans with Disabilities Act
ART – Arterial rapid transit
BNSF – BNSF Railway, operator of Metra's busiest line
BRT – Bus rapid transit
CDOT – Chicago Department of Transportation
CMAP – Chicago Metropolitan Agency for Planning
COST – Capital Optimization Support Tool, developed by the RTA
CRA - Condition rating system (for roads)
CREATE – Chicago Region Environmental and Transportation Efficiency Program
CTA – Chicago Transit Authority
CVHT - Congested vehicle hours traveled
DOT – Department of Transportation
EDA – Economically Disconnected Area, as defined by CMAP's Inclusive Growth ON TO 2050 strategy paper
FTA – Federal Transit Administration
GHG – Greenhouse gas
GIS - Geographic information system
GRP - Gross regional product
HERE - A map data provider
IDOT – Illinois Department of Transportation
IRI - International Roughness Index
IRIS - Illinois Roadway Information System
LEHD - Longitudinal Employer Household Dynamics
MOVES - Motor Vehicle Emissions Simulator
NAICS - North American Industry Classification System
NHS -National Highway System
NTD – National Transit Database
O&M – Operations and maintenance
PTI - Planning Time Index
RBA - Rentable building area
RPM – Red Purple Modernization, a CTA rail project on the north side of Chicago
RSP – Regionally Significant Project
RSP ID – RSP identification number, created by CMAP for evaluation
RTA – Regional Transportation Authority
SRA - Strategic regional arterial
STOPS - Simplified Trips on Projects, an FTA model
TIP – Transportation Improvement Program
TOD – Transit-oriented development

TREDIS - Transportation Economic Development Impact System
TTI - Travel Time Index
UP – Union Pacific, operator of three Metra lines
VHT – Vehicle hours traveled
VMT – Vehicle miles traveled
YOE$ – Year-of-expenditure dollars