



MEMORANDUM

To: CMAP Transportation Committee

From: CMAP staff

Date: December 14, 2021

Re: ON TO 2050 update financial plan for transportation – draft baseline forecast

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

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

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

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

Baseline revenues and expenditures

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

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

Federal revenues	\$80.8
State revenues	\$200.4
Local revenues	\$208.4
Total baseline revenues	\$489.6
Roadway operating/administering expenditures	\$120.0
Transit operating/administering expenditures	\$136.3
Roadway capital maintenance	\$109.4
Transit capital maintenance	\$63.7
Total expenditures	\$429.5
Difference between baseline revenues and expenditures	\$60.1

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

Baseline revenues. The baseline revenue forecast includes all existing revenue sources the region receives for transportation purposes. The forecasts assume that northeastern Illinois will continue to receive revenues from federal, state, and local sources for constructing, operating, administering, and maintaining the current roadway and transit system. This includes periodic transit fare and toll rate increases, which will be necessary to ensure sufficient revenues to pay for these systems over the 32-year planning period.

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

In addition, the Infrastructure Investment and Jobs Act (IIJA) was enacted on November 15, 2021. Northeastern Illinois will receive a portion of the more than \$567 billion in transportation

funding between 2022 and 2026. The funding represents a funding increase over existing federal transportation programs. The forecast will assume that this level of funding continues through the planning period, with trends in annual increases similar to those previously experienced over the past twelve years. To ensure continued federal funding for transportation without the need for non-transportation revenue infusions, the federal government should increase the federal gas tax and index it to an inflationary measure, and implement innovative user fees as was described in ON TO 2050.

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

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

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

Expenditures to maintain the system in its current condition. The forecast includes the cost of capital maintenance on the region's roadway and transit system based on maintaining current conditions. These expenditure forecasts include capital maintenance expenditures completed in tandem with Regionally Significant Projects. This forecast does not include any costs that would address a need for increased capacity on the transportation system.

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

Transit asset condition by federal performance measure category

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

Source: National Transit Database

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

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

Forecast methodology

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

Baseline revenues

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

Locally programmed federal revenue - \$13.9 billion

These funds represent the annual federal apportionment that is passed to the Chicago region for programming. This includes the federal fund sources of CMAQ, Transportation Alternatives

Program-Local, Carbon Reduction Program, Surface Transportation Program-Local, and Surface Transportation Program-Counties.¹ Revenue estimates through 2026 are based on CMAP estimates for expected funding from IJJA. Revenues were assumed to grow 1.5 percent annually based on trends over the past 12 years.

Federal revenue from discretionary programs - \$10.4 billion

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

Federal transit revenue - \$27.0 billion

Forecasted revenues include State of Good Repair and Urbanized Area Formula Grant programs, as well as other federal transit formula grants.² Revenue estimates through 2026 are based on CMAP estimates for expected funding from IJJA. After 2026, revenues are forecast to grow at a rate of 1.5 percent annually, based on trends over the past 12 years.

State-programmed federal highway revenue - \$29.6 billion

These funds represent the annual federal apportionment programmed by the state of Illinois. This includes the federal fund sources of National Highway Performance Program; Surface Transportation Program; National Highway Freight Program; Highway Safety Improvement Program; Transportation Alternatives Program; Recreational Trails; the Bridge Investment Program; National Electric Vehicle Formula Program; and the PROTECT program.³ Revenue estimates through 2026 are based on CMAP estimates for expected funding from IJJA, and 74.43 percent of the statewide total annual apportionment in those years was assumed to go to northeastern Illinois. After 2026, 45 percent of the statewide total annual apportionment was assumed to go to northeastern Illinois, and revenues were assumed to grow 1.5 percent annually based on trends over the past 12 years.

State motor fuel tax - \$46.6 billion

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

These funds include the portion of state motor fuel tax revenue retained by the Illinois Department of Transportation (IDOT) for the Road Fund and State Construction Account. After

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

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

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

accounting for various statutory deductions, the region is assumed to receive 45 percent of these revenues for the purposes of funding state road construction and maintenance projects, estimated to total \$18.5 billion. The Regional Transportation Authority also receives funding based on allocations set in statute, which is forecast to total \$10.6 billion. This forecast also includes statutory disbursements to counties, townships, and municipalities, forecasted to total \$17.6 billion. Statutorily, Cook County receives a 16.74 percent share, and the remaining county share is based on motor vehicle registration fees received. Township share is based on share of mileage of township roads, and municipal share is based on population.

CMAP used forecasted annual vehicle miles traveled (AVMT) and average miles per gallon (MPG) to estimate revenue. For AVMT, CMAP used 2045 forecasts developed by the Illinois Department of Transportation, and extrapolated the forecast to 2050. Average annual percent change in AVMT between 2023-50 was 0.8 percent for passenger vehicles and 0.7 percent for other vehicles.

For passenger vehicle MPG estimates, CMAP created estimates based on National Highway Traffic Safety Administration (NHTSA) rules for Corporate Average Fuel Economy (CAFE) standards, estimated standards for 1978 through 2029 model years for cars and light trucks, and data about vehicle fleet from the Federal Highway Administration's 2017 National Household Travel Survey. CMAP estimates that vehicle fuel economy for passenger vehicles statewide will reach a fleetwide average of 29.3 MPG by 2050. While these CAFE standards are currently being finalized by the federal government, fuel economy across the entire vehicle fleet is still expected to increase with consumer choice, new technology, and adherence to standards promulgated by other states. For non-passenger vehicles, MPG was assumed to improve with NHTSA fuel efficiency standards for medium- and heavy-duty vehicles.

Sales tax on motor fuel - \$5.8 billion

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

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

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

State capital program - \$39.2 billion

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

Tollway revenue - \$74.7 billion

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

State Public Transportation Fund - \$18.4 billion

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

Other state transit - \$0.7 billion

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

RTA sales tax - \$65.9 billion

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

A third of collar county revenues generated from the RTA sales tax, Collar County Transportation Empowerment Funds, are returned to DuPage, Kane, Lake, McHenry, and Will counties to be used for roads, transit, and public safety. During the planning period, revenues

total \$6.7 billion and annual growth averages 3.0 percent. Growth assumptions were based on projected population growth combined with inflationary assumptions.

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

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

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

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

Other local revenues - \$76.9 billion

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

County MFTs for DuPage, Kane, Lake, McHenry, and Will counties were forecast separately using the same methodology for the state MFT, although baseline fuel economy was derived separately for each county, and AVMT growth was calculated using growth rates in AVMT for each county for each air quality conformity analysis year. These revenues are expected to total \$2.4 billion over the planning period.

Operations and administration expenditures

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

Roadway expenditures - \$120.0 billion

The forecast consists of operations and administrative costs for IDOT District 1, Illinois Tollway, counties, townships, and municipalities, including Tollway debt service and state debt service

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

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

Transit expenditures - \$136.3 billion

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

Capital maintenance expenditures to maintain current asset conditions

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

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

Roadway capital expenditures - \$109.4 billion

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

For roadways with condition data, CMAP staff used IDOT's asset management spreadsheet tool to forecast the cost to maintain pavement condition in its current condition. IDOT's tool is able to evaluate the impacts of different investment options for both pavements and bridges. CMAP

only utilized the pavement tool because CMAP had its own in-house bridge model already developed. The spreadsheet tool facilitates the analysis of programming funds for different pavement treatments using deterioration rates and treatment costs. Overall, 90 percent of the roadway miles included in the model are in acceptable condition (Interstates 89 percent, other NHS 92 percent, and other IDOT facilities 87 percent).

The main inputs for the IDOT tool are pavement condition and roadway improvement costs. Pavement condition, measured in Condition Rating Survey (CRS), used in the model came from the 2020 Illinois Roadway Information System public file. The roadway miles were broken down by facility type and CRS rating. The roadway improvement costs used in the model were developed through collaboration with CMAP stakeholders. The improvement costs were broken down by improvement and facility type (Interstate and Non-Interstate). Upcoming IDOT and Illinois Tollway pavement improvement projects were accounted for in the forecast.

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

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

Transit capital expenditures - \$63.7 billion

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

Next steps

Over the coming months, CMAP staff will refine the forecast based on feedback and research potential revenue sources that could fund transit capital to include in the plan's revenue recommendations. CMAP staff will also begin to draft forecasts for improving asset condition to meet the plan's condition targets. The financial plan for transportation will be a component of the full plan update document that will be shared for public comment in June 2022.

ACTION REQUESTED: Discussion

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