TRANSPORTATION

AGENDA - FINAL

Friday, February 25, 2022

9:30 AM

Please register in advance of the meeting at:
https://attendee.gotowebinar.com/register/3526262852302064910

To participate by phone,
call (631)992-3221 with access code 521-732-278

1.0   Call to Order and Introductions

2.0   Agenda Changes and Announcements

3.0   Approval of Minutes

3.01   Approval of Minutes - December 17, 2021   **22-104**

ACTION REQUESTED: Approval

Attachments: TC(DraftMinutes)12-17-21

3.02   Approval of Minutes - February 4, 2022   **22-105**

ACTION REQUESTED: Approval

Attachments: TC(DraftMinutes)02-04-22

4.0   CMAP Board Meeting Updates

Staff will provide updates from recent CMAP Board meetings and other agency activities.

5.0   Approval Items

5.01   FFY 2019-2024 Transportation Improvement Program (TIP) Amendments and Administrative Modifications   **22-111**

PURPOSE & ACTION: TIP Amendment 22-04 was published to the eTIP web site on February 18, 2022 for committee review and public comment. A memo summarizing formal TIP amendment 22- 04 and administrative amendments 22-04.1 and 22- 04.2 are included in the meeting materials. Staff requests approval of TIP Amendment 22-04.

ACTION REQUESTED: Approval

Attachments: TC(Memo)TIP_Amend22-04
TIP Amendment 22-04
TIP Administrative Amendment 22-04.1
TIP Administrative Amendment 22-04.2

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

PURPOSE & ACTION: Starting in January of 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 has recommended approval by the Transportation Committee and MPO Policy Committee.

ACTION REQUESTED: Recommendation of approval of the updated ITS Architecture and supporting documents to the MPO Policy Committee

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

6.0   Information Items

6.01   ON TO 2050 Update   **22-102**

PURPOSE & ACTION: CMAP is currently developing the federally required update to ON TO 2050 due in October 2022. Staff will present an overview of plan progress, with a focus on the schedule in future months and Federal Transportation Performance Measures.

ACTION REQUESTED: Informational

Attachments: Federal Transportation Performance Measures Memo

6.02   CMAP's Strategic Direction & the Transportation Committee   **22-099**

PURPOSE & ACTION: Staff will present on the agency's Strategic Direction, the Board-approved committee structure and how this will intersect with the Transportation Committee. There will also be discussion regarding how staff can effectively execute the federal IIJA through the Committee and related working groups.

ACTION REQUESTED: Information

6.03   Crowd+AI Tools to Map, Analyze, and Visualize Sidewalk Accessibility for Inclusive Cities   **22-110**

PURPOSE & ACTION: Yochai Eisenberg and Sierra Berquist will present on a multi-year project, funded by the National Science Foundation to map, analyze, and visualize accessibility data of sidewalks in the Chicago region. As part of this project, the team is hosting workshops with stakeholders (planners, people, with disabilities, advocates, city officials) to better understand perspectives, challenges, and opportunities for using crowd + AI generated data.

ACTION REQUESTED: Information

6.04   Legislative Update   **22-113**

PURPOSE & ACTION: Staff will provide an update on relevant federal and state legislative activities.

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 next meeting will be April 29, 2022

10.0   Adjournment

Chicago Metropolitan Agency for Planning (CMAP)
Transportation Committee
Draft Meeting Minutes
December 17, 2021
Via GoToWebinar

Members Present: Chris Snyder, Chair – DuPage County, Jessica Hector-Hsu, Vice Chair – RTA, Chuck Abraham – IDOT OIPI, Kevin Carrier – Lake County, Michael Connelly – CTA, Eva De Laurentiis – Cook County, Jon Paul Diipla – McHenry County, John Donovan, FHWA, Doug Ferguson – CMAP, Jackie Forbes – Kendall County, Tony Greep – FTA, Chris Hiebert – SEWRPC, Tom Kelso – IDOT OP&P, David Kralik – Metra, Christina Kupkowski – Will County, Erik Llewellyn – Pace, Jessica Ortega – Bike/Ped TF, Heidy Persaud – CNT, Tom Rickert – Kane County, Leon Rockingham – Council of Mayors, Joe Schofer - Academic, Audrey Wennink – MPC, Rocco Zucchero – Tollway

Staff Present: Erin Aleman, Victoria Barrett, Sarah Buchhorn, Anthony Cefali, Daniel Comeaux, Stephen Di Benedetto, Teri Dixon, Kama Dobbs, Austen Edwards, Jane Grover, Lindsay Hollander, Elliott Lewis, Tim McMahon, Martin Menninger, Stephane Phifer, Russell Pietrowiak, Yousef Salama, Todd Schmidt, Elizabeth Scott, Gordon Smith, Simone Weil, Laura Wilkison

Others Present: Garland Armstrong, Ama Baljinnyam, Noel Basquin, Jesse Elam, Malika Hainer, Kendra Johnson, Mike Klemens, Heidi Lichtenberger, Brittany Matyas, Daniel Maziarz, Laura McFadden, Leah Mooney, Ryan Peterson, Troy Simpson, Joe Surdam, David Tomzik, Michael Vanderhoof, Grant Wingo

1.0   Call to Order and Introductions
Chair Snyder called the meeting to order at 9:30 a.m. and stated that as permitted in the Governor's Disaster Declaration from December 10, 2021, the determination has been made that an in-person meeting is not practical or prudent for this committee. To ensure a transparent and open a meeting, staff posted the meeting materials one week in advance, will provide a recording of this meeting linked on the CMAP website, and will take all votes by roll call. Chair Snyder asked Ms. Dobbs to call the roll.

2.0   Agenda Changes and Announcements
There were no agenda changes or announcements.

3.0   Approval of Minutes – November 19, 2021

A motion to approve the minutes from the November 19, 2021 meeting was made by Vice Chair Hector-Hsu and seconded by Mr. Rickert. A roll call vote was conducted, and the motion carried. (Roll call results are shown at the end of the minutes.)

4.0   Committee Reports

Ms. Aleman thanked Chair Snyder for his three years of service on the Committee and explained the process for selecting a new Chair and Vice Chair. Ms. Aleman then reported on CMAP's continuing examination of the Infrastructure Investment and Jobs Act (IIJA)/Bipartisan Infrastructure Law (BIL), focusing on policy implications, new core funding programs, and competitive programs.

5.0   FFY 2019-2024 Transportation Improvement Program (TIP)

5.1 Amendments and Administrative Modifications

Mr. Pietrowiak presented an overview of the formal TIP amendment 22-02 and the administrative amendments 22-02.1 and 22-02.2.

A motion to approve TIP Amendment 22-02 was made by Mr. Connelly and seconded by Mayor Rockingham. A roll call vote was conducted, and the motion carried. (Roll call results are shown at the end of the minutes.)

5.2 Semi-Annual ON TO 2050/TIP Conformity Analysis and TIP Amendment

Mr. Pietrowiak updated the committee on the status of TIP amendment 22-03 and the ON TO 2050/TIP conformity analysis, which was subject to a 30-day public comment period between November 4, 2021 and December 7, 2021. No comments were received regarding the conformity analysis nor the TIP amendment.

A motion to approve TIP Amendment 22-03 was made by Mr. Carrier and seconded by Ms. Forbes. A roll call vote was conducted, and the motion carried. (Roll call results are shown at the end of the minutes.)

6.0   ON TO 2050 Update

Ms. Hollander gave a status update on the Financial Plan for the ON TO 2050 plan update. Staff has developed a baseline forecast over the past six months to determine existing revenues and transportation investment needs. Ms. Hollander presented a summary of system performance metrics, policy changes, and new revenues since the original ON TO 2050 adoption in 2018. Over the planning horizon, revenues are expected to exceed baseline expenditures to maintain the system in its current condition.

Committee members discussed the impact of IIJA/BIL programs, anticipation of additional federal guidelines, and updates to Regionally Significant Projects. Ms. Hollander stated that further updates to the Financial Plan, including reasonably expected revenues and allocations, would be presented to the Committee at a future date.

7.0 2022 Highway Safety Targets

Mr. Schmidt presented an overview of the 2022 IDOT highway safety targets for approval and recommendation to the CMAP Board and MPO Policy Committee. Mr. Schmidt also presented an overview of recent and planned work by CMAP to address transportation system safety.

Committee members discussed how safety targets are set, effectiveness of roadway improvements, interjurisdictional collaboration, and expressed a desire for a representative from IDOT to present their approach to safety improvements on routes under their jurisdiction. Mr. Ferguson stated CMAP staff would coordinate with IDOT on presenting at a future meeting.

A motion to approve the 2022 highway safety targets was made by Mr. Rickert and seconded by Mr. Schofer. A roll call vote was conducted, and the motion carried. (Roll call results are shown at the end of the minutes.)

8.0 Legislative Update

No formal update was presented.

9.0 Other Business

Mr. Schofer informed the Committee of a Transportation Research Board (TRB) research paper (*Special Report 340: Investing in Transportation Resilience: A Framework for Informed Choices*) to assist in creating resiliency plans for transportation assets.

Vice Chair Hector-Hsu announced that the RTA's strategic planning process is ongoing and invited members to participate through a public survey or workshop. She also noted that the RTA has developed an online interface on their RTAMS website to connect projects in the Regional Capital Program with core requirements and strategic goals.

Mr. Zucchero commended Rocky Donahue for his work at Pace over his career and wished him well ahead of his retirement as Pace Executive Director at the end of the year.

10.0 Public Comment

No public comments were received prior to the meeting or made during the meeting.

11.0 Next Meeting

The next Transportation Committee meeting is scheduled for February 25, 2022.

12.0 Adjournment

The meeting adjourned at 10:46 a.m.

Roll Call Votes

Member	Agency	Meeting Minutes 11-19-2022		TIP Amendment 22-02		TIP Amendment 22-03		2022 Highway Safety Targets	
		Y	N	Y	N	Y	N	Y	N
Chris Snyder	DuPage County	X		X		X		X	
Jessica Hector-Hsu	RTA	X		X		X		X	
Chuck Abraham	IDOT OIPI	X		X		X		X	
Kevin Carrier	Lake County	X		X		X		X	
Michael Connelly	CTA	X		X		X			
Leah Mooney	CTA							X	
Eva De Laurentiis	Cook County	X		X		X		X	
Jon Paul Diipla	McHenry County	X		X		X		X	
Doug Ferguson	CMAP	X		X		X		X	
Jackie Forbes	Kendall County	X		X		X		X	
Chris Hiebert	SEWRPC	X		X		X		X	
Tom Kelso	IDOT OP&P	X		X		X		X	
David Kralik	Metra	X		X		X		X	
Christina Kupkowski	Will County	X		X		X		X	
Erik Llewellyn	Pace	X		X		X		X	
Jessica Ortega	Bike/Ped TF	X		X		X		X	
Heidy Persaud	CNT	X		X		X			
Tom Rickert	Kane County	X		X		X		X	
Leon Rockingham	CoM	X		X		X			
Joe Schofer	Academic	X		X		X		X	
Audrey Wennink	MPC	X		X		X		X	
Rocco Zucchero	Tollway	X		X		X		X	

Respectfully submitted,

Doug Ferguson

TRANSPORTATION

MEETING MINUTES - DRAFT

February 4, 2022

Please register in advance of the meeting at:
https://attendee.gotowebinar.com/register/3526262852302064910

To participate by phone,
call (631)992-3221 with access code 521-732-278

1.0 Call to Order and Introductions

Chair Hector-Hsu called the meeting to order at 9:35 a.m. and reminded the members that the meeting is being recorded. She requested that Lindsay Bayley call the roll.

Present: Academic Research Representative 1, CDOT Representative, CMAP Representative, CNT Representative, CoM Representative, Cook Co Representative, CTA Representative, DuPage Co Representative, IDOT-D1 Representative, IDOT - OIPI Representative, IDOT - OP&P Representative, IEPA Representative, Kane Co Representative, Kendall Co Representative, Lake Co Representative, McHenry Co Representative, Metra Representative, MPC Representative, Pace Representative, SEWRPC Representative, Tollway Representative, FHWA Representative, Will Co Representative, and FTA Representative

Absent: Academic Research Representative 2, Bike/Ped TF Representative, and NIRPC Representative

Jessica Hector-Hsu (Chair) served as representative to RTA; Kevin Carrier (Vice Chair) served as representative to Lake County; Joe Schofer served as representative to Academic Research 1; Vig Krishnamurthy served as representative to CDOT; Doug Ferguson served as representative to CMAP; Heidy Persaud served as representative to CNT; Leon Rockingham served as representative to CoM; Tara Orbon served as representative to Cook Co; Leah Mooney served as representative to CTA; Chris Snyder served as representative to DuPage Co; John Donovan served as representative to FHWA; Tony Greep served as representative to FTA; John Baczek served as representative to IDOT D1; Kahlil Clemmons served as representative to IDOT OIPI; Mike Vanderhoof served as representative to IDOT OP&P; Darwin Burkhart served as representative to IEPA; Tom Rickert served as representative to Kane Co; Jackie Forbes served as representative to Kendall Co; Jon Paul Diipla served as representative to McHenry; Lynnette Ciavarella served as representative to Metra; Audrey Wennink served as representative to MPC; Eric Llewellyn served as representative to Pace; Chris Heibert served as representative to SEWRPC; Rocco Zucchero served as representative to Tollway; Christina Kupkowski served as representative to Will Co;

Staff Present: Laurent Ahiablame, Erin Aleman, Victoria Barrett, Michael Brown, Anthony Cefali, Michael Collins, Stephen Di Benedetto, Teri Dixon, Elizabeth Ginsberg, Jane Grover, Jon Haadsma, Leroy Kos, Elliott Lewis, Angela Manning, Amy McEwan, Tim McMahon, Martin Menninger, Jason Navota, Daniel Olson, Russell Pietrowiak, Dawn Raftery, Yousef Salama, Todd Schmidt, Elizabeth Scott, Blanca Vela-Schneider, Gordon Smith, Mary Weber, Laura Wilkison

Others Present: John Adams, Garland Armstrong, Holly Bieneman, Elaine Bottomley, Len Cannata, Erik Cempel, Michael Connelly, Eva De Laurentiis, Doug Delille, Jesse Elam, Mike Fricano, Malika Hainer, Scott Hennings, Kendra Johnson, Tom Kelso, Mike Klemens, David Kralik, Aimee Lee, Heidi Lichtenberger, Brittany Matyas, Melissa Meyer, Heather Mullins, Chad Riddle, Jeffery Schielke, Troy Simpson, Joe Surdam, Dave Tomzik, Jazmin Vega, Maria Villalobos, Kimberly White, Kyle Whitehead

2.0   Agenda Changes and Announcements

There were no agenda changes or announcements.

3.0   Information Items

3.01   CMAP's Role in Executing the Infrastructure Investment and Jobs Act (IIJA)   **22-062**

PURPOSE & ACTION: Staff will provide a presentation on the IIJA's requirements and opportunities, and its relations to CMAP's role in service to the region. The presentation will outline the programming, policy and competitive programs that CMAP will focus on in the current and next budget cycle. In addition there will be needed collaboration with our regional partners to optimize and leverage the amount of federal funding the region is able to secure.

ACTION REQUESTED: Information

Executive Director Erin Aleman, CMAP, thanked the committee for agreeing to meet today. She gave background on why the committee is meeting today and how the work of CMAP supports the implementation of ON TO 2050.

Laura Wilkison, CMAP, talked about CMAP's role in service to the region for the Infrastructure and Invest in Jobs Act (IIJA) and how the new funding to current programs, the analysis and implementation of new policies, the establishment of new formula programs and achieving regional consensus on priorities for competitive programs helps supports that effort. An overview was giving on the IIJA's impact on existing federal programs, the creation of new federal programs and background on some of the new competitive programs. CMAP staff will be back to talk about many of these activities and will seek input on the committee members priorities.

The agenda item was presented.

4.0   Approval Items

4.01   Draft FY2023 Unified Work Program (UWP) Budget   **22-065**

PURPOSE & ACTION: At the January 13th MPO Policy Committee meeting, Secretary Osman directed staff to engage the full Transportation Committee on the draft FY2023 Unified Work Program (UWP) Budget to meet IDOT's February 14, 2022 budget deadline submission, and to discuss the work 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). Staff will request that Transportation Committee recommend approval of the FY 23 UWP budget to the MPO Policy committee. This action allows CMAP to forward the draft of the agency's 2023 budget to IDOT; thereby meeting IDOT's budget submission deadline.

ACTION REQUESTED: Recommend approval to the MPO Policy Committee

Attachments: TC(Memo)FY23_UWP_Budget_Memo01282022

Yousef Salama, CMAP, provided a presentation on CMAP's FY2023 UWP Budget. He highlighted the goals of the budget which included bringing more federal funding to the region, complete activities our partners need to drive implementation of new resources, provide technical and applied research capacity and services for day-to-day activities and collaborate on new IIJA requirements to position the region as a leader. The work and activities revolve around ADA transition plans, safety, resiliency, data, technical, and applied research services, transportation project analysis tool, regional infrastructure accelerator, and a transportation project risk register. Angela Manning, CMAP, provided the financial details on the UWP budget.

A motion was made by Kane Co Representative, seconded by IDOT - OP&P Representative, that the agenda item be approved and referred to the MPO Policy Committee. The motion carried by the following vote:

Aye:	Academic Research Representative 1, CDOT Representative, CMAP Representative, CNT Representative, CoM Representative, Cook Co Representative, CTA Representative, DuPage Co Representative, IDOT-D1 Representative, IDOT - OIPI Representative, IDOT - OP&P Representative, IEPA Representative, Kane Co Representative, Kendall Co Representative, Lake Co Representative, McHenry Co Representative, Metra Representative, MPC Representative, Pace Representative, Tollway Representative, FHWA Representative, Will Co Representative, and FTA Representative
Absent:	Academic Research Representative 2, Bike/Ped TF Representative, and NIRPC Representative
Abstain:	SEWRPC Representative

5.0   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.

Garland Armstrong (former Illinois resident) introduce himself. He wished the committee a happy new year and was encouraged by the work being done on the Americans with Disabilities (ADA) requirements in the northeastern Illinois region.

6.0   Next Meeting

The next meeting will be February 25, 2022

7.0   Adjournment

A motion was made by Lake Co Representative, seconded by CTA Representative, that the meeting be adjourned. The motion carried by a voice vote.

The meeting was adjourned at 10:42 a.m.

Respectfully submitted,

Minutes prepared by Doug Ferguson

Chicago Metropolitan Agency for Planning

MEMORANDUM

To: CMAP Transportation Committee

From: CMAP Staff

Date: February 18, 2022

Re: Transportation Improvement Program (TIP) Amendments

Since the December 17th committee meeting, project programmers submitted 71 formal amendments for Transportation Committee consideration. Additionally, 230 administrative amendments were submitted, reviewed, and accepted by staff. Summary information is presented below. A list of projects and report of the full change details for each amendment are available on the Amendments tab of the **eTIP public web page**. Staff requests committee approval of Formal Amendment 22-04.

Formal Amendment 22-04

A total of 71 formal amendments were submitted for Transportation Committee approval on amendment **22-04**. Cost changes for 51 existing projects removed over $907 million in total cost from the TIP, the majority of this ($877 million) was due to changes to the costs for the I-190 O'Hare Access Roads project (01-98-0114) and the I-80 Reconstruction project (09-12-0036). Cost changes associated with eleven (11) projects adding phases to or removing phases from federal fiscal years 2022 – 2026 added $4.3 million in total cost to the TIP. Five (5) new projects added a total of $11.7 million, including $9.2 million in federal funding. Finally, cost adjustments made with changes to project scope added $4.1 million in total cost. The overall change in total project cost within all prior, current, and future years due to this amendment is the removal of $887 million in total cost and the reduction of federal participation in projects by $879 million, as summarized below.

Type of change	# of projects	Change in total cost	Total cost before	Total cost after	Change in federal cost	Federal cost before	Federal cost after
Cost change	51	-$907.1	$3,763.6	$2,856.5	-$884.2	$2,803.6	$1,919.3
Phase(s) added to or removed from TIP	11	$4.3	$79.8	$84.1	-$0.6	$60.6	$60.0
New project	5	$11.7	$0.0	$11.7	$9.2	$0.0	$9.2
Scope change	4	$4.1	$47.9	$52.0	-$3.3	$34.8	$31.5
Grand Total	**71**	**-$887.0**	**$3,891.3**	**$3,004.3**	**-$879.0**	**$2,899.0**	**$2,020.1**

All costs in $ millions

Administrative Amendments 22-04.1 and 22-04.2

A total of 230 Administrative Amendments were submitted, reviewed, and accepted by staff on amendments **22-04.1** and **22-04.2**. Administrative amendments include new projects that are not federally funded or have all federal funds in future years, conversion of project phases to or from Advance Construction (AC), cost changes that are below CMAP's amendment thresholds, changes to project schedules within the years of the TIP, changes to fund sources, and other miscellaneous changes that do not affect the scope, schedule, or funding of projects in a way that requires committee approval.

22-04.1 & 22-04.2 Administrative Amendments - Type of Change
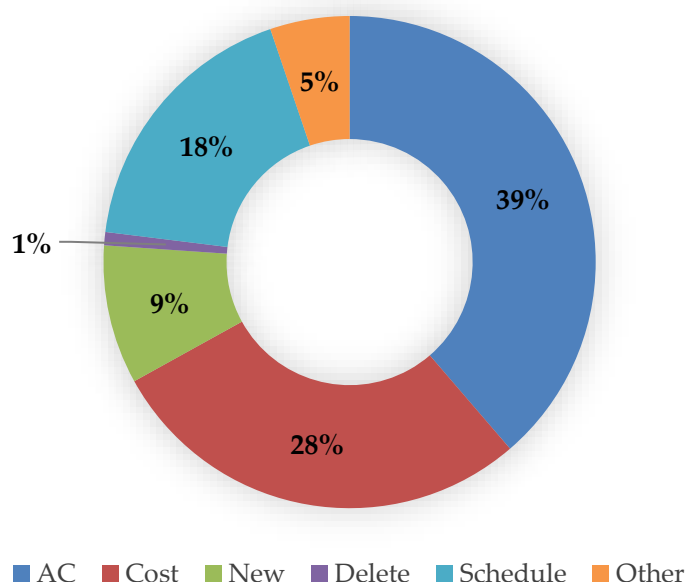
The majority of administrative changes occurred when project phases were placed into (42 projects) or converted from (47 projects) Advance Construction status. Cost adjustments made with these changes resulted in the removal of $5.6 million in total cost from the TIP. Sixty-five (65) projects experienced cost changes below the thresholds for formal amendments or in years beyond the current TIP years. These changes resulted in $63.2 million in total cost and $14.5 million in federal participation being added to the TIP. Twenty-one (21) new projects added $97.3 million in total cost. Two (2) projects were deleted from the TIP, removing $1.1 million in total cost. Minor cost adjustments made with three (3) scope changes removed less than $100,000 in total cost from the TIP. Fifty (50) other changes, such as updating project schedules or project identifiers, were made with no financial impact to the TIP. In total, nearly $154 million total was added to the TIP administratively, and federal participation increased by over $80 million. The type of change, number of projects affected, total project cost, and federal project cost information is shown in the table below. Total cost includes all fund sources and all project phases in prior, current, and future years of the TIP. Federal cost includes only federal fund sources for all project phases in prior, current, and future years of the TIP.

Type of change	# of projects	Change in total cost	Total cost before	Total cost after	Change in federal cost	Federal cost before	Federal cost after
Phase(s) converted from Advance Construction status	47	-$10.5	$678.2	$667.7	-$8.5	$502.8	$494.3
Phase(s) placed in Advance Construction status	42	$4.9	$1,048.8	$1,053.7	$2.0	$771.9	$773.9
Cost change	65	$63.2	$1,051.2	$1,114.5	$14.5	$590.7	$605.2
New Project	21	$97.3	$0.0	$97.3	$71.6	$0.0	$71.6
Delete project	2	-$1.1	$1.1	$0.0	$0.0	$0.0	$0.0
Schedule change	41	$0.0	$453.1	$453.1	$0.0	$220.7	$220.7
Scope change	3	-$0.1	$7.6	$7.6	$0.0	$5.7	$5.7
Other	9	$0.0	$127.4	$127.4	$1.0	$44.7	$45.7
Grand Total	**230**	**$153.7**	**$3,367.5**	**$3,521.2**	**$80.6**	**$2,136.5**	**$2,217.1**

All costs in $ millions

ACTION REQUESTED: Approval of formal TIP Amendment 22-04

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](#)

[Transcription (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]
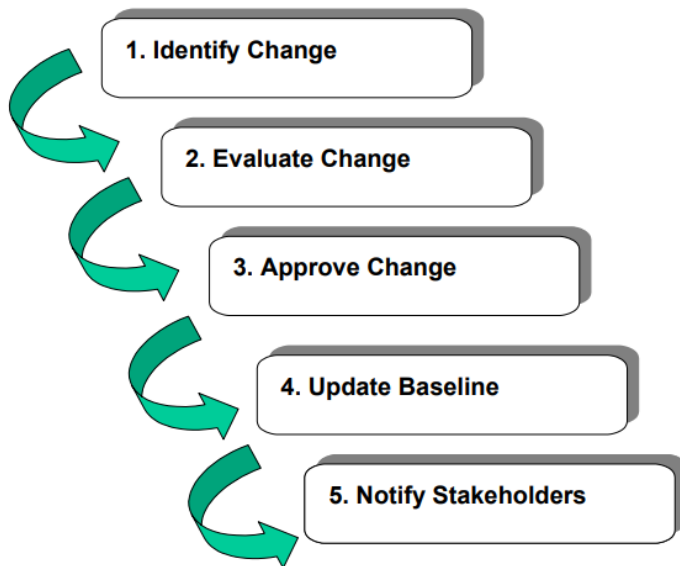
Step 1: Identify Change

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

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[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.

![Chicago Metropolitan Agency for Planning logo]

Chicago Metropolitan Agency for Planning

MEMORANDUM

To: CMAP Transportation Committee

From: CMAP Staff

Date: February 18, 2022

Re: Plan Update of Federal Performance Measures

Ten years ago, MAP-21 instituted a national performance measurement system for the highway and transit programs. After several years of rulemaking planning, CMAP, IDOT, and transit agencies started setting targets in 2018 for many measures. As we approach the four-year target period for many of the targets set in ON TO 2050, we can for the first time begin to see if the region is making progress toward our federal goals. This memo provides a brief overview of the federal performance measures and the process to re-evaluate current targets as part of the ON TO 2050 plan update. Staff are developing a System Performance Report appendix, similar to the one included with the last plan.[1] While the comprehensive list of measures has not been presented to the transportation committee since the adoption of ON TO 2050, three of the five target areas have been updated since 2018.

The targets identified tie directly to ON TO 2050 policy priorities. In addition, they are linked to several long-range plan indicators and, where possible, the financial plan. Seven of sixteen plan mobility indicators[2] are also federal performance measures. These were selected as the measures that best aligned with plan goals and policies. While federal measures set targets for the next one to four years, plan indicator targets are for the year 2050. Additionally, the federal condition measures for transit and highway systems are key metrics used in the financial plan to estimate maintenance and modernization needs.

Federal law requires that targets be set by states and metropolitan planning organizations (MPOs). Transit agencies must also set targets for transit measures. There are five target setting areas.

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[1] Chicago Metropolitan Agency for Planning (CMAP), "ON TO 2050 2018 Systems Performance Report Appendix," October 2018,
https://www.cmap.illinois.gov/documents/10180/862153/FINAL+2018+System+Performance+Report+App endix.pdf/f5b1714b-1c3b-ce2a-2ce0-7d55a078dc8e?t=1538532153599.

[2] CMAP, "Plan Indicators webpage" https://www.cmap.illinois.gov/2050/indicators

Area	Measure Areas	Number of targets	Last update	Target setting	Changes from ON TO 2050
Highway Safety	Fatalities, serious injuries	5	January 2022	CMAP has historically supported IDOT's targets.	CMAP has launched several efforts to address roadway safety.
Highway Condition	NHS Bridge and pavement condition	6	March 2021	CMAP supports IDOT's pavement targets. Bridge targets are set for modest improvement.	Using federal measure for pavement now that data is available.
System Performance	Congestion and air quality	9	October 2018	Congestion targets reflect goals of avoiding increases in congestion while improving reliability and increasing transit ridership. Air quality goals are based on projects selected in the CMAQ program.	Targets will be updated to reflect the most current CMAQ program. Round Lake Beach urbanized area will have separate targets for some measures.
Transit Safety	Fatalities, serious injuries, safety events, and reliability	28	March 2021	Targets are based on those set by the transit agencies. A target is set for four modes for each of the seven measures. (Metra sets targets with the Federal Railroad Administration.)	ON TO 2050 was amended in 2021 to include transit safety. Rules were not final when original plan was adopted.
Transit Condition	Vehicle, equipment, facility, and track condition	8	October 2018	Targets are based on estimates of financial capacity to reduce the state of good repair backlog by 2050.	May include FTA supported Chicago Water taxi assets.

Staff have collected new data as it becomes available and are working through each target area to identify trends, needed analysis, new rules, and any other significant changes. A snapshot of the latest data is available in the tables at the end of this memo. In general, target setting methodology will remain consistent with the original ON TO 2050 plan or the most recent targets adopted by the MPO policy committee. Changes will reflect evolving requirement and improved data where appropriate.

MPOs are required to demonstrate how the Transportation Improvement Program (TIP) contributes to achieving performance targets. In response to this requirement, CMAP has been collecting information in the eTIP database about what performance measures are impacted by TIP projects. This information was first presented in the 2019 Obligations report. A profile of TIP obligations and programming will be included in the System Performance Report update to demonstrate the connection between programming and federal performance measures.

Highway Safety

Highway safety measures are the only target areas requiring adoption by the MPO each year (typically in January). The federal timeline for this measure makes it difficult to align with CMAP's planning cycle, so the targets adopted in January 2022 will be the targets for the plan update. Since CMAP supports the state targets, there are no specific targets for the region, but data for the region is included below for reference.

Name	Measure					Current Targets				Trend	Progress	vs Target
	2016	2017	2018	2019	2020	Mid Point Target	Target Date	End Year Target	Target Date			
Fatalities (CMAP five-year rolling average)	426	444	453	472	504							
Fatalities (State five-year rolling average)	990	1,016	1,025	1,042	1,081	985	2020	1000	2021			(96)
Fatalities per 100 million VMT- CMAP	0.72	0.75	0.76	0.78	0.87							
Fatalities per 100 million VMT - State	0.94	0.96	0.96	0.97	1.04	0.91	2020	0.93	2021			(0.13)
Serious injuries - CMAP	6,663	6,721	6,613	6,426	5,980							
Serious injuries - State	12,184	12,125	11,956	11,553	10,692	11,669	2020	11,556	2021			976
Serious injuries per 100 million VMT- CMAP	11.3	11.3	11.1	10.7	10.2							
Serious injuries per 100 million VMT- State	11.6	11.4	11.2	10.8	10.2	10.8	2020	10.79	2021			0.64
Non-motorized fatalities and serious injuries- CMAP	1,149	1,182	1,215	1,238	1,162							
Non-motorized fatalities and serious injuries - State	1,499	1,528	1,561	1,583	1,490	1456	2020	1518	2021			(33)

Highway Condition

This target area tracks the condition of pavement and bridges on the national highway system (NHS). The data required to calculate the federal pavement condition measure was not available when the ON TO 2050 plan targets were adopted. CMAP used an allowed alternative until the data was collected. The MPO policy committee received an update on bridge and pavement targets in March 2021 and adopted new pavement targets.[3]

| Name | Measure | | | | | Current Targets | | Trend | Progress | vs Target |
	2016	2017	2018	2019	2020	End Year Target	Target Date			
Interstate NHS Pavement Condition - Good	60.8%	55.1%	58.2%	68.5%		61%	2021			-7%
Interstate NHS Pavement Condition - Poor	0.6%	0.9%	0.7%	6.6%		2%	2021			-5%
Non-Interstate NHS Pavement Condition - Good	20.6%	18.3%	18.3%	22.8%		21%	2021			-2%
Non-Interstate NHS Pavement Condition - Poor	6.0%	10.9%	9.7%	29.9%		9%	2021			-21%
Condition of bridges on NHS - % Good	37.6%	36.6%	35.2%	34.6%	30.0%	36.8%	2021			7%
Condition of bridges on NHS - % Poor	9.3%	8.6%	10.7%	12.7%	12.5%	8.3%	2021			-4%

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[3] CMAP, "2021 NHS pavement condition performance targets," March 2021, https://www.cmap.illinois.gov/documents/10180/1298484/Board-MPO%28Memo%29PavementTargets03-03-2021.pdf/046b421b-cadb-ab4e-9b7c-ee8971cf2322?t=1614900045544

System Performance

The system performance area looks at a number of different measures related to air quality, congestion and mode share. CMAP staff are just beginning to see the data from the pandemic, but it has had a significant impact on some of these measures. Past targets for congestion reflect plan goals to limit increases in congestion while focusing on the reliability of the system. It is unclear if reduced congestion levels are temporary or lasting, therefore staff plan to present targets that continue to target congestion level seen before the pandemic.

While most targets reflect assets in the CMAP MPO boundary, the non-single Occupancy vehicle and peak hour excessive delay (PHED) targets are set by census defined urbanized areas. A phase in of the rule mean that starting in 2022, all urbanized areas of over 200,000 population must set targets vs. over 1 million in 2018. Therefore, the Round Lake Beach--McHenry--Grayslake, IL—WI urbanized area may require targets with the plan update. More will be known when the Census Bureau releases updated urban boundaries in March 2022. CMAP will coordinate with IDOT, SEWRPC, WisDOT, INDOT, and NIRPC on these targets.

| Name | Measure | | | | | Current Targets | | Trend | Progress | vs Target |
	2016	2017	2018	2019	2020	End Year Target	Target Date			
VOC (kg/day)		279		106		246.1	2021			17
NOx (kg/day)		1,271		7,247		6,643.5	2021			(3,925)
PM2.5 (kg/day)		47		505		432.2	2021			(289)
PM10 (kg/day)		-		-		-	2021			-
Interstate system travel time reliability	65.7%	66.6%	63.5%	64.2%	85.6%	64.7%	2021			-20.9%
Non-Interstate NHS travel time reliability	82.7%	83.4%	83.5%	86.3%	92.8%	84.7%	2021			-8.1%
Annual excessive peak hour delay per capita on the NHS	14.3	14.5	17.0	14.5	14.5	15.4	2021			0.9
Truck travel time reliability	1.96	1.92	2.06	2.08	2.08	1.95	2021			(0.1)
% non-single occupancy vehicle commute travel (Chicago)	30.6%	30.8%	31.2%	31.4%		31.9%	2021			0.0%

Transit Safety

The transit safety measures and rule were still being finalized when ON TO 2050 was adopted in 2018. The FTA also delayed enforcement for transit agencies due to the pandemic. The MPO policy committee adopted two-year transit safety targets in March 2021.[4] With the plan update, staff will recommend four-year targets to align with the plan cycle. Staff are reviewing new guidance from the FTA on how to set targets with regard to incidents that result from criminal activity. Safety at Metra is regulated by the FRA, so federal targets are not required, but CMAP includes Metra in our planning and discussions around transit safety. Rail targets below only include CTA rail. Bus targets combine CTA and Pace.

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[4] Chicago Metropolitan Agency for Planning, "2022 Regional Transit Safety Performance Targets Memo," March 2021, https://www.cmap.illinois.gov/documents/10180/1298484/Board-MPO%28Memo%29TransitSafetyTargets03-04-2021.pdf/5294ab4b-f322-34ad-0d3d-9d1d855440fc?t=1614900046273

Category	Name	Measure					Targets		Trend	Progress	vs Target
		2016	2017	2018	2019	2020	End Year Target	Target Date			
Bus Safety	Fatalities	-	7	6	1	1	1	2022			0
Bus Safety	Fatalities per million miles	-	0.1	0.1	0.0	0.0	0.0	2022			0.0
Bus Safety	Injuries	689	632	607	639	639	625	2022			-14
Bus Safety	Injuries per million miles	9.2	8.3	7.9	8.3	8.3	8.2	2022			-0.1
Bus Safety	Safety Events	447	411	387	415	415	422	2022			7
Bus Safety	Safety Events per million miles	6.0	5.4	5.1	5.4	5.3	5.5	2022			0.2
Bus Safety	Mean Distance Between Mechanical Failures	6,949	6,880	6,764	6,456	6,956	7,775	2022			819
Rail Safety	Fatalities	17	17	16	18	18	0	2022			-18
Rail Safety	Fatality Rate	0.24	0.23	0.22	0.25	0.25	0	2022			-0.2
Rail Safety	Injuries	96	109	150	239	239	213	2022			-26
Rail Safety	Injuries per million miles	1.3	1.5	2.0	3.3	3.3	3	2022			-0.3
Rail Safety	Safety Events	115	112	155	219	219	222	2022			3
Rail Safety	Safety Events per million miles	1.6	1.5	2.1	3.0	2.0	3	2022			1.0
Rail Safety	Mean Distance Between Mechanical Failures	319,162	249,533	160,747	161,347	188,376	150,000	2022			-38,376
Vanpool	Fatalities	-	0	0	0	-	0	2022			0
Vanpool	Fatality Rate	-	-	-	-	-	0.0	2022			0.0
Vanpool	Injuries	6	0	1	2	1	2	2022			1
Vanpool	Injuries per million miles	0.7	-	0.1	0.3	0.4	0.2	2022			-0.2
Vanpool	Safety Events	1	0	1	2	3	1	2022			-2
Vanpool	Safety Events per million miles	0.1	-	0.1	0.3	1.2	0.1	2022			-1.1
Vanpool	Mean Distance Between Mechanical Failures	138,656	222,290	226,765	180,389	197,391	170,031	2022			(27,360)
APA Paratransit	Fatalities	-	1	-	2	-	1	2022			1
APA Paratransit	Fatality Rate	-	0.03	-	0.06	-	0	2022			0.0
APA Paratransit	Injuries	137	92	99	102	44	102	2022			58
APA Paratransit	Injuries per million miles	0.7	-	0.1	0.3	0.4	2.8	2022			2.4
APA Paratransit	Safety Events	95	94	113	106	63	99	2022			36
APA Paratransit	Safety Events per million miles	2.5	2.6	3.2	3.3	2.8	2.7	2022			-0.1
APA Paratransit	Mean Distance Between Mechanical Failures	64,440	57,227	48,738	49,056	52,141	53,365	2022			1,224

Transit Condition

Transit agencies were required to complete their initial Transit Asset Management plans by October 2018, two weeks before ON TO 2050 was adopted. As such, the asset inventories and policies were still being developed as CMAP finalized the plan. Similar to highway condition, most transit asset condition measures indicate a decline in condition, while targets are for improving condition. CMAP will be working with the RTA and other transit agencies to review new asset condition data and past targets.

Name	Measure						Targets		Trend	Progress	vs Target
	2015	2016	2017	2018	2019	2020	End Year Target	Target Date			
Buses past ULB	3.9%	8.4%	2.7%	6.8%	5.6%	6.7%	8.2%	2022			3%
Rail vehicles past ULB	21.5%	16.9%	17.0%	23.5%	26.9%	30.2%	16.4%	2022			-11%
Non- Fixed Route Vehicles past ULB	33.9%	28.9%	9.9%	9.4%	33.1%	43.4%	28.4%	2022			-5%
Non Revenue - Equipment past ULB		44.5%		57.0%	61.7%	62.6%	43.2%	2022			-19%
Non Revenue - Vehicles past ULB		22.7%		35.7%	40.9%	37.7%	22.1%	2022			-19%
Track miles with performance restrictions			3.75%	3.83%	4.4%	5.7%	3.6%	2022			-1%
Transit facilities in marginal or poor condition		21.0%		21.6%	18.8%	13.2%	20.4%	2022			2%

Next steps

Following discussion by the transportation committee, staff will work with partners to develop draft targets. The full System Performance Report will be a component of the full plan update document that will be shared for public comment in June 2022. Following public and additional partner comments, CMAP will bring proposed final targets to the MPO Policy Committee and CMAP Board in October 2022.

ACTION REQUESTED: Discussion

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