Chicago Metropolitan Agency for Planning

233 South Wacker Drive
Suite 800
Chicago, Illinois 60606

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www.cmap.illinois.gov

Transportation Committee

Agenda
Friday, August 4, 2017
9:30 a.m.
Cook County Conference Room
233 S. Wacker Drive, Suite 800
Chicago, Illinois

1.0 Call to Order/Introductions **9:30 a.m.**

2.0 Agenda Changes and Announcements

3.0 Approval of Minutes— June 16, 2017
ACTION REQUESTED: Approval

4.0 Coordinating Committee Reports
Neither of the coordinating committee have met since the last Transportation Committee meeting. The next Planning Committee meeting is September 13, 2017 and the next Programming Committee meeting is October 11, 2017.

5.0 FFY 2014-19 Transportation Improvement Program (TIP)

5.1 **TIP Amendments and Administrative Modifications**
TIP Amendment 17-08 was published to the **eTIP web site** on July 28, 2017 for committee review and public comment. A memo summarizing the formal TIP amendment **17-08** and administrative amendments **17-08.1** **and** **17-08.2** are included in the meeting materials.
ACTION REQUESTED: Approval

5.2 **Semi-Annual GO TO 2040/TIP Conformity Analysis and TIP Amendment**
Release of the semi-annual GO TO 2040/TIP conformity analysis and TIP amendment **17-10** for a 30-day public comment period from August 4 to September 4 is requested.
ACTION REQUESTED: Approval

6.0 FFY 2018-22 Congestion Mitigation and Air Quality Improvement (CMAQ) Program and FFY 2018-20 Transportation Alternatives Program (TAP-L)

Recommendations for the FFY 2018-22 CMAQ program and the FFY 2018-20 TAP-L program are being presented for consideration and release for public comment. The programs were considered by the CMAQ Project Selection Committee at its July 20, 2017 meeting and were recommended to the Transportation Committee for release for public comment. The programs are available on the CMAQ/TAP Program Development webpage. The public comment period will be from August 4 to September 4.

ACTION REQUESTED: Approval

7.0 LTA Call for Projects Update

Staff will provide an update on the 2017 Local Technical Assistance program Call for Projects. The call ended on June 29; staff will brief the committee on the applications received.

Action Requested: Information

8.0 ON TO 2050

8.1 **Public Health Strategy Paper**

CMAP is exploring planning approaches to public health as part of the development of ON TO 2050. During the initial stage of this process, CMAP gained a better understanding of the public health landscape and is now assessing future needs. An overview of the work scope and an investigation of how other peer MPOs integrate public health strategies into their planning and programming activities will be presented. Staff will solicit the committee's feedback on ways CMAP should consider incorporating health in ON TO 2050.

ACTION REQUESTED: Discussion

8.2 **Walkability Metric – Non motorized Snapshot**

Enabling safe, convenient, and comfortable non-motorized transportation options for all of our region's residents will help to create vibrant communities, improve equity and public health, and support local economies. This report investigates safety for pedestrians and bicyclists, trends in bicycling, trends in walking, and the importance of creating walkable places. Staff will present the latest efforts to create a metric to assess walkability in the region.

ACTION REQUESTED: Information

8.3 **Innovative Technology**

Improvements in technology have the potential to significantly change the region's transportation system. CMAP staff has drafted a transportation technology strategy paper building on the work that Cambridge Systematics presented to the Transportation Committee in January. Staff will present the major strategies identified in the paper.

ACTION REQUESTED: Information

9.0 Other Business

10.0 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 time for the public comment period will immediately follow the last item on the agenda.

11.0 Next meeting

The next Transportation Committee meeting will be September 29, 2017.

12.0 Adjournment

Committee Members

_____ Gabrielle Biciunas	____ Robert Hann	_____ Mark Pitstick
_____ Darwin Burkhart	____ Scott Hennings	_____ Anthony Quigley
_____ Lynnette Ciavarella	____ Emily Karry	_____ Tom Rickert
_____ Michael Connelly	____ Tom Kelso	_____ Leon Rockingham
_____ John Donovan***	____ Jennifer (Sis) Killen*	_____ Joe Schofer
_____ Doug Ferguson	____ Fran Klaas	_____ Lorraine Snorden
_____ Tony Greep***	____ Christina Kupkowski	_____ Chris Snyder
_____ Jacky Grimshaw	____ Beth McCluskey	_____ P.S. Sriraj
_____ Adrian Guerrero	____ Kevin Muhs	_____ Audrey Wennink
_____ Luann Hamilton	____ Randy Neufeld	_____ Rocco Zucchero**

*Chair **Vice-Chair ***Non-voting

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Chicago Metropolitan Agency for Planning (CMAP) Transportation Committee

Draft Minutes

June 16, 2017

Offices of the Chicago Metropolitan Agency for Planning (CMAP)
Cook County Conference Room
Suite 800, 233 S. Wacker Drive, Chicago, Illinois

Committee Members Present:	Jennifer Killen – Cook County, Chair, Jennifer Becker– Kendall County, Gabrielle Biciunas – NIRPC, Darwin Burkhart – IEPA (via phone), Brian Carlson – IDOT District 1, Michael Connelly – CTA, John Donovan – FHWA, Doug Ferguson – CMAP, Jackie Forbes – Kane County, Tony Greep – FTA, Jessica Hector-Hsu – RTA, Emily Karry – Lake County, Tom Kelso – IDOT Central Office, David Kralik – Metra, Christina Kupkowski – Will County, Mayor Leon Rockingham – Council of Mayors, Dave Seglin – CDOT, Lorraine Snorden – Pace, Chris Snyder – DuPage County, Audrey Wennink – MPC, Rocco Zucchero – Illinois Tollway
Absent:	Jacky Grimshaw – CNT, Adrian Guerrero – Class 1 Railroads, Robert Hann – Private Providers, Scott Hennings – McHenry County, Beth McCluskey – IDOT OIPI, Kevin Muhs – SEWRPC, Randy Neufeld – Bicycle and Pedestrian Task Force, Joe Schofer – Academic and Research, P.S. Sriraj – Academic and Research
Others Present:	Daniel Aguirre, Mike Albin, Erin Aleman, Garland Armstrong, Heather Armstrong, Ryan Bigbie, Susan Borucki, Len Cannata, Kevin Carrier, Sherry Chen, Bruce Christensen, Jackie Forbes, Mike Klemens, Barbara Klipp, Dennis Latto, Ashley Lucas, Leah Mooney, Brian Pigeon, Chad Riddle, Adam Rod, David Spacek, Anthony Vega, Mike Walczak
Staff Present:	Alex Beata, Anthony Cefali, Teri Dixon, Kama Dobbs, Jesse Elam, Augusta Gudeman, Kelwin Harris, Lindsay Hollander, Leroy Kos, Tom Kotarac, Tim McMahon, Martin Menninger, Ross Patronsky, Kevin

Peralta, Russell Pietrowiak, Allison Porton, Liz Schuh, Gordon Smith, Joe Szabo, Yiyuan Wang, Barbara Zubek

1.0 Call to Order

Chairman Killen called the meeting to order at 9:34 a.m.

2.0 Agenda Changes and Announcements

Chairman Killen announced that item 9.2 the Walking Metric – Non motorized Snapshot report will be deferred until the next Transportation Committee meeting.

3.0 Approval of Minutes – April 28, 2017

A motion to approve the minutes as presented made by Ms. Karry, seconded by Mayor Rockingham, carried.

4.0 Coordinating Committee Reports

Mr. Zucchero reported that the Planning Committee met on June 14. The committee heard staff presentations about the Regional Expressway Vision, the Draft ON TO 2050 Preview Report, and the ON TO 2050 Highway Operations, Transit Modernization, and Emerging Technology Strategy Synthesis. The next meeting is scheduled for September 13, 2017.

Chairman Killen reported that the Programming Committee met on May 10. The committee was updated on the status of the LTA program and the Call for Projects Symposium. There was a joint presentation by the City of Aurora and CMAP about the City of Aurora Downtown plan, an LTA project that is nearing completion. There were also discussions about the transit asset condition targets and the 2018 Unified Work Program. The next meeting is scheduled for October 11, 2017.

5.0 FFY 14-19 Transportation Improvement Program (TIP)
TIP Amendments and Administrative Modifications

Mr. Kos reported that formal amendment 17-07 to the FFY 2014-2019 was published to the eTIP website for committee review and public comment. Administrative amendments, 17-07.1, 17-07.2, and 17-07.3 were also posted for information. A memo summarizing the formal and administrative changes was included in the meeting packet. A motion to approve amendment 17-07 made by Mr. Connelly, seconded by Ms. Snorden, carried.

6.0 State Long Range Transportation Plan (LRTP)

Ms. Aleman presented the State Long Range Transportation Plan and gave an overview of the goals, which include economic growth, livability, access, resilience, stewardship, and safety. She explained that project prioritization and performance measures will be integral parts of the plan. She reviewed the coordinated plans that will be incorporated into the long range plan including the Freight Plan, Asset Management Plan and Rail

Plan. There will be three stakeholder workshops in Chicago, Springfield, and Metro East with public comment happening in August. The final plan is expected to be released in December. Ms. Becker asked if the bicycle/pedestrian plan will be integrated into the long range plan and Ms. Aleman replied it will be integrated as well. Mr. Zucchero complimented the survey and requested that the feedback be shared with the committee. Ms. Aleman agreed to send the feedback to staff for distribution to the committee.

7.0 RTA 2018-2022 Capital Program Development Process

Mr. Spacek presented the RTA 2018-2022 Capital Program Development Process. He explained the regional five-year program is adopted annually by the RTA board and any capital improvements undertaken by the service boards are included in the program. Mr. Spacek stated that the 2018 Capital program totals $979.16 million and noted that 2018 is the fourth year in a row with no new state contribution to the capital program. He went over the capital funding needs and stated that the capital program continues to fall short of meeting region's state of good repair needs. He concluded by explaining the public hearing process, which starts in October.

8.0 Principles for Programming Federal Freight Funds

Mr. Beata provided an overview of the development of the Regional Strategic Freight Direction, a near-term action agenda for freight policy, and noted that it could make recommendations on the use of federal freight funding in the region. He outlined two concepts: the suballocation of National Highway Freight Program funding to MPOs and a single regional application for competitive funding opportunities. Committee members asked how a suballocated program might work, both in allocating funds to the various MPOs and then the project selection process within the MPO. They also noted that a single application with regional consensus might be acceptable if it did not preclude agencies from submitting additional applications.

Mr. Beata indicated that this work item would be completed around the end of the year. In the meantime, Mr. Kelso noted that freight funds were being programmed largely to the Byrne Circle interchange.

9.0 ON TO 2050

9.1 ON TO 2050 Preview Report

Ms. Schuh presented the ON TO 2050 Preview Report and explained that the purpose of the report is to provide a preview of ON TO 2050's major recommendations. The report introduces three principles in the plan, which are resilience, inclusive growth, and prioritized investment. The report also expands on the Emerging Priorities Report.

Chairman Killen said it is understood that there are limited financial resources but there should be a focus on the benefit of the regional coordination that is occurring. Mr. Zucchero commented that the region does a good job with the resources it has and the

document should show more positivity. Mr. Snyder asked how the Alternative Futures will be incorporated into the plan. Ms. Schuh stated that may of the strategies in the preview report are represented in the Alternative Future process and the feedback received from the public will be put together at the end. Mr. Snyder noted the emphasis on economically disconnected areas and asked if there will be a map. Ms. Schuh said she can send the map to the committee and it will be part of the layers process. Mr. Connelly said he is glad that inclusive growth is part of the plan.

10.0 Status of Local Technical Assistance Program

Chairman Killen state there is an update included in the packet. Mr. Connelly stated that he is interested in the Chicago Pullman National Historic Park transportation plan and requested that a presentation be made at a Transportation Committee meeting.

11.0 Other Business

Chairman Killen announced that in an effort to advance the County's Long Range Transportation Plan, there are two jobs posted - Freight Manager and Transit Manager.

12.0 Public Comment

Ms. Armstrong expressed her concerns about construction projects stopping because of the lack of a State budget.

Mr. Armstrong said that the main goal of the Disability Pride Parade is to march down State Street and he hopes that a CDOT representative can attend their next meeting on June 20. He added that there still is no sign posted at O'Hare for CTA and Pace buses.

Ms. Klipp, representing Livable Lake County, stated that there are better solutions than the current proposed plan for the Route 53 extension, which is not warranted by the demand. She encouraged the committee to support moving forward with a better plan that would leave the wildlife corridor intact and encourage transit-oriented development.

Chairman Killen announced it was Mr. Christensen's last meeting and thanked him for his service.

13.0 Next meeting

The next Transportation Committee meeting will be August 4, 2017.

14.0 Adjournment

On a motion by Mr. Connelly, seconded by Mr. Snyder, the meeting adjourned at 10:42 a.m.

Agenda Item No. 5.1

Chicago Metropolitan Agency for Planning

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MEMORANDUM

To: CMAP Transportation Committee

From: CMAP Staff

Date: July 28, 2017

Re: Transportation Improvement Program (TIP) Amendments

Since the June committee meeting, project programmers submitted 120 Formal Amendments for Transportation Committee consideration. Additionally, 338 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**.

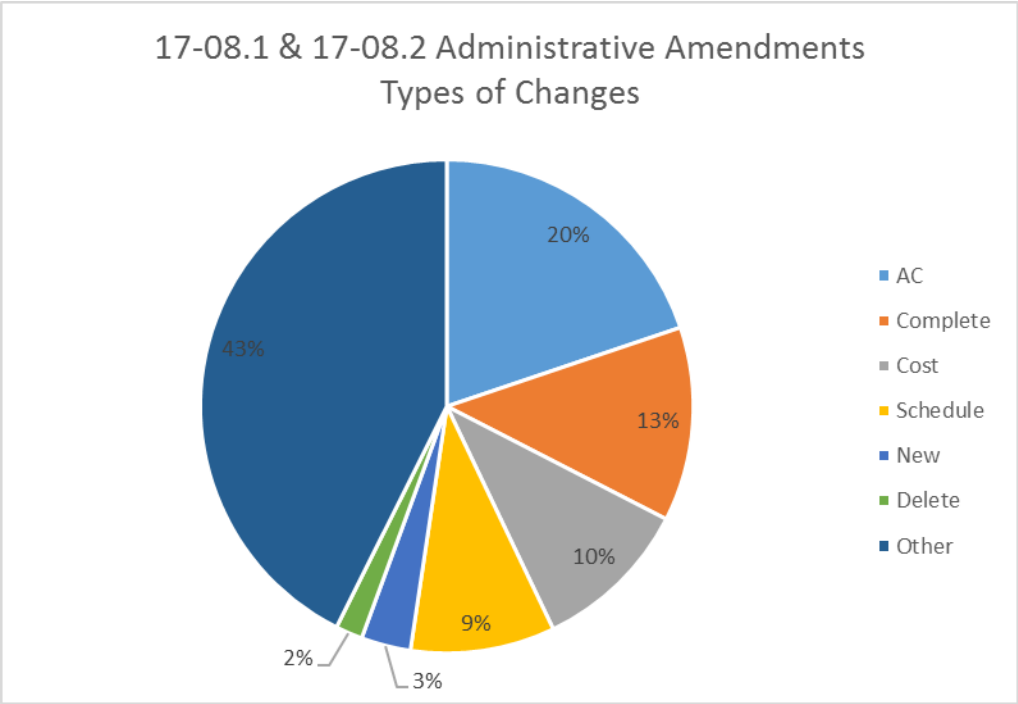
Formal Amendment 17-08

A total of 120 **Formal Amendments** were submitted for Transportation Committee approval. The vast majority of changes (78%) were submitted by IDOT District 1 to reflect the recently published multi-year program (MYP). Thirty-seven (37) new projects added over $88 million in total cost (all fund sources, in all prior, current, and future years) to the TIP. Over $18 million was removed from the TIP due to the deletion of 15 projects. Cost changes exceeding amendment thresholds on 20 projects added $61.5 million in total cost to the TIP. Thirty-five (35) new phases or schedule changes resulting in new phases moving into, or phases moving wholly out of, the TIP years resulted in the addition of $132 million to the TIP, and another $24 million was added on 13 projects that added or deleted federal funds. The overall change in total project cost within all prior, current, and future years resulted in $287 million being added to the TIP, as summarized below.

Type of Change	# of Projects	Change in Total Cost	Total Cost Before	Total Cost After
New Project	37	$88,118,999	$0	$88,118,999
Schedule or phase change	35	$132,154,329	$274,297,849	$406,452,178
Cost change	20	$61,535,360	$1,844,259,895	$1,905,795,255
Delete project	15	-$18,295,000	$18,295,000	$0
Add or remove federal funds	13	$24,169,000	$1,890,745,000	$1,914,914,000
Grand Total	**120**	**$287,682,688**	**$4,027,597,744**	**$4,315,280,432**

Administrative Amendments 17-08.1, and 17-08.2

A total of 338 Administrative Amendments were submitted, reviewed, and accepted by staff on amendments **17-08.1** and **17-08.2**. 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.



As noted within the formal amendment, there were a significant number of changes made to reflect the IDOT MYP. Advance construction (AC) changes also continue to dominate the administrative changes. Since June, 39 project phases were placed in AC, and 28 project phases were converted from AC to a federal fund source; minor cost adjustments from these actions added a net $3.2 million to the TIP. Eleven new projects with all funding in future years or using non-federal funds added $48.7 million to the TIP. Six projects were deleted, removing $12.9 million from the TIP. Cost changes to non-federal fund sources, changes in illustrative years, and changes to federal funds that are below the formal amendment thresholds added $90.6 million to the TIP on 33 projects. Over $95 million was added to the TIP due to adding new fund sources, or changing fund sources. Forty-three projects were marked as "completed" indicating that the final phase is underway and future programming changes are not anticipated. There were 129 other changes, most of which were minor scope, schedule, or contact information changes, resulting in a net addition of just over $1 million. The type of change, number of projects affected, and total project cost information is shown on the next page. Total cost includes all fund sources and all project phases in prior, current, and future years.

Type of Change	# of Projects	Change in Total Cost	Total Cost Before	Total Cost After
Phase(s) placed in Advance Construction status	39	$888,850	$169,595,565	$170,484,415
Phase(s) converted from Advance Construction status	28	$2,299,789	$638,347,343	$640,647,132
Fund sources	47	$95,724,422	$5,949,893,616	$6,045,618,038
Project competed	43	$1,512,923	$446,910,284	$448,423,207
Minor scope changes	42	$1,370,000	$343,558,000	$344,928,000
Cost changes below amendment thresholds or in future	35	$90,620,092	$7,230,842,428	$7,321,462,520
Schedule change within TIP years	32	-$300,000	$3,072,576,640	$3,072,276,640
New Project	11	$48,697,800	$0	$48,697,800
Delete project	6	-$12,882,598	$12,882,598	$0
Other	55	$0	$2,409,498,152	$2,409,498,152
Grand Total	**338**	**$227,931,278**	**$20,274,104,626**	**$20,502,035,904**

Staff Contact
Kama Dobbs, Senior Planner, kdobbs@cmap.illinois.gov, 312-386-8710

ACTION REQUESTED: Approval

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MEMORANDUM

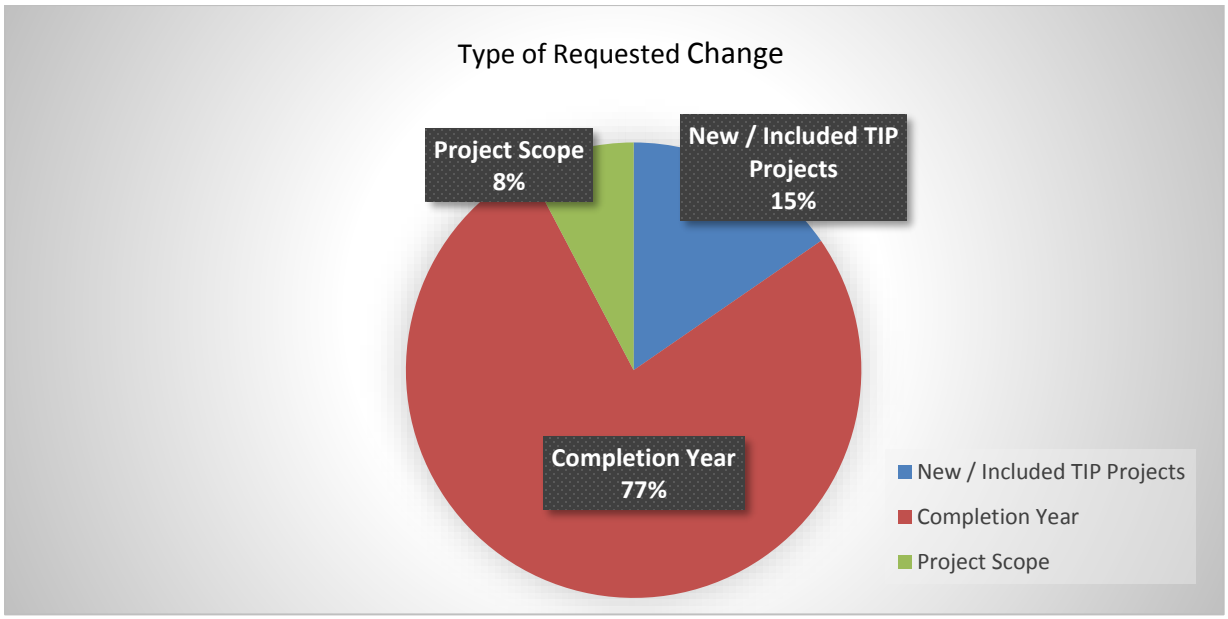
To: **CMAP Transportation Committee**

From: **CMAP Staff**

Date: **July 28, 2017, revised July 31, 2017**

Re: **GO TO 2040/TIP Conformity Analysis & TIP Amendment**

In accordance with the semi-annual conformity analysis policy, CMAP staff asked programmers to submit changes, additions, or deletions to non-exempt projects for inclusion in the regional air quality analysis of the Transportation Improvement Program (TIP) and GO TO 2040. Of the changes requested, thirteen projects require air quality conformity analysis. Below is a summary by type of requested changes.



If the TIP amendment is approved, two new non-exempt projects will be included in the TIP. These types of projects are included in the conformity analysis because funding for phases beyond preliminary engineering has been identified in the TIP. Non-exempt projects with only preliminary engineering funding and exempt tested projects are excluded from conformity analysis.

The new projects are:

- TIP ID 01-17-0017: Damen/Lake Green Line Elevated CTA Station
- TIP ID 10-17-0017: Corridor improvement along Fairfield Rd from Gilmer Rd to IL 176.

Limits are the cross-streets, mileposts or other boundaries which define the extent of a project. There are no projects with significant limit changes.

The completion year indicates when a project is anticipated to be in service to users. The conformity analysis is conducted for selected analysis years between now and 2040. The analysis years are currently 2020, 2025, 2030 and 2040. If a change in completion year results in moving a project across an analysis year, the project must be revised in the conformity analysis.

Three GO TO 2040 Major Capital Projects have a revised completion year requiring a revision to the conformity analysis.

- TIP ID 01-02-9018: Rock Island District Line from 16th St to Gresham Junction
- TIP ID 10-06-0061: IL 53 North-South Tollway from IL 120 to Lake Cook Rd IL 53/120 Tollway
- TIP ID 10-94-0047: IL 120 from Wilson Rd to US 41 IL 53/120 Tollway (IL 120 Bypass)

The following non-exempt group of projects crossed an analysis year and are included in the conformity analysis.

- TIP ID 08-00-0057: 248th Ave from 95th St to 103rd St
- TIP ID 09-00-0033: Bliss/Fabyan Rd extension to Main St
- TIP ID 09-09-0099: U.S. 30 from IL 47 to Albright Rd
- TIP ID 10-09-0037: US 41 Skokie Hwy from Quassey Avenue to S of IL 176
- TIP ID 10-96-0005: Quentin Rd from IL 22 to Lake Cook Rd
- TIP ID 11-00-0001: IL 31 Front St from S of IL 120 Belvidere Rd to N of IL 176
- TIP ID 13-16-0005: Barrington Rd between IL 62 to Mundhank Rd

The scope of a project is determined by the work types associated with the project.

  - Non-exempt work types are expected to affect air quality and must be included in the conformity analysis. Examples of non-exempt work types are adding lanes to a road, interchange expansion, signal timing and the major expansion of bus route service.
  - Exempt tested work types do not require an air quality conformity analysis, but the region has chosen to include the impacts of these types of projects in the travel demand model. Exempt tested projects include new commuter parking lots, rolling stock replacement, and road reconstruction with lane widening to standard (e.g., 10 feet to 12 feet).
  - Exempt work types do not require an air quality conformity analysis. Examples of exempt work types are intersection improvements and rail station modernization.

The following GO TO 2040 Major Capital Project scope was changed to define the new station locations. Although this is not a change to the plan, for conformity purposes the project is included for analysis:

- TIP ID 18-07-0670: UP NW Line New Start (3870), Metra UP Northwest Improvements and Extensions. New Stations at Johnsburg, Prairie Grove and Ridgefield.

The public website of the TIP database is available through the hyperlink for current project information. Newly submitted changes are found in the Conformity Amendments report.

The regional travel demand model was run using the updated networks. The resultant vehicle miles traveled (VMT) by vehicle class, speed, time of day, and facility type were entered into the US Environmental Protection Agency's MOVES model. The model generated on-road emission estimates for each precursor or direct pollutant in each analysis year.

For ozone precursors volatile organic compounds (VOC) and nitrogen oxides (NOx), the resulting emissions inventories estimates fell below the applicable budgets for the ozone maintenance State Implementation Plan (SIP).

As of April, 2015 the region was designated as "unclassifiable" with respect to the 2012 fine particulate matter standard. Effective October, 2016, the 1997 fine particulate matter standard was revoked – this is the standard to which the region has been conforming. Thus, for regulatory purposes, the region has no conformity requirement with respect to fine particulate matter. To reflect this, the conformity inventory table shows only the inventories for ozone precursors.

Direct $PM_{2.5}$ and NOx Emissions in Tons per Year for $PM_{2.5}$ Conformity

	Fine Particulate Matter		Nitrogen Oxides	
Year	Northeastern Illinois	SIP Budget	Northeastern Illinois	SIP Budget
2020	1,636.83	5,100.00	43,423.51	127,951.00
2025	1,214.10	2,377.00	29,793.79	44,224.00
2030	1,003.56	2,377.00	23,868.14	44,224.00
2040	827.79	2,377.00	16,171.75	44,224.00

conformity is demonstrated by comparison of analysis year emissions to the SIP budgets

VOC and NOx Emissions in Tons per Summer Day for Ozone Conformity

	Volatile Organic Compounds		Nitrogen Oxides	
Year	Northeastern Illinois	SIP Budget	Northeastern Illinois	SIP Budget
2020	76.29	117.23	114.21	373.52
2025	60.05	60.13	77.02	150.27
2030	47.74	60.13	60.46	150.27
2040	33.85	60.13	39.66	150.27

conformity is demonstrated by comparison of analysis year emissions to the SIP budgets

Notes:
Off-model benefits are not included in the total emissions estimates
Results updated as of July 25, 2017

ACTION REQUESTED: Recommend for finding of conformity and approval of TIP amendment

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MEMORANDUM

To: **Transportation Committee**

From: CMAP staff

Date: July 28, 2017

Re: Review of FFY 2018-2022 CMAQ program and FFY 2018-2020 Transportation Alternatives Program

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As part of the development process for the FFY 2018-2022 Congestion Mitigation and Air Quality Improvement (CMAQ) and the FFY 2018-2020 Transportation Alternatives Program-Local (TAP-L) programs, CMAP staff is presenting funding recommendations to the Transportation Committee (TC) for discussion and potential adjustment. The recommended programs can be found in the attachments to this memo. The first attachment is the combined CMAQ and TAP-L rankings and recommendations sorted by project type and air quality cost-effectiveness; the second attachment is the TAP-L rankings and recommendations alone. These documents can also be found in spreadsheet format on the **CMAQ/TAP-L Program Development** webpage.

The projects were recommended from among those submitted in a joint CMAQ/TAP-L call for projects held from January to March 2017. Staff evaluated the projects over the spring and discussed the results with the Bicycle and Pedestrian Task Force and Regional Transportation Operations Coalition in June as well as with individual sponsors. The CMAQ and TAP-L program was then considered by the CMAQ Project Selection Committee and recommended to the TC to release for public comment. Staff requests that the TC release both programs with any adjustments for public comment for a period lasting from August 4 to September 4, 2017.

While in general phase I engineering is the responsibility of the project sponsors to complete without CMAQ or TAP-L funding, sponsors may request CMAQ or TAP-L funding for phase I engineering based upon a hardship. Hardship is determined from an evaluation of municipal median income, tax base per capita, total tax base, and population. Three sponsors requested hardship funding for phase I engineering. Requests for phase I engineering funding were evaluated on the expected benefits of the project, as with all other applications. One project ranked high enough to be recommended for funding, a bicycle facility in the City of Country Club Hills.

Transportation Alternatives Program - Local
While the CMAQ program funds bicycle facilities in addition to other types of projects, TAP-L is focused only on bicycle facilities. Thus, bicycle facilities could receive funding under either program, depending on how they ranked under either program's scoring criteria. The TAP-L criteria focus on helping to complete the Regional Greenways and Trails Plan, showing that a significant market for the facility exists (using population and employment density around the project as the metric), and improving the safety and attractiveness of bicycling. Demonstrating project readiness is also an important part of the evaluation. More details on the scoring system can be found in the **application materials**.

In the attached recommended program, projects are all shown together ranked by the CMAQ criteria of dollars per kilogram of VOC eliminated. The TAP-L eligible projects also show the TAP-L composite score to the far right of the sheet. Each TAP-L criterion had a potential score of 30 points except for the bonus, which is 10 points (5 points for having no right-of-way to acquire and 5 points for having phase II engineering complete). The maximum score is thus 100. Thirty-two bicycle facility projects were submitted for TAP-L and CMAQ consideration. Of these, 14 are being recommended for TAP-L funding and one is being recommended for funding in the proposed CMAQ program.

The programming mark for this cycle was based on three years of funding (FFY2018-2020) which uses a base of FFY 2017 at $9.1 million and grows two percent per year based upon the growth of the Surface Transportation Block Grant Program. Adjustments were made based upon a negative carryover amount of $5.3 million and an expected end of FFY 2017 deferral amount of $6.4 million. This yields a TAP-L mark of $30.2 million.

Congestion Mitigation and Air Quality Improvement Program
The CMAQ draft program, projects are shown ranked by the dollar per kilogram of emissions reductions within each project category, but they take into account transportation impact criteria and regional priorities. More details on the scoring system can be found in the **application materials**.

The CMAQ mark for this cycle was based on a number of factors. First, the annual apportionment to the state is assumed to be $109.2 million in the last two years of the program, the same as it was in FFY 17, and it is furthermore assumed that northeastern Illinois can program against the entire state's apportionment. Second, no carryover is assumed as years 2018-2020 are programmed in their entirety, but staff estimates that $14 million will be available from deferrals at the end of FFY 2017. Third, at the end of May, a federal rescission pulled back $6.5 from the State's federal appropriation of CMAQ funds and this was taken out of the mark. Altogether, this yields a CMAQ mark of $225.9 million.

Conclusion
The combined funding recommendation for the TAP-L and CMAQ programs is shown in Table 1. Following the public comment period, staff will suggest any changes that should be made to the programs based on comments received. Any suggested changes will be presented at the September TC meeting before requesting approval of the programs at the CMAP Board and MPO Policy Committee meeting in October.

Table 1. Summary of recommended FFY 2018-20 TAP-L and FFY 2018-22 CMAQ programs

Project Type	Recommended Funding	Number of Projects Recommended*
Bicycle Facilities	$30,453,097	15
Bottleneck Elimination	$50,179,061	3
Direct Emissions Reduction	$73,955,500	4
Intersection Improvement	$10,296,421	6
Other	$6,386,000	1
Signal Interconnect	$4,460,199	3
Transit Facility Improvement	$76,970,512	3
Transit Service/Equipment	$0	0
Transit Access	$3,038,695	4
Grand Total	**$255,739,485**	**39**

Staff Contact
Doug Ferguson, Senior Planner, dferguson@cmap.illinois.gov, 312-386-8824

Action Requested: Approval to release draft programs for public comment

Chicago Metropolitan Agency for Planning

FFY 2018-2022 CMAQ and FFY 2018-2020 TAP-L Proposed Programs for August 4, 2017 Transportation Committee Consideration to be Released for a Public Comment Period

							CMAQ Rankings					TAP-L Rankings
SubType	**CMAQ ID**	**Sponsor**	**Facility to be Improved**	**Project Total**	**Federal Request**	**Recommendation CMAQ 2018-2022 (Orange) TAP-L 2018-2020 (Green)**	**Annualized $ per Kg VOC Eliminated**	**Annualized $ Per Kg PM2.5 Eliminated**	**Air Quality Cost Effectiveness Score**	**Transportation Impact Criteria Scores**	**Composite Priority Index [1]**	**Composite Priority Index [2]**
Access to Transit	TI03184286	HANOVER PARK	Village of Hanover Park - Barrington Road Accessibility Improvements	$342,500	**$270,000**		$854		**53.5**	**3**	**56.5**	
Access to Transit	TI18184315	Metra	Metra Bike Parking Expansion	$382,500	**$306,000**	**$306,000**	$1,037		**52.2**	**18**	**70.2**	
Access to Transit	TI03184285	HANOVER PARK	Village of Hanover Park - US 20 Pedestrian Access to Hanover Park Metra Station	$495,000	**$396,000**	**$396,000**	$1,234		**50.8**	**3**	**53.8**	
Access to Transit	TI05184289	BERWYN	Depot District Streetscape Project	$675,813	**$523,200**	**$523,200**	$1,423		**49.5**	**6**	**55.5**	
Access to Transit	TI13184305	RTA	Access to Transit Group	$2,266,869	**$1,813,495**	**$1,813,495**	$1,982		**45.9**	**13**	**59.3**	
Access to Transit	TI05184239	IDOT D1 Hwys	55th Street At Sergo Dr and Electromotive Dr (Transit Access Improvements)	$231,000	**$185,000**		$2,061		**45.5**	**3**	**48.5**	
Access to Transit	TI18184313	Metra	Union Pacific West Line La Fox Parking Lot Expansion	$2,297,068	**$1,838,088**		$4,735		**31.7**	**14**	**45.2**	
Access to Transit	TI08184273	WESTMONT	Westmont Path Improvement Program	$862,700	**$694,160**		$14,185		**8.9**	**4**	**13.2**	
Access to Transit	TI05184260	RIVERSIDE	RIVERSIDE METRA STATION ACCESS IMPROVEMENTS	$662,335	**$513,868**		$17,595		**5.6**	**6**	**11.6**	
Access to Transit	TI04184265	HILLSIDE	Wolf Road Complete Sidewalks and Bus Stop Improvements from Roosevelt to Harrison	$595,580	**$444,308**		$20,633		**3.7**	**3**	**6.7**	
Bicycle Facilities	BP03184241	Schaumburg	Village of Schaumburg - Higgins Road Bike Path	$701,788	**$515,760**	**$515,760**	$905		**53.1**	**19**	**72.1**	**77**
Bicycle Facilities	BP09184232	Aurora	East New York Street Bike Path	$595,850	**$428,680**	**$428,680**	$1,222		**50.9**	**21**	**72.4**	**66**
Bicycle Facilities	BP03184248	Niles	Niles Howard Street Bicycle Path	$1,500,000	**$1,145,000**	**$1,145,000**	$2,650		**42.0**	**25**	**66.6**	**76**
Bicycle Facilities	BP12184262	Romeoville	Village of Romeoville NGPL Multi-Use Trail	$1,087,000	**$813,600**	**$813,600**	$3,015		**40.0**	**19**	**58.6**	**78**
Bicycle Facilities	BP03184229	Palatine	Village of Palatine - Roselle Road/Euclid Avenue Multi-Use Path	$589,000	**$400,000**	**$400,000**	$3,870		**35.6**	**20**	**55.7**	**57**
Bicycle Facilities	BP02184211	Skokie	Village of Skokie - Skokie Valley Trail	$3,720,000	**$2,880,000**	**$2,880,000**	$5,398		**29.0**	**25**	**54.4**	**90**
Bicycle Facilities	BP10184250	Libertyville Township	LTHD Oak Spring Rd Bike Lanes	$164,100	**$120,300**		$5,841		**27.3**	**16**	**42.9**	**28**

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Bicycle Facilities	BP08184258	Carol Stream	Southeast Carol Stream Bike Paths	$2,459,900	**$380,000**	**$380,000**	$6,896		**23.7**	**19**	**43.0**	**58**
Bicycle Facilities	BP08184212	Roselle	Village of Roselle - Irving Park Road Bike Path and Sidewalk	$1,253,000	**$946,400**		$7,497		**21.9**	**22**	**43.4**	**52**
Bicycle Facilities	BP06184290	Alsip	Cal-Sag Trail - 131st Street Segment	$894,000	**$716,000**		$8,113		**20.1**	**20**	**39.9**	**61**
Bicycle Facilities	BP09184216	Kane County FPD	Great Western Regional Bike Trail Extension from LeRoy Oakes Forest Preserve to Randall Road	$874,343	**$680,034**	**$680,034**	$11,693		**12.4**	**22**	**34.2**	**67**
Bicycle Facilities	BP11184219	Algonquin	Multi-Use path along Main St, Park St, Harrison St and Riverview Dr	$1,768,000	**$1,196,800**		$13,291		**10.0**	**13**	**22.8**	**33**
Bicycle Facilities	BP06184279	Lemont Park District	Lemont Park District Pedestrian/Bikeway Connector	$316,470	**$253,176**		$15,131		**7.8**	**9**	**17.0**	**29**
Bicycle Facilities	BP08184207	Woodridge	Woodridge - Route 53 Southern Multi-Use Path Connectivity Project	$698,507	**$486,806**		$16,166		**6.8**	**19**	**26.1**	**57**
Bicycle Facilities	BP10184208	Mundelein	Midlothian Road Multi-Use Path	$1,009,680	**$767,357**		$18,327		**5.1**	**20**	**24.7**	**66**
Bicycle Facilities	BP08184225	DuPage County FPD	West Branch DuPage River Trail - West DuPage Woods Forest Preserve to Blackwell Forest Preserve	$4,675,000	**$2,730,134**	**$2,730,134**	$19,352		**4.4**	**21**	**25.0**	**72**
Bicycle Facilities	BP12184235	Elwood	Village of Elwood Mississippi Street Bike Path	$239,290	**$12,064**		$20,835		**3.6**	**11**	**15.1**	**23**
Bicycle Facilities	BP06184268	Orland Hills	Orland Hills Multi-Use Path Project	$487,270	**$365,816**		$22,961		**2.7**	**17**	**19.2**	**48**
Bicycle Facilities	BP06184264	Willow Springs	Willow Springs Village Center Trial Interconnect	$5,075,750	**$4,060,599**		$24,622		**2.2**	**23**	**25.6**	**72**
Bicycle Facilities	BP11184263	Huntley	Multi-Use path along Reed Rd from Vine St to IL Rte 47	$255,000	**$192,000**		$31,362		**0.9**	**11**	**12.3**	**39**
Bicycle Facilities	BP03184213	Palatine	Village of Palatine - Smith Street Connection to Jens Jensen Forest Preserve Path	$177,000	**$112,000**		$31,636		**0.8**	**11**	**11.8**	**23**
Bicycle Facilities	BP03184209	Elk Grove Village	Elk Grove Village - Oakton Street and Busse Road Multi-Use Path	$230,888	**$162,545**	**$162,545**	$35,297		**0.5**	**19**	**20.0**	**68**
Bicycle Facilities	BP02184230	Glenview	Village of Glenview Willow Road Multi-Use Path	$1,738,900	**$1,323,760**		$44,882		**0.1**	**20**	**20.6**	**59**
Bicycle Facilities	BP01184300	CDOT	Englewood Line Trail	$51,635,000	**$40,508,000**		$47,666		**0.1**	**21**	**20.6**	**67**
Bicycle Facilities	BP11184206	McHenry Co DOT	Bike path along Randall Road	$18,322,954	**$918,240**		$58,470		**0.0**	**15**	**15.2**	**42**
Bicycle Facilities	BP07184280	Richton Park	Poplar Avenue Bike Trail Extension	$834,200	**$631,360**		$94,862		**0.0**	**19**	**18.7**	**45**
Bicycle Facilities	BP02184238	Cook Co DOTH	Skokie Valley Trail Extension	$4,101,980	**$2,780,936**	**$2,780,936**	$132,633		**0.0**	**23**	**22.7**	**79**

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Bicycle Facilities	BP07184261	Country Club Hills	BP Pipeline Shared Use Path	$1,918,030	**$134,408**	**$134,408**	$202,779		**0.0**	**20**	**19.7**	**74**
Bicycle Facilities	BP08184272	DuPage County FPD	North Central DuPage Regional Trail	$2,552,000	**$152,000**	**$152,000**	$227,061		**0.0**	**19**	**19.5**	**77**
Bicycle Facilities	BP08184224	Naperville	North Aurora Road Underpass Bicycle and Pedestrian Facilities	$36,265,000	**$3,932,000**		$280,036		**0.0**	**13**	**13.4**	**36**
Bicycle Facilities	BP01184297	CDOT	Columbia Bridge Over Jackson Park Lagoon/59th St Bike Path	$9,113,000	**$5,098,000**	**$5,098,000**	$340,867		**0.0**	**27**	**27.3**	**84**
Bicycle Facilities	BP01184283	CDOT	43rd Street Access Bridge to the Lakefront Trail	$31,962,676	**$12,152,000**	**$12,152,000**	$438,683		**0.0**	**26**	**26.4**	**79**
Bottleneck Elimination	BE03184320	IDOT	I-90 WB Improvements from Ill 43 to I-190	$44,938,000	**$31,746,400**	**$26,146,400**	$1,471		**49.2**	**35**	**84.2**	
Bottleneck Elimination	BE15184220	Cook Co DOTH	I-294 to and from Franklin Avenue/Green Street	$31,225,020	**$19,076,416**	**$19,076,416**	$3,952		**35.2**	**29**	**64.2**	
Bottleneck Elimination	BE09184202	Kane Co DOT	Randall Road at Weld Road/US 20	$6,801,553	**$4,956,245**	**$4,956,245**	$6,219		**26.0**	**23**	**49.0**	
Bottleneck Elimination	BE03184243	Barrington	Village of Barrington - US Route 14 Underpass	$62,808,500	**$34,926,800**		$78,238		**0.0**	**16**	**16.0**	
Bottleneck Elimination	BE08184253	Naperville	North Aurora Road Underpass Bottleneck Elimination	$36,265,000	**$14,899,000**		$203,073		**0.0**	**15**	**15.0**	
Direct Emissions Reduction	DR18184318	Metra	F40PH 3 Engine Upgrade & Emissions Reduction	$11,962,600	**$9,570,080**			$36	**59.8**	**30**	**89.8**	
Direct Emissions Reduction	DR18184319	Metra	Locomotive Acquisition and Rehabilitation	$98,000,000	**$78,400,000**	**$44,800,000**		$36	**59.8**	**30**	**89.8**	
Direct Emissions Reduction	DR16184291	CTA	Purchase of Up to 10 Electric Buses and two En-route Charging Stations	$10,000,000	**$8,000,000**	**$8,000,000**		$1,168	**54.5**	**27**	**81.5**	
Direct Emissions Reduction	DR06184270	Bedford Park	The Belt Railway Company of Chicago Bedford Park Clearing Yard Switcher Locomotive Retrofit Project	$8,690,000	**$5,648,500**	**$5,648,500**		$1,050	**55.0**	**7**	**62.0**	
Direct Emissions Reduction	DR01184299	CDOT	Drive Electric Chicago - EV Fleet Program	$25,957,108	**$15,507,000**	**$15,507,000**		$3,737	**44.1**	**13**	**57.1**	
Direct Emissions Reduction	DR13184302	IL EPA	Chicago Area Heavy-Duty Vehicle Clean Fuel Infrastructure Partnership	$23,033,000	**$10,000,000**			$17,615	**14.0**	**1**	**15.0**	
Direct Emissions Reduction	DR01184296	CDOT	Chicago Area Alternative Fuel Deployment Project ("Drive Clean Chicago"), Series 3	$59,000,000	**$26,800,000**			$28,655	**5.6**	**7**	**12.6**	
Direct Emissions Reduction	DR08184269	Naperville	City of Naperville - Municipal CNG Fleet and Station Project	$13,046,199	**$7,078,039**			$79,739	**0.1**	**5**	**5.1**	

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Direct Emissions Reduction	DR07184288	Crete	Electric Wide Span Cranes (7) at Crete Intermodal Logistics Center	$44,723,399	**$29,070,209**			Analysis Inconclusive	**0.0**	**2**	**2.0**	
Direct Emissions Reduction	DR08184281	Forest Preserve District of DuPage Co	FPDDC CNG/LPG Fuel Conversions	$220,000	**$176,000**			No Benefit	**0.0**	**5**	**0.0**	
Intersection Improvement	II03184316	IDOT D1 Hwys	IL 19 (Irving Park Rd.) at Wise Rd.	$1,918,000	**$1,346,000**	**$1,346,000**	$1,944		**46.2**	**6**	**52.2**	
Intersection Improvement	II12184276	JOLIET	Jefferson Street Intersection Safety and Congestion Reduction Project - US Route 52 & Houbolt Road (Location 5)	$861,770	**$657,416**	**$657,416**	$4,078		**34.6**	**21**	**55.6**	
Intersection Improvement	II03184317	IDOT D1 Hwys	IL 19 (Irving Park Rd.) at Barrington Rd.	$3,071,000	**$2,177,000**	**$2,177,000**	$4,785		**31.5**	**16**	**47.5**	
Intersection Improvement	II09184255	AURORA	City of Aurora - Hill Avenue at Montgomery Road Intersection	$5,441,500	**$4,353,200**		$5,717		**27.8**	**11**	**38.8**	
Intersection Improvement	II12184267	JOLIET	Jefferson Street Intersection Safety and Congestion Reduction Project - US Route 52 & I-55 Southbound Ramps (Location 2)	$2,695,700	**$2,068,560**	**$2,068,560**	$6,151		**26.2**	**21**	**47.2**	
Intersection Improvement	II11184287	CRYSTAL LAKE	Intersection improvements at US Rte 14 and Virginia Rd	$2,005,131	**$1,450,505**	**$1,450,505**	$6,526		**24.9**	**16**	**40.9**	
Intersection Improvement	II10184217	Lake Co DOT	Wadsworth Road at Lewis Avenue Intersection Improvement	$4,262,750	**$2,596,940**	**$2,596,940**	$6,619		**24.6**	**15**	**39.6**	
Intersection Improvement	II03184304	IDOT D1 Hwys	US 20 at Oak Ave and at Bartlett Rd.	$3,123,000	**$2,188,000**		$9,260		**17.2**	**25**	**42.2**	
Intersection Improvement	II09184303	IDOT D1 Hwys	IL 56 at Hart/Mitchell Rd.	$1,159,000	**$808,000**		$13,707		**9.5**	**9**	**18.5**	
Intersection Improvement	II12184266	JOLIET	Jefferson Street Intersection Safety and Congestion Reduction Project - US Route 52 & IL Route 59 (Location 1)	$6,391,615	**$4,833,292**		$14,173		**8.9**	**25**	**33.9**	
Intersection Improvement	II08184242	DuPage Co DOT	75th St. at Fairmount Avenue, at Fairview Avenue and at Exner Road/Williams Street including a bike path from Lyman Avenue to Fairview Avenue	$4,416,371	**$3,396,920**		$17,477		**5.7**	**21**	**26.7**	
Intersection Improvement	II12184274	JOLIET	Jefferson Street Intersection Safety and Congestion Reduction Project - US Route 52 & I-55 Northbound Ramps (Location 3)	$677,040	**$501,632**		$23,440		**2.6**	**21**	**23.6**	

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Intersection Improvement	II09184203	Kane Co DOT	Bliss Main Fabyan Intersection	$12,581,103	**$8,292,283**		$29,813		**1.1**	**7**	**8.1**	
Intersection Improvement	II10184271	Lake Co DOT	Darrell Road at Dowell Road Intersection Improvement	$4,688,394	**$2,948,800**		$52,740		**0.0**	**2**	**2.0**	
Intersection Improvement	II08184244	DuPage Co DOT	Lemont Road at 87th Street and at 83rd Street	$5,697,367	**$4,205,183**		$57,999		**0.0**	**13**	**13.0**	
Intersection Improvement	II12184237	ELWOOD	Village of Elwood - Elwood International Port Road Signalization Project	$724,520	**$36,515**		$77,874		**0.0**	**16**	**16.0**	
Intersection Improvement	II10184306	IDOT D1 Hwys	IL 43 (Waukegan Rd.) at IL 176 (Rockland Rd.)	$9,084,000	**$6,451,000**		$79,497		**0.0**	**13**	**13.0**	
Intersection Improvement	II09184222	CARPENTERS VILLE	Main Street at Washington Street Roundabout	$6,224,207	**$4,491,300**		$84,985		**0.0**	**7**	**7.0**	
Intersection Improvement	II10184234	Lake Co DOT	Fairfield Road at Monaville Road Intersection Improvement	$3,013,162	**$1,832,208**		$105,567		**0.0**	**4**	**4.0**	
Intersection Improvement	II03184256	SCHAUMBUR G	Village of Schaumburg - National Parkway at American Lane Roundabout	$3,246,456	**$2,485,164**		$127,820		**0.0**	**7**	**7.0**	
Intersection Improvement	II10184205	Lake Co DOT	Wadsworth Road at Dilleys Road Roundabout	$4,627,696	**$3,034,457**		$156,618		**0.0**	**12**	**12.0**	
Intersection Improvement	II11184231	ALGONQUIN	Roundabout at Main St, Cary Rd and Arrowhead Dr	$2,987,500	**$1,914,000**		$170,380		**0.0**	**12**	**12.0**	
Intersection Improvement	II10184249	Lake Co DOT	Hunt Club Road at IL Route 132 Intersection Improvements	$5,156,784	**$3,460,310**		$185,744		**0.0**	**26**	**26.0**	
Intersection Improvement	II10184277	Lake Co DOT	Darrell Road at Fisher Road Intersection Improvement	$4,935,394	**$3,124,000**		$190,220		**0.0**	**2**	**2.0**	
Intersection Improvement	II10184251	Lake Co DOT	Darrell Road at Case Road/Neville Road Intersection Improvement	$6,889,394	**$4,251,200**		$231,605		**0.0**	**2**	**2.0**	
Intersection Improvement	II03184221	SCHAUMBUR G	Village of Schaumburg - Plum Grove Road Roundabouts at Remington Road and State Parkway	$5,724,753	**$3,875,227**		$732,629		**0.0**	**2**	**2.0**	
Intersection Improvement	II12184275	JOLIET	Jefferson Street Intersection Safety and Congestion Reduction Project - US Route 52 & I-55 East Frontage Road (Location 4)	$1,082,560	**$818,048**		No Benefit		**0.0**	**21**	**0.0**	
Intersection Improvement	II10184228	Lake Co DOT	IL 59 and Grand Avenue Intersection Improvement	$6,088,694	**$3,856,872**		No Benefit		**0.0**	**10**	**0.0**	
Intersection Improvement	II10184233	Lake Co DOT	Grand Avenue and IL 59 Intersection Improvement and Connection	$6,956,644	**$4,291,648**		No Benefit		**0.0**	**10**	**0.0**	
Other	OT01184295	CDOT	Chicago Citywide Wireless Signal Interconnect	$14,330,000	**$11,464,000**		$821		**80.6**	**0**	**80.6**	

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Other	OT13184307	IDOT D1 Hwys	IDOT Central Traffic Management System	$7,982,000	**$6,386,000**	**$6,386,000**	$2,907		**60.8**	**0**	**60.8**	
Other	OT10184227	Lake Co DOT	Transportation Management Association (TMA) of Lake Cook Last Mile Market Shuttle Demonstration Project	$258,000	**$206,400**		$5,889		**40.7**	**0**	**40.7**	
Other	OT09184223	AURORA	Bike Share Program Expansion for City of Aurora	$194,400	**$155,520**		$23,711		**3.7**	**0**	**3.7**	
Other	OT01184298	CDOT	Chicago Bike Sharing Program ("Divvy") System Expansion	$20,460,000	**$16,368,000**		$31,600		**1.3**	**0**	**1.3**	
Signal Interconnect	SI08184245	DuPage Co DOT	Central Signal System Expansion 1	$3,128,820	**$2,503,056**	**$2,503,056**	$272		**57.8**	**20**	**77.8**	
Signal Interconnect	SI08184247	DuPage Co DOT	Central Signal System Expansion 2	$1,315,429	**$1,052,343**	**$1,052,343**	$706		**54.6**	**16**	**70.6**	
Signal Interconnect	SI12184278	JOLIET	Black Road Traffic Signal Interconnection Project	$1,200,000	**$904,800**	**$904,800**	$778		**54.0**	**15**	**69.0**	
Signal Interconnect	SI02184254	EVANSTON	Emerson Street Traffic Signal Modernization and Interconnect	$1,152,000	**$838,000**		$6,702		**24.3**	**13**	**37.3**	
Transit Facility Improvement	TI18184311	Metra	Peterson-Ridge Union Pacific North Line New Station	$16,222,360	**$12,977,088**		$2,644		**42.0**	**32**	**74.3**	
Transit Facility Improvement	TI08184257	ELMHURST	Elmhurst Metra Station/Multi-Modal and Site Access/Improvements	$17,903,000	**$14,322,400**	**$10,000,000**	$4,289		**33.7**	**18**	**51.2**	
Transit Facility Improvement	TI17184310	Pace	Pulse Dempster Line	$23,898,336	**$10,040,512**	**$10,040,512**	$5,965		**26.9**	**33**	**59.9**	
Transit Facility Improvement	TI01184292	CDOT	State/Lake (Loop Elevated) Station	$119,360,000	**$113,860,000**	**$56,930,000**	$7,782		**21.0**	**34**	**55.0**	
Transit Facility Improvement	TI01184293	CDOT	Washington (Blue Line) Station	$82,930,000	**$80,930,000**		$10,292		**15.0**	**32**	**47.0**	
Transit Facility Improvement	TI01184294	CDOT	Monroe (Red Line) Station	$83,865,000	**$83,865,000**		$11,730		**12.4**	**24**	**36.4**	
Transit Facility Improvement	TI17184312	Pace	Pulse 95th Line	$26,444,573	**$20,626,733**		$34,090		**0.6**	**31**	**31.1**	
Transit Service and Equipment	TI16184314	CTA	Dearborn and Kimball (Blue Line) Subways - Water Management and Track Improvements Project	$44,000,000	**$35,200,000**		$7,304		**22.4**	**22**	**44.4**	

1 - The sum of air quality and transportation impact scores which includes the regional priority scores

2 - The sum of the scores for Regional Greenways and Trails Plan, population/employment density, and safety and attractiveness

Chicago Metropolitan Agency for Planning

FFY 2018-2020 TAP-L Proposed Program for August 4, 2017 Transportation Committee Consideration to be Released for a Public Comment Period

							TAP-L Scoring				
SubType	**CMAQ ID**	**Sponsor**	**Facility to be Improved**	**Project Total**	**Federal Request**	**Recommendation TAP-L 2018-2020**	**Regional Greenways & Trails Plan Score**	**Population & Employment Density Score**	**Safety & Attractiveness Score**	**Bonus for No ROW or ENG2**	**Composite Priority Index [1]**
Bicycle Facilities	BP02184211	Skokie	Village of Skokie - Skokie Valley Trail	$3,720,000	**$2,880,000**	**$2,880,000**	30	30	30	0	90
Bicycle Facilities	BP01184297	CDOT	Columbia Bridge Over Jackson Park Lagoon/59th St Bike Path	$9,113,000	**$5,098,000**	**$5,098,000**	25	24	30	5	84
Bicycle Facilities	BP01184283	CDOT	43rd Street Access Bridge to the Lakefront Trail	$31,962,676	**$12,152,000**	**$12,152,000**	25	24	30	0	79
Bicycle Facilities	BP02184238	Cook Co DOTH	Skokie Valley Trail Extension	$4,101,980	**$2,780,936**	**$2,780,936**	25	24	30	0	79
Bicycle Facilities	BP12184262	Romeoville	Village of Romeoville NGPL Multi-Use Trail	$1,087,000	**$813,600**	**$813,600**	25	18	30	5	78
Bicycle Facilities	BP08184272	DuPage County FPD	North Central DuPage Regional Trail	$2,552,000	**$152,000**	**$152,000**	30	12	30	5	77
Bicycle Facilities	BP03184241	Schaumburg	Village of Schaumburg - Higgins Road Bike Path	$701,788	**$515,760**	**$515,760**	30	24	18	5	77
Bicycle Facilities	BP03184248	Niles	Niles Howard Street Bicycle Path	$1,500,000	**$1,145,000**	**$1,145,000**	25	27	24	0	76
Bicycle Facilities	BP07184261	Country Club Hills	BP Pipeline Shared Use Path	$1,918,030	**$134,408**	**$134,408**	30	15	24	5	74
Bicycle Facilities	BP08184225	DuPage County FPD	West Branch DuPage River Trail - West DuPage Woods Forest Preserve to Blackwell Forest Preserve	$4,675,000	**$2,730,134**	**$2,730,134**	30	12	30	0	72
Bicycle Facilities	BP06184264	Willow Springs	Willow Springs Village Center Trial Interconnect	$5,075,750	**$4,060,599**		30	12	30	0	72
Bicycle Facilities	BP03184209	Elk Grove Village	Elk Grove Village - Oakton Street and Busse Road Multi-Use Path	$230,888	**$162,545**	**$162,545**	20	24	24	0	68
Bicycle Facilities	BP01184300	CDOT	Englewood Line Trail	$51,635,000	**$40,508,000**		25	30	12	0	67
Bicycle Facilities	BP09184216	Kane County FPD	Great Western Regional Bike Trail Extension from LeRoy Oakes Forest Preserve to Randall Road	$874,343	**$680,034**	**$680,034**	25	12	30	0	67
Bicycle Facilities	BP09184232	Aurora	East New York Street Bike Path	$595,850	**$428,680**	**$428,680**	25	12	24	5	66
Bicycle Facilities	BP10184208	Mundelein	Midlothian Road Multi-Use Path	$1,009,680	**$767,357**		25	12	24	5	66
Bicycle Facilities	BP06184290	Alsip	Cal-Sag Trail - 131st Street Segment	$894,000	**$716,000**		20	18	18	5	61

1 - The sum of the scores for Regional Greenways and Trails Plan, population/employment density, safety and attractiveness, and the bonus

							TAP-L Scoring				
SubType	**CMAQ ID**	**Sponsor**	**Facility to be Improved**	**Project Total**	**Federal Request**	**Recommendation TAP-L 2018-2020**	**Regional Greenways & Trails Plan Score**	**Population & Employment Density Score**	**Safety & Attractiveness Score**	**Bonus for No ROW or ENG2**	**Composite Priority Index [1]**
Bicycle Facilities	BP02184230	Glenview	Village of Glenview Willow Road Multi-Use Path	$1,738,900	**$1,323,760**		10	20	24	5	59
Bicycle Facilities	BP08184258	Carol Stream	Southeast Carol Stream Bike Paths	$2,459,900	**$380,000**	$380,000	10	30	18	0	58
Bicycle Facilities	BP03184229	Palatine	Village of Palatine - Roselle Road/Euclid Avenue Multi-Use Path	$589,000	**$400,000**		10	18	24	5	57
Bicycle Facilities	BP08184207	Woodridge	Woodridge - Route 53 Southern Multi-Use Path Connectivity Project	$698,507	**$486,806**		10	18	24	5	57
Bicycle Facilities	BP08184212	Roselle	Village of Roselle - Irving Park Road Bike Path and Sidewalk	$1,253,000	**$946,400**		10	18	24	0	52
Bicycle Facilities	BP06184268	Orland Hills	Orland Hills Multi-Use Path Project	$487,270	**$365,816**		10	15	18	5	48
Bicycle Facilities	BP07184280	Richton Park	Poplar Avenue Bike Trail Extension	$834,200	**$631,360**		10	12	18	5	45
Bicycle Facilities	BP11184206	McHenry Co DOT	Bike path along Randall Road	$18,322,954	**$918,240**		0	18	24	0	42
Bicycle Facilities	BP11184263	Huntley	Multi-Use path along Reed Rd from Vine St to IL Rte 47	$255,000	**$192,000**		10	12	12	5	39
Bicycle Facilities	BP08184224	Naperville	North Aurora Road Underpass Bicycle and Pedestrian Facilities	$36,265,000	**$3,932,000**		0	12	24	0	36
Bicycle Facilities	BP11184219	Algonquin	Multi-Use path along Main St, Park St, Harrison St and Riverview Dr	$1,768,000	**$1,196,800**		10	12	6	5	33
Bicycle Facilities	BP06184279	Lemont Park District	Lemont Park District Pedestrian/Bikeway Connector	$316,470	**$253,176**		0	12	12	5	29
Bicycle Facilities	BP10184250	Libertyville Township	LTHD Oak Spring Rd Bike Lanes	$164,100	**$120,300**		10	6	12	0	28
Bicycle Facilities	BP12184235	Elwood	Village of Elwood Mississippi Street Bike Path	$239,290	**$12,064**		0	6	12	5	23
Bicycle Facilities	BP03184213	Palatine	Village of Palatine - Smith Street Connection to Jens Jensen Forest Preserve Path	$177,000	**$112,000**		0	12	6	5	23

1 - The sum of the scores for Regional Greenways and Trails Plan, population/employment density, safety and attractiveness, and the bonus

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Summary of Local Technical Assistance (LTA) Applications
July 12, 2017

CMAP has established the Local Technical Assistance (LTA) program to direct resources to communities to pursue planning work that helps to implement GO TO 2040. In conjunction with the RTA's Community Planning program, CMAP held a call for LTA projects in spring and summer 2017. Applications were due on June 29, 2017.

The remainder of this document provides basic statistics about the applications received, describes the project selection process, and includes short summaries of each project submitted. CMAP's understanding of some of these projects may change through discussions with the applicants, so the descriptions and figures in this document should be considered preliminary.

Basic application statistics and comparisons to previous years

In total, 80 applications were submitted by 69 different applicants to the LTA program. An additional 13 applications were submitted to the RTA for consideration through their Community Planning program. Details of the projects being reviewed by the RTA are available on their website.

This is the sixth year that CMAP has offered the LTA program, so comparisons to the first five years of the program may be useful. (The 2016 program year was cancelled due to the State budget impasse). The number of applications received was roughly comparable to the average from past years.

	2017	**2015**	**2014**	**2013**	**2012**	**Average, 2012-17**
Projects submitted	80	72	104	67	109	86
Applicants	69	61	77	58	88	71

Project types this year showed some variation from past years. Subarea or corridor plans were the most common types of plans this year, with 27 applications. 15 transportation-related plans were submitted this year, a decline from 24 in the previous application round, but many of the corridor plans included significant transportation components. Very few environmentally-focused plans were submitted as stand-alone projects, although many other applications did have environmental components.

Project type or topic	2017	2015	2014	2013	2012	Average, 2012-17
Subarea or corridor plan	27	17	18	14	20	19
Transportation plan	15	24	17	14	16	17
Comprehensive plan	13	13	14	12	22	15
Zoning	11	6	20	7	12	11
Sustainability or other environmental focus	2	5	11	6	19	9
Housing	4	3	0	2	6	3
Other	8	4	24	21	14	14

Applicants were from across the region, from all Counties. The chart below shows applications received by geography, using County and Council of Mayors boundaries. Projects were placed in multiple geographies if they crossed geographic boundaries. (For example, applications from the City of Aurora, which is partially within DuPage, Kane, Kendall, and Will, is counted in the totals of all four of these Counties.) This year, more applications were received from Will County than any other geography (16), followed by applications from the City of Chicago (14).

Geography	2017	2015	2014	2013	2012	Average, 2012-17
Chicago	14	9	17	7	14	12
North / Northwest Cook	7	7	9	4	17	9
West Cook	9	9	4	10	13	9
Southwest Cook	5	5	8	1	7	5
South Cook	12	16	23	7	18	15
DuPage	10	6	20	7	11	11
Kane	9	3	10	5	16	8
Kendall	6	0	4	4	4	4
Lake	8	8	8	10	14	10
McHenry	10	8	14	7	7	9
Will	16	13	13	4	4	10
Regional	0	1	2	1	9	3

Some applicants have had past experience with the LTA program. Of the 69 applicants, 40 have already submitted at least one successful application in past years; some of them have submitted follow-up projects, and others have submitted entirely new ideas. The remaining 29 are new to the LTA program. Some (11) have submitted before but have not yet been successful, and the others (18) are entirely new applicants, although some of these have participated in past multijurisdictional projects.

Local match requirements

Match rates vary between 5% and 20%, depending on community need. Based on initial analysis, it appears that 37 applications, or slightly fewer than half of the total, were determined to have "low" or "very low" need, meaning that they would pay the full match of 20%. Between 12 and 17 applications are classified in each of the remaining categories – "moderate", "high", and "very high" need – with match rates of 15%, 10%, and 5%, respectively. This distribution of match rates is similar to past years, and demonstrates that the local match rates have not precluded higher-need communities from applying.

Selection criteria

Criteria for the LTA program include alignment of the project with the recommendations of GO TO 2040 and ON TO 2050; local need for assistance; feasibility and ability to implement; collaboration with other groups, including neighboring governments and nongovernmental groups; input from relevant Counties and Councils of Government (COGs); and geographic balance. CMAP will continue to pay particular attention to the criteria involving feasibility and ability to implement, in line with the overall focus on directing resources to plans that will be implemented.

Review process and timeline

Applications for the LTA program were due on June 29, and will be presented to the CMAP Board and MPO Policy Committee for approval in October. In July and August, a summary of applications received will be shared with CMAP's working committees for discussion and comment. The same will occur with other stakeholder groups, including technical assistance providers, transit agencies, Counties, the City of Chicago, COGs, and others. Comments can also be sent directly to CMAP; please email Tony Manno at tmanno@cmap.illinois.gov or call 312-386-8606 with direct comments on any projects. All stakeholders are requested to provide comments to CMAP by **Friday, August 25.**

Recommendations will be discussed with CMAP's Transportation committee on September 29. Recommendations will be brought to the CMAP Board and MPO Policy Committee at their meetings in October. The Programming Coordinating Committee will discuss the recommendations immediately prior to the Board meeting on October 11, and also may have a special meeting to review the applications in more detail in mid-September (scheduling TBD).

Following the Board and MPO meetings, CMAP will work closely with the sponsors of selected projects to handle any needed administrative work, develop full project scopes and schedules, and get projects started. It is expected that newly selected projects will be initiated on a rolling basis beginning in late 2017 and early 2018.

2017 Project descriptions

Projects are organized by geography. Please note that not all projects below are entirely consistent with the purpose of CMAP's local programs, and more information is needed to fully understand many of them; project proposals are described regardless of eligibility and completeness. Any suggested edits to these descriptions should be sent to Tony Manno at tmanno@cmap.illinois.gov. Full applications are available on CMAP's LTA webpage.

City of Chicago

Bridgeport and Canaryville Community Plan Group

- Develop a **comprehensive plan** that promotes sustainable business, retail, and economic development, strengthens local educational and cultural institutions, and builds on area assets including housing stock, access to public transportation, and resident population.

Chicago Office of Budget and Management (OBM)

- Assist with the **development of the 2020-2025 Consolidated Plan** required by U.S. Department of Housing and Urban Development (HUD). The City requests assistance in conducting a needs assessment and market analysis in affordable housing, community development and homelessness, creating community area maps to highlight identified needs, and improving public and stakeholder engagement in the Plan development.

Coalition for a Better Chinese American Community (CBCAC)

- Conduct a **parking management study** in line with the 2015 Community Vision Plan for Chinatown. With limited space available for growth in Chinatown and few opportunities for development, it is increasingly important to fully determine the amount and type of metered, restricted, and unrestricted parking, and identify opportunities for shared parking.

Far South Community Development Corporation

- Develop a **Comprehensive Plan for the Roseland Medical District**. The plan will focus on strategic partnerships and developments on land use and zoning, economic development, transportation assets including CTA rail and bus terminals, Roseland Community Hospital, nearby business corridors, and housing.

Greater Chatham Initiative (GCI)

- Creation of a **'Downtown Chatham' Retail Corridor Revitalization and Economic Development Plan.** CMAP assistance is specifically requested for: (1) planning for a new creative identity for an ethnically distinct retail corridor similar to Chinatown and Pilsen; (2) identifying, attracting and sustaining a diversity of businesses for a family-friendly area; (3) creating a place-based business incubator to support local businesses in Downtown Chatham; (4) improving Downtown Chatham safety for younger families,

older residents, local customers, employees and tourists; and (5) developing a business attraction and retention approach.

Greater Ravenswood Chamber of Commerce (GRCC)

- Assistance conducting a **corridor study** to understand demographics and retail market demand in order to produce recommendations related to economic development, land use, and quality of life improvements along Lawrence Avenue from Clark Street to Leavitt.

Illinois International Port District (IIPD)

- Create a **Comprehensive Port Study** that would explore the advancement of existing plans for area transportation, land and water conservation, recreation and regional tourism, and other infrastructure issues that would simultaneously advance the interests of IIPD and the community.

Lakeview Citizens Council

- Develop a **Comprehensive Community Plan** for Chicago's Lakeview neighborhood. The committee's goal is to create a plan for Lakeview that will help guide real estate development, business development, and open space by articulating a clear vision for the community's future. LCC is specifically interested in incorporating more transit-oriented development and better open/green space within the neighborhood.

McKinley Park Development Council

- Assistance developing a **neighborhood plan** to help craft development guidelines to promote transit-oriented development, job creation, enhanced walkability, ongoing affordability, and services and amenities to the neighborhood. This plan would focus on maximizing the existing transit and transportation network, reinvigorate the central manufacturing district, revive/reimagine the 35th Street retail corridor, and engage the community to create both common ground and a shared vision for the future.

North Avenue District (also West Cook County)

- The North Avenue District, in partnership with the Village of Oak Park, seeks assistance developing an **economic development plan** for the North Avenue corridor to guide and coordinate new development and business recruitment efforts by the Village and 29th Ward Economic Development Committee. The plan will focus on ways to improve the corridor streetscape/branding, provide guidance on potential financial incentives to attract development, and inform the upcoming CDOT transportation study.

Northwest Side Housing Center (NWSHC)

- The NWSHC would like to develop a **business and economic development plan** for the Belmont-Cragin neighborhood that implements their 2016 LISC Quality of Life plan.

Roseland, Ninth Ward Greater Roseland Community Coalition

- Develop a **Corridor and Pedestrian Improvement Plan** which aims to redesign the 107th and Dr. Martin Luther King Drive intersection, enhance walking and pedestrian amenities, and improve access to the Metra via a pedestrian improvement plan that addresses pedestrian safety, beautification and parks, and business improvements.

University of Illinois at Chicago (UIC)

- UIC proposes to launch a collaborative planning process focused on developing an **environmentally friendly industrial corridor plan** for the Lake Calumet region. This effort will be coordinated by the recently designated Economic Development Administration University Center at UIC. This center provides technical assistance, capacity building, and research assistance to initiatives that enhance green development in Cook County with a focus on the Calumet region. With coordinated efforts, this plan aims to bring new jobs to the region, meet the needs of industry, and provide economic stimulus for the region – all with an emphasis on the green economy.

Uptown United

- Develop an **affordable housing plan** that utilizes comprehensive data on housing affordability in Uptown and evidence-based best practices from other communities to develop guiding policy for Uptown United to use when evaluating development proposals.

North / Northwest Cook

Cook County Department of Planning and Development and Zoning Board of Appeals (also West Cook, South Cook, and Southwest Cook)

- **Update the Cook County Comprehensive Land Use and Policies Plan** to address new challenges brought on by change in demographics, development expansion, environmentally sensitive areas, and annexation of unincorporated areas.

Des Plaines

- Conduct a **Downtown Parking and Traffic Circulation Study**. The study will assess the feasibility of reintroducing two-way streets in the downtown and identify parking problems and parking management strategies to spur development in the downtown area.

Evanston

- Assistance developing a **multi-modal transportation corridor plan** along Chicago Avenue to build upon the recommendations and action steps identified in the 2014 Evanston Bike Plan update, the 2000 Evanston Chicago Avenue Corridor Plan, the 2010 Northwest Municipal Conference Bicycle Plan, and the 2014 Evanston Main Street TOD Plan. This plan would link these past efforts to improve the streetscape to accommodate bicycles, identify funding mechanisms, establish best practices for collaborating with

transit agencies to connect/expand/improve service, and build consensus for implementation.

Hanover Park (also DuPage County)

- Assistance **updating the Comprehensive Plan**. The update will focus on four areas: (1) identify alternative funding options to construct the I-390 extension; (2) address economically disconnected areas and identify strategies to bring higher income, jobs, and education opportunities; (3) incorporate policies to implement strategies in the Village Center Plan and TOD plans to revitalize downtown and plan for future growth; and (4) assess and provide linkages between all plans affecting Hanover Park developed by overlapping jurisdictions to help holistically connect regional issues, eliminate conflicts and present an overall plan for the entire community.

Mount Prospect

- Create an updated **Comprehensive Subarea plan** for the South Mount Prospect subarea. The plan will build off of the original South Mount Prospect Subarea Plan adopted in 2009, as well as the Public Transportation System Plan adopted in 2009, both of which originally hinged on a Star Line Station development project in the area, which is no longer active. The Village has annexed around 220 acres of land within the subarea since 2009, which provides new opportunities to address some of the outstanding needs in the area, including completing sidewalks, providing and improving access to recreation, and identifying key sites catalyst projects and creating third places in the community.

Northwest Municipal Conference (NWMC) (also DuPage, Kane, Lake, McHenry)

- The NWMC is looking to produce a **multi-modal transportation plan** that includes bicycle and pedestrian planning, as well as improving access to transit throughout the region. Building on previous bicycle planning work and relying on the work of the Bicycle and Pedestrian Committee, municipal staff and elected officials, this new plan will act as a guide for planning and implementing a multi-modal network in the NWMC service area.

Skokie

- The Village of Skokie and the representatives of the Westfield Old Orchard Shopping Center would like assistance with a **Site Specific Development Plan.** Already a mixed-use, the plan will consider alternate futures, including incorporating residential housing and broader entertainment uses into its mix of uses. In addition, consideration will be given to transportation alternatives, and implementing Skokie's new Complete Streets Policy. The proposed plan will examine the implementation of mixed-use development in the area, and greater integration of and enhancements to this major public transportation hub.

West Cook

Berkeley

- Update the **corridor plan** for St. Charles Road, which was first adopted in the 1999 Comprehensive Plan. The city requests technical assistance with developing an updated plan that reflects current economic development and retail trends for their community, including enhancing accessibility to transportation and transit modes for businesses and residents.

- Update the **zoning code** to reflect the character of the community as well as short and long term plans of the Board related to the Village's industrial areas, St. Charles Road Corridor, and aging infrastructure.

Cook County Department of Planning and Development and Zoning Board of Appeals (also North/Northwest Cook, South Cook, and Southwest Cook)

- **Update the Cook County Comprehensive Land Use and Policies Plan** to address new challenges brought on by change in demographics, development expansion, environmentally sensitive areas, and annexation of unincorporated areas.

Cook County Forest Preserves

- Conduct a **feasibility study for Des Plaines River Trail-South** to determine future alignment alternatives for an extension of the Des Plaines River Trail from North Avenue to Ogden Avenue and to build a Des Plaines River Trail coalition. The project will fill the gap in the trail system where the Union Pacific Railroad runs through the Forest Preserves and bisects the Des Plaines River Trail. Seeks CMAP assistance specifically to: convene an advisory committee of local municipalities, major stakeholders, and transportation agencies; identify a timeline, budget, and implementation plan for the trail; and help stakeholders determine short, medium and long range tasks for their agencies.

Forest Park

- Assistance with a **feasibility study** for a Cultural Music and Art Park on 8.5 acres of village-owned land adjacent to the CTA Blue Line terminus and a multi-unit condo/townhome development.

Indian Head Park

- The Village of Indian Head Park seeks to review and **update its existing zoning ordinance** to include more commercial land use. The village would like to see a 10 acre commercial corridor converted into a Transit Oriented Development, which would ideally attract more mixed-use development. The village would like to be completely transparent with the local community, which they wish to actively involve in the major policy change decision.

Maywood

- The Village of Maywood requests access to **Sketchup diagrams** (similar to what CMAP developed for the City of Berwyn) to make their recently adopted Zoning ordinance user friendly. This can be a library of sorts – allowing Maywood to access and modify (via Sketchup) and use the models, either in an official capacity as an adopted part of the zoning ordinance, or simply as handouts illustrating the ordinance for residents and developers.

North Avenue District (also City of Chicago)

- The North Avenue District, in partnership with the Village of Oak Park, seeks assistance developing an **economic development plan** for the North Avenue corridor to guide and coordinate new development and business recruitment efforts by the Village and 29th Ward Economic Development Committee. The plan will focus on ways to improve the corridor streetscape/branding, provide guidance on potential financial incentives to attract development, and inform the upcoming CDOT transportation study.

Summit

- The Village of Summit requests assistance with a village-wide **zoning ordinance update** to incorporate recommendations from the CMAP-funded Comprehensive Plan, adopted in 2015.

South Cook

Calumet Park

- Develop a **comprehensive plan** that specifically addresses flooding, economic development, housing, and transportation. Since the November 2016 planning priorities report conducted by CMAP, the Village has passed or completed a Complete Streets Policy, CNT's RainReady Plan, and a Capital Improvement Priorities Workshop.

Cook County Bureau of Economic Development

- Assistance in **completing Phase 2 of the South Suburban Economic Growth Initiative (SSEGI).** Phase 1 of the SSEGI has been completed with 2015 LTA, and Phase 2 seeks to expand stakeholder engagement, refine strategies identified in Phase 1, and begin implementation of programs that are quick to launch, high-impact, and relatively low cost. Specific CMAP roles include: creation of a "Development Authority," transportation and freight planning, land use analysis, and stakeholder engagement.

Cook County Department of Planning and Development and Zoning Board of Appeals (also North/Northwest Cook, West Cook, and Southwest Cook)

- **Update the Cook County Comprehensive Land Use and Policies Plan** to address new challenges brought on by change in demographics, development expansion, environmentally sensitive areas, and annexation of unincorporated areas.

Lynwood

- Create a **Downtown Development Plan** along a segment of the new Joe Orr Road that was recently constructed, and continues to be extended throughout the region. The downtown development plan would ideally address economic development, zoning ordinances and building codes in the downtown area of Lynwood. The Village currently has an 'in-house' plan for the downtown corridor, but is interested in further developing this plan.

Matteson

- The Village of Matteson is interested in creating a **Streetscape Improvement Plan** that will address potential streetscape enhancement for two arterial streets, U.S. Route 30 and Cicero Avenue. The Streetscape Improvement Plan was recommended in the Village's Master Plan, and seeks to improve transportation infrastructure, green space, lighting, and other visual elements of public roads.

Midlothian

- Develop a long term **Capital Improvement Plan for Stormwater Management.** The Village has already identified critical projects that should be included in the capital plan. The Village has involved a number of strategic partners and will receive support from CNT on community engagement and education. The plan is a necessary next step to capitalize on the momentum within the community, ready to see flood relief projects result from many years of planning work.

Richton Park

- Develop a comprehensive **Strategic Economic Development Plan** that will provide guidance for the Board of Trustees and staff with its marketing, business attraction and business retention efforts. The plan will include a market feasibility study for commercial retail and services, industry, housing, etc.; plan recommendations for assisting with business retention and attraction for commercial retail and services uses and industrial uses; identification of economic development strategies used in smaller urban/suburban areas; and financing and implementation strategies related to economic development activities.

Robbins

- The Village of Robbins has partnered with the Metropolitan Water Reclamation District of Greater Chicago (MWRD) to develop a **stormwater, TOD, and clean energy** plan to address flooding along Midlothian Creek. The proposed stormwater solutions will remove approximately 140 acres from the floodplain, freeing the area for potential transit-oriented development.

Sauk Village

- Update the Village's **Comprehensive Plan** to integrate key objective of the Southland Parkway Plan which calls for major transportation changes to Sauk Trail and an

interchange. Additionally, the plan can help connect Forest Preserves and recreational areas to planned bike pathways. This will also allow the village to obtain future grant funds and assistance from the Cook County Forest Preserve District to plan for recreational needs.

South Suburban Mayors and Managers Association (also Will County)

- SSMMA requests assistance to initiate a **Circuit Rider Pilot Program**, meant to provide technical assistance to communities to advance plan implementation**.** The purpose of the initiative is to facilitate seasoned technical assistance providers to be embedded in local municipalities to help support and increase municipal capacity and provide direct implementation assistance. The SSMMA initiative can bridge the gap that exists between local government goals, objectives, and strategies that are necessary to enhance the effectiveness of local program or project delivery. Services that are anticipated to be included are specialized deliverables such as transportation or community planning, grant writing, request for proposal preparation, grant administration, funding identification, project coordination, project management, and local priority setting.

Steger (also Will County)

- Develop a **Downtown Mixed-Use Development Plan**. Steger wants to further advance the Planning Priorities Report that was completed recently, which consisted of a market analysis, review of taxing impacts resulting from mixed-use developments and recommended various redevelopments in its downtown including the underutilized "Steger Center Development Area" into mixed-use. The goal is to provide equitable TOD (around a proposed Metra station) which can benefit the entire community, including low-income households by reducing the cost of living, and creating more vibrant, healthier neighborhoods.

Thornton

- Develop a **comprehensive plan** that supports its tradition of mixed land uses, expands housing options, and provides a framework for planning and development decisions. This plan should promote inclusive growth for residential, commercial, and industrial development while creating a sense of place and community character.

Southwest Cook

Cook County Department of Planning and Development and Zoning Board of Appeals (also North/Northwest Cook, South Cook, and West Cook)

- **Update the Cook County Comprehensive Land Use and Policies Plan** to address new challenges brought on by change in demographics, development expansion, environmentally sensitive areas, and annexation of unincorporated areas.

Justice

- Assistance with an **I&M State Trail Extension Feasibility Study**, to explore the creation of a bike path that will connect to the current Illinois & Michigan State Trail in Willow Springs and run through Justice, Bedford Park and into Summit. The village is looking for technical assistance with the planning process of feasible routes and access points for continuing the bike trail. The I&M State Trail Extension Feasibility study will align with three past plans within the Village of Justice: The Village of Justice Transit Improvement Study (2007), the Village of Justice Strategic Plan (2016-2020) and the Village of Justice 2030 Vision Plan.

- The Village of Justice, in conjunction with the Village of Bedford Park, is seeking assistance to perform a **study of potential land use and future development opportunities** along the Illinois & Michigan Canal Corridor. The Village of Justice received assistance for a Transit Improvement Study from RTA in 2007, which allowed Justice to make many improvements to the area.

- **Update the existing Comprehensive Zoning Ordinance**, as well as create a **Unified Development Ordinance**. This proposal would review and assess the current development regulations within the community to find opportunities for unified development standards and guidelines, and establish better infrastructure and transportation options that would ultimately assist with new development and retention/attraction of businesses.

Oak Lawn

- Develop and design a **Corridor / Interchange Plan** to reduce congestion, provide access for pedestrians, improve motorist and pedestrian safety, and encourage new development. In addition, previous studies had recommended improving gateways with landscaping, art and painted medians; a single point urban diamond; a bus transfer station; and redevelopment of commercial and multi-family residential around the 95th St. and Harlem Ave. intersection.

DuPage County

Aurora (also Kane, Kendall, and Will counties)

- *Four projects submitted by Aurora (two involving partnerships with Naperville) are listed only in the Kane County section for space reasons. Please see the Kane County section for a complete description.*

Carol Stream

- Update the **zoning code**, in response to the recommendation by the 2016 Comprehensive Plan completed by CMAP's LTA staff. The Village wishes to use a Unified Development Ordinance, to include an update to parking requirements, design/development regulations, update to zoning district standards/bulk regulations,

industrial district standards, permitted/special uses, definitions, and establish stronger subdivision regulations.

DuPage County

- DuPage County is seeking to **update the Unincorporated Land Use Plan** for the Illinois Route 83 corridor. The update will provide a land use plan that incorporates current land use trends and the most recent transportation activity associated with Western Access to O'Hare Airport and to combine the development goals of unincorporated DuPage County with those of the stakeholder municipalities.

Glen Ellyn

- Seeks assistance to **update the Comprehensive Plan.** The plan will serve many purposes, including integration of all existing studies and strategic plans, addressing gaps in current plans regarding open space and recreation, assessing current conditions of the community, and addressing the challenges and needs in multi-modal transportation, stormwater management in the northern area, equitable workforce development, public outreach, and economic development in disinvested areas in the Central Business District.

Hanover Park (also North/Northwest Cook)

- Assistance **updating the Comprehensive Plan**. The update will focus on four areas: (1) identify alternative funding options to construct the I-390 extension; (2) address economically disconnected areas and identify strategies to bring higher income, jobs, and education opportunities; (3) incorporate policies to implement strategies in the Village Center Plan and TOD plans to revitalize downtown and Plan for future growth; and (4) assess and provide linkages between all plans affecting Hanover Park developed by overlapping jurisdictions to help holistically connect regional issues, eliminate any conflicts and present an overall plan for the entire community.

Naperville (also Will County)

- Develop a **Building Design Guidelines Update** to create a single consolidated document that provides consistent guidance for all properties located in the City, streamline the format and recommendations to achieve good building, site design, and walkability; reduce the overall document length/redundancy and increase user-friendliness; and reflect current design best practices, including sustainability, energy efficiency/LEED, environmental considerations, new technology, new building material options, creating a sense of place, and other architectural goals for the City of Naperville.

- *Please see two projects submitted by Aurora that also include Naperville as a partner.*

Northwest Municipal Conference (NWMC) (also Northwest Cook, Kane, Lake, McHenry)

- The NWMC is looking to produce a **multi-modal transportation plan** that includes bicycle and pedestrian planning, as well as improving access to transit throughout the region. Building on previous bicycle planning work and relying on the work of the Bicycle and Pedestrian Committee, municipal staff and elected officials, this new plan will act as a guide for planning and implementing a multi-modal network in the NWMC service area.

Kane County

Algonquin (also McHenry County)

- Develop a **health assessment** to determine existing barriers to health equity that prevent residents in Algonquin from engaging in healthy lifestyles and physical activity, especially related to the use of the community's bicycle and pedestrian facilities. The public health data that is collected would also help give a health-based perspective when considering new land use and transportation policies and codes.

Aurora (also DuPage, Kendall, and Will counties)

- Develop a comprehensive **set of neighborhood plans** for each ward of the city. Each neighborhood plan is envisioned to be a comprehensive plan that encompasses land use, transportation, quality of life, and economic development. Aurora seeks to partner with Invest Aurora, CMAP, and a private consultant. Aurora currently already has several pieces of the total plan, including a Sustainability Plan, Homes for a Changing Region Plan, Countryside Vision Plan, Bicycle and Pedestrian Plan, and several neighborhood plans: Riverfront Vision, Countryside Vision, RiverEdge Park, several Downtown and Riverwalk plans, and several Aurora Neighborhood Planning Initiative (ANPI) Plans.

- Update and amend its **Neighborhood Revitalization Strategy Area plan**, which was previously amended in 2011. The city wishes to include evaluation of effectiveness, as well as adhering to the Consolidated Plan which calls for an annual review of the NRSA, and to remove Census Block Group(s) which no long qualify as Low-Moderate Income and add eligible Census Block Groups.

Aurora and Naperville (also DuPage, Kendall, and Will Counties)

- Improve upon Aurora's 2007 **Homes for a Changing Region plan**, in order to include the change in the housing landscape as a result of the economic downturn, look regionally to include Naperville, and include recommendations on giving senior residents the opportunity to age in place. The plan seeks to comprehensively and strategically address the needs of the aging population.

Aurora, Algonquin, Elgin, McHenry, Naperville, South Elgin (also DuPage, Kendall, McHenry, and Will Counties)

- Develop a **regional bicycle and pedestrian program**, to be called Regional Active Mobility Program (RAMP), for both recreational and commuter users. The program will include three main components: expansion of Aurora's bike share program through the region, incorporating comprehensive wayfinding and user-experience, and growing mobility-based tourism and commerce.

Geneva

- Assistance for completion of **the East State Street Tax Increment Financing Redevelopment Project and Plan (TIF 2)**. This project will focus on studying the barriers to redevelopment, including required approval processes, existing development controls, market conditions, and the impact and timing of right-of-way takings associated with the pending IL Route 38 reconstruction project. The plan will formulate recommendations for better utilization of the East State Street TIF District prior to its expiration in 2022 and examine the feasibility as well as the pros and cons of gaining support to extend the expiration date of the TIF district.

Kane County

- Kane County would like to partner with Openlands and CMAP to create a **Farmland Protection Research & Guidance plan** that will examine the potential of expanding revenue streams for the purpose of additional farmland protection and local food investment. The plan would address Kane County and also be broadly regionally relevant, looking at appropriate areas for farmland protection, urban development, and local foods production. It will explicitly include investigation of Transfer of Development Rights, a technique that can advance both land preservation and reinvestment goals.

Montgomery (also Kendall County)

- The Village of Montgomery desires assistance to conduct a comprehensive **Zoning Ordinance Update**. The zoning ordinance is out of date and no longer achieves the goals of the Village set forth in the Village's Comprehensive Plan. The Village would like to pay particular attention to the Business and Manufacturing Districts Sections of the zoning ordinance. A form-based approach with a comprehensive land use matrix is desired in these areas.

Northwest Municipal Conference (NWMC) (also Northwest Cook, DuPage, Lake, McHenry)

- The NWMC is looking to produce a **multi-modal transportation plan** that includes bicycle and pedestrian planning, as well as improving access to transit throughout the region. Building on previous bicycle planning work and relying on the work of the Bicycle and Pedestrian Committee, municipal staff and elected officials, this new plan will act as a guide for planning and implementing a multi-modal network in the NWMC service area.

Oswego, Montgomery, and Yorkville (also Kendall County)

- Conduct a **Joint Study of Governance Structure** for a Shared Water Treatment Plant to guide the three communities to provide a sustainable future water supply which is efficient and cost-effective. The study should explore issues such as structure, funding, schedule, decision making process, dispute resolution and other issues that must be decided by intergovernmental agreement in order to make a joint facility work.

Kendall County

Aurora (also DuPage, Kendall, and Will counties)

- *Four projects submitted by Aurora are listed only in the Kane County section for space reasons. Please see the Kane County section for a complete description.*

Montgomery (also Kane County)

- The Village of Montgomery desires assistance to conduct a comprehensive **Zoning Ordinance Update**. The zoning ordinance is out of date and no longer achieves the goals of the Village set forth in the Village's Comprehensive Plan. The Village would like to pay particular attention to the Business and Manufacturing Districts Sections of the zoning ordinance. A form-based approach with a comprehensive land use matrix is desired in these areas.

Oswego, Montgomery, and Yorkville (also Kane County)

- Conduct a **Joint Study of Governance Structure** for a Shared Water Treatment Plant to guide the three communities to provide a sustainable future water supply which is efficient and cost-effective. The study should explore issues such as structure, funding, schedule, decision making process, dispute resolution and other issues that must be decided by intergovernmental agreement in order to make a joint facility work.

Sandwich

- The city seeks to update its **Comprehensive Plan** to a 'workable' plan that can be implemented, unlike its predecessor adopted in 2005. The staff needs leadership training, direction, and assistance in its development to prove that the exercise is a worthy endeavor to give the city a clear direction. They also aim to expose current council members to the merits of planning ahead rather than reacting to development proposals.

Lake County

Beach Park

- Develop a **regional bicycle plan** to develop a cohesive vision for regional trails and access in partnership with North Chicago, Waukegan, Zion, Winthrop Harbor, Lake County Forest Preserve District, and Lake County Health Department. The communities

wish to identify ways to enhance recreational access to the lakefront and nearby open spaces, as well as promote trail connections between communities for both recreation and commuting purposes.

Lake Zurich

- Lake Zurich is interested in creating a **Corridor Redevelopment Plan** for the IL Route 22 Corridor. The corridor is a regional arterial and serves a number of different land uses and demographic segments of the community, while linking Lake Zurich to its neighboring communities. The corridor suffers from high vacancy and outdated infrastructure, which the Village would like to see redeveloped and updated.

- The village of Lake Zurich seeks to complete a **Zoning Code Update**, given that the codes were last comprehensively updated in 2004, immediately following the updates to the village's 2003 Comprehensive Plan. The village is currently working towards updating its 2003 Comprehensive Plan, so the village believes that the logical next step is to update its zoning and land development codes to implement the policies and guidance provided in such updated plan. The Village already receives a large number of amendments to the zoning code on an annual basis, and has been experiencing an increase in certain types of development that warrant a more flexible approach to zoning.

Lakemoor (also McHenry County)

- Develop an **updated Zoning Code Subdivision Ordinance** that promotes conservative/traditional neighborhood design standards, while also suggesting best practices in street design. Although the Village adopted a successful Complete Streets policy in 2014, its Subdivision Ordinance (adopted 1990), is outdated and does not promote the Village's new vision and development philosophy.

- Develop a **Masterplan for the Town Center** area as an implementation strategy of the Village's Comprehensive Plan which was developed as an LTA project by CMAP in 2012. This plan aims to transform underutilized properties, incompatible land uses, and outdated structures into a mixed use development that promotes civic events and community pride. The plan must also include sustainable components such as green infrastructure and complete streets.

Lincolnshire

- Develop a cohesive **corridor study** for a 2-mile segment of Milwaukee Avenue. The goal is to develop an overall vision for the corridor, focusing also on two subareas – the Downtown node, north of Illinois Route 22, and the southern Aptakasic Road node. Lincolnshire wishes to build upon the corridor's strong visibility, mix of land uses, and opportuntiies for development/redevelopment, while also enhancing pedestrian and vehicular connectivity.

Northwest Municipal Conference (NWMC) (also Northwest Cook, DuPage, Kane, McHenry)

- The NWMC is looking to produce a **multi-modal transportation plan** that includes bicycle and pedestrian planning, as well as improving access to transit throughout the region. Building on previous bicycle planning work and relying on the work of the Bicycle and Pedestrian Committee, municipal staff and elected officials, this new plan will act as a guide for planning and implementing a multi-modal network in the NWMC service area.

Zion

- The City of Zion would like assistance with a Z**oning Ordinance update** to support the proposed land uses discussed in Chapter Seven of the City's Comprehensive Plan. The main goal of this update would be to clarify the purpose and function of the City's zoning districts, to streamline the code, and eliminate inconsistencies and confusion. The end result should improve and upgrade design standards in the zoning ordinance to improve the character, quality and performance of development on the City.

McHenry County

Algonquin (also Kane County)

- Develop a **health assessment** to determine existing barriers to health equity that prevent residents in Algonquin from engaging in healthy lifestyles and physically active pursuits in order to address the use of the community's walkability and bike-ability features. The public health data that is collected would also help give a health-based perspective when considering new land use and transportation policies and codes.

Algonquin-Cary

- Develop **a land use sub-area plan** along the Route 31 corridor between villages of Algonquin and Cary for parcels of land that will soon become suitable for development as mining draws to a close. Cary is also considering building out the 265-acre Hoffman Park. The villages would like the area to develop with strong bicycle and pedestrian connections, with linkages to the downtown business districts.

Aurora, Algonquin, Elgin, McHenry, Naperville, South Elgin (also DuPage, Kane, Kendall, and Will Counties)

- Develop a **regional bicycle and pedestrian program**, to be called Regional Active Mobility Program (RAMP), for both recreational and commuter users. The program will include three main components: expansion of Aurora's bike share program through the region, incorporating comprehensive wayfinding and user-experience, and growing mobility-based tourism and commerce.

Crystal Lake

- Develop an **Active Transportation Plan** that builds on the current city-wide Transportation Plan that is in development with CMAP assistance. The current Plan in

development mainly identifies areas of need for pedestrian and bicycle mobility and specific projects for those areas. The proposed Active Transportation Plan will serve as the master plan unifying the vision for active transportation projects and provide more detail on prioritization of projects, potential funding sources, and how to fill in gaps in pedestrian and bicycle networks,

Lake in the Hills

- Requests assistance developing a new, updated **comprehensive plan,** which will do the following: help the Village understand the big picture, act as a framework for local decision making, provide guidance for landowners and developers, inform and engage the public, and help mobilize for action. Lake in the Hills' last comprehensive plan was a 10 year plan created in 2002, which is now nearly five years expired and no longer reflects the current conditions of The Village. A new comprehensive plan would act as a guiding document that will inform future investment, growth, development, and redevelopment of the community.

Lakemoor (also Lake County)

- The Village of Lakemoor is interested in developing an **updated Zoning Code Subdivision Ordinance** that promotes conservation or traditional neighborhood design standards, while also suggesting best practices in street design. Although the Village adopted a successful Complete Streets policy in 2014, its Subdivision Ordinance (adopted 1990), is outdated and does not promote the Village's new vision and development philosophy.

- Develop a **Masterplan for the Town Center** area as an implementation strategy of the Village's Comprehensive Plan which was developed as an LTA project by CMAP in 2012. This plan aims to transform underutilized properties, incompatible land uses, and outdated structures into a mixed use development that promotes civic events and community pride. The plan must also include sustainable components such as green infrastructure and complete streets.

McHenry County Council of Governments

- Produce a **Shared Services Plan** to streamline intergovernmental cooperation, increase efficiencies and expand better and reliable services to residents. This study would implement GO TO 2040's intent of efficient government, as well as foster regional cooperation. Focal areas will include integrating and pooling transportation resources and opportunities, sharing inspectors, police and fire collaborations, and others.

McHenry County, Department of Planning and Development

- Develop a **Fox River Corridor Plan** to build upon the previous and current Fox River planning efforts to extend upriver, touching multiple municipalities, conservation areas, and parks over a distance of about 10 miles until reaching the Dutch Creek inlet. Goals include multijurisdictional planning which includes review of existing plans to identify

common goals and potential connections. The plan also aims to study opportunities for transit, intermodal connections, public access and recreation, environmental sustainability, commerce and tourism.

Northwest Municipal Conference (NWMC) (also Northwest Cook, DuPage, Kane, Lake)

- The NWMC is looking to produce a **multi-modal transportation plan** that includes bicycle and pedestrian planning, as well as improving access to transit throughout the region. Building on previous bicycle planning work and relying on the work of the Bicycle and Pedestrian Committee, municipal staff and elected officials, this new plan will act as a guide for planning and implementing a multi-modal network in the NWMC service area.

Will County

Aurora (also DuPage, Kane, and Kendall counties)

- *Four projects submitted by Aurora (two involving partnerships with Naperville) are listed only in the Kane County section for space reasons. Please see the Kane County section for a complete description.*

Beecher

- Develop a **comprehensive plan** by updating the 2005 land use plan. Since the last comprehensive plan, adopted in 1996, major changes to the community include a population that has doubled in size as well as capital projects such as a new regional airport, intermodal center, major expressway, and new railway are in various stages of planning and development. The community wishes to engage the residents in the planning process and allow them opportunity for input and collaboration with local leadership.

Channahon

- Update the **comprehensive plan** adopted in 2008 to reflect the changed demographic and economic conditions since the recession, including major population growth.

Frankfort

- **Update the Frankfort Bike Trails Plan.** The new plan will incorporate pedestrian facilities, update the trail inventory and data, identify new trails funded but not constructed, and identify key connection points and destinations. The updated plan will identify gaps and offer a framework for prioritizing capital improvement projects, serving as a base document for evaluating future plans and projects including the cyclist and pedestrian mobility plan.

- **Update the Historic District Revitalization Strategies (HDRS) plan.** Many of the recommendations in the previous 2007 Plan have been implemented. The new plan will address new challenges in current context and define the future vision of the downtown

- Seeks assistance for **Planning Commissioner training** to enhance the collective knowledge, skill and effectiveness of our commissioners, regardless of their level of experience.

- Develop a **Frankfort Subarea Plan** for the 577 acre site located west of I-57 and north and south of Stuenkel Road as an update to the overall comprehensive plan. The Plan will assess future development and infrastructure needs in the area as a result of IDOT's new interchange at the intersection between Stuenkel Road and I-57, which transforms Stuenkel Road from a minor gravel road into a major transportation corridor connecting Harlem Avenue (Route 43) and Cicero Ave with I-57.

- Seeks assistance in identifying a **Residential Tear Down Management Strategy** to document attributes of downtown residential structures that contribute to its character and offer strategies to manage market demand for modern housing while preserving the character of the neighborhood.

Homer Glen

- Create a **Land Use and Economic Development Plan**, which will serve as an **addendum to the Comprehensive Land Use Plan** (last amended in 2007) to allow for meaningful development and implementation strategies. The community's major commercial corridors, as well as primary development areas, have the potential to be enhanced and transformed based on the current and near future economic conditions. The overall goal of the plan will be to develop land use concepts, economic development initiatives, and zoning/procedure amendment recommendations to create a unified Land Use and Economic Development Plan.

Joliet

- Create a **Downtown Bicycle Plan**, which would examine Joliet's connections and linkages to regional trails. The goals of the project are to reconcile bike travel issues in the downtown area, establish a network of bike pathways that will serve as a node for regional trail connections, and provide multi-modal access to transit, services, recreation, tourism, and commerce. This project will coordinate and link with other local and regionally significant area plans that champion bike and pedestrian transportation options.

Mokena

- The Village of Mokena requests assistance with a **comprehensive plan update.** Certain areas of the Village, including the Western Basin, downtown area, and the 191st Street Corridor, would benefit from a update/revision based on current market trends, needs of local businesses, and commuters.

Naperville

- Develop a **Building Design Guidelines Update** to create a single consolidated document to provide consistent guidance for all properties located in the City; streamline the format and recommendations to achieve good building, site design, and walkability; reduce the overall document length/redundancy and increase user-friendliness; and reflect current design best practices, including sustainability, energy efficiency/LEED, environmental considerations, new technology, new building material options, creating a sense of place, and other architectural goals for the City of Naperville.

- *Please see two projects submitted by Aurora that also include Naperville as a partner.*

Steger (also South Cook County)

- Develop a **Downtown Mixed-Use Development Plan**. Steger wants to further advance the Planning Priorities Report that was completed recently, which consisted of a market analysis, review of taxing impacts resulting from mixed-use developments and recommended various redevelopments in its downtown including the underutilized "Steger Center Development Area" into mixed-use. The goal is to provide equitable TOD (around a proposed Metra station) which can benefit the entire community, including low-income households by reducing the cost of living, and creating more vibrant, healthier neighborhoods.

Wilmington

- Develop a **regional bikeway plan** in partnership with Elwood, Joliet, Will County, Will County Forest Preserve District, Island Park District, USDA Midewin National Tall Grass Prairie, IDNR, and Illinois Route 66 Association. This partnership wishes to develop new bike connectivity along Route 66, linking to regional amenities and trails. This plan would identify and recommend optimal location of new routes, cost estimates, funding sources, signage, linkages to transit, and other ancillary amenities along the new routes.

Regional

While all projects can be assigned to a particular set of geographies, several affect numerous geographies or have regional implications. These include the projects submitted by Councils of Government (NWMC, SSMMA, and MCCOG); the Kane County farmland protection and Transfer of Development Rights project; and the bicycle and pedestrian project sponsored by Aurora, in partnership with numerous Fox Valley partner communities.

RTA Community Planning Program Applicants

The following projects will be reviewed by the RTA, rather than CMAP, due to their focus on public transit:

Bartlett	TOD Zoning Code Overlay
Brookfield	Developer Panel
Chicago DPD	Corridor Study
Cicero	Zoning Code Update
La Grange Park	Corridor Study
Maywood	TOD Plan Update
Mundelein	Corridor Study of NCS
Niles	New Metra Station Feasibility Study
North Chicago	New Metra Station Feasibility Study
Pace Suburban Bus	Corridor Study
Schiller Park	TOD Plan
Wheaton	Corridor Study
Winthrop Harbor	Developer Panel

Chicago Metropolitan Agency for Planning

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MEMORANDUM

To: **CMAP Transportation Committee**

From: CMAP Staff

Date: August 4, 2017

Re: ON TO 2050: Public Health Strategy Paper

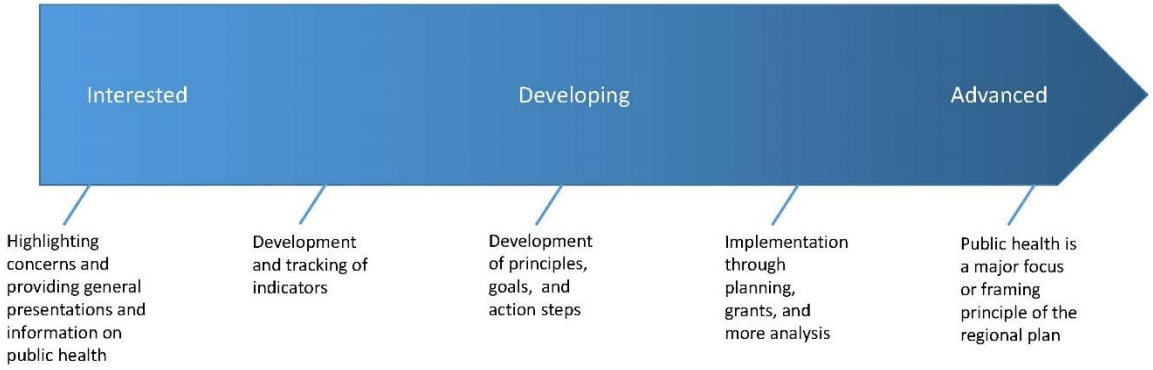
With support from the Chicago Community Trust, CMAP has partnered with the Adler University Institute on Social Inclusion to develop a strategy paper on Public Health to inform ON TO 2050. During the initial phase of this project, CMAP gained a better understanding of the public health landscape. This has involved a review of partners' health plans, an assessment of what peer MPOs are doing to address health impacts, and ongoing engagement with local partners, including a health resource group, CMAP's working committees, and other health equity stakeholders. CMAP, and its partner Adler, is now working with the health resource group to recommend health strategies to consider for ON TO 2050.

Staff will present an overview of the work scope and peer MPO assessment, along with a discussion on how the Transportation Committee can contribute to this effort.

<u>Public Health at peer metropolitan planning organizations</u>
As CMAP staff continue to investigate ways to best incorporate public health into regional planning efforts, a number of peer metropolitan planning organizations (MPOs) have developed various strategies and goals that focus on the interactions between health and land use or transportation. Analysis of how these peer agencies incorporate public health concepts into their planning and policy efforts reveals a range of approaches and best practices for CMAP to draw upon for ON TO 2050.

In addressing concerns regarding public health, the majority of CMAP's peer agencies detail active transportation, access to open spaces and parks, environmental pollutants, and health education as opportunity areas to promote community health. Many peer organizations looked at public health from a broad lens, but certain organizations made targeted efforts to promote health among higher-risk segments of the population. For example, the Atlanta Regional Commission (ARC) and Metropolitan Area Planning Council (MAPC) of the Boston region both make concerted efforts to address health disparities among lower-income individuals. The Puget Sound Regional Council (PSRC) and Denver Regional Council of Governments (DRCOG) pay special attention to address the health needs of older adults and people living with

disabilities. Ultimately, the chosen MPO approach is based on the organization's unique authority and the local context. As shown below, CMAP categorizes these **approaches to public health at peer MPOs within a range from "Interested" to "Developing" to "Advanced**."



Source: Chicago Metropolitan Planning Agency's analysis of peer agencies

The "**interested"** category identifies regional organizations that make general connections to public health in their regional transportation plans or include health resources on their website.

- For example, the North Jersey Transportation Planning Authority (NJTPA) mentions the health benefits of meeting EPA Clean Air Act emissions standards and walkable communities, but does not provide specific recommendations, goals, or strategies related to public health.
- Additionally, the Delaware Valley Regional Planning Commission (DVRPC) created a Health Data Snapshot to understand the geographic distribution of health outcomes. The Data Snapshot offers maps, data descriptions, a Health Disparities Index, and a Community Investment Index (CI2). The Health Disparities Index reviews the relationship of four health-related indicators–overweight/obesity, asthma, diabetes, and high blood pressure–to behaviors partially dictated by development patterns and access to transportation choices. The CI2 links planning and grantmaking allowing planners to target projects that will be most competitive for funding and have the greatest local-area impact. DVRPC also provides teacher resource guides and structured lessons to supplement public school curriculum with health education.
- Though efforts such as snapshots represent a significant effort to support public health, organizations in the "interested" category have yet to take steps to adopt specific principles or goals to improve public health in the region.

The "**developing"** category of regional planning agencies have integrated public health into a regional transportation plan or are in the process of doing so. These agencies also provide health-related information, resources, or toolkits.

- The Mid-American Regional Council (MARC) in the Kansas City metropolitan area includes public health as a specific goal in their plan, "Transportation Outlook 2040", listing strategies including encouraging active transportation, promoting healthy community design, and attaining federal air quality and ozone standards, among

others[1]. Selection criteria for regionally significant transportation projects that support "Transportation Outlook 2040" include five percentage points for promoting an increase in non-motorized travel and an additional five points for reducing precursor ozone emission levels. MARC also includes a "Healthy Living" page on their website, with information for individuals, communities, and employers in topics such as healthy eating, physical activity, and tobacco use.

- Additionally, the Metropolitan Council of the Twin Cities region created a "2040 Transportation Policy Plan" that includes a "Healthy Environment" goal and details strategies to decrease congestion, citing the positive impacts on air quality and related health impacts including decreased asthma and heart disease[2]. The "2040 Transportation Policy Plan" also covers water quality concerns, declaring the Mississippi River a public health hazard.

"**Advanced"** agencies are those with regional plans that make definitive connections between health and land use or transportation and identify how specific diseases can be impacted through policy changes in the built environment. These organizations have also institutionalized the integration of public health into plans and policy by designating staff to work on this topic area. Increasingly, advanced agencies are also beginning to pay specific attention to social determinants of health and how health inequities can be remediated by addressing these determinants.

- MAPC, the regional planning agency in Boston, uses factors such as violent crime, income, racial and ethnic segregation, unemployment, and others to create a comparative index. Moreover, MAPC has a Public Health department that focuses exclusively on integrating public health initiatives into all agency planning, project, and policy work, allowing the organization to provide detailed reports and presentations on public health, including one that directly links Complete Streets to healthier communities. Through this unique approach, MAPC is able to draft targeted approaches and recommendations that promote public health. MAPC's website also features a data portal with roughly 50 charts and maps regarding public health in the region[3].
- Additionally, the Nashville Area Metropolitan Planning Organization has incorporated a goal to "Help Local Communities Grow in a Healthy and Sustainable Way" in their transportation plan titled "Middle Tennessee Connected."[4] Strategies to achieve this goal center on forming policy, providing funding, and conducting research that support the improvement of health outcomes through active transportation.

To date, CMAP has incorporated public health into a number of agency initiatives. The GO TO 2040 regional plan addressed the topic from the lens of livable communities, partnering with the University of Illinois at Chicago's School of Public Health and the Chicago Community Trust to generate a "Health Report" that included Indicators to watch and 12 recommendations

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[1] Mid-American Regional Council, "Transportation Outlook 2040." See: http://www.to2040.org/

[2] Metropolitan Council, "2040 Transportation Policy Plan". See: https://metrocouncil.org/Transportation/Planning-2/Key-Transportation-Planning-Documents/Transportation-Policy-Plan/The-Adopted-2040-TPP-(1).aspx

[3] Metropolitan Area Planning Council, "Public Health". See: http://www.mapc.org/public-health

[4] Nashville Area Metropolitan Planning Organization, "2040 Regional Transportation Plan". See: http://www.nashvillempo.org/plans_programs/rtp/2040_rtp.aspx

pertaining to "Integrated Prevention/Health Promotion Strategy," "Data for Integrated Planning and Monitoring," and "Public Health Infrastructure". Additionally, transportation programs like the Congestion Mitigation and Air Quality Improvement (CMAQ) program consider emissions and air quality when selecting projects. CMAP has also addressed Public Health through its Local Technical Assistance (LTA) program. Examples of LTA projects that address public health include a Health Impact Assessment for a busy intersection in the Village of Carpentersville and the Green Healthy Neighborhoods plan that addresses repurposing vacant parcels in low-income neighborhoods of Chicago. Through these initiatives, CMAP can be reasonably classified as MPO between "**Interested**" and **"Developing"** in regards to Public Health.

Discussion Questions

We have shared examples of strategies MPOs have used to impact health. We would now like to take some time to get your feedback on these ideas, as well as learn how your agency is considering health impacts. Your feedback will help us determine what you think should be prioritized for including in the Health strategy paper.

1. Has public health emerged as a goal within your agency? How does your organization engage with public health?

2. What are some of the challenges to integrating health objectives into the plan(s) of your department?

3. How do we move forward with making the connection between public health and transportation?

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ACTION REQUIRED: Discussion

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Contents

August 2017

Emerging Transportation Technologies

As part of the development of ON TO 2050, CMAP staff is in the process of developing a series of strategy papers -- reviewing current policies, emerging issues, and potential future directions -- on various issues. This strategy paper explores the way that emerging transportation technologies may affect the future of the Chicago region.

From canals to railroads to highways, transportation technology has been a major force shaping land use and driving the economy of the Chicago region. By 2050, automated vehicles and other emerging technologies are poised to have transformational impacts of similar magnitude. This strategy paper explores recent developments and possible future impacts of emerging technologies with the potential to affect land use, travel patterns, economic activity, governance and quality of life, including:

- Connected Vehicles & Smart Infrastructure
- Automated Vehicles
- Shared Mobility
- Big Data
- Alternative Energy

These technologies present both a remarkable opportunity and a challenge for regional planning. The pace and disruptive nature of technological change makes it difficult, if not impossible, to predict what technologies will be commonplace by 2050. And yet, infrastructure investments the region makes in the next few years will be in operation for many decades.[1] By making strategic investments and policy interventions, the region may be able to shape the development of emerging technologies and better position the Chicago region to achieve its goals for economic vitality and improved quality of life for all. Decisions about investments and policies will need to be coordinated across many levels of government, and engage the private sector, civic leaders, and residents. This strategy paper identifies actions CMAP and its partners can take to shape the development of emerging technologies and advance regional priorities.

Research process

The Emerging Transportation Technology strategy paper focuses on technologies that are likely to have a significant impact on the region by 2050, but which have substantial uncertainties over when or if they will reach mass adoption. This paper is related to three other ON TO 2050 strategy papers - Highway Operations, Energy, and Transit Modernization - which all address emerging technologies to some extent, but which focus primarily on existing technologies and shorter term implementation and impacts. A series of memos on the regional economy

[1] For example, most Metra cars were built in the 1980s, before customers needed wifi and charging stations, and before modern communications and signal technology allowed better tracking and movement of trains.

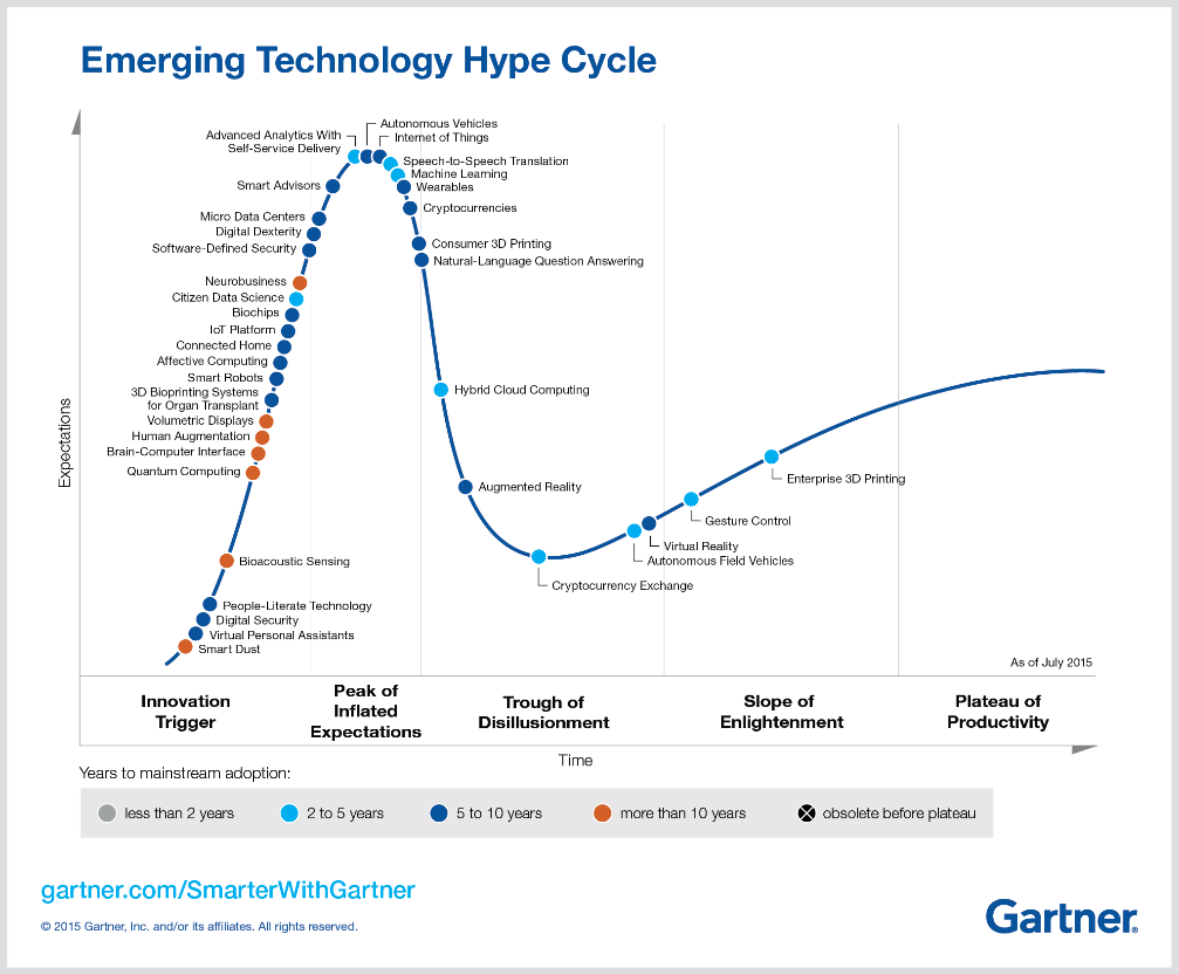
(innovation, human capital, economic development) will assess both near and long term impacts of technological change on the region's economy. Because this strategy paper focuses on emerging technologies across modes, it will pay careful attention to what key uncertainties may influence the impact of the technology on CMAP priorities such as land use patterns, mobility, and inclusive growth.

During the research process for this paper, CMAP contracted Cambridge Systematics to conduct a literature review about emerging technologies and interview leaders in private industry and academia on their thoughts about how these technologies might evolve in the coming decades. A list of interviewees is available in Appendix 1. CMAP used the Cambridge research to inform staff analysis of the key actions it and other partners can take to harness technological innovations to improve mobility, maintain and modernize the transportation network, and meet land use and livability goals for the Chicago region.

Emerging Transportation Technologies

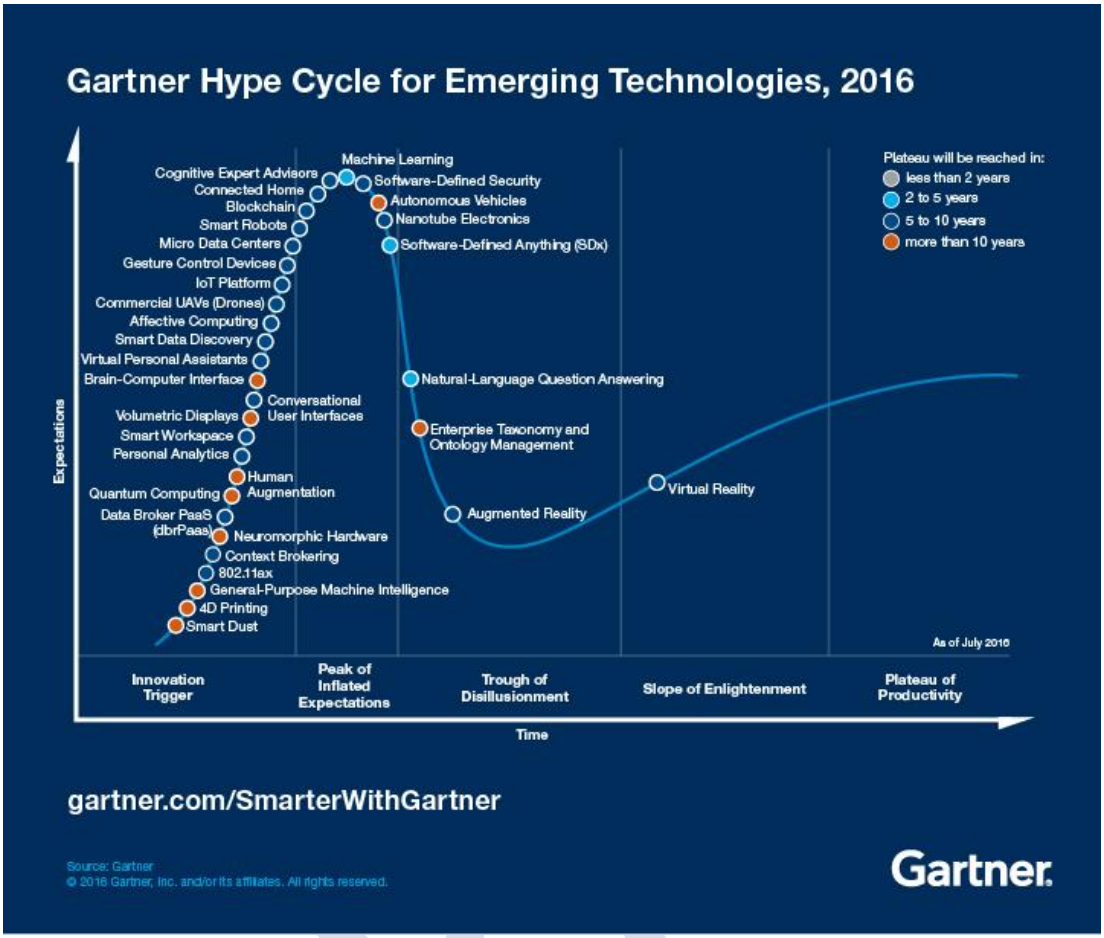
This document discusses the many uncertainties posed by emerging technologies, including when they might be broadly adopted, when industry standards will be formed, or what transportation, land use, and economic impacts might by. Understanding where technologies fall on the "hype cycle" illustrates this problem. The hype cycle tracks changes in expectations and adoption of a technology over time. Technologies move from early proof of concept through the "peak of inflated expectations" where excitement about the technology is fueled by media coverage and publicity. In the "Trough of Disillusionment," early experiments and pilots fail to deliver on heightened expectations. If technologies can overcome these hurdles and demonstrate value to consumers, they can reach the "plateau of productivity" and begin to move towards mass production and adoption. **Figures 1** and **2** display the Hype Cycles for 2015 and 2016 respectively. A number of transportation technologies appear in these diagrams, most notably autonomous vehicles, which Gartner places near the peak of inflated expectations.

Figure 1. Gartner Emerging Technology Hype Cycle, 2015.



Source: Gartner, 2015.

Figure 2. Gartner Emerging Technologies Hype Cycle, 2016.



Source: Gartner, 2016

Understanding hype cycles can also help agencies avoid making unrealistic expectations of technology and make careful, proactive, and measured investments and policy decisions. For example, autonomous vehicles are now at the "peak of inflated expectations", and actual implementation may lag today's expectations. There are still many barriers, such as an inability to sense consistently bicyclists or animals. The industry may take some time to overcome these barriers, but public and private researchers are making advancements and investments in the technology. Understanding that true implementation of this technology may be 10 years out, rather than just a few years, aids planning and policy decisions.

The following strategy paper outlines potential impacts for five key areas: connected vehicles and smart infrastructure, automated (and connected) vehicles, shared mobility, transportation and goods movement data, and alternative energy. Each section addresses potential transportation, land use, and inclusive growth outcomes, with a focus on infrastructure and the built environment, as well as outlining uncertainties that may affect policy and planning decisions.

Connected Vehicles and Smart Infrastructure

Connected vehicles and "smart" infrastructure interact with the environment and one another to provide greater safety, comfort, and entertainment. With the appropriate communication network in place, vehicles with on-board communications (such as Dedicated Short-Range Communications (DSRC), cellular, WiFi, satellite, Bluetooth, etc.), can send vehicle information such as location and speed to roadside units. Vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) technology enables automated vehicle operation, including radar-based active braking and vehicle-control algorithms to improve safety and fuel efficiency, collision mitigation systems that detect stopped or slowed vehicles far down the road to alert the driver and apply brakes when needed.

Mainstream adoption of connected vehicles and smart infrastructure has the potential to reduce congestion and improve roadway safety by greatly enhancing the quantity, quality, and velocity of available data. Gartner predicts that by 2020, more than 250 million vehicles will be connected globally[2]. Most long range scenarios on vehicle trends expect the population of equipped vehicles to exceed 90 percent by 2050[3]. A key area of uncertainty around connected vehicles and smart infrastructure development is what communications technology will form the backbone of the system. Either of two competing wireless network types could support vehicular communication: DSRC and 5G. DSRC technology is more developed, tested, and commercially available, but 5G may eventually be able to provide the basic functions offered by DSRC as well as additional in-car features that passengers want. In December of 2016, NHTSA published their notice of proposed rulemaking (NPRM)[4] which would require manufacturers to install dedicated short-range communication (DSRC) radios into new vehicles, starting in about 2020. The communications infrastructure and data processing capacity necessary for providing connected vehicle features pose privacy, data security, and physical safety vulnerabilities of connected vehicle computer systems.

Research has indicated a range of potential improvements that largely depend on the market penetration of these technologies: connected vehicles could improve roadway capacity by 20 percent with relatively low market penetration, and at 33 percent or more of the market, connected vehicles would significantly reduce delays at urban intersections.[5] [6] Connected vehicle warning systems and autonomous emergency braking could reduce fatalities by as

[2] https://dupress.deloitte.com/dup-us-en/focus/internet-of-things/iot-in-automotive-industry.html

[3] AASHTO, "National Connected Vehicle Field Infrastructure Footprint Analysis", Publication No. FHWA-JPO-14-125, June 2014.

[4] https://www.nhtsa.gov/press-releases/us-dot-advances-deployment-connected-vehicle-technology-prevent-hundreds-thousands

[5] http://www.itsknowledgeresources.its.dot.gov/ITS/benecost.nsf/0/70212CAA6C95BA5D85257B510055CD6E?OpenDocument&Query=Home

[6] http://www.itsknowledgeresources.its.dot.gov/ITS/benecost.nsf/0/844389AFAC48AA4B85257EEB00642F90?OpenDocument

much as 57 percent[7]. V2V and V2I technology can reduce fuel consumption and provide additional amenities to passengers. Traffic-light-to-vehicle communication systems can help drivers avoid braking and accelerating maneuvers and reduce fuel consumption 8 to 22 percent[8].Cyclists can also take advantage of connected infrastructure technology, receiving information about road conditions and safety en route, as well as alerting nearby vehicles to their presence.

Real-time roadway conditions, congestion levels, travel times, and incident-related information of roadway users can be used to augment existing Transportation Systems Management & Operations strategies (TSM&O). Although public agencies and private firms already generate and use large quantities of data about the transportation system, more real-time data provided by CVs could provide transportation operators with more timely and accurate performance data to improve emergency responder dispatch, monitor vehicle and infrastructure condition, and manage congestion. In addition to safety and capacity benefits,
Electronically coupling heavy trucks using V2V communications allows trucks to accelerate and brake together and operate at closer distances to form a platoon.

Bus transit riders on routes with authorized transit signal priority at key intersections would benefit from faster, more reliable service that could make transit a more attractive commuting option. These technologies could also enable more extensive vehicle infotainment systems for transit riders and auto passengers alike, such as Internet radio, video streaming, web browsing, connected media, and more. Increased mobile-data consumption from infotainment services is a potential avenue for additional revenue for transit agencies, much the way airlines and airports charge a fee for or provide sponsored access to in-flight entertainment.

Table 1. Examples of ITS Technology Applications in CV.

ITS Technology	Traditional/Existing Solutions	C/AV Potential
Dynamic Message Systems	Electronic signs provide real-time travel information to motorists.	Motorists can directly receive information inside vehicle, potentially rendering signs obsolete
Travel Time System	In-pavement or roadside-mounted point-to-point sensors read a unique signal and estimate travel time. Existing probe data systems (primarily using Bluetooth technology) provide travel time data to both agencies and private customers.	DSRC can, in the short term, increase the density of probe data and potentially transition to replace current methods. Benefit can be extended to motorcyclists and bicyclists. This is effective even with low market penetration.

[7]http://www.itsknowledgeresources.its.dot.gov/ITS/benecost.nsf/ID/458522B76F5CF56885257D890073621E?OpenDocument&Query=Home

[8]http://www.itsknowledgeresources.its.dot.gov/ITS/benecost.nsf/ID/0DBE1DFA0628439685257EF30061BF96?OpenDocument&Query=Home

ITS Technology	Traditional/Existing Solutions	C/AV Potential
Signal Coordination Study	Pre-timed signals allow traffic to flow freely through a corridor based on a manual field survey.	Field survey data can be automatically collected through DSRC. This requires medium to high penetration for data accuracy.
Intersection Monitoring and Detection	This technology converts signals from pre-timed to actuated logic, where signals will skip approaches when sensors detect no vehicle and the pedestrian push button is not active.	Mitigate negative impacts on motorcyclists and bicyclists who are not detected by complementing sensor data with DSRC signal data.
Adaptive Traffic Signal Technologies	These technologies allow signal logic to change based on traffic condition information collected by sensors.	Traffic conditions data can be collected through DSRC instead of sensors. This would require medium to high market penetration for data accuracy.
Traffic Signal Interconnect	The interconnect slaves traffic signals to a common clock for executing pre-timed plans via fiber optics or wireless communication.	DSRC can serve as the wireless communication medium for intersections that are within a 400 meter line of sight of each other.
Close Circuit Television (CCTV) Cameras	CCTV cameras provide real-time visual monitoring of a road facility requiring a high-capacity communications network.	Existing CCTV would help CV deployment, as the existing backhaul communications can be utilized.
Transit Signal Priority (TSP) and emergency vehicle preemption	Transit or emergency vehicle requests extended green to clear intersection or requests overrides of signal timing to provide green lights	DSRC can serve as a wireless communication medium and provide a response to the vehicle advising whether priority has been granted.
Pedestrian Push Buttons and Countdown Signals	Pedestrians request walk signals (particularly for adaptive traffic signals) and are provided with a visual countdown of remaining crossing time left.	Disabled or senior pedestrians can request a walk signal and/or extended green time through a DSRC-enabled smartphone.

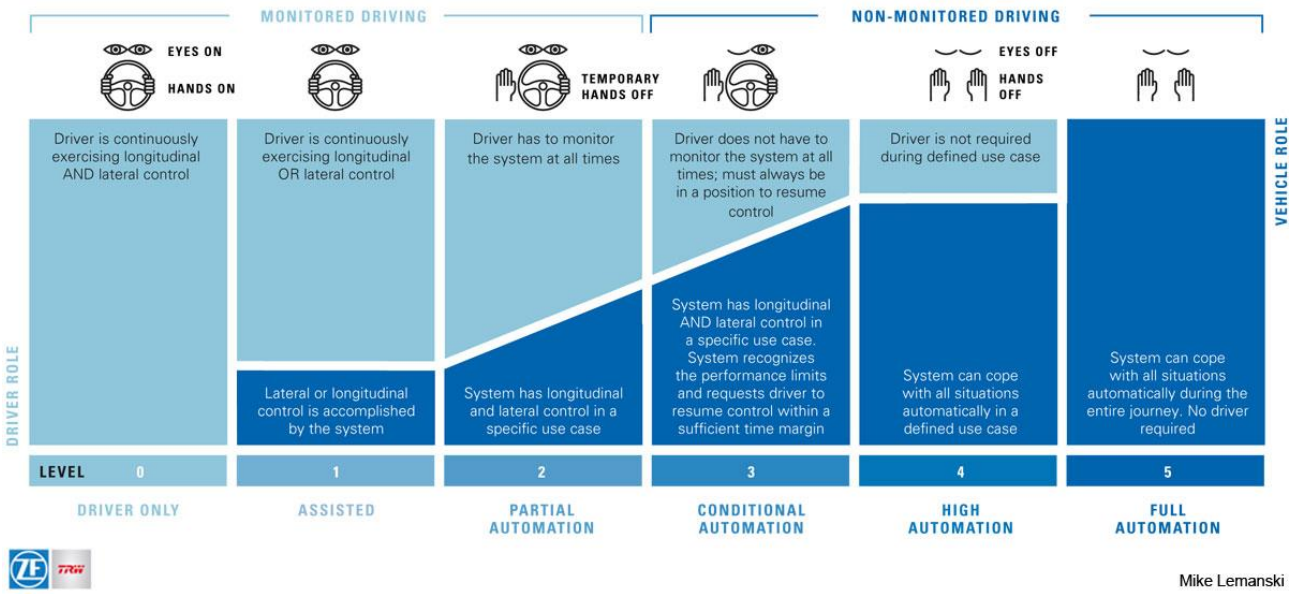
(Source: Adapted from Connected/Automated Vehicle Impacts on Transportation Planning: Primer, prepared by CS for US DOT Joint Program Office, 2016)

Many decisions about communications and security standards will be made at the federal level, but implementers in the Chicago region will need to decide where and when to implement connected infrastructure technology. Investment decisions will be complex, as connected infrastructure could reduce some maintenance costs, but may also increase capital costs to develop and maintain more complicated communications and data processing infrastructure, or replace early investments as standards evolve. Investments in V2V technology are likely to be driven by the private sector and can be more easily upgraded as the fleet turns over, but may not provide the extensive congestion mitigation, transit priority, and incidence response functions that V2I infrastructure can. The Chicago region is already moving forward with some smart infrastructure projects. The "smart corridor" project on the Illinois Jane Addams Memorial Tollway will use sensors planted in the roadway and gantries to inform overhead digital signs, which can be used to update advisory speed limits based on traffic flows, alert drivers of congestion or collisions, or indicate lane closures as needed.

Automated Vehicles

In recent years, few emerging transportation technologies have captured as much public and policymaker attention as automated or "driverless" vehicles. Automated cars make intelligent decisions regarding a vehicle's direction, speed and interaction with other road users (i.e., cyclists and pedestrians) through the utilization of global positioning system (GPS), radar and light detection and ranging (LIDAR) technology. Fully automated vehicles (AVs) are capable of sensing their environment and navigating without human input, meaning that passengers can sleep, work, or engage in other activities on their commute. While fully automated vehicles are likely decades away from mass adoption, semi-autonomous features such as adaptive cruise control, parking assist systems, lane departure warning systems, lane keeping systems, and autonomous braking are becoming increasingly prevalent in new car models. The Society of Automotive Engineers' (SAE) vehicle standards committee has defined six levels of driving automation to help industry and consumers understand how vehicle automation can progress safely, as shown in **Figure 4**[9]. Currently, most commercially available vehicle automation features fall into SAE Levels 1 and 2.

Figure 3. Six levels of vehicle automation.



(Source: Auto Safety, 2016.)

Over 30 automobile manufacturers are currently trying to develop a fully autonomous passenger vehicle. Several industry leaders are designing autonomous commercial vehicles, such as driverless shuttles, buses, and trucks. Driverless transit initiatives have taken off in recent years, with small and large-scale demonstrations across the globe in Europe, Asia and the United States. In the United States, the National Highway and Traffic Safety Administration (NHTSA) will regulate automated vehicle performance and set standards that manufacturers

[9] http://safety.trw.com/autonomous-cars-must-progress-through-these-6-levels-of-automation/0104/

must meet before selling vehicles.[10] The range among predictions for mass adoption of fully autonomous vehicles is wide, with most industry experts projecting that they will be available for purchase between the mid 2020s and early 2030s.[11]

The rate of technology adoption will depend on a number of factors, including the price of remote sensing technology, the adoption of V2V and V2I technology, and customer preferences. Currently, the LIDAR systems used on the Google AVs cost approximately $70,000 for the equipment alone. A J.D. Power and Associates survey reveals that only 20 percent of people would purchase an AV if it increases the purchase price of the vehicle by $3,000. These market dynamics may make fleet purchasing of AVs by mobility service companies a more financially viable model. The fleet ownership model may have the effect of increasing autonomous vehicle adoption more rapidly than individual purchase, as it often takes decades for commercially-available technologies (from airbags to automatic transmissions to in-vehicle navigation systems) to go from premium feature on new cars to ubiquitous feature on every car on the road.[12]

Adoption of fully autonomous vehicle technology may be quicker in freight vehicles than in passenger vehicles, because labor represents nearly 40% of an average trucking firm's costs.[13] Adoption may be particularly swift in controlled environments such as intermodal ports. The container cranes at the Port of Rotterdam are unmanned and practically fully automated, and more intermodal automation has been proposed in facilities in the US.[14] These innovations could allow continuous operation of intermodal facilities with minimal staff. McKinsey & Company projects that by 2025, at least one third of new heavy trucks will be semi-autonomous, eliminating the need for a full-time driver.[15] In the short-term, semi-automated and fully automated vehicles, shared fleets, and transit will need to operate alongside traditional vehicles.

A vehicle fleet with a large number of autonomous vehicles has the potential to dramatically decrease motor vehicle crashes and fatalities and increase the capacity of roadways. In the Chicago region in 2014, 366 people were killed and 41,858[16] injured in motor vehicle crashes, and motor vehicles were the thirteenth most common cause of death nationwide. Driver actions

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[10] https://one.nhtsa.gov/nhtsa/av/av-policy.html

[11] https://qz.com/943899/a-timeline-of-when-self-driving-cars-will-be-on-the-road-according-to-the-people-making-them/

[12] http://www.vtpi.org/avip.pdf

[13] http://atri-online.org/wp-content/uploads/2016/10/ATRI-Operational-Costs-of-Trucking-2016-09-2016.pdf

[14] https://www.portofrotterdam.com/en/cargo-industry/50-years-of-containers/the-robot-is-coming, http://www.presstelegram.com/business/20170318/port-of-las-automated-terminal-future-of-commerce-or-blue-collar-job-killer

[15] https://www.trucks.com/2016/09/12/one-third-trucks-autonomous-2025/

[16] Illinois Department of Transportation Division of Traffic Safety, " 2014 Illinois Crash Facts and Statistics." http://www.idot.illinois.gov/Assets/uploads/files/Transportation-System/Resources/Safety/Crash-Reports/crash-facts/2014%20CF.pdf

were the critical reason for 94 percent of U.S. crashes.[17] At high rates of technology adoption, fully automated vehicles are expected to improve roadway capacity by between 15% and 100%.[18] Connected autonomous trucks hold promise for achieving new efficiencies in productivity of goods distribution. Autonomous freight vehicles traveling in platoons can travel farther with lower fueling and labor costs, meaning more consumers can be serviced within a one-day range of a distribution center, critical in dense urban areas where demand for distribution space outpaces supply.

Although there is great promise of significant benefits in efficiency, safety, and personal mobility from AVs there are also substantial land use and development impacts that may arise. Much of the speculation on the potential impacts of AVs hypothesizes two potential paths, one in which the technology enables more low-density auto oriented development patterns and increased vehicle miles traveled, and another in which the technology facilitates more dense, walkable development patterns and increased use of transit and active transportation.
As the cost and inconvenience of low occupancy vehicle travel goes down, people may choose to live in places that would previously have required too much time behind the wheel of a car. People and employers could move to less dense parts of the region to take advantage of lower land prices and more open space while still having convenient access to all their daily needs. With less demand, some existing denser communities may see declines in population and residential property values. Substantial development on agricultural land and in natural areas could occur, requiring new infrastructure, including roads, utilities, and drinking water, sewer, and stormwater systems. Zero-passenger trips in particular could more than offset increases in roadway capacity and increase congestion on routes into major activity centers. Public transit, which has long provided productivity advantages to passengers, may struggle to retain riders who can afford private autonomous options. Bus service on congested streets may become slower and less reliable, making it an even less attractive alternative. Low frequency routes through less dense neighborhoods would likely experience particularly steep declines in ridership as new autonomous options become available, reinforcing their dependence on low occupancy vehicles.

If AVs are mostly deployed as higher-occupancy vehicles, they may enable municipalities to support their goals for increased transit ridership, walkability, and transit-oriented development. Automated public transit or private shuttle services could provide faster and more frequent last mile connections to high frequency mass transit. The ability of automated vehicles to drop off passengers and park themselves in more compact and remote locations could open up land in commercial areas and activity centers for infill development. The cost of development in denser areas could also decrease if developers no longer need to factor in the cost of parking spaces into construction costs. Some researchers even speculate that since risk-

[17] US Department of Transportation, Traffic Safety Facts, "Critical reasons for crashes investigated in the national motor vehicle crash causation survey," February 2015. https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812115

[18] http://orfe.princeton.edu/~alaink/Papers/FP_NextGenVehicleWhitePaper012414.pdf

averse automated vehicles will always stop for pedestrians, it will be easier to navigate dense urban neighborhoods on foot than in a vehicle, enabling more pedestrian-oriented development in these areas.[19]

While much of the conversation about AVs focuses on these two disparate futures, it is likely that the impacts of AVs will be dependent on the cost and convenience of low- and zero-occupancy autonomous vehicle travel, which will vary substantially across the country and even within regions. Policies affecting the cost and convenience of low occupancy vehicle travel will need to be addressed at the local and regional scale.

Cities, states, and regions across the country are approaching automated vehicle technologies with varying degrees of enthusiasm and skepticism. In October 2015, CCTA in Northern California signed an agreement with EasyMile for a two-year test of two EZ10 autonomous shuttles to determine the potential of autonomous shuttles filling in the gaps of traditional public transportation and addressing first and last mile challenges[20]. This partnership with GoMentum Station in Concord, California, marks the first intended deployment of driverless shuttles in the United States. In September 2016, Uber launched its first self-driving fleet in Pittsburgh, home of the company's new Advanced Technologies Center. Since 2012, at least 41 states and DC have considered legislation related to autonomous vehicles. Nineteen states have passed legislation, and governors in three other states have issued executive orders related to autonomous vehicles.[21] Five bills have been proposed in Illinois in 2017, but none have yet been enacted. The Illinois House and Senate both passed a bill that, if signed by the governor, would prevent a unit of local government from prohibiting the use of autonomous vehicles on its roadways.[22]

Shared Mobility

Shared modes of transportation include bikes, trucks, and personal vehicles that users do not personally own, but can use to get where they need to go. The Shared Use Mobility Center defines shared mobility as "transportation services that are shared among users, including public transit; taxis and limos; bikesharing; carsharing (round-trip, one-way, and personal vehicle sharing); ridesharing (car-pooling, van-pooling); ridesourcing/ride-splitting; scooter sharing; shuttle services; neighborhood jitneys; and commercial delivery vehicles providing flexible goods movement. The array of shared mobility options in the Chicago region is

[19] https://www.scientificamerican.com/article/how-pedestrians-will-defeat-autonomous-vehicles/

[20] http://www.techrepublic.com/article/could-the-autonomous-mercedes-future-bus-lead-to-driverless-public-transportation/

[21] http://www.ncsl.org/research/transportation/autonomous-vehicles-self-driving-vehicles-enacted-legislation.aspx

[22] http://www.ilga.gov/legislation/billstatus.asp?DocNum=791&GAID=14&GA=100&DocTypeID=HB&LegID=101170&SessionID=91

extensive, and includes Divvy, Uber, Lyft, Zipcar and many others. **Table 2** below highlights several categories of innovative mobility services which have transformed the transportation landscape, providing on-demand services which are both convenient and economical.

Table 2. Selected taxonomy of innovative mobility services.

Service	Role of Technology	Problems Technology May Solve	Factors in Success
Carsharing (examples: Zipcar, car2go)	Reservations and tracking of vehicles; billing	Convenience in making/changing reservations and in locating/dropping off vehicles; national branding encourages use while traveling	Critical mass of users to support availability of vehicles at sufficient array of pickup/drop-off locations
Bikesharing (examples: Citi Bike, Divvy, Capital Bikeshare)	Reservations and tracking of bikes; billing	Convenience in finding bikeshare stations and information on bike availability; management of rebalancing	Critical mass of users to support a sufficient array of bike stations; rebalancing of bikes to ensure availability
Transportation network companies (TNCs) – sequential sharing (examples; Uber, Lyft)	Reservations and tracking of vehicles; billing; matching of riders for shared rides; quality control via online customer feedback	Convenience of arranging ride just prior to travel; customer tracking of vehicles and wait times reduces uncertainty; national branding encourages use while traveling	Critical mass of users to support widespread vehicle availability. Long-term financial viability of companies.
Transportation network companies (TNCs) – concurrent sharing (examples; UberPool, LyftLine)	Reservations and tracking of vehicles; billing; matching of riders for shared rides; quality control via online customer feedback	Convenience of arranging ride just prior to travel; customer tracking of vehicles and wait times reduces uncertainty; national branding encourages use while traveling	Critical mass of users to support widespread vehicle availability; comfort with riding with strangers; critical mass to match riders for shared rides
Microtransit (examples: Chariot)	Reservations and tracking of vehicles; determining routes from public demand; billing	On-board wi-fi and efficient routing to match customer demand; customer tracking of vehicles and wait times reduces uncertainty	Critical mass of users to support a variety of routes; comfort with riding with strangers; price points that, while higher than those of standard transit, allow for regular commuting
Taxi apps (or e-hail) (examples: Flywheel, Curb, myTaxi)	Easier reservations, both advance and just prior to travel	Apps may cover multiple taxi companies and estimate wait time, reducing uncertainty; national branding could encourage use while traveling	Critical mass of participating taxi companies; integration with traditional taxi operations; app use by traditional customer base

(Source: TRB, Between Public and Private Mobility: Examining the Rise of Technology-Enabled Transportation Services, 2015.)

Unlike fully autonomous vehicles, which remain decades away from mass adoption, shared mobility options like taxis and public transit have existed in the Chicago region for a century. Over the past five years, mobile phones and other technologies have contributed to the increasing visibility and viability of additional shared-use modes, particularly Transportation Network Companies (TNCs) like Uber and Lyft. In 2015, half of all American adults were familiar with services like Uber and Lyft, but only 15% had ever used them. In the last two

years these services have continued to expand geographically and in numbers of users, with a recent study estimating that 15% of all vehicle trips inside San Francisco were Uber and Lyft trips.[23] However, in order for these services to be financially viable in the long term, they will need a critical mass of vehicles in order to provide fast response time, and increase revenue or lower expenses. In 2016, Uber operated at a loss of $2.8 billion.[24] Both Uber and Lyft are heavily investing in autonomous vehicle technology, which would eliminate their need to share revenue with drivers and could increase their profits.

Some early evidence shows that emerging shared mobility options may complement existing transit service and allow more people to forego car ownership, and make trips that they would otherwise not have been able to make. A three-year study by scientists at the University of California, Berkeley, found that each Zipcar and car2go carshare vehicle removes up to 13 and 11 vehicles respectively from the road.[25] A 2016 report by the Shared Use Mobility Center (SUMC) and the American Public Transportation Association (APTA) reveals that "supersharers" – people who complement public transit with other shared modes (e.g., bike sharing, carsharing, TNCs, etc.) save the most money and own half as many household cars as people who use public transit alone[26]. The constant availability of on-demand vehicles has the potential to moderate the need for on-street parking and reduce the need for off-street parking. Integrated, multi-modal trip planning apps can help to facilitate more supersharing and increase transit ridership. The region's Ventra app is the first in the nation that allows customers to pay for rides on multiple transit systems (CTA, Pace and Metra) using the same app. Private companies are also developing platforms that can allow customers to plan trips across public and private shared use modes. Several cities are piloting partnerships with TNCs in an effort to provide more responsive, cost effective, and higher quality service to people with disabilities and people in less dense areas. Transit agencies may also be able to develop their own services using similar mobile ride requesting technologies.

However, there is also some evidence that TNCs may contribute to congestion problems and may compete with transit for riders in more dense urban environments. Studies in Boulder and New York City found that the extra miles that TNCs generate circling to pick up riders and transporting people who would otherwise have walked, biked, or taken public transit could contribute to increased congestion.[27] It is difficult to ascertain the impact that TNCs are having on congestion, mobility, and transit ridership because detailed data on their use is not available to public agencies.

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[23] http://www.sfexaminer.com/study-uber-lyft-account-15-percent-vehicle-trips-sf/

[24] http://www.latimes.com/business/la-fi-tn-uber-financials-20170414-story.html

[25] http://phys.org/news/2016-07-car-mobility-decreases-greenhouse-gas.html

[26] https://www.apta.com/resources/reportsandpublications/Documents/APTA-Shared-Mobility.pdf

[27] https://www.citylab.com/transportation/2017/02/uber-lyft-transportation-network-companies-effect-on-transit-ridership-new-york-city/517932/ http://denver.streetsblog.org/2017/03/29/study-uber-and-lyft-add-traffic-reduce-efficiency-on-denver-and-boulder-roads/

Transportation Data and Goods Delivery

In the coming decades, the current trend toward larger quantities of data is likely to accelerate, providing new opportunities for rapid, informed decision making in the public and private sectors. The variety and veracity of transportation data will improve, coming from sources such as public agencies, private industry, academia, and civil society. More and more public agencies, including the City of Chicago, are leveraging existing administrative datasets for new analysis and developing open data portals to increase the transparency of government data. In 2016, the National Science Foundation (NSF) awarded the University of Chicago $3 million in Smart Cities-related grants to support the creation of the Array of Things in Chicago, the first such network to serve as an infrastructure for researchers to rapidly deploy sensors, embedded systems, computing, and communications systems at scale in an urban environment. Comprised of 500 nodes deployed throughout the City of Chicago, each with power, Internet, and a base set of sensing and embedded information systems capabilities, the Array of Things will continuously measure the physical environment of urban areas at the city block scale. Several active transportation mobile apps such as Strava, MapMyRide, and Ride with GPS track bicyclist and pedestrian activity, and other companies such as Chicago-based HERE offer data on traffic speeds on roadways. City Digital, a Chicago-based consortium, is planning to launch two pilots that bring together the city, academia and industry to address major urban infrastructure challenges.[28]

This explosion in data availability can be leveraged to unlock promising new research areas, increase accurate predictions, and fuel approaches that drive sound decision making. Transportation data can provide a deeper understanding of traveler route choices and modal preferences, giving transportation agencies insights on how to respond to the needs of the traveling public. In order to accomplish this, two main challenges need to be addressed: (1) data sharing between private industry and public agencies and (2) managing data acquisition, storage, processing, and security. Public agencies are generally required to make their data freely accessible, and this data is often an immense source of value to private companies. While many private sector companies have emerged to collect, analyze, and provide insights to public agencies, mobility companies like Uber and Lyft have been hesitant to share data with public agencies or participate in open data portals, citing privacy and competitive concerns. The public sector may be less able to collect and manage transportation data as it increases in volume and complexity. Data generated from connected travelers, vehicles and infrastructure may exceed one terabyte of data per TMC per day[29]. Private industry companies are offering an increasing number of services that provide insights and enhanced visualization and tools to people without access to or experience with ArcGIS, machine learning/artificial intelligence, and other data processing platforms. While this reduces the need for public agencies to invest in

[28] https://www.whitehouse.gov/the-press-office/2015/09/14/fact-sheet-administration-announces-new-smart-cities-initiative-help

[29] FHWA, *Integrating Emerging Data Sources into Operational Practice: Opportunities for Integration of Emerging Data for Transportation System Management and Operations*, unpublished.

data storage and processing platforms, this also increases the dependency of public agencies to purchase these tools or services.

A specialized but crucial application of increased transportation data is in the area of goods movement, partly fueled by a shift to online ordering of goods and increasing consumer (both residents and business) expectation of short delivery timelines. Drastic improvements in freight supply chain information across modes and across industries are also expected in the coming decades. Large companies such as FedEx, UPS and Wal-Mart, have sophisticated software systems that optimize their truck movements, both for long-haul and local trips. Software companies are developing freight movement optimization software which allows for sophisticated optimization of routing and order processing of pickups and deliveries. Optimization areas can include route, forecasted traffic, real-time traffic, incident avoidance, freight/warehouse facility loading dock hours, driver schedule, driver hours of services, and more. The Federal Highway Administration is also developing a freight-centric traveler information system (FRATIS) with the goal of improving intermodal freight operation, reducing freight congestion, and improving air quality near intermodal facilities. In the Chicago region, the Supply Chain Innovation Network is working to encourage off-peak delivery coordination and streamline permitting for oversize and overweight vehicles.

These innovations may have a particularly profound impact on the Chicago region, as a quarter of all freight in the nation either originates, terminates, or passes through metropolitan Chicago. The number of intermodal containers moved through Chicago terminals has risen every year between 2009 and 2015, and volumes of freight movement are anticipated to increase. Changes in freight supply chain management strategies also have significant land use and congestion management implications, as many goods movement companies first invested in large distribution facilities near interstates on the region's periphery, and then began to establish neighborhood distribution centers within urban areas to facilitate more rapid "on demand" delivery.[30] Shifting freight patterns often leaves communities and transportation agencies planning for yesterday's freight system and struggling to anticipate future freight traffic. The region will need to develop strategies to track these shifts, plan for major transportation investments, and assist local communities in addressing the challenges these facilities may pose.

Alternative Energy

Alternative energy refers to renewable energy sources to be used in place of fossil fuels, intended to address concerns such as high carbon dioxide emissions, an important factor in global warming. The highly popular hybrid electric vehicle has led vehicle manufacturers to explore the usage of fully electric, solar-powered, hydrogen fuel cell and other technologies to

[30] https://www.wsj.com/articles/the-new-shopping-hubs-for-cities-warehouse-distribution-centers-1492394640

achieve zero emission vehicles. Modes of human-powered transportation such as scooters and bicycles are increasingly employing electric power. Historically, the U.S. electric bike market has been slower to develop compared to countries such as China and Europe. From 2011 to 2012, Americans purchased approximately 100,000 electric bikes, growing to approximately four times that amount in 2014. Experts predict that that the U.S. will become one of the top markets for electric bicycles, selling as many as two million a year within 20 years[31]. Fast-accelerating electric trains have the potential to substantially shorten travel times and improve service for riders by bringing the train up to top speed faster than diesel locomotives.

Battery cost reduction and improved charging infrastructure is needed in order to increase adoption rates of EVs. Economies of scale won't be reached until EV production reaches 50-80 million worldwide. A tightly knit network of home, public, and workplace charging stations which tops off the battery *quickly* is critical to increase adoption rates. Incentivizing the installation of fast chargers into multi-unit housing developments and near-term investments in publically available wireless charging stations or electrified roadways can help extend operable ranges of EVs which will make them more appealing for the public to adopt. Solar powered toll roads and bike sharing stations are other possible solutions that would reduce carbon dioxide emissions and save on energy costs. The E-470 Solar Powered Toll Road in Colorado has a projected 20-year energy cost savings of more than $1 million and will be able to save 24,000 tons of carbon dioxide emissions over the same span of time. The energy produced from the 714.9kW photovoltaic system is enough to supply energy for its headquarters building, 18 toll ramps, two toll plazas, one maintenance site, 18 signs, and 15 surveillance cameras[32].

CDOT is making strides towards replacing on-road fleet vehicles with green fleet through its Drive Clean Chicago program, which offers point-of-sale discounts for hybrid and electric city vehicles. To date, this program has helped deploy over 400 cleaner vehicles for Chicago area fleets and over 220 alternative fuel stations, reducing greenhouse gas emissions by 2,850 tons[33]. Pace has recently invested in a fleet of 91 compressed natural gas-powered buses in Arlington Heights, Illinois. Combined annual fuel savings are estimated to be $1 million, compared to using diesel-powered buses[34]. The CTA has been assessing the feasibility of wayside energy storage systems.[35]

Chicago's 100-year old electricity grid network relies mainly on the nuclear, coal-fired, and natural gas-fired energy sources available in Northern Illinois. In order for electric fleets to

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[31] http://www.citylab.com/commute/2014/07/if-an-electric-bike-is-ever-going-to-hit-it-big-in-the-us-its-this-one/375167/

[32] http://ibtta.org/sites/default/files/documents/MAF/SmartMove_E-470_Solar.pdf

[33] http://www.drivecleanchicago.com/

[34] http://pacebus.com/sub/news_events/press_release_detail.asp?ReleaseID=658

[35] http://www.transitchicago.com/solicitation/detail.aspx?Sid=b7oWoG/RHlV1vneZ4UVJLqg73hfoDoSQxmlz%2B9DYHbQ%3D

become truly sustainable, the Chicago region would need to make strides towards increasing its percentage of renewable energy generation. In 2014, Illinois was the country's fifth largest producer of wind power with 9.6 million megawatthours (MWh) of electricity. This accounts for 5.7% of the U.S. net electricity generation from wind[36]. High local fuel prices may provide an incentive to explore R&D opportunities in other renewable energy sources, such as advanced liquid biofuels. There is also a need to modernize the energy grid to accommodate increasing electricity demands from private vehicles, public transport, long-distance trains, and bicycles.

ON TO 2050 framework and strategies

CMAP has a significant role in helping the region prepare for and benefit from transformative transportation technologies. Similarly, many of CMAP's partners will be the main implementers, decision-makers, or facilitators of these changes in the region. While we cannot predict the exact technologies of the future, we can understand the potential impacts of today's emerging technology. Actions taken today can guide technology's impact on our built environment, residents, and economy. The following outlines a framework for addressing the uncertainties inherent in emerging technologies, as well as policies and strategies for CMAP and its partners to steer emerging technologies in ways that can benefit the region and meet ON TO 2050 goals.

Regional action in the face of uncertainty

Robust Decision Making (RDM) RDM is an analytical process for examining many plausible futures and systematically testing the impact of alternative policies or actions within each of them. The core principle of RDM is the development of plans that will perform as well as possible, regardless of how the future unfolds. RDM has proven valuable in facing challenges including long-term planning for water resource agencies, coastal restoration in the context of uncertain sea level rise, and military acquisitions to address unknown future threats. This strategy paper uses a simplified, qualitative RDM framework to identify recommendations for taking advantage of, utilizing, and/or preparing for emerging transportation technologies into four different categories. Each of the recommendations is identified as: near-term, shaping, hedging, or deferred adaptive.

Near-Term NT

Near-term strategies are anticipated to be effective at achieving objectives in all futures, regardless of risk. These are the most robust actions – the *no-brainers*. For example, taking advantage of existing transit technologies and modernizing the transit system fits in this category.

[36] https://www.eia.gov/state/state_one_pager/Illinois.pdf

Shaping S

Shaping strategies do not necessarily perform well in all plausible futures. Thus there is some risk in undertaking them. Shaping strategies have the potential, however, to promote a desirable future. For example, pilot applications which advance certain transportation technologies may be risky as competing technologies may arise and displace one's efforts, but there is a potential for a preferred technology to gain a foothold in the market through thoughtful pilot development.

Hedging H

Hedging strategies also do not necessarily perform well in all plausible futures. However, they are intended to hedge against a high-risk future that you absolutely seek to avoid. For example, maintaining and defending the right of way (ROW) of transit services may hedge against a potential future where AVs have led to significant increases in vehicle miles traveled (VMT) and resulting roadway congestion.

Deferred Adaptive DA

In some cases immediate action is not needed. If there are potential future signposts or indicators of when action may be needed, some actions can be safely deferred. For example, investment in a transit fleet of driverless shuttles would be premature, but if and when the technology has proven itself reliable and cost-competitive, the region's transit agencies could consider that option.

Key Strategies

Set the stage for future innovation by identifying and supporting strategic public investments in emerging technology

Continue analysis of impacts and opportunities for emerging technologies in the region NT

To understand the transportation and land use impacts, benefits, and costs of emerging technologies, CMAP should continue to develop information for stakeholders on the near and long term impacts of new technology. This will require new tools and analytical techniques as well as effort from both the public and commercial sectors. Several topics are already ripe for additional, standalone assessment, including autonomous vehicles, connected vehicles, emerging freight technology and logistics, and TNCs.

CMAP could also play a key role, in coordination with partners in academia and public agencies, in developing analytical tools and tracking the impact of emerging technologies. CMAP should also conduct analysis of places where deployment of technologies could provide the greatest benefit to the region, such as where it would be most beneficial to broadcast

intersection signal phase and timing or where early adoption of AVs is most likely, Implementers will also need to better understand the long-term financial implications of technology investments. For example, the many transportation agencies in the region who implement and maintain ITS equipment could benefit from a shared understanding and vision for the transition to CVs. CMAP's current role in convening the Advanced Technology Task Force could position the agency to play a role in advancing analysis of connected vehicle opportunities in the Chicago region.

Support innovative and pilot applications of technologies through funding programs S

CMAP has a major role in project prioritization and selection. There is an opportunity to prioritize those technology projects with potentially far-reaching impacts in the region. CMAP and partners with control of transportation funding can enable pilot applications of relatively unproven technology with some risk, ultimately helping the region gain their footing on evolving technologies. For example, CMAP has a track record of using Congestion Mitigation and Air Quality (CMAQ) funds to support innovative projects, such as supporting vehicle electrification projects, rideshare incentive programs, and various ITS projects. The TAP program could also potentially fund investments in technologies that support multimodal transportation options.

One way to facilitate beneficial AV technology advancement and adoption in the region is through pilot testing of AV operations in controlled environments. AV technology is already in operation at O'Hare International Airport with the fully automated Airport Transit System (ATS). As transit agencies look to diversify their service offerings and integrate new technologies, environments such as campuses and office parks may be good testing grounds for pilot transit AV applications. Private AVs could operate in restricted testing areas, which will reduce interactions with non-AVs and ensure pedestrian safety. The RTA's Innovation, Coordination, and Enhancement (ICE) grant program could support these types of pilots, in partnership with communities, CMAP, IDOT, and other transportation stakeholders.

While it is difficult, if not impossible, to predict the exact technologies that will be in use in 2050, it is important to identify the core supporting investments that can enable a wide range of technologies. For example, most innovative transportation technologies, from real-time traffic information to automated vehicles, will rely on a robust communications network. Over the medium term, the region strongly needs to consider improving the fiber optic communications backbone to allow the region to take advantage of improved technology throughout the life of a project.

Establish a regulatory environment that facilitates innovation and supports regional priorities S

In addition to financial and analytical support, CMAP and partners can influence the development of emerging technologies through strategic and coordinated policies. The region

should avoid prohibiting or mandating specific technologies and focus on integrating new technologies into existing transportation systems and services in ways that leverage the new services' strengths and help achieve regional objectives around congestion management, emissions reductions, and promoting inclusive economic growth. Some examples could include identifying and requiring information needed to understand and set policies on private mobility services. Adoption and promotion of industry standards for communication and technology increases the likelihood that upgrades would be possible without complete replacement of existing infrastructure, which would yield cost savings for transportation agencies and municipalities. CMAP and partners should encourage the development of such standards. CMAP and the RTA could play an important role in developing model policies and coordinating throughout the region to avoid a patchwork of inconsistent regulations.

As AV technology matures, carefully consider implications of dedicated roadway allocation for automated and connected vehicles DA

AV and CV technology is likely still decades away from mass adoption, and it is too early to develop concrete plans for dedicating roadway capacity for automated operation. As technology evolves, this issue may become an increasing area of focus, since the greatest benefits of automated and connected technologies accrue when they are not mixed with human-operated vehicles. However, there are many factors to balance when considering dedicated right of way, especially for passenger vehicles. Equity is a particular concern, as these technologies are likely to come with a price premium. CMAP and transportation agencies in the region should carefully monitor the development of AV and CV technologies, but wait to develop any plans for expanded or dedicated roadway capacity until more is known about technology applications.

Continue to invest in fast, reliable, and modern public transit

Build on traditional public transit strengths S

Public transit is the most basic shared mobility, and traditional public transit forms like rail and bus service provide the most cost effective and efficient service in dense population and job centers. The region should continue to invest in these services, particularly those with dedicated right of way and high ridership and ridership potential. Transit agencies and partners should identify places where more dedicated right of way, transit signal priority, and supportive land use policies could make existing service more effective or enable increased frequency or extended hours of service. This recommendation is a major focus of the Transit Modernization strategy paper.

Learn from and integrate private sector trip aggregation techniques to support more nimble transit services DA

Private sector companies like Via and Uber are getting involved in trip aggregation as part of their ridesharing services. To make these services as profitable as possible, they are building sophisticated platforms and capabilities to get efficiency out of their services while meeting a complex and dynamic customer demand. There is an opportunity to learn from and adapt these capabilities to more nimble public transit services and develop them as system feeders and first mile/last mile solutions. Many agencies are looking to partner with TNCs and have them provide the services, but there is an opportunity for agencies to institutionalize the technologies and capabilities, not just outsource them.

Partner with mobility service companies to address transit first mile/last mile issues S

Transit's first and last mile problems are well documented. Some agencies in other parts of the country have begun addressing first mile/last mile issues through partnerships and subsidies with TNCs. Each of the region's transit agencies operate in different environments and will have different relationships with TNCs, but RTA and CMAP should develop regionwide TNC guidance to assist the agencies in establishing partnerships. Some issues this guidance could address include model data sharing requirements, public safety requirements covering drivers and vehicles, accessibility for people with disabilities, geographic coverage and span of service. Transit agencies will need to maintain their competitive advantage in providing longer trips with greater reliability and less congestion.

Continue to provide and archive real-time transit data for use in third party applications and evaluation of system performance NT

Seamless trip planning should be an ongoing goal of transportation agencies within the region, especially transit providers. Many of the innovations and platforms for multimodal trip planning have come from the private sector, and transit agencies can continue to facilitate these services by maintaining high quality data that can be used by third party platforms and applications. CMAP and RTA should consider creating an archive of real time transit data similar to the data archive CMAP has of expressway system data. This could be an invaluable resource for future research efforts to better understand the transit system operating characteristics and performance trends over time.

Continue development of a universal and seamless payment platform S

A universal and seamless payment platform for transportation costs will improve the competitiveness of transit and facilitate multimodalism. Ventra is an important step toward an integrated and seamless fare system, but the program should be expanded over time to include Divvy bikeshare and other emerging modes.

Consider integrating automated vehicles into the suite of public transit options as they become available and cost competitive DA

Automated technologies may enable public transit agencies to provide better service to populations and markets that are not as effectively served by traditional forms of transit. Customers who have limited mobility, require paratransit services, or live in low-demand areas can benefit from AV-based transit services, once they have proven to be reliable and cost competitive. Mid-sized vehicles could serve the role of jitneys, collecting passengers for short trips, connecting them to services such as Metra stations or major bus routes with greater reliability and speed. Automated shuttles may also enable cost effective ways to increase frequency of service during late night, weekends, or special events. CMAP, RTA, and transit agencies do not need to take immediate action on this recommendation, but should follow developments in automated shuttle technologies.

Implement policies that discourage zero-occupancy vehicle travel

Identify and employ pricing strategies to manage demand and incentivize higher vehicle occupancy S

AVs have the potential to revolutionize the demand for mobility, roadway space, and parking space. One of the greatest risks presented by emerging technology is the potential effect of low or zero-occupancy vehicles on congestion and development patterns. CMAP and partners should take steps in the coming years to identify and analyze roadway and parking pricing policies related to automated vehicles, shared mode and vehicle occupancy. The region should develop and consider options for pricing roadway use and parking. New pricing strategies can support the competitiveness of transit, ensure funding is available for infrastructure maintenance and modernization, and temper the demand for low occupancy vehicle use. When more sophisticated payment collection options are available, dynamic pricing may become a more widely utilized and valuable tool within the region. Congestion pricing via the application of variable toll rates along major expressways would allow prices to rise during the morning and evening peak periods and encourage drivers during peak periods to switch to higher occupancy modes, routes, or times of day. If automated vehicles become prominent, tolls for zero occupancy vehicles should be higher than for occupied vehicles, particularly during peak periods and on congested routes.

Preserve and expand right of way for higher occupancy vehicles and active transportation H

Preserving and expanding right of way for higher occupancy vehicles will be critical to limiting low occupancy vehicle travel. This will be particularly essential in the CBD and other capacity-constrained, high-demand parts of the region, but communities throughout the region should preserve space on roads for transit and use technologies like transit signal priority to ensure that the region's infrastructure can be used to move large numbers of people efficiently.

Infrastructure changes can be made to accommodate the evolving shared mobility environment, including investments in traveler information, bicycle and pedestrian improvements, and mandated spaces for carsharing, bikesharing, and carpooling as well as more basic infrastructure such as sidewalks, trails, streetscapes, and signage. CMAP's Local Technical Assistance program can help communities plan for shared mobility infrastructure.

Support walkable, mixed use communities

Continue to prioritize growth and investment in existing communities S

A 2017 report from UC Davis points out that many of the best tools for avoiding potential additional auto-oriented development patterns caused by automated vehicles are the same tools planners currently use to encourage infill development.[37] If AVs and other emerging technologies facilitate rapid long-distance commuting, residents will increasingly make decisions on where to live based on other factors, including a community's quality of life. Investing in existing communities can increase their attractiveness to potential residents. CMAP and other stakeholders also have a crucial role to play in educating communities about the benefits of infill development.

As part of the ON TO 2050 development process, CMAP staff have written a Reinvestment and Infill strategy paper that expands on GO TO 2040's broad recommendations to direct growth and investment to existing communities, particularly transit station areas. In particular, promoting non-residential development in infill areas has emerged as an area of strategic emphasis. The report also highlights the need to focus infrastructure, assistance, and other efforts in employment centers, transit-rich or transit potential areas, and disinvested areas, prioritizing limited resources to create the strong impacts. The continuing evolution of mobility services that complement transit have the potential to overcome some barriers to infill development, for example, by making it easier for communities to plan for parking and land use patterns across several adjacent transit stations. CMAP can help develop best practices for engaging residents and businesses about their concerns over changes in land use, density, and parking availability.

Identify opportunities for flexible design and adaptive reuse as part of local planning S

Given the potential for AVs and shared mobility to substantially alter demand for retail and parking spaces, municipalities should encourage new development that can be used for multiple purposes or repurposed as space needs change. For example, the city of Denver requires the ground floor of stand-alone parking garages to be suitable for conversion to active non-parking use.[38] Local plans should identify opportunities to meet both shorter term needs as

[37] https://3rev.ucdavis.edu/wp-content/uploads/2017/04/3R.LandUse.Final_.pdf

[38] http://www.denverpost.com/2016/10/15/denver-developers-future-parking-self-driving-cars/

well as longer term shifts and goals. The Route 59 Metra Station in Naperville offers one example of this, where parking lots were designed to facilitate phased-in, denser development over the long term. CMAP, RTA, and other partners should help identify best practices and provide technical assistance to communities seeking to plan for future flexibility.
Work with communities to plan for evolving freight technologies and land uses

Monitor changes in goods movement and better understand land use implications NT

CMAP and partners should increase efforts to track changes in supply chain technologies and practices to support freight's crucial role in the Chicago economy, enhance day-to-day delivery of goods throughout the region, and improve quality of life for residents near freight facilities. In particular, CMAP should work to understand the local impacts of the emerging small distribution facilities, such as traffic, air quality, bike and pedestrian safety, and noise, as well as on the efficiency of goods movement within and through the Chicago region. As automated vehicle technology matures and freight applications become more common, CMAP and partners will need to keep abreast of their impact on local communities as well as on regional freight movement through the expressway system. These changing shopping and supply patterns may also add trucks to local roads. CMAP and communities should encourage continued innovations in safer and cleaner neighborhood-scale delivery vehicles.

Help communities plan for desired freight uses S
Local jurisdictions in northeastern Illinois—including counties, municipalities, and townships—regulate land use and development to protect the public health, safety, and welfare. Freight-related land uses can create challenges at both the local and regional scales. Preserving areas dedicated to freight-supportive activity ensures efficient movement of freight, promotes reinvestment in areas with existing freight infrastructure, supports environmental and land conservation goals, and supports the economic base for the region. However, local jurisdictions may have little incentive to modify regulations to facilitate freight-supportive land uses until conflicts arise. At the same time, permissive zoning categories may not align with community plans, leading to new local distribution facilities within transit station areas or areas designated for mixed-use development. CMAP and partners should help municipalities use the land use planning tools at their disposal to integrate industrial and freight development into communities, integrate market feasibility into plans to better match goals with market potential, and align zoning and other regulations with community plans to ensure that development meets feasible community goals.

Emphasize data collection and sharing as a regional priority

Continue to encourage the public sector to collect and share data NT

CMAP, RTA, and other transportation providers provide and process significant data for the region. As data continue to grow in value and availability, this role will only grow more

important. CMAP will continue to have a major role as a regional data aggregator and can continue to address data gaps and promote data consistency and availability throughout the region. CMAP can promote responsible data stewardship among partner agencies such as the City of Chicago, RTA, transit providers, counties, and communities, and may be able to play a role in helping cost-effectively collect, process and store transportation data. Given the increasing value of accurate, comprehensive, and timely roadway data to AV manufacturers and mobility companies, the public sector should identify ways to leverage provision of detailed data and analysis to private companies.

Work with partners to increase data sharing between public and private sector S

The next decades will involve a substantial amount of work determining what data is useful and what data is still needed. Much more research is needed in order to determine how well new mobility management strategies (e.g., one-way trips, peer-to-peer carsharing, shared-used modes, trip planning apps) are working and whether they are supporting regional performance goals. While regional data-sharing, especially between public and private sector entities, is always a challenge, the region should continue to emphasize open data sources and standards for privacy protection. CMAP can encourage private sector partners to share data and, where possible, require it contractually as a condition for access to public infrastructure or subsidies. Implementation of this recommendation will need to be led by a variety of stakeholders, most notably the major data asset holders. There are opportunities to engage in more partnerships among research universities in the Chicago region (i.e., University of Illinois at Chicago, Northwestern University, University of Chicago, Loyola University, DePaul University, etc.) which have experience dealing with personally identifiable information.

Ensure emerging technologies support inclusive economic growth

Pursue innovative, affordable mobility solutions for low income residents S

If new premium mobility options cause declining transit ridership, transit agencies may struggle to provide services that provide crucial access to jobs and other destinations for those who cannot afford car ownership. While investing in frequent service on high ridership corridors, transit agencies must also find ways to improve mobility for low income residents and communities in areas with limited transit service, or travel needs that are not well served by traditional transit options. Shared mobility and automated vehicle technologies have the potential to provide more frequent and direct service in low income neighborhoods, and improve connections to jobs that may currently require long transit trips or connecting multiple modes. CMAP can play a role in identifying gaps in the transportation ecosystem for economically disconnected communities, and work with transit agency and private sector partners to identify solutions.

Support land use planning and transportation investments in lower capacity or lower income communities S

Communities with limited resources will be less able to anticipate and respond to changing land use and traffic patterns caused by evolving transportation technologies. They may also be less able to purchase sensor, communication, and data processing equipment that could allow them to reap the benefits of new technology. For example, AVs could continue and accelerate an existing trend in disinvested communities of increased vehicle speed on roads designed to accommodate higher volumes of human-operated vehicles. Without thoughtful planning, biking and walking in these communities may become increasingly difficult and dangerous. At the same time, innovate technologies could reduce congestion, attract new investment, and better serve residents of economically disconnected communities, which often overlap with the region's strongest assets. CMAP should devote local planning resources to helping communities identify the potential benefits and pitfalls of new technologies with regard to economic success and quality of life. IDOT, counties, and other transportation providers should ensure that disinvested communities are not adversely impacted by improvements intended to facilitate new vehicle types and technologies.

Analyze opportunities and needs for new skills and jobs due to technological change in the freight cluster NT

Transportation technologies, including advances in freight and logistics technology, may affect the numbers and types of jobs available in the Chicago region in the future constraining job growth in some areas and creating new, unforeseen opportunities. CMAP's past regional economy work already analyzes trends in the region's traded clusters and the impact on employment in the region. CMAP and other stakeholders should continue this analysis, and include discussion of changing freight industries on employment, training, and job accessibility, particularly in economically disconnected communities.

Appendix 1: Interviews

For this project, researchers at Cambridge Systematics interviewed the following group of transportation technology leaders and visionaries to get their insights on emerging technology trends and issues. Among them were public and private sector technology developers, analysts, and users with an expertise in wide-ranging domains.

- **John Corbin**, Transportation Specialist at the Federal Highway Administration Resource Center, *ITS technologies*

- **Scott McCormick**, President of Connected Vehicle Trade Association, *connected/autonomous vehicles*
- **Valerie Shuman**, Principal at Shuman Consulting Group, LLC and Vice President of Connected Vehicle Trade Association, *connected/autonomous vehicles*
- **Josh Meyer**, Vice President of Strategic Planning – Aftermarket Division at Robert Bosch LLC, *aftermarket devices*
- **Jonathan Levy**, Open Data Program Manager at Chicago Department of Innovation & Technology, *data*
- **Monali Shah**, Director of Global Intelligent Transportation Solutions at HERE, *data*
- **Michael Horvath**, Chairman and President at Strava and **Brian Devaney**, Marketing Lead at Strava, *active transportation data*
- **Sara Rienhoff**, Platform Principal at Via, *ridesharing*
- **Sean Wiedel**, Assistant Commissioner at Chicago Department of Transportation and **Samantha Bingham**, Environmental Policy Analyst at Chicago Department of Transportation, *bike sharing*
- **Joseph Kopser**, President at moovel Group North America, *transit app developer*
- **Chris Ricciardi**, Chief Product Officer at Logistical Labs, *business logistics*
- **Steve Viscelli**, Senior Fellow in the Department of Sociology at University of Pennsylvania, *freight*