Chicago Metropolitan Agency for Planning

433 West Van Buren Street
Suite 450
Chicago, IL 60607

# MPO POLICY COMMITTEE

**AGENDA - FINAL-REVISED**

Thursday, March 10, 2022

9:30 AM

**Please join from your computer, tablet or smartphone.**

**Join Zoom Meeting**
**https://us06web.zoom.us/j/84648891483?pwd=Z0xkNFFNT0gzNW9aUS9ldVNiL0xWZz09**

**Meeting ID: 846 4889 1483**
**Passcode: 189126**
**One tap mobile**
**+13126266799,,84648891483#,,,,*189126# US (Chicago)**
**+19292056099,,84648891483#,,,,*189126# US (New York)**

**1.0 Call to Order and Introductions**

**2.0 Agenda Changes and Announcements**

**3.0 Approval of Minutes**

**3.01 Minutes from January 13, 2022** **22-127**

ACTION REQUESTED: Approval

**Attachments:** MPO 1.13.2022 Minutes - Final

**4.0 Committee Reports**

**4.01 Executive Director's report** **22-135**

ACTION REQUESTED: Information

**5.0 Other Items for Approval**

**5.01 American Rescue Plan Act (ARPA) Federal Transit Administration (FTA) Funding Allocations** **22-138**

PURPOSE & ACTION: The MPO Policy Committee is being asked to approve of the subarea allocations between Northwestern Indiana-Northeastern Illinois and Southeastern Wisconsin-Northeastern Illinois, approved by RTA Board on November 5, 2021. An overview of the FFY 2021 ARPA Federal allocations to the Service Boards and the subarea allocations of FTA §5307/ §5340, §5337, §5339, and §5310 funding with has been provided.

ACTION REQUESTED: Approval

**Attachments:** PolicyCmteMemo--ARP ACT FTA Funding Splits mar 2022 corrected 3-7-22
ARP Funding Agreement

### 5.02 Regional ITS Architecture v4.0 22-098

PURPOSE & ACTION: Starting in January 2019, CMAP staff and consultants met with agency representatives and reviewed ON TO 2050 to identify changes needed in the northeastern Illinois Regional ITS Architecture to ensure that it reflects expected ITS development over the next 15 years. The process has been completed, with changes and updated supporting documents reviewed by members of the Transportation Technology and Operations Coalition (formerly known as the Advanced Technology Task Force). That group is satisfied with the updated Architecture, Maintenance Plan, and Architecture Summary and recommended approval by the Transportation Committee and the MPO Policy Committee. The Transportation Committee recommended approval of the items by the MPO Policy Committee at its meeting on February 25, 2022.

ACTION REQUESTED: Approval of the updated ITS Architecture and supporting documents

**Attachments:** Regional ITS Architecture v4.0 Summary Report
Regional ITS Architecture v4.0 Maintenance Plan

### 5.03 FY2023 Unified Work Program (UWP) Budget 22-065

PURPOSE & ACTION: To meet IDOT's February 14, 2022 budget submission deadline, MPO Chair Secretary Osman, during the January 13 MPO Policy Committee meeting, directed that the draft FY2023 Unified Work Program (UWP) Budget be considered at a special meeting of the Transportation Committee. The Transportation Committee met on February 4, 2022 to discuss actions the agency will need to perform in FY2023 to accomplish the work of the MPO and new requirements under the Infrastructure Investment and Jobs Act (IIJA). The Transportation Committee is recommending approval of the FY2023 UWP Budget to the MPO Policy Committee and staff has submitted the draft budget to IDOT within the submission deadline.

ACTION REQUESTED: Approval

**Attachments:** MPO Policy Committee FY23 UWP Budget Memo 2.25.2022

## 6.0 Information Items

### 6.01 CMAP's strategic direction and the committees 22-099

PURPOSE & ACTION: Presentation on the agency's strategic direction and the Board-approved engagement, including upcoming committee meetings and how this will intersect with the MPO Policy and other committees and working groups. There will also be a discussion regarding how staff can effectively execute the federal Investment and Infrastructure Job Act through the committees and related working groups.

ACTION REQUESTED: Information

### 6.02 ON TO 2050 Update 22-131

PURPOSE & ACTION: CMAP is developing the federally required update to ON TO 2050, which is due in October 2022. Staff will present on the identification of regionally significant projects.

ACTION REQUESTED: Information

**Attachments:** MPO Memo - ONTO2050Update- Draft RSP List 3.3.22
MPO Memo - Forecast 3.3.22

**6.03 2022 US DOT planning certification review** **22-129**

PURPOSE & ACTION: The Federal Highway Administration and the Federal Transit Administration is conducting the quadrennial review of metropolitan planning required under 23 USC 134(k)(5) from March 8-March 10. Staff from the US DOT will provide information on the process and a preliminary overview of the activities. The formal report including findings and recommendations will follow in the upcoming months. Comments on the metropolitan planning process in northeastern Illinois can be provided by March 25, 2022 to either John Donovan, FHWA, at john.donovan@dot.gov, (312) 353-4048, or Anthony Greep, FTA, anthony.greep@dot.gov, (312) 353-1646.

ACTION REQUESTED: Information

**7.0 Other Business**

**8.0 Public Comment**

This is an opportunity for comments from members of the audience. The amount of time available to speak will be at the chair's discretion. It should be noted that the public comment period will immediately follow the last item on the agenda.

**9.0 Next Meeting**

**The MPO Policy Committee will meet on June 9, 2022**

**10.0 Adjournment**

Chicago Metropolitan Agency for Planning

433 West Van Buren Street
Suite 450
Chicago, IL 60607

# MPO POLICY COMMITTEE

**MEETING MINUTES - FINAL**

Thursday, January 13, 2022

9:30 AM

**January 13, 2022**

**Please join from your computer, tablet or smartphone.**

**Join Zoom Meeting**
**https://us06web.zoom.us/j/84648891483?pwd=Z0xkNFFNT0gzNW9aUS9ldVNiL0xWZz09**

**Meeting ID: 846 4889 1483**
**Passcode: 189126**

**One tap mobile**
**+13126266799,,84648891483#,,,,*189126# US (Chicago)**

## 1.0 Call to Order and Introductions

Chair Secretary Osman called the meeting to order at 9:33 a.m.

**Present:** IDOT Representative, CDOT Representative, CMAP Representative 1, CMAP Representative 2, CTA Representative, Cook Co Representative, CoM Representative, DuPage Co Representative, Tollway Representative, Kane Co Representative, Kendall Co Representative, Lake Co Representative, McHenry Co Representative, Metra Representative, Pace Representative, RTA Representative, and Will Co Representative

**Absent:** Class I Railroads Representative

**Non-Voting:** FHWA Representative, and FTA Representative

Secretary Omer Osman served as representative for IDOT; Gia Biagi served as representative for CDOT, Frank Beal served as representative for CMAP Representative 1, President Matt Brolley served as representative for CMAP Representative 2, Michael Connelly served as representative for CTA, Jennifer (Sis) Killen and Jesse Elam alternately served as representatives for Cook County, Mayor Jeffrey Schielke served as representative for Council of Mayors, Chair Dan Cronin and Scott Chris Snyder alternately served as representatives for DuPage County, Arlene Kocher served as representative for FHWA, Tony Greep served as representative for FTA, Rocco Zucchero served as representative for the Tollway, Chair Corrine Pierog served as representative for Kane County, Scott Koeppel served as representative for Kendall County, Shane Schneider served as representative for Lake County, Scott Hennings served as representative for McHenry County, Jim Derwinksi served as representative for Metra, Melinda Metzger served as representative for Pace, Leanne Redden served as representative for RTA, County Executive Jennifer Bertino-Tarrant served as representative for Will County.

**Staff present:** Erin Aleman, Jonathan Burch, Anthony Cefali, David Clark, Michael Collins, Daniel Comeaux, Stephen Di Benedetto, Teri Dixon, Kama Dobbs, Austen Edwards, Doug Ferguson, Elizabeth Ginsberg, Jane Grover, Craig Heither, Lindsay Hollander, Elliott Lewis, Angela Manning-Hardimon, Alexis McAdams, Amy McEwan, Martin Menninger, Jason Navota, Russell Pietrowiak, Yousef Salama,

Todd Schmidt, Gordon Smith, Matt Stern, Blanca Vela-Schneider, Laura Wilkison

**Others present:** Ama Baljinnyan, Jason Biernat, Elaine Bottomley, Leonard B. Cannata, Lynette Ciavarella, Eric Czarnota, Doug DeLille, John Donovan, Jesse Elam, Jackie Forbes, Kendra Johnson, Tom Kelso, Mike Klemens, Daniel Knickelbein, Jon-Paul Kohler, Aimee Lee, Brittany Matyas, Leah Mooney, Heather Mullins, Kelsey Passi, Tom Rickert, Leon Rockingham, Jeff Schielke, Christopher Snyder, Joe Surdam, Mike Vanderhoof

## 2.0 Agenda Changes and Announcements

Secretary Osman congratulated former Pace Director Rocky Donahue on his recent retirement. Melinda Metzger will serve as Interim Executive Director with Pace. Secretary Osman announced that Jason Osborn will serve as the new Intermodal Project Implementation Director effective January 18, 2022.

## 3.0 Approval of Minutes

3.01 CMAP Board and MPO Policy Committee Meeting Minutes from October 13, 2021 **22-010**

**Attachments:** CMAP Board-MPO Policy Committee 10.13.21 Minutes

A motion was made by CDOT Representative Biagi, seconded by CoM Representative Mayor Schielke, that the agenda item be approved. The motion carried by the following vote:

**Aye:** IDOT Representative, CDOT Representative, CMAP Representative 1, CMAP Representative 2, CTA Representative, Cook Co Representative, CoM Representative, DuPage Co Representative, Tollway Representative, Kane Co Representative, Kendall Co Representative, Lake Co Representative, McHenry Co Representative, Metra Representative, Pace Representative, RTA Representative, and Will Co Representative

**Absent:** Class I Railroads Representative

**Non-Voting:** FHWA Representative, and FTA Representative

## 4.0 Committee Reports

4.01 **Executive Director's Report** **22-011**

Executive Director Erin Aleman reported that Jackie Grimshaw's was awarded the Sharon D. Banks award from the Transportation Research Board. Director Aleman's report included updates on the following: the implementation of the Legistar Agenda Management System, CMAP's local dues contributions, the upcoming governor's State of the State address, the Infrastructure, Investment, and Job Act (IIJA), her upcoming trip to the National Association of Regional Councils, COVID relief funding for transportation projects, CMAP's technical assistance FY 2022 project group, and the WTS (local chapter) Innovative Transportation Solutions Award for CMAP's Fees, Fines, and Fares Project.

Executive Director Aleman reported on the January 10, 2022 UWP Committee meeting. The committee discussed the UWP budget. Executive Director Aleman discussed the development of the FY 2023 budget and the challenges that occurred this year and reviewed projects and programs that would occur in the new fiscal year.

The Executive Director's report was read into the record.

4.02 CMAP Board Report **22-012**

Vice-Chair Redden reported that at the November CMAP Board meeting, two presentations were

provided: one was on economic recovery and its impact on mobility, the other was on strategic direction engagement strategy. At the January CMAP Board meeting, presentations on the budget and Regional Transit Vulnerability Assessment were provided. Additionally, the Highway Safety Targets were approved and referred for consideration to the MPO Policy Committee.

Vice-Chair Redden reported that the CMAP Board, after a discussion in September 2021 to restructure committees, also considered and approved the committees for 2022. She reported that there was substantial conversation regarding it. She reported that she expressed concern at the January CMAP Board meeting regarding the process, noting that she had requested in September 2021 that the issue be brought to the MPO Policy Committee for discussion but that it had never occurred. She clarified that she was not against the concept or principle of committee restructuring but the process that was taken. Discussion ensued.

The CMAP Board report was read into the record.

4.03 Council of Mayors Report **22-013**

Mayor Schielke reported on the October 19, 2021 Council of Mayors meeting. The FY 2023 funding proposal for the planning liaisons program in the UWP program was approved, an overview of the STP Program's FFY 2021 accomplishments and projects for FFY 2022 - 2026 was given, and an update on IDOT Bureau of Local Roads was presented. Staff presented preliminary results of the 2020 census, the Community Data Snapshots, and the Local Technical Assistance call for projects. An update was provided on the Local Government Network initiatives and recent progress of the agency's legislative priorities at the state and federal levels. The next Council of Mayors meeting will be January 25, 2022.

Mayor Schielke reported that at its January 10, 2022 meeting, the Unified Work Program Committee deferred approval of the FY 2023 UWP Core and Competitive Proposals. As a representative of the Council of Mayors on the Unified Work Program, Mayor Schielke reported that he voted to approve the FY 2023 Core and Competitive Proposals, adding that CMAP has been instrumental in providing guidance and funding to aid municipalities in serving their communities. Mayor Schielke also remarked on IDOT's work over the last 10 years that has provided guidance to municipalities and has been successful in its execution of programs and projects. He reported that with the additional funding from the Infrastructure and Investment Job Act (IIJA), it is critical that CMAP receive its requested share of funding so that it has the staff to support the work that will result from the IIJA.

Secretary Osman agreed with Mayor Schielke's statements and concerns. Secretary Osman reported that there is a need to submit a timely budget to IDOT and added that the IIJA will increase funding of several programs that will aid all agencies and municipalities. Secretary Osman reported that there are several external factors related to the IIJA and IDOT budget approval process, and because of the need to expedite the approval process, he directed staff to delegate the consideration of the FY 2033 UWP Core and Competitive Proposals from the Unified Work Program Committee to the Transportation Committee. Executive Director Erin Aleman reported that she will move this item to the Transportation Committee based upon Secretary's Osman's direction.

This Council of Mayor's Committee Report was read into the record.

## 5.0 Approval Items

5.01 Appointment of the Chair and Vice-Chair of the CMAP Transportation Committee **22-007**

Research, Analysis, and Planning Deputy Executive Director Yousef Salama reported on Chris Snyder's service, contributions, and accomplishments as the Chair of the Transportation Committee. He

presented the request to appoint Jessica Hector-Hsu of RTA as Chair, and Kevin Kerrigan of the Lake County Division of Transportation as Vice-Chair of the Transportation Committee. He reviewed their qualifications.

*(Cook Co representative Jennifer (Sis) Killen left the meeting. Jesse Elam stepped in as CDOT representative. DuPage County Representative Dan Cronin left the meeting. Chris Snyder stepped in as DuPage County Representative.*

A motion was made by CoM Representative Mayor Schielke, seconded by Tollway Representative Zucchero, that the agenda item be approved. The motion carried by the following vote:

**Aye:** IDOT Representative, CDOT Representative, CMAP Representative 1, CMAP Representative 2, CTA Representative, Cook Co Representative, CoM Representative, DuPage Co Representative, Tollway Representative, Kane Co Representative, Kendall Co Representative, Lake Co Representative, McHenry Co Representative, Metra Representative, Pace Representative, RTA Representative, and Will Co Representative

**Absent:** Class I Railroads Representative

**Non-Voting:** FHWA Representative, and FTA Representative

5.02 Semi-annual ON TO 2050/TIP Conformity Analysis and TIP Amendment **22-006**

**Attachments:** Conformity Amendment 22-03
ON TO 2050/TIP Conformity Analysis

Russell Pietrowiak, CMAP, presented the semi-annual ON TO 2050/TIP Conformity Analysis and TIP Amendments. The CMAP region is required to demonstrate that projects in the TIP conform to the motor vehicle emissions budget for its region through a regional transportation analysis. New or amended projects were subject to a 30 day public comment period which has passed; no public comments were received.

A motion was made by CTA Representative Connelly, seconded by McHenry Co Representative Hennings, that the agenda item be approved. The motion carried by the following vote:

**Aye:** IDOT Representative, CDOT Representative, CMAP Representative 1, CMAP Representative 2, CTA Representative, Cook Co Representative, CoM Representative, DuPage Co Representative, Tollway Representative, Kane Co Representative, Kendall Co Representative, Lake Co Representative, McHenry Co Representative, Metra Representative, Pace Representative, RTA Representative, and Will Co Representative

**Absent:** Class I Railroads Representative

**Non-Voting:** FHWA Representative, and FTA Representative

5.03 **2022 Highway Safety Targets** **22-008**

**Attachments:** 2022 Highway safety performance targets

Todd Schmidt, CMAP, provided a presentation of the 2022 highway safety targets, a component of the Transportation Performance Management (TPM) intended to track national goals at the state and regional levels. He reported that the state and CMAP region have seen an increase in fatalities during the last five years but that the number of serious injuries has decreased. The state did not meet or make significant progress towards meeting its safety targets and the Illinois Department of Transportation (IDOT) will be required to use all Highway Safety Improvement Program (HSIP) funds for safety projects and develop a HSIP Implementation Plan. Mr. Schmidt reviewed a number of safety initiatives implemented by CMAP.

A motion was made by CDOT Representative Biagi, seconded by Pace Representative Metzger, that the agenda item be approved. The motion carried by the following vote:

**Aye:** IDOT Representative, CDOT Representative, CMAP Representative 1, CMAP Representative 2, CTA Representative, Cook Co Representative, CoM Representative, DuPage Co Representative, Tollway Representative, Kane Co Representative, Kendall Co Representative, Lake Co Representative, McHenry Co Representative, Metra Representative, Pace Representative, RTA Representative, and Will Co Representative

**Absent:** Class I Railroads Representative

**Non-Voting:** FHWA Representative, and FTA Representative

## 6.0 Information Items

### 6.01 ON TO 2050 Update 22-029

**Attachments:** ON TO 2050 update financial plan for transportation

Laura Wilkison, Deputy Executive Director of Plan Implementation and Legislative Affairs, reported that staff is federally required to provide certain elements of the plan every four years. This update focuses on the socio-economic forecast, the federal targets and system performance report, the financial plan for transportation, and regionally significant projects evaluation.

Alexis McAdams and David Clark, CMAP, discussed the demographic forecast overview and demographic and employment projections. Martin Menninger, CMAP, discussed the federal performance measures based on five focus areas: highway condition, highway safety, system performance, transit asset condition, and transit safety. Lindsay Hollander, CMAP, provided an update on the financial plan for transportation, noting the overall condition of the system has declined since the ON TO 2050 plan, that federal, state and local actions have increased available revenues, and that the impact has had a negative impact to the revenue stream. Draft revenue recommendations was provided. Doug Ferguson, CMAP, reported that there were 69 regionally significant projects (RSP) projects submitted for consideration and discussed the RSP process.

A presentation on the ON TO 2050 was received and filed.

## 7.0 Other Business

Erin Aleman, Executive Director, reported that staff will schedule a special meeting of the Transportation Committee. Staff will also evaluate whether there is a need for a special meeting of the MPO Committee.

## 8.0 Public Comment

This is an opportunity for comments from members of the audience. The amount of time available to speak will be at the chair's discretion. It should be noted that the public comment period will immediately follow the last item on the agenda.

There were no comments from the public. Erin Aleman, Executive Director, reported that Heather and Garland Armstrong, former Illinois residents, attended the CMAP Board meeting.

## 9.0 Next Meeting:

**The MPO Policy Committee will meet on March 10, 2022**

## 10.0 Adjournment

The meeting was adjourned at 11:18 a.m.

A motion was made by CTA Representative Connelly, seconded by Pace Representative Metzger, that

the meeting be adjourned. The motion carried by the following vote:

**Aye:** IDOT Representative, CDOT Representative, CMAP Representative 1, CMAP Representative 2, CTA Representative, Cook Co Representative, CoM Representative, DuPage Co Representative, Tollway Representative, Kane Co Representative, Kendall Co Representative, Lake Co Representative, McHenry Co Representative, Metra Representative, Pace Representative, RTA Representative, and Will Co Representative

**Absent:** Class I Railroads Representative

**Non-Voting:** FHWA Representative, and FTA Representative

Minutes prepared by Blanca Vela-Schneider.

Chicago Metropolitan Agency for Planning

233 South Wacker Drive
Suite 800
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# MEMORANDUM

**To:** MPO Policy Committee

**From:** CMAP Staff

**Date:** March 3, 2022

**Re:** American Rescue Plan Act (ARPA) funding from Section 5307, sub-area funding allocations between Illinois/Indiana and Illinois/Wisconsin

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Under the American Rescue Plan Act (ARPA, Public Law 117-2, enacted March 11, 2021) funding has been allocated for this region and was published on the FTA website on April 13, 2021. In the CMAP region there are two urbanized areas: Chicago, IL-IN and Round Lake Beach-McHenry-Grayslake, IL-WI. Each of these urbanized areas is within the boundaries of two MPOs. The 5307 funding that is allocated to each urbanized area is then sub-allocated based on the agreements negotiated between Illinois and Indiana and Illinois and Wisconsin. The RTA Board of Directors approved the allocations of ARPA funding at the November 5, 2021 Board meeting. The MPO is being asked for its endorsement of the allocation split between Illinois/Indiana and Illinois/Wisconsin (Table 1). Table 2, the allocation split between the Service Boards, is for informational purposes only.

Table 1 – Allocation Split between Illinois/Indiana and Illinois/ Wisconsin

| Region | Total | Illinois | Indiana | Wisconsin |
|---|---|---|---|---|
| Chicago, Illinois/Indiana Urbanized Area | $1,495,628,027 | $1,492,155,556 | $3,472,471 | |
| Round Lake Beach, McHenry, Grayslake Urbanized Area | $4,994,364 | $4,818,755 | | $175,609 |
| Total | $1,500,622,391 | $1,496,974,311 | $3,472,471 | $175,609 |

Table 2 – Allocation split between Service Boards

| Service Board | CTA | Metra | Pace | Total |
|---|---|---|---|---|
| Allocations | $912,124,980 | $513,586,257 | $71,263,074 | $1,496,974,311 |

ACTION REQUESTED: Approval

###

# Regional Intelligent Transportation System (ITS) Architecture

Prepared by
Chicago Metropolitan Agency for Planning

Draft
February, 2022

## Introduction

The Northeastern Illinois Regional Intelligent Transportation Systems (ITS) Architecture is a roadmap for transportation systems integration for the northeastern Illinois counties of Cook, DuPage, Kane, Kendall, Lake, McHenry, Will and a portion of Grundy County over the next 15 years. The Architecture has been developed through a cooperative effort by the region's transportation agencies, covering all modes and all roads in the region. The Architecture represents a shared vision of how each agency's systems will work together in the future, sharing information and resources to provide a safer, more efficient, and more effective transportation system for travelers in the region.

The Architecture is an important tool that will be used by:

- Operating agencies to recognize and plan for transportation integration opportunities in the region;
- Planning agencies to better reflect integration opportunities and operational needs into the transportation planning process; and
- Other organizations and individuals that use the transportation system in the Northeastern Illinois region.

The Architecture provides an overarching framework that spans all of these organizations and individual transportation projects. Using the Architecture, each transportation project can be viewed as an element of the overall transportation system, providing visibility into the relationship between individual transportation projects and ways to cost-effectively build an integrated intelligent transportation system over time.

## Relationship to Other Architectures

The Architecture was developed in cooperation with the Illinois Department of Transportation (IDOT) and recognizes linkages to the Illinois Statewide ITS Architecture. The Architecture also supports information flows from the states of Wisconsin, Indiana, and Michigan who maintain their own Statewide ITS Architectures. Within the region, DuPage County has adopted the DuPage County Transportation Coordination Initiative, and the Regional Transportation Authority has adopted the Regional Transit Intelligent Transportation Systems Plan - both subregional ITS architectures whose activities are also supported and included within the Regional ITS Architecture.

## Background

In 2001, the U.S. Department of Transportation (U.S. DOT) published the Federal Highway Administration (FHWA) Final Rule and Federal Transit Administration (FTA) Policy which implement section 5206(e) of the Transportation Equity Act for the 21st Century (TEA-21). The rule set out the requirement that regions who were implementing ITS projects must develop an ITS Architecture by April 2005.

Fortunately, the Chicago metropolitan area understood early on the value of a plan to guide the

development of the region's intelligent transportation systems. In 1999, the Strategic Early Deployment Plan (SEDP) identified the need for a Regional ITS Architecture. A preliminary, high level Architecture of key regional systems was prepared through the Gary-Chicago-Milwaukee Corridor Multi-Modal Traveler Information System (GCM/MMTIS) and is described in the SEDP and in GCM documentation.

In July of 2000, IDOT and Chicago Area Transportation Study (CATS), a predecessor of the Chicago Metropolitan Agency for Planning (CMAP), sponsored a regional Tier 1 Architecture workshop to continue the development of the preliminary regional architecture. This one-day workshop gathered local transportation stakeholders and introduced the basic steps and concepts necessary to continue the development of a Regional ITS Architecture. In March of 2001, the Tier II Architecture workshop was held which incorporated the information from GCM and SEDP documentation, and stakeholder input into the first Regional ITS Architecture for northeastern Illinois – well in advance of the deadline set out by U.S. DOT for this task. This Regional ITS Architecture was built using the Turbo Architecture© tool. The resulting 2002 Regional ITS Architecture v1.0 was found to be consistent with the National ITS Architecture by the FHWA and FTA in June of 2003.

In 2007, another major update to the base Regional ITS Architecture was undertaken. Over a period of two days, half-day stakeholder meetings were held with groups of stakeholders from the region's agencies representing:

- Emergency Management and Security Functions
- Arterial Management Functions
- Expressway Management Functions
- Transit Management Functions

The stakeholders had a chance to review information included in the northeastern Illinois Regional ITS Architecture v1.0 and participate in discussions guided by consultants regarding ITS activities. In addition to stakeholder input, ITS documents from a variety of agencies were reviewed with information incorporated into the revised Regional ITS Architecture. The results of the document review and outreach produced the northeastern Illinois Regional ITS Architecture v2.0, adopted in early 2008.

After an information gathering process which extended from spring of 2013 until the middle of 2014, an updated Regional ITS Architecture v.3.0 was developed. The CMAP Board and MPO Policy Committees approved the updated architecture at their respective January 2015 meetings.

On December 4, 2015, President Obama signed into law H.R. 22, the Fixing America's Surface Transportation (FAST) Act. The bill retained funding for research in Intelligent Transportation systems, and also reiterated the requirement that ITS projects carried out with funding from the Highway Trust Fund must conform to the appropriate regional ITS Architecture.

## ARC-IT and RAD-IT Versions

In July 2017, the USDOT released the Architecture Reference for Cooperative and Intelligent

Transportation (ARC-IT), since updated to version 8.3, to replace the National ITS Architecture. The Turbo Architecture© database software has been replaced with Regional Architecture Development for Intelligent Transportation (RAD-IT) software, which has also been updated to maintain consistency with the ARC-IT Version 8.3.

Before updating the information contained within the existing Architecture database, the 2013/2014 Northeastern Illinois ITS Architecture was updated from Turbo Architecture© 7.0 to RAD-IT Architecture version 8.3. This update resulted in a Regional ITS Architecture that is consistent with the current ARC-IT v8.3, which defines the functions that are required for ITS, the physical systems which supply them, and the information exchanges that connect the physical subsystems together into an integrated system.

## Regional ITS Architecture Information Update

At the conclusion of the 2013/2014 update, CMAP updated the Architecture maintenance plan to call for a more continuous rather than periodic maintenance process based on information collected at regular meetings of the Transportation Technology and Operations Coalition, formerly the Advanced Technology Taskforce (ATTF) and Regional Transportation Operations Coalition (RTOC), collectively. The maintenance tasks could be either supported by consultants or CMAP staff could take advantage of training provided by FHWA and develop the skills to maintain the ITS Architecture in-house. In the years that followed, CMAP staff availed themselves of this training. Time passed, however, and the continuous update model was not followed. In addition to the passing of time triggering the need for an update, the region updated its regional comprehensive plan in October 2018, ON TO 2050, which included a number of projects, action areas, and policies which are highly dependent on the region's ITS infrastructure and which were not reflected in the Regional ITS Architecture. Therefore, in 2019, CMAP began an outreach process with the TTOC members to collect information on desired revisions to project architectures.

Information collection took place during interviews with regional stakeholder agencies as noted in Table 1 below. The meetings were scheduled with individual TTOC members, who were free to invite additional participants who could add information to the conversation. The Architecture update team traveled to the agency location, and in most cases the meetings were attended by multiple agency representatives. The meetings focused on a review of each agency's project ITS architectures developed as part of the Regional ITS Architecture. Meeting notes were taken during the wide-ranging conversations, focusing on project architecture items that should be changed or added.

**Table 1 – Summary of Regional Stakeholder Agency Meeting on Project Architectures**

| Regional Agency | Meeting Date | Agency Contacts | |
|---|---|---|---|
| IDOT | Sept. 11th, 2019 | Lisa Heaven-Baum | Jeff Galas |
| CMAP | June 18th, 2019 | Claire Bozic | Tom Murtha |
| CDOT | June 27th, 2019 | Abraham Emmanuel | John O'Neal |
| Illinois Tollway | Multiple | Steve Mednis | Elyse Morgan |

| Table 1 – Summary of Regional Stakeholder Agency Meeting on Project Architectures | | | |
|---|---|---|---|
| **Regional Agency** | **Meeting Date** | **Agency Contacts** | |
| Cook County | June 4th, 2019 | Brian Roberts | |
| DuPage County | May 23rd, 2019 | Bill Eidson | |
| Lake County | May 22nd, 2019 | Jon Nelson | |
| Kane County | May 15th, 2019 | Stephen Zulkowski | |
| City of Naperville | August 15th, 2019 | Andy Hynes | |
| CTA | August 20th, 2019 | Herb Nitz | |
| Pace | June 26th, 2019 | Taqhi Mohammed | David Tomzik |
| Metra | July 11th, 2019 | David Kralik | |
| ILAVA | Sept. 11th, 2019 | Jerry Quandt | |
| UIC | Sept. 11th, 2019 | John Dillenburg | |
| FHWA | Sept. 9th, 2019 | Dean Mentjes | |

Once the initial interviews were completed, draft changes were added to the Architecture. This included changes indicated by the ON TO 2050 projects, action areas, and policies. Meetings with police and emergency responders were not undertaken. Each of the TTOC agencies maintains a cooperative relationship with appropriate law enforcement and emergency response agencies. The team relied on the TTOC members to comment on coordination activities underway with police and emergency response staff. At the conclusion of the meetings and calls with the key stakeholders, all information was added to the revised RAD-IT Architecture Database and exported to a revised web-based presentation, with the process being documented in this Regional ITS Architecture v.4.

## Maintenance Plan Update

CMAP is responsible for maintaining the Northeastern Illinois Regional ITS Architecture. While CMAP assumes responsibility for maintenance, a group of core stakeholders act as an "institutional framework" to provide information and to review proposed changes to the Architecture. The Regional ITS Architecture is a consensus framework for integrating ITS systems in the region. The "institutional framework" is the Transportation Technology and Operations Coalition (now being reconstituted with the Regional Transportation Operations Coalition as the Transportation Technology and Operations Coalition).

The maintenance plan adopted in 2014 made a number of recommended steps:

- Identify Change – focus on ITS projects; take advantage of the TTOC to facilitate the use and maintenance of the Regional Architecture; update the Change Request Form.
- Evaluate/Approve Change – rekindle the TTOC Architecture subgroup to play a more

active role in Architecture maintenance.

- Update Baseline – training or outside support should be provided to facilitate Architecture maintenance.
- Notify Stakeholders – approved Architecture changes should be distributed to regional ITS stakeholders to keep them updated and to encourage use of the Architecture.

CMAP has included these recommended steps in the updated maintenance plan except for the identification of an TTOC ITS Architecture subgroup. There was little appetite for the development of an additional group. As a result, the revised plan reflects that TTOC as a whole serves this purpose.

The updated maintenance plan also goes into more detail about the Architecture approval process and versioning. The main clarification is that minor error corrections or changes are only approved by the TTOC, and will be treated as minor version changes (e.g., 4.0 changes to 4.0.1). A substantial change to a new project or an existing item in the Architecture would initiate a new version number (e.g., 4.0 changes to 4.1) would also require approval by the TTOC. However, multiple substantial changes, including new projects and existing items in the Architecture, would require approval by the MPO Policy Committee and would initiate a major version number revision (e.g., 4.1 changes to 5.0).

The Regional ITS Architecture V4 Maintenance Plan for 2020 maintains these changes from 2014 and has been updated to reference more recent updates to the ARC-IT as version 8.3 and use of RAD-IT database software. The maintenance plan has been updated for approval by the Transportation Technology and Operations Coalition.

## Status Categories

Throughout the Regional Architecture, inventory, services, interfaces, agreements, and projects are assigned a status of existing, planned, or potential.

An item is **planned** if the region has invested some efforts or funds on the item and intends to implement it at some point. For example, a traffic management center where a planning study has occurred but which none of the further work to implement it has taken place is defined as planned. An item may still be defined as planned when there is a demonstration project or a small amount of the system in place.

An item is **existing** if the item is in place and operating. The item does not have to be in place systemwide or for all stakeholders. For items which are partially in place, the boundary between whether it is planned or existing is fuzzy. How much should be in place to qualify as existing? The decision to categorize as planned or existing was determined based on the stakeholder conversation.

An item is **potential** if the region believes it is valuable and will likely come into existence one day, but nothing has been invested in developing it yet.

## Stakeholder Update

Stakeholder coordination and involvement are key elements for developing a Regional ITS Architecture. The stakeholders have been identified and described with enough detail that a project developer can understand who the stakeholders are and what activities they are responsible for. The web-based presentation conveniently provides a list of elements associated with the stakeholder directly from the stakeholder list. The stakeholders represent a mix of specific agencies or organizations and generic names used to represent groups of stakeholders. Examples of specific agency or organizations are Metra and the Illinois Tollway. An example of a generic stakeholder group name is Municipalities / Townships, which represents any of the municipalities in the region that have ITS elements.

Updates to the stakeholder list for V4 of the Regional ITS Architecture include the following:

- Addition of Cook County Bureau of Technology to reflect their role in planning, developing and maintaining enterprise technology services.
- Addition of Private Transportation Network Providers to represent Uber, Lyft, and other private companies that are providing ride matching or ridesharing services.

Web-Based Presentation Stakeholder List

## Inventory

The inventory, viewable either by stakeholder or physical object, provides a list of the ITS systems and equipment in the region along with some statewide elements and even some elements of adjoining states (Indiana and Wisconsin). The majority of elements in the inventory represent a specific existing or planned system. Examples of specific systems are the IDOT District 1 ComCenter and the Chicago Transit Authority Control Center.

Some elements represent sets of devices, rather than a single specific system or device. An example of this type of element is the element "City of Chicago Office of Emergency Management and Communications (OEMC) Field Equipment." This element represents all of the traffic signals, traffic detectors, Closed Circuit Television (CCTV), Dynamic Message Signs (DMS) and Highway Advisory Radio (HAR) that are or will be operated by the City of Chicago OEMC. The element describes the type of devices, not the specific numbers of devices. For example, the element calls out DMS, but does not say how many there are, or their precise location.

A third type of element in the inventory is a "generic" element that represents all of the systems of a certain type in the region. An example of this type of element is the Municipal Public Safety Dispatch, which represents the many municipal public safety answering points (PSAPs) in the region. There are multiple PSAPs in the region. Including these systems using a single element helps keep the Architecture from growing too large.

Each inventory element includes a link to the associated stakeholder, a description of the functionality the item is intended to provide, a context diagram presenting interfaces to all other inventory elements, and individual flow diagrams for interfaces to other elements. The individual flow information defines

the flows and links to the applicable ITS standards.

Some highlights of changes to the inventory include:

- Addition of City of Chicago Open Data Portal as a data source that the CTA, Pace, and DOTs within the region provide data to for review by other agencies in the region.
- Addition of IDOT Data Depository to reflect the http://ritis.org data depository to which IDOT maintains a subscription for traffic data collection and analysis. Data system can be shared with regional agencies upon request.
- Addition of both a planned Kane County Automated Traffic Signal Performance Monitoring System and a Lake County Automated Traffic Signal Performance Monitoring System.
- Addition of private transportation network providers to represent Uber, Lyft, and other private companies that are providing ride matching or ridesharing services.
- Addition of Public Electric Vehicle Charging Stations to represent electric vehicle charging stations installed by municipalities and townships through the NE Illinois region.
- Addition of Regional Transit Ventra card to reflect use of the card on all CTA and Pace transit vehicles.

View the ITS Architecture's inventory here.

## Needs and Services

The transportation needs for the region are defined as part of the transportation planning process. ON TO 2050, the region's comprehensive plan, emphasized three principles that relate to improving mobility within the region:

1) Promoting inclusive growth by improving mobility options that spur economic opportunity for low-income communities, people of color, and people with disabilities;
2) Improve resilience by ensuring that infrastructure can adapt to changes in climate and technology; and
3) Prioritize investment of limited resources to efficiently maintain existing infrastructure while securing new revenues for needed enhancements.

Based upon these principles, ON TO 2050 provides a series of recommendations and related strategies / actions to implement the recommendations.

**ON TO 2050 Recommendation: Harness technology to improve travel and anticipate future impacts**

The related strategies and actions to implement this recommendation include, but are not limited to, coordinating traffic operations region-wide, making a regional priority of data collection, sharing, and analysis of transportation data, and identify public investments that could catalyze emerging technologies.

Example service packages that support these regionally significant projects include:

- Electronic Toll Collection
- Variable Speed Limits
- Dynamic Lane Management and Shoulder Use

**ON TO 2050 Recommendation: Make transit more competitive**

The related strategies and actions to implement this recommendation include, but are not limited to, investing in and protecting transit's core strengths, encouraging roadway agencies to prioritize improving transit service, and making further progress in fare and service coordination.

Example service packages that support these goals are:

- Transit Vehicle Tracking
- Transit Fixed Route Operations
- Transit Fare Collection Management
- Transit Fleet Management
- Transit Traveler Information
- Transit Signal Priority
- Integrated Multi-Modal Electronic Payment

**ON TO 2050 Recommendation: Maintain the region's status as North America's freight hub**

The related strategies and actions to implement this recommendation include, but are not limited to, invest strategically in the freight network, improving local and regional truck travel, and mitigating the negative impacts of freight on adjacent areas, particularly Economically Disconnected Areas.

Example service packages that support these goals are:

- Advanced Railroad Grade Crossing
- Freight Electronic Clearance
- Roadside CVO Safety
- Parking Facility Management
- Railroad Operations Coordination

**ON TO 2050 Recommendation: Leverage the transportation network to promote inclusive growth**

The related strategies and actions to implement this recommendation include, but are not limited to, improving commute options between disinvested areas and employment, education and training, and service opportunities, as well as improving access to public rights of way for pedestrians, cyclists, seniors, and people with disabilities.

Example service packages that support these goals are:

- Broadcast Traveler Information
- Personalized Traveler Information
- Dynamic Ridesharing and Shared Use Transportation
- Dynamic Roadway Warning

**ON TO 2050 Recommendation: Improve travel safety**

The related strategies and actions to implement this recommendation include, but are not limited to,

improve incident detection and management and expanding regional data collection and analysis on safety to support programming decisions.

Example service packages that support these goals are:

- Transportation Infrastructure Protection
- Intersection Safety Warning and Collision Avoidance
- Traffic Incident Management System
- ITS Data Warehouse

**ON TO 2050 Recommendation: Improve resilience of the transportation network to weather events and climate change**

The related strategies and actions to implement this recommendation include, but are not limited to, adapting vulnerable transportation infrastructure to be responsive to weather events and climate change as well as improving the operational response to weather events to ensure mobility.

Example service packages that support these goals are:

- Weather Data Collection
- Weather Information Processing and Distribution
- Winter Maintenance
- Infrastructure Monitoring

**ON TO 2050 Recommendation: Fully fund the region's transportation system**

The related strategies and actions to implement this recommendation include, but are not limited to, expanding priced parking, implement tolling, and using public-private partnerships strategically.

Example service packages that support these regionally significant projects include:

- Electronic Toll Collection
- Parking Space Management
- Parking Electronic Payment
- Parking Reservations

**ON TO 2050 Recommendation: Enhance the region's approach to transportation programming**

The related strategies and actions to implement this recommendation include, but are not limited to, implementing performance-based programming region-wide and expand asset management practices to the entire transportation system.

Example service packages that support these regionally significant projects include:

- ITS Data Warehouse

**ON TO 2050 Recommendation: Build regionally significant projects**

ON TO 2050 recommends building regionally significant projects as major capital projects in the region.

Some of the new major capital projects are recommended to include managed lanes. While not specifically mentioned, all new major capital projects will include significant ITS components.

Example service packages that support these regionally significant projects include:

- Electronic Toll Collection
- Variable Speed Limits
- Dynamic Lane Management and Shoulder Use
- Dynamic Roadway Warning
- VMT Road User Payment
- Transportation Decision Support and Demand Management

## Operational Concept

An operational concept documents each stakeholder's current and future roles and responsibilities in the operation of the regional ITS systems. The operational concept documents these roles and responsibilities across a range of transportation services. Agency responsibilities in the following areas have been defined.

- Archived Data Systems
- Commercial Vehicle Operations
- Electronic Toll Collection
- Emergency Management
- Freeway Management
- Incident Management
- Maintenance and Construction
- Parking Management
- Road User Payment
- Surface Street Management
- Transit Services
- Traveler Information

View the ITS Architecture's concept of operations by clicking here.

## Interfaces and Information Exchanges

While it is important to identify the various systems and stakeholders as part of a Regional ITS Architecture, a primary purpose of the Architecture is to identify the *connectivity* between transportation systems in the region and where appropriate, outside the region. How these systems interface with each other is an integral part of the overall Architecture. These interactions are referred to as interfaces and are listed in the web-based presentation. The elements are listed alphabetically in the column on the left, and each entry in the Interfacing Element column on the right is a link to more detailed information about the particular interface.

There are 343 different elements identified as part of the Northeastern Illinois Regional ITS Architecture. These elements include city, county and state traffic operations centers, transit centers, transit vehicles,

public safety dispatch centers, media outlets, and others—essentially all of the existing and planned physical components that contribute to the regional intelligent transportation system. Interfaces have been defined for each element in the Architecture. For example, the IDOT District 1 Traffic Systems Center (TSC) has existing or planned interfaces with many other elements in the region ranging from field equipment to transit centers. Some of the interfaces are far less complex. For example, the City of Chicago Skyway Roadside Equipment has interfaces with only two other elements in the Architecture.

Architecture flows between the elements define specific information that is exchanged by the elements. Each Architecture flow has a direction, name and definition. Most of the Architecture flows match ones from the National ITS Architecture (the mapping of elements to National ITS Architecture entities allowed the developers to match the Architecture flows to the appropriate interfaces). In some cases, new user defined flows have been created for interfaces or connections that are not expressed in the National ITS Architecture. These Architecture flows define the interface requirements between the various elements in the Regional Architecture.

View the ITS Architecture's interfaces and information exchange by clicking here

## Functional Requirements

Functional requirements are a description of the functions or activities that are currently performed by the ITS elements or that are planned to be performed in the future. The information describes what the systems are supposed to do. The Northeastern Illinois Regional ITS Architecture functions were developed using the functional assignments underlying the National ITS Architecture and the mapping from transportation services to elements. The functions are easily understood and are presented as a list of "shall" statements.

View the ITS Architecture's functional requirements by clicking here.

## Regional Projects and Project Sequencing

One focus of this update was to collect more information about ongoing projects. Because of this, the project list changed more than anything else in the Architecture.

The projects listed in the Architecture provide a way to learn about specific ITS development activities. The Northeastern Illinois Regional ITS Architecture views the project entry as reflective of the process which takes place to:

- Expand an existing inventory

  For example, an agency may have traffic surveillance equipment on parts of its system. The inventory items will reflect that the agency owns such equipment. If the equipment is being expanded onto another roadway, a project is included to reflect the expansion on that roadway.

- Develop a new inventory item

An agency may begin the process to develop a truck parking information system. A project will then be added that reflects the activity of building a truck parking system, while the inventory will be updated to reflect the existence of a planned truck parking system belonging to the agency.

- Link the inventory items in a new way to achieve a goal

The work to develop the links between inventory items is reflected as a project. For example, the region has 911 call centers, and the region has traffic management centers. The region has identified the flow of incident information to traffic management centers as an important goal. A project has been added that reflects the activity of establishing communication between those systems.

A number of projects have been added with CMAP as the primary stakeholder in response to the ON TO 2050 plan update. These are: CMAP Congestion Pricing, CMAP Expressway Vision Improvements, CMAP Parking Management, and CMAP VMT Pricing. While it is unlikely that CMAP will ultimately be the primary stakeholder, the ITS projects needed to support the region's long range goals should be included in the ITS Architecture.

Two projects have also been added under the flag of the TTOC. These are the TTOC (formerly RTOC) Integration of Centers and TTOC PSAP Integration projects. In this case, TTOC is not an individual agency but a cooperative group representing the region's transportation system operators. These two activities have risen to the top of the list as this group's regional priorities. A number of agencies are already working on this activity (Kane County, Lake County, Will County, IDOT, Illinois Tollway and CDOT), but as other unlisted agencies begin work on this activity, the Regional ITS Architecture acknowledges that it is a known priority.

Other projects have had major changes to descriptions or names and are included in the table of updated projects below. In other cases, multiple project architectures have been merged into a singular project architecture to reflect a combination of technologies within a specific area. Other project architectures have been merged through a review of the architectures by agency stakeholders.

Project sequencing is addressed in general terms. Projects are defined as short-term (0-5 years), mid-term (5-10 years), and long-term projects (10-15 years).

Table 2 below lists a summary of major updates to project architectures made to the Architecture during this update.

**Table 2 – Summary of Major Updates to Project ITS Architectures**

| **Previous Project Architectures** | **Updates Made Based on Stakeholder Agency Meeting Notes** |
|---|---|
| CDOT Transit Signal Priority Project | Merged with **CDOT Bus Rapid Transit System** |

| Table 2 – Summary of Major Updates to Project ITS Architectures | |
|---|---|
| **Previous Project Architectures** | **Updates Made Based on Stakeholder Agency Meeting Notes** |
| CDOT Chicago Truck Route Advisory System | Renamed to **CDOT Traffic Advisory System**, merged with CDOT Lakeshore Drive Surveillance and CDOT Special Events Advisory System projects |
| CDOT Cicero Ave Smart Corridor | Renamed to **CDOT Cicero Ave. / Midway Smart Corridor**, also merged with CDOT Railroad Grade Crossing Delay - Traveler Information System project |
| CDOT Railroad Grade Crossing Delay - Traveler Information System | Merged with **CDOT Cicero Ave. / Midway Smart Corridor** project |
| CDOT Smart Corridors | Renamed to **CDOT Smart Signal System**, merged with Chicago Wireless Traffic Signal Interconnects project |
| CDOT US41 Lake Shore Drive Surveillance and Information System | Merged with **CDOT Traffic Advisory System** project |
| Chicago Special Events Advisory System | Merged with **CDOT Traffic Advisory System** project |
| CMAP Dedicated and Managed Truckways | Renamed to **CMAP Expressway Vision Improvements**, major updates to reflect existing and future capabilities of project |
| CTA Bus Rapid Transit | Merged with **CTA Transit Signal Priority Corridors** project |
| CTA Subway CCTV Station Portal Security | Merged with **CTA Infrastructure Surveillance (Subway Tunnels)** project |
| CTA Transit Signal Priority Corridors | Merged with **CTA Bus Rapid Transit** project |
| Kane County Randall Road Adaptive Signal Control | Merged into new project (**Kane County Randall Road ITS Corridor**) |
| Kane County Randall Road Safety Improvements | Merged into new project (**Kane County Randall Road ITS Corridor**) |
| Kane County Signal Interconnects / ATMS Integration | Merged into new project (**Kane County Randall Road ITS Corridor**) |
| Lake County Countywide Bluetooth Traffic Monitoring | Renamed to **Lake County Countywide Traffic Monitoring**, major updates to reflect new project capabilities and goals |

| Table 2 – Summary of Major Updates to Project ITS Architectures | |
|---|---|
| **Previous Project Architectures** | **Updates Made Based on Stakeholder Agency Meeting Notes** |
| Metra Automatic Passenger Counts | Renamed to **Metra Automated Communications and Onboard Reporting Network (ACORN)**, major updates to reflect new project capabilities and goals |
| Metra Contactless Electronic Fare Collection | Renamed to **Metra Automated Communications and Onboard Reporting Network (ACORN)**, moderate updates to reflect new project capabilities and goals |
| Pace TSP and ART Improvements | Project split into two separate projects as **Pace Transit Signal Priority Corridors** and **Pace Pulse BRT** |

Reasonable attempts were made to ensure that the project Architecture components (inventory, service packages, and data flows) made sense. However, we acknowledge these items will undergo closer scrutiny and require refinement as projects get underway. We expect that corrections to the project Architectures will be made as they are identified during project development.

View the ITS Architecture project listing by clicking here.

## Agreements

There are several types of arrangements associated with the interfaces included with the projects discussed previously. Data exchanges between systems require agreements on the transmission protocol and data formats to ensure compatibility. Coordinating field device operations owned by different agencies requires defined procedures for submitting message requests and rules governing when such requests can be honored. Such coordination can be accomplished either with handshake agreements or formal written instruments. Sharing control of field devices operated by different agencies involves more liability issues, which requires more formal agreements. Coordinated incident response may also require formal agreements, but also requires group training of personnel from various agencies. While all interfaces involve agreements for data compatibility, agreements for procedures and operations as well as training can also be critical elements to optimizing the benefits of the Architecture.

View the ITS Architecture agreements by clicking here.

## Standards

ITS standards establish a common way in which devices connect and communicate with one another. This allows transportation agencies to implement systems that cost-effectively exchange data and accommodate equipment replacement, system upgrades, and system expansion. Standards benefit the

traveling public by providing products that will function consistently and reliably throughout the region. ITS standards contribute to a safer and more efficient transportation system, facilitate regional interoperability, and promote an innovative and competitive market for transportation products and services.

Standards are developed by a number of standards development organizations:

- American Association of State Highway and Transportation Officials (AASHTO)
- American National Standards Institute (ANSI)
- American Society for Testing and Materials (ASTM)
- Electronic Industries Alliance/Consumer Electronic Association (EIA/CEA)
- Institute of Electrical and Electronics Engineers (IEEE)
- Institute of Transportation Engineers (ITE)
- Society of Automotive Engineers (SAE)
- American Public Transportation Association (APTA)
- National Electrical Manufacturers Association (NEMA)

Use of ITS standards is very important to project development in the northeastern Illinois region. These standards apply to many areas including center-to-center, center-to-roadside, center-to-vehicle/traveler, roadside-to-roadside, and roadside-to-vehicle. Based on the interfaces and information flows chosen for the Regional Architecture, a number of ITS standards are applicable to the region. Each information flow is associated with a standard. However, the Regional ITS Architecture does not link directly to details on the applicable standards, but simply lists the relevant standards leaving project developers to find the detailed information on their own. The USDOT Research and Innovative Technology Administration ITS Joint Program Office ITS Standards Program is a good place to start.

A specific plan for how the region will consider standards has not been developed, but the Regional Transit Signal Priority Working Group, hosted by the Regional Transportation Authority, provides a good example for how that process might be carried out. This group has developed regional standards for an interoperable system which includes bus equipment from two different transit agencies (Pace and CTA) and roadside equipment owned and operated by city, county and state transportation departments. The group is working cooperatively with all stakeholders involved to implement a regionally interoperable transit signal priority system through use of these standards.

View the ITS Architecture standards by clicking here.

## Using the Regional ITS Architecture

Once a Regional ITS Architecture has been created, it is important that it be used as a key reference in the transportation planning process. This will ensure that all proposed ITS projects are consistent with the Regional ITS Architecture and additional integration opportunities are considered, leading to more efficient implementations.

The Regional ITS Architecture should also be considered for support in the ITS project development cycle. This begins with project definition, followed by procurement, leading to implementation. Information in the Regional ITS Architecture can assist in all three of these areas of project development.

**Project Definition** may occur at several levels of detail. Early in the planning process, a project may be defined only in terms of the transportation services it will provide, or by the major system pieces it contains. At some point prior to the beginning of implementation, the details of the project must be developed. This could include further system definition and interface definition including exactly what systems or parts of systems will make up the project, what interconnections the project entails, and what information needs to flow across the system interconnections. Requirements definition may go through similar levels of detail, starting with a very high level description of project functions and moving toward system specifications. By identifying the portions of the Regional ITS Architecture that define the project, the Regional ITS Architecture outputs can be used to create key aspects of the project definition.

The areas that a Regional ITS Architecture can assist in project definition are:

- The identification of agency roles and responsibilities (including any interagency cooperation) that can come from the operational concept developed as part of the Regional ITS Architecture. This operational concept can either serve as a starting point for a more detailed definition, or possibly provide all the needed information.
- Requirements definition can be completely or partly defined by using the Regional ITS Architecture functional requirements applicable to the project.
- The Regional ITS Architecture includes a map to ITS standards and the project mapping to the Regional ITS Architecture can extract the applicable ITS standards for the project.

**Procurement** can commence once a project is defined, and funding for it is committed. This generally begins with the development of a Request for Proposal (RFP), which is the common governmental practice for initiating a contract with the private sector to implement the project.

The Regional ITS Architecture can support RFP development. First, the project definition described above forms the basis for what is being procured. Mapping the project to the Regional ITS Architecture allows bidders to have a clear understanding of the scope of the project and of the interfaces that need to be developed. The functional requirements created as part of the Regional ITS Architecture can be used to describe the functional requirements for the project. In addition, a subset of the ITS Standards identified as part of the Regional ITS Architecture development can be specified in the RFP.

**Project Implementation** begins once a contract is in place. Implementation moves through design, development, integration, and testing.

Because ITS projects involve systems and their interconnections, it is very important to follow a system engineering approach to designing and implementing the project. While the exact process followed is at the discretion of the local agency, the ITS Architecture and Standards Rule/Policy lay out a set of required system engineering analyses for ITS projects funded through the Highway Trust Fund.

The required systems engineering analysis steps are:

- Identification of portions of the Regional ITS Architecture being implemented (or if a Regional ITS Architecture does not exist, the applicable portions of ARC-IT)
- Identification of participating agencies' roles and responsibilities
- Requirements definitions
- Analysis of alternative system configurations and technology options to meet requirements
- Procurement options
- Identification of applicable ITS standards and testing procedures
- Procedures and resources necessary for operations and management of the system

The Regional ITS Architecture can provide inputs to a number of these steps as shown in the Table 3 below.

**Table 3 – Summary of Systems Engineering Requirements and ITS Architecture Outputs**

| System Engineering Requirements | Regional ITS Architecture output |
|---|---|
| Identification of portions of the regional ITS Architecture being implemented | Mapping project to the elements and interfaces of the regional ITS Architecture. |
| Identification of participating agencies' roles and responsibilities | Use Operational Concept as a starting point. |
| Requirements definitions | Use Functional Requirements as a starting point. |
| Identification of applicable ITS standards and testing procedures | Use Regional Architecture standards outputs as a starting point for the standards definition. |

The Regional ITS Architecture represents a detailed plan for the evolution of the ITS systems in the region and can be used to support regional transportation planning efforts and project development efforts.

# Regional Intelligent Transportation System (ITS) Architecture

## Maintenance Plan

Prepared by
Chicago Metropolitan Agency for Planning

Draft
February, 2022

# Table of Contents

# Introduction

According to the Federal Highway Administration (FHWA) Final Rule on Intelligent Transportation Systems' (ITS) Architecture and Standards, "the agencies and other stakeholders participating in the development of the Regional ITS Architecture shall develop and implement procedures and responsibilities for maintaining it, as needs evolve within the region." The Northeastern Illinois ITS Architecture Maintenance Plan was last revised in 2014 and, while the plan has not changed significantly, it has been updated to reflect current practices. The goal of this process is to provide a straightforward, better understood process for architecture use and maintenance, one that regional ITS stakeholders can follow to improve their ITS projects and to encourage regional integration and cooperation in project deployment and operations.

# Maintenance Responsibility

The Chicago Metropolitan Agency for Planning (CMAP), as staff to the MPO of northeastern Illinois, has primary responsibility for maintaining the ITS Architecture. This task cannot be accomplished without the input of the region's ITS implementers.

To accomplish this, CMAP also hosts and staffs the region's Transportation Technology and Operations Coalition (TTOC, formerly the Advanced Technology Task Force), whose participants provide input and review of changes to the region's ITS Architecture. The Coalition's participants include the Chicago Department of Transportation, the Regional Transportation Authority, IDOT, Illinois Tollway, CTA, Metra, Pace, the counties, and UIC. The Coalition is also open to the participation of other interested attendees and audience members participate freely to share information.

# Maintenance Frequency

CMAP intends to maintain the Regional ITS Architecture continuously, with updates and revisions being made as they are identified. Scheduled meetings with TTOC will provide input from the group on current and future ITS projects.

# Maintenance Items

The region's ITS Architecture is maintained in a Regional Architecture Development for Intelligent Transportation (RAD-IT) database (previously known as Turbo Architecture©), with an associated user-friendly web-based presentation of the information. These items will be maintained as part of the maintenance plan:

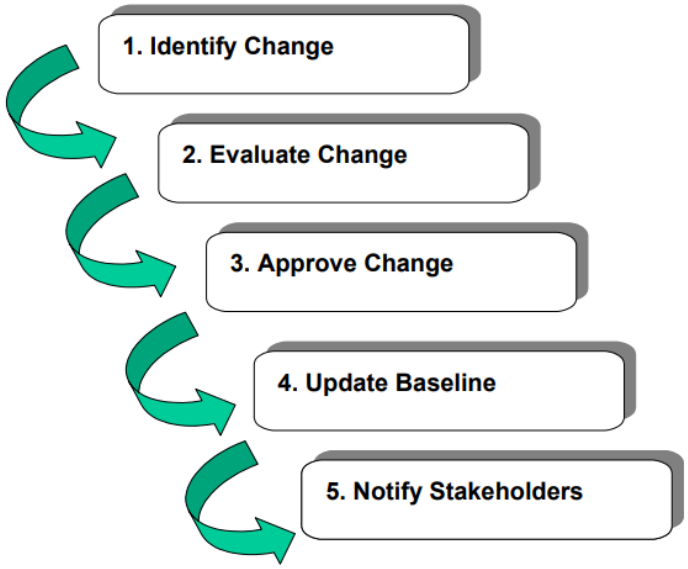
- Description of the Region – The Architecture focuses on the CMAP area. It does not change frequently.

- List of Stakeholders – Most often, stakeholders have changed to reflect name changes, for example from Highway Department to Division of Transportation.
- List of ITS Elements (inventory) – The list of elements is comprehensive, but implementation of some projects may result in a revised element description or a new element. In CMAP's architecture development, we add a project to reflect the element being developed, and an element to describe the finished product of the project. For example, a project may describe equipping vehicles with AVL technology and purchasing a fleet management system for the operations center. Consequently, the description of vehicles will be changed to reflect that they are AVL equipped, and a new element called Agency X Fleet Management System will also be added.
- Interfaces between Elements (interconnects and information flows) – This is the most difficult item to establish and maintain. Interfaces are included in the architecture, and many times they have been included based on likely interfaces presented by the RAD-IT software application. These will be refined as needed when a project or element is subject to the scrutiny arising from project development.
- Project Descriptions – In the past, projects were described in a separate document. Project information is now being housed in the architecture database. Often, a project may be entered to reflect an agency expanding a capability it already has. For example, an agency may operate a type of field equipment at one location. If a project to expand that type of equipment at another location is being planned, a project will be added to reflect that in the Architecture. This will not result in new ITS elements, because the field and center information already existed in the inventory.
- Project Sequencing – Project sequencing is addressed in a general way, with each project classified as a short-term (1-5 years), mid-term (5-10 years) or long-term (10-15 years) project.
- System Functional Requirements – The National Architecture, as reflected in the RAD-IT software application, provides guidance and the ability to select functional requirements.
- Operational Concept - The concept of operations is included in the RAD-IT database.
- List of Agreements – Identifying existing agreements and potential future agreements continues.
- Applicable ITS Standards – The RAD-IT database associates applicable ITS standards with projects based on how the projects are defined.
- Web-based ITS Architecture Presentation – The new RAD-IT application makes keeping up the web based presentation simple through its ability to export the desired information in a format that can be directly added to the agency website.
- The required Maintenance Plan will also be updated to reflect maintenance procedures as they evolve.

## Summary of Change Procedure / Maintenance Steps

The maintenance plan is based on the five ITS architecture maintenance steps identified in the FHWA's Regional ITS Architecture Guidance Document (Figure 1).

**Figure 1: Process for Change Identification**[1]




***Step 1: Identify Change***

ITS Architecture changes occur primarily as a result of stakeholder changes or ITS projects being added, deleted, modified, or reprioritized. Other changes result from adjustments in regional needs or change in the National Reference ITS Architecture, referred to as the Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT)[2]. It has been most productive to focus on changes needed in response to ITS project changes. Discussion of the project changes lead to identification of new projects, items needed for the project which must be added to the stakeholder inventory, and new agreements that may be needed to support the project.

TTOC meetings provide an opportunity to identify ITS projects. Architecture Change Request Forms will be distributed electronically to all TTOC participants as an attachment to meeting invitations, which TTOC participants can then use to identify new regional ITS projects. At TTOC meetings, regional ITS updates by the Illinois Department of Transportation (IDOT), Illinois State Toll Highway Authority (ISTHA), Regional Transportation Authority (RTA), counties, municipalities, and other TTOC participants should reference the architecture (using the Change Request Forms as formal submittals), when applicable. CMAP architecture staff will facilitate this process. Through this approach, the TTOC participants can identify appropriate elements, user services, interconnect diagrams, standards, agreements, etc. from the architecture that may be affected – and identify potential integration opportunities.

To improve the flexibility of architecture change identification, the Change Request Form was modified to allow for attachments (e.g., spreadsheet, text document) in instances when the text

[1] Regional ITS Architecture Guidance – "Developing, Using, and Maintaining an ITS Architecture for Your Region," Version 2.0, U.S. DOT FHWA, July, 2006.
[2] ARC-IT: The National ITS Reference Architecture. Available at: https://local.iteris.com/arc-it/index.html.

areas on the form are too small or when there is a report that can be attached. This will provide a regional ITS stakeholder with more space to clarify a requested change.

***Step 2: Evaluate/Approve Change***

It is critical that the TTOC actively seek out architecture changes, provide support to regional ITS stakeholders as they incorporate the architecture into their processes, and serve as the decision makers for Regional ITS Architecture changes. This group consists of participants that are familiar with ITS architecture and the systems engineering process. Participants are highly aware of regional ITS activities. This group should meet regularly to discuss potential changes to the architecture. Potential architecture changes could come from TTOC participants or other ITS stakeholders.

The TTOC would evaluate a potential change to determine whether it constituted a minor revision and needed only TTOC concurrence. Such cases would include error corrections to stakeholders, projects, inventories and flows. These corrections would get the nod from TTOC and a minor version number revision to the Architecture would be made, for example from 4.0 to 4.0.1.

If the change is not an error correction, including new projects, new inventory items, or a significant change to an existing item that would impact its connections to other agency items, the change will be reviewed by TTOC. A version number revision to the Architecture would also be made with this concurrence, for example from 4.0 to 4.1.

If there are a group of changes to multiple items, including multiple new projects, inventory items, and other significant change to existing items that impact their connections to other agency items, these changes can be reviewed by TTOC but would need approval by the CMAP Policy Committee. A major version revision to the Architecture would also be made with this approval, for example from 4.1 to 5.0.

***Step 3: Update Baseline***

The baseline Regional ITS Architecture consists of the RAD-IT database and the Regional ITS Architecture website. To implement approved changes, CMAP staff assigned to carry out this work have been trained for RAD-IT using free RAD-IT training workshops. Any approved changes to the baseline architecture should be documented.

When the RAD-IT database is updated, a new web-based presentation will be generated and posted on the CMAP website.

***Step 4: Notify Stakeholders***

Once an architecture change has been identified, evaluated, and implemented, it is important that both the requesting agency and other regional ITS stakeholders be made aware of the change. Some reasons this is important are:

- The requesting agency may be relying on Highway Trust Fund dollars to support implementation of the project, which requires inclusion in the Regional ITS Architecture.

- The change may affect other related projects or ITS architectures.
- Alerting regional ITS stakeholders about architecture changes will encourage them to use the architecture and participate in its maintenance process.

Changes will be summarized by TTOC and distributed via email, posted on the architecture website, and/or discussed at scheduled TTOC meetings.

In addition, requested architecture changes that are not approved should also be relayed back to the requesting agency. This notification should provide an explanation (e.g., the ITS project is already included in the Regional ITS Architecture) and the opportunity for the agency to clarify or resubmit its request.

## Conclusion

For the Northeastern Illinois Regional ITS Architecture to fulfill its potential as an ITS planning and deployment tool, regional stakeholders must be aware of it, understand its purpose, and know how to use it. The current ITS Architecture Maintenance Plan provides a strong starting point for reaching these goals, and the process outlined in this document should provide CMAP with the steps necessary to maximize the utility of the Northeastern Illinois Regional ITS Architecture. The goal of these steps is to make the architecture a "living" document, one that regional ITS stakeholders can feel comfortable using.

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**MEMORANDUM**

**To:** **MPO Policy Committee**

**From:** CMAP Staff

**Date:** March 10, 2022

**Re:** Draft FY2023 Unified Work Program (UWP) Budget

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It is truly an exciting time to be working in transportation. The passage of the Infrastructure Investment and Jobs Acts (IIJA) by Congress in November 2021 presents the region with an opportunity to address longstanding infrastructure, resilience, and equity challenges identified in ON TO 2050. It also affords the region an opportunity to address inequities that have been exacerbated by the COVID-19 pandemic. Under the IIJA, the Unified Work Program (UWP) mark or federal Metropolitan Planning fund increases by approximately $4.1 million in federal funding for FY2023. The UWP funds provides the federal resources for CMAP to meet the Metropolitan Planning requirements as outlined in Title 23 Section 134. With the required match, the total UWP funding is $28,567,244 million, an increase of $5,713,448 or 20 percent as compared to FY2022. This memo illustrates how CMAP will execute on the FY2023 funding and deliver value and services to our partners while implementing ON TO 2050.

As the region's MPO, CMAP is charged with maintaining the data and information necessary to support the region's multimodal needs. To meet both the known and soon-to-be shared policy guidance and regulations for the UWP funds and broader IIJA policy goals, CMAP proactively built this year's budget to support the region's implementers in executing on projects in ON TO 2050. The combination of both Rebuild Illinois and IIJA will amplify the resources required to effectively coordinate, convene, plan, and program transportation activities across the region.

## Overview

CMAP's FY2023 Comprehensive Budget incorporates both the UWP budget and funds the agency applies for from grantors like the Illinois Environmental Protection Agency, Illinois Department of Natural Resources, The United States Department of Transportation (USDOT), The Chicago Community Trust, and The MacArthur Foundation. The federal Metropolitan Planning funds or UWP funds provides the funding for CMAP to meet the Metropolitan Planning requirements as outlined in Title 23 Section 134.

Over the past few years, CMAP, working collaboratively with our partners, has laid the groundwork to leverage the region's partnerships and collaboration to capitalize on the new resources provided

through the IIJA. The use of these funds is outlined in the agency's draft FY2023 Comprehensive Budget and Work Plan. While we don't have all the details on the implementation of the new policies, core funding programs, and competitive funding programs, our longstanding work will serve the region well as a starting point.

CMAP's goal each budget year is to address such issues to expand the positive impact we have on the lives of the nearly 8.6 million people who call northeastern Illinois home. To achieve this goal, we must come together as partners to focus on the most critical issues. The increase of approximately $4.1 million in federal funding for FY2023 couldn't have come at a better time for us to hit the ground running.

Our FY2023 work plan is purposeful, and our intent is to be impactful and expeditious to provide best value to our regional partners and our residents who rely on us. To illustrate this, our FY23 Budget and Work Plan includes the following project highlights:

**Programmatic Initiatives included in the FY2023 Budget**

**ADA Transition Plans:** Last year during the MPO self-certification process, FHWA impressed the need to address the region's lack of compliance with Title II. CMAP developed a multi-year program to support local governments in developing ADA transition plans to help communities identify and prioritize their ADA needs. In the FY2023 Budget, we will begin this work and have dedicated $2 million to deploy a team of staff and consultants to initiate a support program for our communities to complete these plans.

**Mobility Recovery Implementation:** Working collaboratively with our regional partners and consultants, we are developing a series of recommendations aimed at mitigating a rebound in congestion, supporting an equitable economic recovery, and ensuring a financially sustainable transit network.

**Next Gen Geospatial Data and Imagery**: We received funding from the statewide planning fund to purchase next-generation geospatial data from ECOPIA that can be used by the entire state for transportation modeling and investment decisions, while significantly reducing the time required relative to traditional analysis methods. This represents $2.5 million, or a 459% increase, in commodities in the FY2023 budget.

**Regionwide Safety Initiatives:** The Transportation Committee, concerned with rising fatalities in the region, called on CMAP to convene stakeholders and identify actionable strategies for addressing traffic fatalities. In response, CMAP embarked on a multi-year regionwide safety strategy that targets the reduction of fatalities on our roadways. We will be purchasing speed data to analyze one month of complete automobile trip data in our region. This work will identify locations and circumstances where higher speed travel creates or contributes to hazardous conditions and will serve as the first step toward establishing a regional safety data clearinghouse at CMAP. In addition, we will be developing procedures to improve the efficiency and effectiveness in processing and cleaning the traffic crash data necessary to support the Safety Action Agenda and local safety studies at CMAP. The result of this work will lead to a series of recommendations and analysis that our partners can apply to ensure people and goods can move safely though our region.

**Regional Transportation Vulnerability Assessment:** Building off recent work by IDOT, RTA, and others, this project aims to more broadly understand the climate vulnerabilities of our region's transportation system and develop strategies to reduce this risk in the future. By leveraging our additional FY2023 funds, we can expedite the development of a fully compliant resilience plan that our entire region can use to increase the federal share of PROTECT funds by up to 10%.

**Regional Infrastructure Accelerator Pilot Program:** Last fall, we were awarded a $1 million grant from the USDOT's Regional Infrastructure Accelerators (RIA) grant program. This grant supports our region's efforts to evaluate the use of innovative project delivery and financing/Public-Private Partnerships (such as design-build-finance-maintain) to expedite the development and delivery of needed bridge rehabilitations, electric vehicle infrastructure, and ADA transition projects. Moreover, this opportunity will develop a Regional P3 Knowledge Center (for our regional partners to leverage) consisting of case studies, lessons learned, best practices, and a suite of project development and delivery guidance documents aimed at assessing projects for P3 suitability; conducting value-for-money analysis; refining the cost estimating process; analyzing risk; and improving contract administration.

**Transportation Risk Register:** In FY2023, a consultant-led regional transportation risk register will be developed to identify, assess, allocate, and quantify project risks (e.g., costs associated with overruns, schedule delays, approvals, permitting, unexpected maintenance, etc.). This will allow us to allocate these risks between the public and private sectors for various project delivery models to optimize risk transfer and draw attention to major risks and work together as partners to develop risk mitigation strategies. Prudent risk assessment is fundamental to the on-time and on-budget success of each capital project, an important step in accurately estimating and comparing the total risk-adjusted cost to project delivery and delivering value for money to our residents.

**Transportation Project Analysis Tool:** We will begin the development of a "best-in-class" tool capable of evaluating the safety, equity, economic, environmental, and transportation impacts of major transportation capital investments. The results can be leveraged by our regional partners to improve decision making while providing much-needed analysis to bolster their applications to competitive programs contained within IIJA. The tool will ensure our region is making the most effective investments, deploying limited tax dollars in ways that meet critical transportation needs, and providing greater transparency and accountability to the public.

IIJA is a historic opportunity to improve our region's infrastructure and ultimately our quality of life. With additional federal funding, we can move faster to comprehensively plan and implement our highest priority initiatives. This budget represents what we believe it will take to accomplish the current and emerging responsibilities that MPOs must meet while delivering value back to our seven counties, 284 communities, and 8.6 million residents.

This memo illustrates how we are planning to execute on the funding requested for FY2023 to deliver value and services to our partners while implementing ON TO 2050.

## FY2023 UWP Budget Recommended Program

For FY2023, the proposal presented below outlines an allocation of funding, as requested by each of the participating UWP Committee members, that will allow the region to accomplish its work. Unique to our region, CMAP provides UWP funding to our partners to assist in the required state and federal programming process and has provided a competitive portion of funding for partners to further the implementation of ON TO 2050 goals and objectives. Today, we are seeking the MPO Policy Committee's approval of the allocations outlined below and in Table 1 for a total of $28,567,244.

**UWP CMAP MPO Activities Budget**

- CMAP request for $22,765,195 be approved as proposed. This reflects a 17% or $3,972,133 increase from the FY2022 budget.
- The additional funding is being applied to both staff (17 total increase, 14 under UWP funding). This equates to approximately $2,185,243 or 18% of the increase in UWP funds and $1,243,088 or 40% in contractual dollars.

**UWP Partner Agency Core Activities Requests – ($4,687,868)**

- CDOT request for $1,009,500 be approved, an increase of $44,125 from FY2022.
- County request for $200,000 be approved, a decrease of $100,000 from FY2022.
- Council of Mayors request for $1,916,368 be approved, an increase of $8,844 from FY2022.
- CTA request for $625,000 be approved, unchanged from FY2022.
- Metra request for $650,000 be approved, an increase of $30,000 from FY2022.
- Pace total request of $287,000 for the following projects:
    - Smart Mobility Regional Support request of $150,000 be approved, a decrease of $50,000 from FY2022.
    - TIP Development and Monitoring request be approved at $137,000, an increase of $62,000 from FY2021.

**UWP Competitive Funding - $400,000**

- CTA (Competitive Project) request be approved for $400,000 for the Loop Rail Capacity Modeling Project.
- SSMMA requested funding or ADA planning, after discussion this work will be combined with CMAP's program to ensure consistent implementation of ADA Transition Plans across our region.

For FY2023, IDOT will provide the full match of $5,713, 449 for all UWP partner agencies. No local match will be required for FY2023.

Table 1 reflects the FY2023 UWP Budget recommended program.

TABLE 1
RECOMMENDED FY2023 UWP

| Agency | Project Title | Federal | StateMatch | Total |
|---|---|---|---|---|
| CMAP | MPO Activities | 18,212,156 | 4,553,039 | 22,765,195 |
| **CMAP Total** | | **18,212,156** | **4,553,039** | **22,765,195** |
| City of Chicago | Transportation and Programming | 807,600 | 201,900 | 1,009,500 |
| **City of Chicago Total** | | **807,600** | **201,900** | **1,009,500** |
| Council of Mayors | Subregional Transportation Planning, Programming and Management | 1,533,094 | 383,274 | 1,916,368 |
| **Council of Mayors Total** | | **1,533,094** | **383,274** | **1,916,368** |
| CTA | Program Development | 500,000 | 125,000 | 625,000 |

| | | | | |
|---|---|---|---|---|
| CTA | Loop Rail Capacity Modeling | 320,000 | 80,000 | 400,000 |
| **CTA Total** | | **820,000** | **205,000** | **1,025,000** |
| Kane County | Bicycle and Pedestrian Plan Update | 160,000 | 40,000 | 200,000 |
| **County Total** | | **160,000** | **40,000** | **200,000** |
| Metra | Capital Program Management and Asset Management | 520,000 | 130,000 | 650,000 |
| **Metra Total** | | **520,000** | **130,000** | **650,000** |
| Pace | Smart Mobility Regional Support | 120,000 | 30,000 | 150,000 |
| Pace | TIP Development and Modeling | 109,600 | 27,400 | 137,000 |
| **Pace Total** | | **229,600** | **57,400** | **287,000** |
| | Complete Streets Program | 571,345 | 142,836 | 714,181 |
| **Complete Streets** | | **571,345** | **142,836** | **714,181** |
| | | | | |
| **FY 2022 UWP Total** | | **22,853,795** | **5,713,449** | **28,567,244** |

ACTION REQUESTED: Recommend approval by the MPO Policy Committee.

Chicago Metropolitan Agency for Planning

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# MEMORANDUM

**To:** MPO Policy Committee

**From:** CMAP Staff

**Date:** March 3, 2022

**Re:** ON TO 2050 Plan Update – Draft Regionally Significant Projects List

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This memo provides an overview of the draft list of regionally significant projects (RSPs) recommended by staff for the ON TO 2050 Update. This list reflects in depth analysis of RSPs proposed to CMAP by the region's transportation implementors. It is provided for discussion in advance of the future request that the Board and MPO Policy Committee release complete plan update package for public comment in early June, inclusive of the RSPs and the corresponding RSP Benefits Report.

As northeastern Illinois's metropolitan planning organization, CMAP is required by federal law to quadrennially develop a list of major transportation projects to be implemented in the region between now and 2050. These projects are capital investments in the region's expressways, arterials, and transit system with impacts and benefits that are large enough to warrant additional discussion through the regional planning process. This group of projects must also be fiscally constrained: sufficient future revenues must be reasonably available to implement them.

**Project Threshold**

Projects required to be evaluated as a RSP are those that meet one of the following thresholds:

- Costs at least $100 million and either (a) changes capacity on the National Highway System or is a new expressway or principal arterial, or (b) changes capacity on transit services with some separate rights of way or shared right of way where transit has priority over other traffic
- Costs at least $250 million and improves the state of good repair for a particular highway or transit facility

**Evaluation Framework**

RSPs support ON TO 2050's principles of inclusive growth, prioritized investment, and resilience, particularly emphasizing the need to use the region's limited resources to invest in

existing infrastructure to modernize and improve condition 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 for goods and people, and support economic success overall. Projects that are categorized as "unconstrained" require further action such as additional study and/or cannot be completed within the limits of the region's forecasted revenues.

To identify candidate RSPs, CMAP solicited projects from partner agencies. Regional transportation implementors submitted both unconstructed projects previously identified in ON TO 2050 and new projects considered for the first time under the plan update process. A total of 65 projects were considered. Staff is recommending that the constrained list include the following new or previously unconstrained projects:

- Arterial capacity expansions = 9 projects
- Expressway capacity expansions = 1 project
- Transit capacity projects = 3 projects

Although each project was evaluated as either an expressway, transit, or arterial project, many of the constrained RSPs have multimodal elements and benefits.

Next, staff conducted an extensive evaluation of the benefits of all the projects, both existing and new, which will be documented in the RSP Project Benefits Report included as an appendix to the draft ON TO 2050 Plan Update[1]. Each project was evaluated on current need, the modeled benefit with 2050 population and employment, and the degree to which the project fits with ON TO 2050 planning priorities. For expressway and arterial projects, current need includes whether a project addresses a significant congestion, safety, or reliability problem occurring today. This includes whether the roadway is a near-term priority for pavement reconstruction or bridge replacement, although over the long-term time frame of the plan, many assets will deteriorate to the point of requiring replacement. For transit projects, assessment of current need includes the degree to which a project will improve current state of repair or help relieve a capacity constraint, which is analogous to congestion on the highway system.

The evaluation of 2050 performance is based on an updated socioeconomic forecast and travel demand modeling that estimates which projects will have the highest future benefits relative to cost. CMAP evaluated how much each expressway project improved job accessibility, commute times, and crash rates. Expressway projects were also evaluated for their impact on regional congestion, a federal performance measure and ON TO 2050 indicators. Transit projects were evaluated for their impact on regional transit ridership, an ON TO 2050 indicator, and changes in job access.

**Draft Prioritization**

Based on an analysis of the evaluation results, CMAP staff categorized projects into draft constrained and unconstrained lists. Table 1 describes the newly constrained projects that were added to the draft list of regionally significant projects. The table includes the project name and

[1] For reference, the ON TO 2050 RSP Benefits Report is available at https://www.cmap.illinois.gov/documents/10180/911391/FINAL+Regionally+Significant+Projects+Benefit+Report+Appendix.pdf

a description of the capital improvements that will be made by the project. A complete list of all constrained and unconstrained projects is attached as an appendix to this memo. Descriptions of projects from previously adopted ON TO 2050 list of constrained projects can be found on the ON TO 2050 website at https://www.cmap.illinois.gov/2050/mobility/regionally-significant-projects.

**Table 1. Draft newly constrained list of regionally significant projects.**

| **Arterial Projects** | |
|---|---|
| Caton Farm Bruce Road Corridor from west of US 30 to IL Route 7 (159th St) | This project would upgrade the existing roadway system with a new roadway on a new alignment. Included in the project is a new crossing of the Des Plaines River Valley, over a dozen new and upgraded signals, and a number of new structures. |
| Elston-Armitage-Ashland-Cortland Intersection Improvement | This project will realign Elston Ave over to the Mendell St right-of-way. The project will relocate one existing railroad viaduct over Elston and replace and expand two existing railroad viaducts over Armitage. It will also build an Armitage Ave bridge over North Branch. |
| US 6 from I-55 to US 52 | This project will increase the capacity of US 6 from I-55 to US 52. |
| US 30 from IL 47 to Albright Rd | This project will add lanes and reconstruct existing lanes on US 30 from IL 47 to Albright Rd. The bridge will also be replaced. |
| US 45 and Milburn By-Pass from IL 173 to IL 132 | This project will add lanes and reconstruct existing lanes on US 45 from north of Milburn Bypass to north of IL 173. |
| IL 7/143rd St from Will-Cook Line to IL 7/Southwest Hwy | This project will reconstruct IL 7 (143rd St) from Will-Cook Line to IL 7 (Southwest Hwy). |
| IL 47 from s/o I-90 to s/o Old Plank Rd | This project will add lanes and reconstruct existing lanes on IL 47 from south of I-90 to south of Plank Rd. |
| IL 56 from Kirk Rd to IL 59 | This project will add lanes and reconstruct existing lanes on IL 56 (Butterfield Rd) from IL 25 to IL 59 (Joliet Rd). |
| IL 60 from IL 120 to IL 176 | This project will add lanes and reconstruct existing lanes on IL 60 from IL 120 (Belvidere Rd) to IL 176 (Maple Ave). |
| **Expressway Projects** | |
| I-57 @ Eagle Lake Rd | This project will construct a new full interchange at IL 57 and Eagle Lake Rd. |

| Transit Projects | |
|---|---|
| Brown Line Core Capacity | The project will reconstruct yard and shop, reconfigure and optimize Kimball terminal, construct a new turnback track west of Western Brown Line station, reconstruct tight radius curves, upgrade signal system, upgrade power. |
| Ashland-Ogden Metra Infill Station | This will construct a new Metra station between Ashland Ave. and Ogden Ave. serving UP-W, MD-N, MD-W, NCS and potentially Amtrak. |
| I-294 Tri-State Express Bus Stations | This will construct two new in-line bus rapid transit (BRT) stations along the I-294 Tri-State Tollway. Improvements at these stations will include: new bus shelters; platforms; transfer opportunities to local Pace fixed route services; passenger amenities; new pedestrian infrastructure and ADA improvements; and, connections to new Pace Express service proposed along the Tri-State corridor. |

ACTION REQUESTED: Discussion

# ON TO 2050 Update - Draft Regionally Significant Projects List

Draft for Discussion

| Project | Project Information | | | | Cost for new capacity | | | |
|---|---|---|---|---|---|---|---|---|
| | RSP ID | Project submitter | Year of construction | Percent of cost for new capacity | Capital cost, YOE$b | Operating costs to 2050, YOE$b | Total project cost, YOE$b | Reconstruction costs, YOE$b |
| **Arterial Projects** | | | | | | | | |
| **Constrained** | | | | | | | | |
| 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 |
| Central Av at BRC RR (CREATE) | 151 | IDOT | 2021 | 0% | 0.00 | 0.000 | 0.00 | 0.18 |
| 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 |
| IL 31/Front St from IL 120 to IL 176 | 6 | IDOT | 2026 | 50% | 0.06 | 0.003 | 0.07 | 0.06 |
| 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 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 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 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 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 |
| IL 83 Milwaukee Ave from Petite Lake Rd to IL 120 | 13 | IDOT | 2035 | 50% | 0.14 | 0.002 | 0.14 | 0.14 |
| North Lake Shore Drive Improvements | 89 | IDOT | 2035 | 10% | 0.62 | 0.002 | 0.62 | 5.59 |
| 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 |
| 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 |
| 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 |
| US 6 from I-55 to US 52 | 158 | IDOT | 2040 | 50% | 0.14 | 0.000 | 0.14 | 0.14 |
| 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 |

# ON TO 2050 Update - Draft Regionally Significant Projects List

Draft for Discussion

| Project | Project Information | | | | Cost for new capacity | | | |
|---|---|---|---|---|---|---|---|---|
| | RSP ID | Project submitter | Year of construction | Percent of cost for new capacity | Capital cost, YOE$b | Operating costs to 2050, YOE$b | Total project cost, YOE$b | Reconstruction costs, YOE$b |
| **Expressway Projects** | | | | | | | | |
| **Constrained** | | | | | | | | |
| I-190 Access Improvements | 32 | IDOT | 2026 | 20% | 0.21 | 0.003 | 0.21 | 0.82 |
| 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-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 |
| 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 |
| 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 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 @ Airport Rd | 157 | IDOT | 2026 | 100% | 0.23 | 0.000 | 0.23 | 0.00 |
| I-80 from US 30 to I-294 | 37 | IDOT | 2040 | 80% | 2.88 | 0.008 | 2.89 | 0.72 |
| I-80 Reconstruction from Ridge Rd to US 30 Lincoln Hwy | 36 | IDOT | 2030 | 20% | 0.28 | 0.014 | 0.30 | 1.13 |
| 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 |
| Elgin O'Hare Western Access | 20 | Tollway | 2023 | 100% | 0.70 | 0.063 | 0.76 | 0.00 |
| I-290/I-88/I-294 Interchange Improvement | 24 | Tollway | 2018 | 0% | 0.00 | 0.004 | 0.00 | 0.41 |
| 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-294 Tri-state Tollway at I-57 Interchange Addition | 22 | Tollway | 2020 | 50% | 0.03 | 0.001 | 0.03 | 0.03 |

# ON TO 2050 Update - Draft Regionally Significant Projects List

Draft for Discussion

| Project | Project Information | | | | Cost for new capacity | | | |
|---|---|---|---|---|---|---|---|---|
| | RSP ID | Project submitter | Year of construction | Percent of cost for new capacity | Capital cost, YOE$b | Operating costs to 2050, YOE$b | Total project cost, YOE$b | Reconstruction costs, YOE$b |
| **Transit** | | | | | | | | |
| **Constrained** | | | | | | | | |
| Chicago Union Station Master Plan Implementation | 85 | CDOT | 2026 | 100% | 1.13 | 0.026 | 1.16 | 0.00 |
| South Lakefront-Museum Campus Access Improvements | 104 | CDOT | 2025 | 100% | 0.22 | -0.018 | 0.20 | 0.00 |
| Ashland-Ogden Metra Infill Station | 153 | CDOT | 2030 | 100% | 0.34 | -0.022 | 0.31 | 0.00 |
| Red Line Extension from US 12 US 20 95th St to 130th | 57 | CTA | 2027 | 95% | 2.68 | 0.350 | 3.03 | 0.14 |
| CTA Blue Line Forest Park Reconstruction | 93 | CTA | 2023 | 15% | 0.27 | -0.091 | 0.18 | 1.54 |
| Ashland Avenue from Irving Park Road to 95th Street (Ashland BRT) | 106 | CTA | 2027 | 75% | 0.14 | 0.087 | 0.23 | 0.05 |
| Blue Line Capacity Project | 147 | CTA | 2030 | 54% | 0.74 | 0.392 | 1.13 | 0.63 |
| Brown Line Core Capacity | 165 | CTA | 2023 | 50% | 2.15 | -0.058 | 2.09 | 2.13 |
| North Red/Purple Line Modernization | 58A | CTA | 2025 | 62% | 0.18 | 0.000 | 0.18 | 0.11 |
| Red Purple Modernization Future Phases | 58B | CTA | 2030 | 60% | 3.60 | -0.117 | 3.48 | 2.40 |
| South Halsted BRT | 108 | CTA/Pace | 2026 | 75% | 0.18 | 0.082 | 0.21 | 0.04 |
| UP NW Line New Start | 66 | Metra | 2026 | 50% | 0.30 | -0.139 | 0.16 | 0.30 |
| Metra UP North Improvements | 68 | Metra | 2036 | 25% | 0.14 | 0.136 | 0.28 | 0.43 |
| UP West Line - New Start | 69 | Metra | 2033 | 25% | 0.17 | -0.118 | 0.05 | 0.52 |
| Metra Rock Island 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 | -0.039 | 0.21 | 0.75 |
| A-2 Crossing Rebuild | 98 | Metra | 2028 | 25% | 0.33 | 0.046 | 0.37 | 0.98 |
| 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 |
| **Unconstrained** | | | | | | | | |
| Chicago Union Station Master Plan Implementation-Phase II | 88 | CDOT | 2041 | 100% | 2.00 | 0.051 | 2.05 | 0.00 |
| O'Hare Express Service | A1 | CDOT | 2025 | 100% | 0.00 | 0.000 | 0.00 | 1.10 |
| BNSF Extension-Oswego/Plano | 71 | Kendall Co | 2045 | 100% | 1.27 | 0.029 | 1.30 | 0.00 |
| Metra Milwaukee Corridor Improvements | 156 | Metra | 2030 | 75% | N/A | N/A | N/A | N/A |

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# MEMORANDUM

**To:** MPO Policy Committee

**From:** CMAP staff

**Date:** March 3, 2022

**Re:** Draft ON TO 2050 update financial plan for transportation

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Federal law requires metropolitan planning organizations to demonstrate fiscal constraint by determining that sufficient funding resources will be available to invest in the transportation system as recommended in the long-range plan. Specifically, federal regulations require "for purposes of transportation system operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain Federal-aid highways" and "public transportation" (23 CFR § 450.324(f)(11)).

To achieve federal requirements, CMAP must assess the anticipated expenditures and revenue sources necessary to carry out the operation, maintenance, and expansion of the region's surface transportation system over the planning period (2023-50). Long-range financial forecasting requires determining a base set of assumptions regarding revenue and expenditures trends, understanding the future implications of current policies, and development of a robust, accurate, and straightforward methodology that is appropriate for a planning-level forecast. Similar to ON TO 2050, CMAP staff are performing financial analysis and conduct policy research to develop revenue and expenditure forecasts, including reasonably expected revenues, in consultation with CMAP committees, stakeholders, and experts.

The financial plan for transportation will prioritize how to invest available revenues by allocating planned expenditures into different categories. These categories account for funding for administering, operating, maintaining, improving, enhancing, and expanding northeastern Illinois' transportation system. Like ON TO 2050, CMAP expects that the plan will continue to constrain sufficient funding to operate and maintain the existing system in its current condition. These allocations will integrate partner input and regional priorities with the funding needs required to meet asset condition targets, provide needed system enhancements, and fund regionally significant projects.

This memo provides the draft ON TO 2050 forecasts for baseline revenues and expenditures to operate and administer the current system and maintain its current state of repair. This memo

also describes proposed policy recommendations and forecasts for four reasonably expected revenues, primarily drawing from existing ON TO 2050 recommendations

## Baseline revenues and expenditures

As required by federal regulations, revenues and expenditures were forecast in year of expenditure dollars rather than real or constant dollars, meaning that inflationary increases are included in the forecasts. The following table summarizes the updated estimates for revenues and expenditures over the 28-year planning period (2023-2050). A methodology for each source is at the end of this memorandum. Note that baseline revenues include local, state, and federal revenue streams already in place.

**Draft forecast of baseline revenues and expenditures, 2023-50, in billions**

| | |
|---|---|
| **Federal revenues** | $80.8 |
| **State revenues** | $197.8 |
| **Local revenues** | $206.7 |
| **Total baseline revenues** | **$485.3** |
| **Roadway operating/administering expenditures** | $120.0 |
| **Transit operating/administering expenditures** | $136.3 |
| **Roadway capital maintenance** | $109.4 |
| **Transit capital maintenance** | $63.7 |
| **Total expenditures** | **$429.5** |
| **Difference between baseline revenues and expenditures** | **$55.9** |

CMAP staff estimates that the revenues forecasted to be available over the planning horizon will be sufficient to operate and maintain the transportation system in its current condition. However, the expected funding would be insufficient to cover regional priorities for improving asset condition, enhancements, or expansions to the system. To meet the region's asset condition targets, fiscally constrain enhancements and expansions within the long-range planning context, and ensure sufficient operational funding, the region will need to continue to prioritize existing ON TO 2050 recommendations for new and innovative revenue sources as major policy priorities in the update to ON TO 2050.

**Baseline revenues.** The baseline revenue forecast includes all existing revenue sources the region receives for transportation purposes. The forecasts assume that northeastern Illinois will continue to receive revenues from federal, state, and local sources for constructing, operating, administering, and maintaining the current roadway and transit system. This includes periodic transit fare and toll rate increases, which will be necessary to ensure sufficient revenues to pay for these systems over the 28-year planning period.

ON TO 2050 recommends that transportation user fees be implemented carefully to avoid undue burdens on residents with low income. To pursue this recommendation, CMAP conducted a study, *Improving Equity in Transportation Fees, Fines, and Fares*, that assessed the impacts of many of the transportation fees and fares included in this forecast. The project's findings indicated that the burden of fees associated with driving, like the motor fuel tax, vehicle registration fees, and tolls, are borne less by households with low income since they tend to drive fewer miles and own fewer vehicles. However, the overall cost of driving is a

burden for households with low income, due to the numerous costs of owning and operating a vehicle, rather than associated fees. In addition, the project highlighted the need to implement reduced transit fares for households with low income to ensure that these residents, who tend to rely more on transit, may access economic opportunities and conduct everyday activities.

Since the adoption of ON TO 2050, the State of Illinois approved Rebuild Illinois, a capital plan that provides for increases in several revenue sources, including the state motor fuel tax, state motor vehicle registration fees, and other transportation user fees. These revenues were already included in ON TO 2050's forecast as either assumed future capital programs or reasonably expected revenues, depending on the source. The forecast also assumes two more state capital programs will be enacted during the planning period, which will ensure the region's ability to make capital investments in the transportation system.

In addition, the Infrastructure Investment and Jobs Act (IIJA) was enacted on November 15, 2021. Northeastern Illinois will receive a portion of the more than $567 billion in transportation funding between 2022 and 2026. The funding represents a funding increase over existing federal transportation programs. The forecast will assume that this level of funding continues through the planning period, with trends in annual increases similar to those previously experienced over the past twelve years. To ensure continued federal funding for transportation without the need for non-transportation revenue infusions, the federal government should increase the federal gas tax and index it to an inflationary measure, and implement innovative user fees as described in ON TO 2050.

As the planning period begins in 2023 and lasts until 2050, the pandemic impacted some of the revenue forecasts. Toll revenue is assumed to start out at a lower level than previously assumed, resulting in a lower overall revenue forecast. Similarly, transit fare revenue and other transit operating revenue begins at a lower point than anticipated in the original ON TO 2050 forecast. The forecast assumes that ridership will return to prior levels by the beginning of the planning period, rather than continue to grow to the extent previously assumed. Should ridership and resulting fare revenue not substantially return to prior levels by the beginning of the planning period, it is assumed that fare revenue will be supplemented by other federal or state operating support.

**Expenditures to operate and administer the existing system.** This category includes the cost of administering, operating, and servicing debt for the region's roadway and transit system. This assumes no operational enhancements, but the continued operation of the existing system. This includes employee costs, rent, utilities, non-capital repairs, fuel, debt service, as well as other costs needed to administer daily operations of the transportation system.

Forecasts for the operation and administration of IDOT District 1, Illinois Tollway, county transportation departments, the RTA, and transit service boards were estimated from historical expenditures. Municipal and township operating and administration forecasts were derived from U.S. Census of Governments data on highway operating expenses from 2017, the most recent year available.

**Expenditures to maintain the system in its current condition.** The forecast includes the cost of capital maintenance on the region's roadway and transit system based on maintaining current

conditions. These expenditure forecasts include capital maintenance expenditures completed in tandem with Regionally Significant Projects. This forecast does not include any costs that would address a need for increased capacity on the transportation system.

Overall, the condition of the system has declined since the adoption of ON TO 2050. The most recent data available indicate that 85.8 percent of the bridge deck area are in acceptable condition, a decline from 90.7 percent in 2016. Due to a change in the methodology for calculating road condition, similar comparisons are not available for roadways. Similarly, fewer transit assets overall are in a state of good repair. The following table provides more detail by transit asset category.

**Transit asset condition in northeastern Illinois by federal performance measure category**

| Category | Measure | 2016 | 2020 |
|---|---|---|---|
| Vehicles (% beyond useful life) | Buses | 8.4% | 6.7% |
| | Rail | 16.9% | 30.2% |
| | Non - fixed route | 28.9% | 43.4% |
| Track Condition | % w/performance restrictions | N/A | 5.7% |
| Facilities | Marginal or fair | 21.0% | 20.6% |
| Non - Revenue Vehicles (% beyond useful life) | Vehicles | 22.7% | 37.7% |
| | Equipment (Rail) | 44.5% | 62.6% |

Source: National Transit Database

The expenditure forecast is based on the investment needed to keep these conditions constant and not increase the backlog of facilities in fair or poor condition. As such, it will cost less over the planning period to maintain transit and bridge assets in worse condition. However, the plan will include funding allocations to meet targets for pavement, bridge, and transit asset condition that will represent an improvement over current conditions. These findings also underscore the importance of preventative maintenance as it will cost more to meet these targets than it would have if condition had been maintained.

Condition forecasts were developed in consultation with implementers. For roadways with condition data, CMAP staff used IDOT's asset management spreadsheet tool to forecast the cost to maintain pavement condition in its current condition. Staff used the spreadsheet tool provided by IDOT to forecast pavement condition and expenditures on state roadways, as well as other National Highway System roadways. Similarly, the RTA's Capital Optimization Support Tool (COST) was used to forecast transit asset condition and investment needs. CMAP used an in-house model based on National Bridge Inventory data to forecast bridge maintenance needs. Staff forecasted maintenance on other roadway assets, such as local roads, based on assumptions of the typical cycles with which roadway maintenance projects are performed today. These capital assets make up a large portion of the forecast, in part because local roadways make up the majority of the region's roadway network.

## Reasonably expected revenue recommendations

New and modernized revenues must be implemented to ensure the future viability of the region's transportation system. Despite new funding, federal, state, and local revenue sources remain unsustainable in the long term to fully fund regional priorities for the maintenance,

operation, enhancement, and expansion of the region's transportation system. Federal guidance permits the inclusion of new sources of revenue that can be reasonably expected to be made available to carry out the transportation plan. The following table summarizes a total of $25 billion in proposed reasonably expected revenues for the plan update.

| Revenue source | 2023-50 estimate | Notes |
|---|---|---|
| Replace state MFT with a revenue neutral road usage charge | $10 billion | Retains ON TO 2050 source |
| Expand the sales tax base to additional services | $9 billion | Retains ON TO 2050 source |
| Local parking pricing expansion | $2 billion | Retains ON TO 2050 source |
| Regional revenue source | $4 billion | Revise existing ON TO 2050 recommendation to suggest a TNC fee |
| **Total** | **$25 billion** | |

ON TO 2050's recommendation for a state motor fuel tax increase has already been enacted, thus is already included in the baseline forecast. The plan update will retain ON TO 2050's recommendation for a federal cost of freight services fee (a national sales tax on the cost of shipping freight), but the revenue will not be added as a reasonably expected revenue source. It is assumed that the federal government will have to enact this revenue source, as well as ON TO 2050's recommendation to increase the federal gas tax, in order to continue to fund federal transportation programs at the levels authorized in IIJA without general fund transfers. The baseline forecast already assumes continued federal funding at these levels throughout the planning period.

Certain new funding sources, like expanded tolling and value capture, are specific to particular projects. Therefore, in the financial plan, they can be used to offset the cost of specific Regionally Significant Projects, rather than being included as reasonably expected revenue.

**Replace state MFT with revenue neutral road usage charge.** The motor fuel tax no longer reflects the way people travel or the many types of vehicles on the road. Fuel efficiency has increased, which erodes revenue despite its environmental and consumer benefits, and projections suggest electric vehicles will become a much larger part of the fleet. While registration fees in Illinois were increased for electric vehicles to offset what they would pay in motor fuel taxes, these fees are not indexed to inflation like the MFT, nor do they apply to fuel efficient vehicles that are not fully electric. Over the long term, then, the state should replace its MFTs with a user fee that taxes actual use of the system, as with a per-mile road usage charge. Drivers already pay per mile under the current MFT, but the rate just varies based on the vehicle's fuel economy. For replacing the Illinois MFT, charging 2 cents per mile and indexing it to an inflationary measure would provide a sufficient, stable revenue source. Any change should be accompanied by piloting a system that works for Illinois and rigorous, transparent analysis to ensure that a road usage charge is implemented and invested fairly.

This revenue source would benefit from a streamlined national solution that allows each state to collect mileage-based user fees from out-of-state drivers. IIJA renewed the federal government's program for supporting state efforts to test road usage charges, now called the

Strategic Innovation for Revenue Collection, expanded the program to MPOs and local governments, and increased the federal share to 80 percent. IIJA also authorized a national pilot on road usage charges with planned participation from all 50 states, guided by a national advisory panel which is still to be formed.

**Expand the sales tax base to additional services.** Sales taxes in Illinois are imposed on a relatively narrow base, focused on tangible goods. Expanding the current base to include more services would generate additional revenue from existing state and local sources like the RTA sales tax, which supports transit operations in the RTA service area and other transportation and public safety purposes in the collar counties. The cost of operating the transit system continues to increase, yet consumption of services outside of the sales tax base is increasing faster than consumption of taxable goods. Expanding the base would also have the benefit of reducing economic distortions -- that is, inadvertently influencing consumers' purchase of different goods and services based on whether or not they are taxed -- and volatility in the sales tax, as well as providing tax revenue from service-based commercial land uses.

**Local parking pricing expansion.** Despite priced parking in some denser areas, the majority of parking spaces in the region are free. Priced parking has many benefits in areas with significant demand for parking. Free parking obscures the cost of driving and the cost of supportive infrastructure. Priced parking in areas with high parking demand would reduce the number of vehicle trips, helping to reduce vehicle emissions, alleviate congestion, and improve bus reliability. Municipalities should price more publicly owned parking spaces on streets and in municipal parking lots and garages to provide revenue for local multimodal transportation improvements and allow land to be transitioned to revenue-generating uses. In addition, municipalities could choose to implement variable parking rates, with higher prices charged at times and locations of peak demand or for certain vehicle types such as delivery trucks in business districts, allowing for more efficient use of available parking spaces.

**Regional revenue source**. Other than the RTA sales tax, which provides funding for transit operations, northeastern Illinois does not have a dedicated source of regional funding to provide for capital infrastructure investments. The State should enact such a revenue source for the seven counties to meet the region's unique transportation needs and to achieve comprehensive planning goals. The investments needed in the region to move the transit system toward a state of good repair, increase transit reliability, decrease freight delay, and reduce roadway congestion are significantly greater than the needs in other parts of Illinois.

Having the ability to impose a regional fee on transportation network company (TNC) rides would ensure that users pay a fair share for the use of public infrastructure and that fees can help offset the additional costs of air pollution, congestion, and the use of curb space. Illinois does not impose a fee or surcharge on TNC trips at the state level, though at least twelve other states have implemented such fees. CMAP's *Improving Equity in Transportation Fees, Fines, and Fares* report recommends that any regional fee on TNCs pursue equitable outcomes by supporting regional transit goals. To ensure that a fee is implemented equitably, any TNC fee should be levied as a percent of the total cost of the service, as opposed to a flat fee. This structure could incentivize shorter trips, such as those that connect to transit and discourage longer trips that may replace transit. To further support equitable mobility, some of the revenue should be utilized for investments that support an accessible and connected transit

system, including programs that leverage innovative partnerships with TNCs. Moreover, some TNCs have partnerships with transit operators, and rides taken through those partnerships should be exempt from a fee. Long term, if the region pursues an integrated fare payment system across mobility providers, TNC fees should be further used to incentivize transit by reducing or eliminating fees that link TNC rides and transit trips.

## Allocations

The financial plan for transportation prioritizes how to invest available revenues by allocating planned expenditures into different categories. These categories account for funding for administering, operating, and maintaining the transportation system, as discussed above. They also provide for improving, enhancing, and expanding the system. This section will provide an overview of these draft allocations.

**Improve system condition**

This category constrains investments to help achieve targets for various asset condition measures. Federal transportation law requires that transportation planning efforts incorporate performance measures for infrastructure condition, among other topics. This funding allocation includes **$30.8 billion** to improve the condition of pavement, bridge, and transit assets. These estimates use similar methodology as the capital maintenance expenditures. The following table provides an overview of how the financial plan allocates funds toward meeting system condition goals.

**Allocations toward meeting asset condition goals, 2023-50, in billions (year of expenditure dollars)**

| | |
|---|---|
| Transit assets from 61% to 68% in good repair | $22.1 |
| Roadways from 90% to 98% in acceptable condition | $6.2 |
| Bridges from 85.8% to 97% in acceptable condition | $2.5 |
| **Total allocation for improving system condition** | **$30.8** |

**System enhancements**

This category includes capital and operational enhancements or improvements not already constrained under other categories. Examples include bicycle, pedestrian, and ADA improvements; highway management and operations, including intelligent transportation systems; expansions that do not meet the RSP definition; culvert maintenance not accounted for the bridge model; and intersection improvements. It is critical that the region make these investments, particularly multimodal improvements that provide residents with low-cost mobility options. It is assumed that **$31.8 billion** constrained in this category is sufficient to reasonably provide for these smaller improvements to the system.

**Expansion through regionally significant projects**

This category allocates funding toward expansion elements of constrained RSPs, while the cost of maintaining existing infrastructure in constrained projects is accounted for in the baseline forecast. The constrained RSPs total $52.3 billion, which includes capital costs ($22.7 billion for new capacity and $28.5 billion for reconstruction) and incremental operating costs on new

capacity ($1.1 billion). These costs consider anticipated cost inflation by the time the project is constructed and begins operation.

ON TO 2050 acknowledges that tolling will be needed to defray the costs of rebuilding the expressway system and that value capture will be required to fund transit needs. The plan assumes that tolling would be implemented on several projects, generating revenue to support $2.6 billion in bond funds to offset project costs. Transit projects can also generate revenue that can be used to offset their costs. Transit Facility Improvement Areas (TFIA) – in which a form of value capture can be used to fund transit capital investments – are assumed to generate revenue to support $2.9 billion in bond funds to offset transit project costs through existing and new TFIAs. The amount constrained for new capacity after taking these revenues into account totals **$18.3 billion**.

## Forecast methodology

This section will discuss the specific methodologies used for projecting revenues for ON TO 2050 update over the 2023-2050 planning period.

### Baseline revenues

Baseline revenues include funding sources the region currently receives for transportation purposes and do not include any new sources. The forecasts assume that northeastern Illinois will continue to receive revenues from federal, state, and local sources for constructing, operating, administering, and maintaining the current roadway and transit system.

#### *Locally programmed federal revenue - $13.9 billion*

These funds represent the annual federal apportionment that is passed to the Chicago region for programming. This includes the federal fund sources of CMAQ, Transportation Alternatives Program-Local, Carbon Reduction Program, Surface Transportation Program-Local, and Surface Transportation Program-Counties.[1] Revenue estimates through 2026 are based on CMAP estimates for expected funding from IIJA. Federal revenues to the region grew at a rate of 1.5 percent between 2010 and 2021. After 2026, revenues were assumed to increase annually by this same 1.5 percent rate.

#### *Federal revenue from discretionary programs - $10.4 billion*

Forecasted revenues include those allocated by the federal government at the discretion of U.S.DOT, rather than by formula. The region is assumed to receive a similar share of grants over the planning period as it has in recent years. Programs tend to vary over time, with current programs including New Starts, BUILD, INFRA, All Stations Accessibility Program, Congestion Relief Program, Reconnecting Communities Pilot Program, RAISE, Safe Streets and Roads for All, Active Transportation Infrastructure Investment Program, and Strengthening Mobility and Revolutionizing Transportation (SMART). Federal revenues to the region grew at

[1] See http://www.cmap.illinois.gov/mobility/strategic-investment/regional-transportation-programs.

a rate of 1.5 percent between 2010 and 2021. After 2026, revenues were assumed to increase annually by this same 1.5 percent rate.

### *Federal transit revenue - $27.0 billion*

Forecasted revenues include State of Good Repair and Urbanized Area Formula Grant programs, as well as other federal transit formula grants.[2] Revenue estimates through 2026 are based on CMAP estimates for expected funding from IIJA. Federal revenues to the region grew at a rate of 1.5 percent between 2010 and 2021. After 2026, revenues were assumed to increase annually by this same 1.5 percent rate.

### *State-programmed federal highway revenue - $29.6 billion*

These funds represent the annual federal apportionment programmed by the state of Illinois. This includes the federal fund sources of National Highway Performance Program; Surface Transportation Program; National Highway Freight Program; Highway Safety Improvement Program; Transportation Alternatives Program; Recreational Trails; the Bridge Investment Program; National Electric Vehicle Formula Program; and the PROTECT program.[3] Revenue estimates through 2026 are based on CMAP estimates for expected funding from IIJA, and 74.43 percent of the statewide total annual apportionment in those years was assumed to go to northeastern Illinois. Federal revenues to the region grew at a rate of 1.5 percent between 2010 and 2021. After 2026, 45 percent of the statewide total annual apportionment was assumed to go to northeastern Illinois, and revenues were assumed to increase annually by this same 1.5 percent rate.

### *State motor fuel tax - $43.0 billion*

The current MFT rate is 39.2 cents per gallon (46.7 cents per gallon of diesel). The base rate is indexed to inflation and was assumed to grow an average of 2.5 percent annually.

These funds include the portion of state motor fuel tax revenue retained by the Illinois Department of Transportation (IDOT) for the Road Fund and State Construction Account. After accounting for various statutory deductions, the region is assumed to receive 45 percent of these revenues for the purposes of funding state road construction and maintenance projects, estimated to total $17.2 billion. The Regional Transportation Authority also receives funding based on allocations set in statute, which is forecast to total $9.7 billion. This forecast also includes statutory disbursements to counties, townships, and municipalities, forecasted to total $16.2 billion. Statutorily, Cook County receives a 16.74 percent share, and the remaining county share is based on motor vehicle registration fees received. Township share is based on share of mileage of township roads, and municipal share is based on population.

CMAP used forecasted annual vehicle miles traveled (AVMT) and average miles per gallon (MPG) to estimate revenue. For AVMT, CMAP used 2045 forecasts developed by the Illinois

[2] For more information on Federal Transit Administration programs, see https://www.transit.dot.gov/grants.

[3] For more information on Federal Highway Administration programs, see https://www.fhwa.dot.gov/specialfunding.

Department of Transportation and extrapolated the forecast to 2050. Average annual percent change in AVMT between 2023-50 was 0.8 percent for passenger vehicles and 0.7 percent for other vehicles.

For passenger vehicle MPG estimates, CMAP created estimates based on National Highway Traffic Safety Administration (NHTSA) rules for Corporate Average Fuel Economy (CAFE) standards, estimated standards for 1978 through 2029 model years for cars and light trucks, and data about vehicle fleet from the Federal Highway Administration's 2017 National Household Travel Survey. CMAP estimates that vehicle fuel economy for passenger vehicles statewide will reach a fleetwide average of 34.5 MPG by 2050. While these CAFE standards are currently being finalized by the federal government, fuel economy across the entire vehicle fleet is still expected to increase with consumer choice, new technology, and adherence to standards promulgated by other states. For non-passenger vehicles, MPG was assumed to improve with NHTSA fuel efficiency standards for medium- and heavy-duty vehicles.

### *Sales tax on motor fuel - $5.4 billion*

The state's portion of the state retailer's occupation tax generated from the sale of motor fuel will be deposited in the Road Fund, with increasing portions allocated to the Road Fund during 2023, 2024, and 2025, and 100 percent in 2026 and thereafter. The forecast uses average Midwest gas prices from the U.S. Energy Information Administration from the past year, $2.51 for regular and $2.82 for diesel, and deducts various taxes included in the prices. The forecast assumes that the price of motor fuel will grow at a rate of 0.1 percent annually. Gallonage assumptions are the same as above.

### *State motor vehicle registration fees and other state fees - $32.5 billion*

These revenues include annual vehicle registration fees, certificate of title fees, overweight fines, permit fees, and operator's license fees collected by the State that are deposited into the Road Fund and State Construction Account. Motor vehicle registration fee revenues to the Road Fund and State Construction Account were assumed to grow at a rate of approximately 0.5 percent annually. Other types of fees in this category were forecast to grow approximately 1.8 percent annually. The region is assumed to receive 45 percent of these revenues for the purposes of funding state road construction and maintenance projects. Recent fee increases enacted as part of Rebuild Illinois are included here, but future fee rate increases were not assumed in this category, as they would likely be accounted for in future state capital programs.

### *State capital program - $39.2 billion*

State capital programs are typically funded with a variety of revenue increases, including fee increases on sources like vehicle registration and certificate of title. It is assumed that the state will enact a capital program two additional times during the planning period, in ten year intervals. Funding levels were assumed to grow 2.5 percent annually, with Rebuild Illinois funding levels assumed as the baseline.

### *Tollway revenue - $74.7 billion*

This forecast includes toll revenues forecasted to be collected on the 294-mile system, as well as other operating revenues. The current toll rate structure went into effect in 2012, with the commercial rate adjusted annually for inflation. Toll revenue projections were derived from estimates prepared for the Illinois Tollway by CDM Smith in November 2020. The projection assumed that the annual adjustment in commercial toll rates would be 2 percent annually. CMAP also included an assumption of two passenger toll rate adjustments throughout the planning period. Other operational revenues, such as concessions and miscellaneous income, were forecast to grow at a compound rate of 2.3 percent annually.

### *State Public Transportation Fund - $18.4 billion*

These funds represent state matching funds for transit, which are equal to 30 percent of Regional Transportation Authority (RTA) sales tax, state use tax disbursements to the RTA, and the portion of Chicago real estate transfer tax revenues reserved for the CTA. The forecast equals 30 percent of the forecasts of these revenues.

### *Other state transit - $0.7 billion*

The State has provided funding annually to support Pace Americans with Disabilities Act (ADA) Paratransit service since 2010. The State also provides reduced fare reimbursements to the service boards. Both reduced fare reimbursements and ADA support are forecast to remain at current levels annually for the planning period, $17.6 million and $8.4 million respectively.

### *RTA sales tax - $59.2 billion*

The RTA sales tax is equivalent to 1.25 percent of sales in Cook County (including the RTA sales tax and the RTA's share of the state sales tax) and 0.75 percent of sales in DuPage, Kane, Lake, McHenry, and Will counties. The RTA receives two-thirds of the collar county revenues. Sales tax revenues accruing to the RTA are assumed to grow 2.8 percent annually throughout the planning period. The RTA also receives disbursements of state use tax, which are expected to grow at a rate of 3.3 percent on average.

A third of collar county revenues generated from the RTA sales tax, Collar County Transportation Empowerment Funds, are returned to DuPage, Kane, Lake, McHenry, and Will counties to be used for roads, transit, and public safety. During the planning period, revenues total $6.7 billion and annual growth averages 3.0 percent. Growth assumptions were based on projected population growth combined with inflationary assumptions.

### *Chicago real estate transfer tax (RETT) - $2.2 billion*

The $1.50 per $500 of value of the City of Chicago's RETT is transferred to the Chicago Transit Authority (CTA). Revenues were forecast to grow at an average rate of 2.7 percent annually.

### *Transit passenger fares and other transit operating revenue - $45.8 billion*

This includes passenger fares for the CTA, Metra, Pace, and Pace ADA and other revenues for the RTA, CTA, Metra, Pace, and Pace ADA such as advertising revenue, investment income, and Medicaid reimbursements. Revenues were forecast to grow at an average rate of 2.0 percent annually. To the extent that ridership does not substantially return to normal levels by the beginning of the planning period, it is assumed that fare revenue will be supplemented by other federal or state operating support. Other operating revenues are assumed grow at a rate of 1.2 percent annually, based on assumed rates of growth in system revenue and ridership.

### *Other local revenues - $76.6 billion*

These are funding sources used for transportation purposes by counties, townships, and municipalities, such as property tax revenue, sales tax revenue, local motor fuel taxes and impact fees. Revenues were calculated for municipalities and townships using 2017 U.S. Census of Governments data. County revenues were obtained from recent county budget documents. Revenues were adjusted to the current year using the change in the Consumer Price Index and population growth. To forecast to 2050, growth rates for CMAP population forecasts were added to an annual 2.5 percent inflationary adjustment. Average annual growth regionwide was 3.0 percent.

County MFTs for DuPage, Kane, Lake, McHenry, and Will counties were forecast separately using the same methodology for the state MFT, although baseline fuel economy was derived separately for each county, and AVMT growth was calculated using growth rates in AVMT for each county for each air quality conformity analysis year. These revenues are expected to total $2.2 billion over the planning period.

## Reasonably expected revenues

Reasonably expected revenues are estimated based on reasonable assumptions for how these recommendations for transportation funding sources could be implemented. The following methodology is intended to be congruent with CMAP recommendations, but the assumptions do not necessarily constitute proposals for precisely how these would be imposed.

### *Replace state MFT with a revenue neutral road usage charge - $10 billion*

Northeastern Illinois would receive revenues from replacing the state motor fuel tax with a road usage charge in the first five years of the planning period at a rate of 2 cents per mile. The rate would be indexed to an inflationary measure, assumed to be 2.5 percent annually for the purposes of the forecast. The forecast assumes that fund would accrue to northeastern Illinois in the same manner as the state MFT currently does.

### *Expand the sales tax base to additional services - $9 billion*

Expansion of the sales tax to additional services would result in additional RTA sales tax revenues, as well as state sales tax disbursements to the RTA. The forecast assumes that additional consumer services would be added to the sales tax base in approximately 2026,

resulting in a 15 percent increase in the base. Revenues are assumed to grow at a rate of 3.6 percent annually, which is the average annual growth rate for personal consumption expenditures in Illinois for certain consumer services over the prior twenty years. The forecast assumes no additional Public Transportation Fund revenue. This forecast does not include revenues that would accrue to the state or other local jurisdictions due to a sales tax base expansion.

### *Local parking pricing expansion - $2 billion*

Municipalities in the region would increase the number of priced parking spots in the region throughout the planning period. Pricing of unpriced parking spots would be phased in annually, starting with 600 spaces in the first year. The number of priced spaces would accelerate as the concept gained popularity. Prices and rate structures would vary by location, and it was assumed that the regional average would total $5 per day, with inflationary rate increases of 2.5 percent annually for the purposes of this forecast. Given the local nature of parking pricing, these revenues be used for local transportation investments.

### *Regional revenue source - $4 billion*

Given the unique investment needs of northeastern Illinois, a regional revenue source could help match federal funds, implement regional transportation priorities, and advance modernization initiatives. The forecast assumes that the regional revenue source would be imposed as a 5 percent fee on the trip fares paid to TNCs. Base trip and fare assumptions for the region were derived from an analysis of City of Chicago data and CMAP's My Daily Travel survey. The forecast assumes the tax base would grow 2.5 percent annually throughout the planning period as a result of increases in trips and fares.

## Operations and administration expenditures

This category includes the cost of administering, operating, and servicing debt for the region's existing roadway and transit system. This assumes no operational enhancements, but the continued operation of the existing system. This includes employee costs, rent, utilities, non-capital repairs, fuel, debt service, as well as other costs needed to administer daily operations of the transportation system.

### *Roadway expenditures - $120.0 billion*

The forecast consists of operations and administrative costs for IDOT District 1, Illinois Tollway, counties, townships, and municipalities, including Tollway debt service and state debt service for Series A bonds. Tollway and IDOT District 1 operating and administrative expenditures were forecasted linearly based on the most recent 20 years of available data. During the planning period, annual growth averaged 2.6 percent for IDOT District 1 and 2.1 percent for the Illinois Tollway. Tollway interest payments were forecast based on past trends, and growth averaged 2.0 percent annually during the planning period. Series A bond payments were forecast to grow linearly at an average rate of 1.8 percent annually during the planning period, and it was assumed that 45 percent of these costs were attributable to the region.

County budget documents provided baseline county expenditures for 2019. Municipal and township expenditures were estimated from the local highway operations expenditures reported to the 2017 Census of Governments, and adjusted to the current year based on inflation and population growth. County, township, and municipal expenditures were assumed to grow at an average rate of 3.0 percent annually during the planning period due to growth in the region's population and growth in inflation.

### *Transit expenditures - $136.3 billion*

The forecast includes operating, administration, and debt service costs for the RTA, CTA, Metra, Pace, and Pace ADA. Operating and administrative expenditures were forecast to grow an average of 2.7 percent annually during the planning period. The interest portion of debt service payments were forecasted to grow an average of 0.7 percent annually.

## Capital maintenance expenditures to maintain current asset conditions

The forecast includes the cost of capital maintenance on the region's roadway and transit system based on maintaining current conditions. The expenditure forecast is based on the investment needed to keep these conditions constant and not increase the backlog of facilities in fair or poor condition. These expenditure forecasts include capital maintenance expenditures completed in tandem with RSPs but do not include any costs that would address a need for increased capacity on the transportation system.

Based on analysis and input from transportation agencies, staff inflated maintenance unit costs for year-of-expenditure using a 2.5 percent rate, which was also used in ON TO 2050. Over the past 20 years, the average annual percent change in the U.S. Consumer Price Index was 2 percent. FHWA's National Highway Construction Cost Index has experienced average annual increases of 2.2 percent over the past decade.

### *Roadway capital expenditures - $109.4 billion*

Capital maintenance includes costs for expressways, arterials, collectors, local roads, bridges, and signals. The scenarios used assumed that current asset conditions would be maintained during the planning period. Various transportation departments provided feedback on modeling assumptions, unit costs, and lifecycle assumptions.

For roadways with condition data, CMAP staff used IDOT's asset management spreadsheet tool to forecast the cost to maintain pavement condition in its current condition. IDOT's tool is able to evaluate the impacts of different investment options for both pavements and bridges. CMAP only utilized the pavement tool because CMAP had its own in-house bridge model already developed. The spreadsheet tool facilitates the analysis of programming funds for different pavement treatments using deterioration rates and treatment costs. Overall, 90 percent of the roadway miles included in the model are in acceptable condition (Interstates 89 percent, other NHS 92 percent, and other IDOT facilities 87 percent).

The main inputs for the IDOT tool are pavement condition and roadway improvement costs. Pavement condition, measured in Condition Rating Survey (CRS), used in the model came from

the 2020 Illinois Roadway Information System public file. The roadway miles were broken down by facility type and CRS rating. The roadway improvement costs used in the model were developed through collaboration with CMAP stakeholders. The improvement costs were broken down by improvement and facility type (Interstate and Non-Interstate). Upcoming IDOT and Illinois Tollway pavement improvement projects were accounted for in the forecast.

CMAP staff used its bridge model to forecast capital maintenance expenditures for bridges, based on deterioration curves for Illinois from National Bridge Inventory data. The model considers the condition of the deck, substructure, and superstructure and if one or more components of the bridge is in fair or poor condition, it will trigger an improvement to the bridge. The scenario used assumed that current pavement conditions would be maintained during the planning period.

Staff forecasted capital maintenance expenditures on other roadway assets, such as local roads and traffic signals, based on assumptions of the typical cycles with which roadway maintenance projects are performed today. These assumptions are then applied to the inventory of roadway assets in the region.

### *Transit capital expenditures - $63.7 billion*

This includes capital maintenance costs for the CTA, Metra, Pace, and Pace ADA. RTA's Capital Optimization Support Tool provided data to forecast asset condition and investment needs for a period of 2023-45, with extrapolation for the final five years of the planning period. The scenario assumed that the current condition of assets would be maintained across the planning period. Expenditures were inflated 2.5 percent annually.

## Next steps

Over the coming months, CMAP staff will refine the forecast based on feedback. The financial plan for transportation will be a component of the full plan update document that will be shared for public comment in June 2022.

ACTION REQUESTED: Discussion

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