

# ON TO 2050 FINANCIAL PLAN FOR TRANSPORTATION APPENDIX

Draft  
for public  
comment

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## Summary

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 that “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(g)(11)). To achieve this, 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 ON TO 2050 planning period (2019-50). This appendix to ON TO 2050 provides detail on the methodology used in the financial plan for transportation forecast. The Mobility chapter of ON TO 2050 also contains the recommendations of the financial plan.

The following table details ON TO 2050’s financial plan for transportation, including forecasted revenues and funding allocations to planned investments on the system. The forecast indicates that revenues from existing sources will be insufficient to operate and maintain the transportation system through 2050, let alone enhance or expand the system. To keep the region’s transportation system in the condition it is in today, as well as fiscally constrain a limited number of enhancements and expansions within the long-range planning context, the region will need to prioritize the advancement of new and innovative revenue sources as major policy priorities in ON TO 2050.

Adding five reasonably expected revenues to the forecast will make a total of \$517.7 billion available over the planning period, of which 94 percent is necessary to operate, administer, and maintain the system in its current condition. This leaves 6 percent to allocate toward improving system condition, enhancing, and expanding the system.

As required by federal regulations, revenues and expenditures were forecast in year of expenditure dollars rather than real dollars, meaning that inflationary increases are included in the forecasts.



**Forecasted transportation revenues and expenditure allocations, 2019-50, in billions (year of expenditure dollars)**

<b>Revenues</b>	
Federal revenues	\$61.9
State revenues	\$166.8
Local revenues	\$233.0
<b>Subtotal core revenues</b>	<b>\$461.7</b>
Increase state MFT and replace with VMT	\$31.0
Expand the sales tax base to additional services	\$11.0
Federal cost of freight service fee	\$7.0
Regional revenue source	\$5.0
Local parking pricing expansion	\$2.0
<b>Subtotal reasonably expected revenues</b>	<b>\$56.0</b>
<b>Total revenues</b>	<b>\$517.7</b>
<b>Expenditures</b>	
Operate and administer roadway system	\$114.9
Operate and administer transit system	\$162.9
Maintain current roadway condition	\$126.8
Maintain current transit asset condition	\$81.1
<b>Subtotal cost to administer, operate, and maintain in current condition</b>	<b>\$485.8</b>
Improve system condition	\$9.5
Make system enhancements	\$17.6
Full cost of constrained regionally significant projects	\$72.7
Capital cost allocated as maintenance and reconstruction	-\$50.3
Offsetting revenues from tolling and value capture	-\$17.5
<b>Subtotal constrained new capacity cost of regionally significant projects</b>	<b>\$4.8</b>
<b>Total expenditures</b>	<b>\$517.7</b>

\*Note: expenditures do not add up to the totals due to rounding

## Process

The development of the financial plan included feedback generated over three years from CMAP committees as well as individual meetings and conversations with transportation implementing agencies and other stakeholders. During committee meetings throughout the process, CMAP staff presented draft forecasts for core revenues and expenditures necessary to operate, administer, and maintain the transportation system, as well as recommendations for reasonably expected revenues. Steps involved in this process included:

- Transportation System Funding Concepts strategy paper development during 2015 and 2016<sup>1</sup>

<sup>1</sup> Chicago Metropolitan Agency for Planning, *Transportation System Funding Concepts*, August 2016, <http://www.cmap.illinois.gov/documents/10180/570463/Transportation+System+Funding+Concepts/a40cfa4a-4743-4cfb-83c3-44f1d1d0ef02>



- Forums during 2015 and 2016 on pavement condition forecasting,<sup>2</sup> cost efficiencies in project delivery,<sup>3</sup> financial planning,<sup>4</sup> and bridge condition forecasting<sup>5</sup>
- Presentation on revenue trends in September 2016<sup>6</sup>
- Meetings with transportation implementing agencies to develop forecasting assumptions during fall 2016
- Presentations of revenue and expenditure forecasts, as well as allocation category definitions and reasonably expected revenues from January through May 2017
- Briefings with partners on forecasting revisions in July 2017
- Presentation of allocation options in September 2017
- Presentation of revised draft forecast in October 2017
- Convening of a subcommittee of the Board and MPO Policy Committee on transportation revenues in December 2017, February 2018, and March 2018<sup>7</sup>

## Revenues

Revenue forecasts are intended to account for all funding resources expected to be available to administer, operate, maintain, improve, enhance, and expand the system. In the fiscal constraint, all revenue sources are aggregated prior to the process of allocation to expenditure categories. This approach is suited to a long-range planning process focused on determining regional investment priorities, rather than budgeting for a program. In addition, the approach

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<sup>2</sup> Chicago Metropolitan Agency for Planning, “Planning Information Forum: Setting Pavement Condition Targets – September 18, 2015,” [http://www.cmap.illinois.gov/documents/10180/489731/pavement\\_forum\\_notes\\_v2.pdf/eb5004b1-4c9e-4e01-9082-362fd97d71b9](http://www.cmap.illinois.gov/documents/10180/489731/pavement_forum_notes_v2.pdf/eb5004b1-4c9e-4e01-9082-362fd97d71b9)

<sup>3</sup> Chicago Metropolitan Agency for Planning, “Planning Information Forum: Cost Efficiencies in Project Delivery – January 22, 2016,” <http://www.cmap.illinois.gov/documents/10180/520073/forum+notes01222016.pdf/f38bb61d-43b1-4227-a025-3d92bf171899>

<sup>4</sup> Chicago Metropolitan Agency for Planning, “Planning Information Forum: Financial Planning – April 22, 2016,” [http://www.cmap.illinois.gov/documents/10180/561602/financial\\_plan\\_forum\\_notes\\_final.pdf/ccb534a6-c5ad-45fe-a185-4e0a385608bc](http://www.cmap.illinois.gov/documents/10180/561602/financial_plan_forum_notes_final.pdf/ccb534a6-c5ad-45fe-a185-4e0a385608bc)

<sup>5</sup> Chicago Metropolitan Agency for Planning, “Planning Information Forum: Setting Bridge Condition Targets – May 20, 2016,” [http://www.cmap.illinois.gov/documents/10180/561602/bridge\\_forum\\_notes.pdf/17f7f792-abbe-4989-92ba-15a92b288f7a](http://www.cmap.illinois.gov/documents/10180/561602/bridge_forum_notes.pdf/17f7f792-abbe-4989-92ba-15a92b288f7a)

<sup>6</sup> Chicago Metropolitan Agency for Planning, “Revenue trends for transportation funding in the Chicago region,” April 3, 2017, [http://www.cmap.illinois.gov/updates/all/-/asset\\_publisher/UIMfSLnFfMB6/content/revenue-trends-for-transportation-funding-in-the-chicago-region](http://www.cmap.illinois.gov/updates/all/-/asset_publisher/UIMfSLnFfMB6/content/revenue-trends-for-transportation-funding-in-the-chicago-region)

<sup>7</sup> Chicago Metropolitan Agency for Planning, Subcommittee on Transportation Revenue, <http://www.cmap.illinois.gov/committees/other/subcommittee-on-transportation-revenue>



fits with CMAP recommendations emphasizing the need to use state motor fuel tax (MFT) and other user fees imposed on drivers for all transportation modes.

## Core revenues

The core revenue forecast totals \$461.7 billion over the 32-year planning period. Forecasts of core revenues include funding sources the region currently receives for transportation purposes – taxes, fees, tolls, and fares - 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. 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. In addition, this assumes that three 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. Until there is more clarity on its implementation, CMAP does not believe the provisions contained in the recent amendment to the state constitution regarding transportation funds will have an effect on the forecast.<sup>8</sup> The chart below provides forecasts for specific revenue sources, followed by methodology and assumptions.

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<sup>8</sup> Constitution of the State of Illinois, Article IX, Section 11, <http://www.ilga.gov/commission/lrb/con9.htm>. For more information, see Chicago Metropolitan Agency for Planning, “Constitutional Amendment Regarding Transportation Revenues,” October 5, 2016, <http://www.cmap.illinois.gov/documents/10180/583513/JointMemo--ConstitutionalAmendment10-05-2016.pdf/d250f1db-5eff-46fd-ba48-41833968f9a0>



**Core revenue forecast, 2019-50, in year of expenditure dollars**



**Locally programmed federal revenue - \$12.2 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, Surface Transportation Program-Local, and Surface Transportation Program-Counties.<sup>9</sup> Revenues were assumed to grow 2.25 percent annually, commensurate with growth

<sup>9</sup> For more information on these programs, see <http://www.cmap.illinois.gov/mobility/strategic-investment/regional-transportation-programs>.



in the economy. The Congressional Budget Office projects that non-farm business sector Gross Domestic Product will grow 2.25 percent annually between 2019-26.

### ***Other federal transit revenue - \$26.2 billion***

Forecasted revenues include New Starts, bus and bus facilities, State of Good Repair, and Urbanized Area Formula Grant programs, as well as other federal transit grants.<sup>10</sup> Revenue estimates through 2021 are based on the draft FFY2017-21 State/Regional Resources Table.<sup>11</sup> After 2021, revenues are forecast to grow at a rate of 2.25 percent annually, commensurate with growth in the economy. The Congressional Budget Office projects that non-farm business sector Gross Domestic Product will grow 2.25 percent annually between 2019-26.

### ***State-programmed federal highway revenue - \$23.5 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, and Recreational Trails.<sup>12</sup> Revenues were assumed to grow 2.25 percent annually, commensurate with growth in the economy. The Congressional Budget Office projects that non-farm business sector Gross Domestic Product will grow 2.25 percent annually between 2019-26. Forty-five percent of the statewide total annual apportionment was assumed to go to northeastern Illinois.

### ***State motor fuel tax - \$15.6 billion***

The current MFT rate is 19 cents per gallon (21.5 cents per gallon of diesel). These funds include the portion of state motor fuel tax revenue retained by the Illinois Department of Transportation (IDOT) for the Road Fund and State Construction Account. After accounting for various statutory deductions, the region is assumed to receive 45 percent of these revenues for the purposes of funding state road construction and maintenance projects, estimated to total \$6.8 billion between 2019-50. This forecast also includes statutory disbursements to counties, townships, and municipalities, forecasted to total \$8.8 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 forecasted annual vehicle miles traveled (AVMT) and average miles per gallon (MPG) to estimate revenue. To forecast AVMT, CMAP used actual statewide AVMT data for passenger vehicles (1996-2015) and for all other vehicles (2009-15) to calculate linear trendlines for AVMT.

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<sup>10</sup> For more information on Federal Transit Administration programs, see <https://www.transit.dot.gov/grants>.

<sup>11</sup> Chicago Metropolitan Agency for Planning, FFY2017-21 State/Regional Resources Table, November 2016, [http://www.cmap.illinois.gov/documents/10180/595578/Federal\\_Fiscal\\_Resource\\_TableFFY17.pdf/5a41df2c-0119-41e7-ab3a-443a39320f6a](http://www.cmap.illinois.gov/documents/10180/595578/Federal_Fiscal_Resource_TableFFY17.pdf/5a41df2c-0119-41e7-ab3a-443a39320f6a)

<sup>12</sup> For more information on Federal Highway Administration programs, see <https://www.fhwa.dot.gov/specialfunding>.





Average annual percent change in AVMT between 2019-50 was 0.3 percent for passenger vehicles and 0.9 percent for other vehicles.

For passenger vehicle MPG estimates over the planning horizon, CMAP created estimates based on National Highway Traffic Safety Administration (NHTSA) rules for Corporate Average Fuel Economy (CAFE) standards, estimated standards for 1978 through 2025 model years for cars and light trucks, and information about vehicle fleet from the Federal Highway Administration's 2009 National Household Travel Survey. CMAP estimates that vehicle fuel economy for passenger vehicles statewide will reach a fleetwide average of 36.7 MPG by 2050. While these CAFE standards are currently being reevaluated 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 and countries. For non-passenger vehicles, MPG was assumed to improve with NHTSA fuel efficiency standards for medium- and heavy-duty vehicles.

### ***State motor vehicle registration fees and other state fees - \$27.1 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 1.3 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. Fee rate increases were not assumed here, as they would likely be accounted for in future state capital programs.

### ***State capital program - \$24.6 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 three times during the planning period, in ten year intervals. Funding levels were assumed to grow 2.5 percent annually, with Illinois Jobs Now! funding levels assumed as the baseline.

### ***Tollway revenue - \$84.8 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. As of 2018, the commercial rate will be adjusted annually for inflation. Toll revenue projections were derived from estimates prepared for the Illinois Tollway by CDM Smith in May 2016. The projection assumed that the annual adjustment in commercial toll rates beginning in 2017 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 percent annually.



### **State Public Transportation Fund - \$22.2 billion**

These funds represent state matching funds for transit, which are equal to 30 percent of Regional Transportation Authority (RTA) sales tax and real estate transfer tax revenues. The forecast equals 30 percent of forecasted RTA sales tax and real estate transfer tax estimates.

### **Other state transit - \$1.4 billion**

The State has provided \$8.5 million 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 flat for the duration of the planning period.

### **RTA sales tax - \$78.4 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. RTA sales tax revenues are assumed to grow 3 percent annually throughout the planning period.

A third of collar county revenues generated from the RTA sales tax are returned to DuPage, Kane, Lake, McHenry, and Will counties to be used for roads, transit, and public safety. These are the Collar County Transportation Empowerment Funds, totaling \$7.9 billion. Growth in revenues generated for the collar counties are based on projected population growth combined with inflationary assumptions. During the planning period, annual growth averages 3.0 percent.

### **Chicago real estate transfer tax (RETT) - \$3.4 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 annual rate of 2.1 percent annually.

### **Transit passenger fares - \$53.0 billion**

This includes passenger fares for the CTA, Metra, Pace, and Pace ADA. The forecast was provided by the RTA. Revenues were forecast to grow at an average rate of 2.9 percent annually. This assumes average annual ridership growth of 1.1 percent and the remaining growth is assumed to come from periodic fare increases.

### **Other transit operating revenue - \$7.8 billion**

This includes other revenues for the RTA, CTA, Metra, Pace, and Pace ADA such as advertising revenue, investment income, and Medicaid reimbursements. These revenues are assumed grow at a rate of 2.7 percent annually, based on assumed rates of growth in system revenue and ridership.

### **Other local revenues - \$81.5 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 2012 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 3.1 percent.

County MFTs for DuPage, Kane, and McHenry 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.

## Reasonably expected revenues

Given the substantial deficit between core revenues and expenditures, new and increased revenues must be implemented to ensure the future viability of the region's transportation system. Federal guidance permits the inclusion of new sources of revenue that can be reasonably expected to be made available to carry out the transportation plan. ON TO 2050 proposes a total of \$56 billion across five reasonably expected revenues that represent policy changes that would require actions at the state and local levels. Recent experience both within the region and across the country suggests that all five revenue sources could be reasonably expected to be implemented over the planning horizon. The [Mobility chapter of ON TO 2050](#) contains more detail on these policy recommendations, and the following describes the methodology behind the forecast.

Other new funding sources, like congestion pricing, tolling, and value capture, or financing approaches like public private partnerships, are specific to particular projects. Building on recent advancements in funding within the state and region, advancement of value capture and tolling in particular offer potential for specific projects and corridors. Therefore, in the financial plan, they will be used to offset the cost of specific Regionally Significant Projects (RSPs), rather than being included as reasonably expected revenue.

### ***Increase state MFT and replace with VMT fee - \$31 billion***

Northeastern Illinois would receive increased revenues resulting from an initial state motor fuel tax rate increase, followed by the implementation of a vehicle miles traveled fee to replace the state motor fuel tax. The financial plan recommends a 15 cent increase in the motor fuel tax rate in the first three years of the planning period, as well as indexing that rate to an inflationary measure. An annual growth rate of 2.5 percent was used for the purposes of this forecast.

The plan also recommends implementation of a vehicle miles traveled fee in approximately 2025 at a rate of 2 cents per mile. The rate would be indexed to an inflationary measure, assumed to be 2.5 percent annually for the purposes of this forecast. The forecast assumes that funds would flow to northeastern Illinois in the same manner as the state MFT current does.



### ***Expand the sales tax base to additional services - \$11 billion***

Expansion of the sales tax to additional services would result in additional RTA sales tax revenues, as well as state sales tax disbursements to the RTA. The forecast assumes that additional consumer services would be added to the sales tax base in approximately 2021, resulting in a 15 percent increase in the base. Revenues are assumed to grow at a rate of 3.2 percent annually, which is the average annual growth rate for personal consumption expenditures in Illinois for certain consumer services between 2006-15. The forecast assumes no additional Public Transportation Fund revenue. This forecast does not include revenues that would accrue to the state or other local jurisdictions due to a sales tax base expansion.

### ***Federal cost of freight service fee - \$7 billion***

The federal government would impose a new cost of freight service (COFS) fee, with a portion of revenues allocated to the region. The forecast assumes that a COFS fee would be implemented as part of the next federal transportation bill in 2020. Estimates from the Eno Center for Transportation indicate that a fee of 0.3 percent assessed on the cost of freight shipments would raise \$2 billion nationwide in the first year.<sup>13</sup> The forecast assumes that the region's share of the federal revenue would total 8.1 percent, which is equivalent to half of its share of the nation's truck and rail freight traffic. It is assumed that allocations will grow at the same rate as other federal revenue in the forecast (2.25 percent).

### ***Regional revenue source - \$5 billion***

Given limited state and federal funds, a regional revenue source could help match federal dollars, implement regional transportation priorities, or advance modernization initiatives. A regional revenue source, such as a 4 cent MFT or \$15 vehicle registration fee, would be imposed in the 7-county region in the first three years of the planning period. Any flat rates would be indexed to an inflationary measure, assumed to be 2.5 percent annually for the purposes of this forecast. Implementation should be pursued along with statewide transportation revenue reform.

### ***Expansion of priced parking - \$2 billion***

Municipalities in the region would increase the number of priced parking spots in the region throughout the planning period. Pricing of unpriced parking spots would be phased in annually, starting with 550 spaces in the first year. The number of priced spaces would accelerate as the concept gained popularity. Prices and rate structures would vary by location, and it was assumed that the regional average would total \$4 per day, with inflationary rate increases of 2.5 percent annually for the purposes of this forecast. Given the local nature of parking pricing, these revenues would help implement local priorities.

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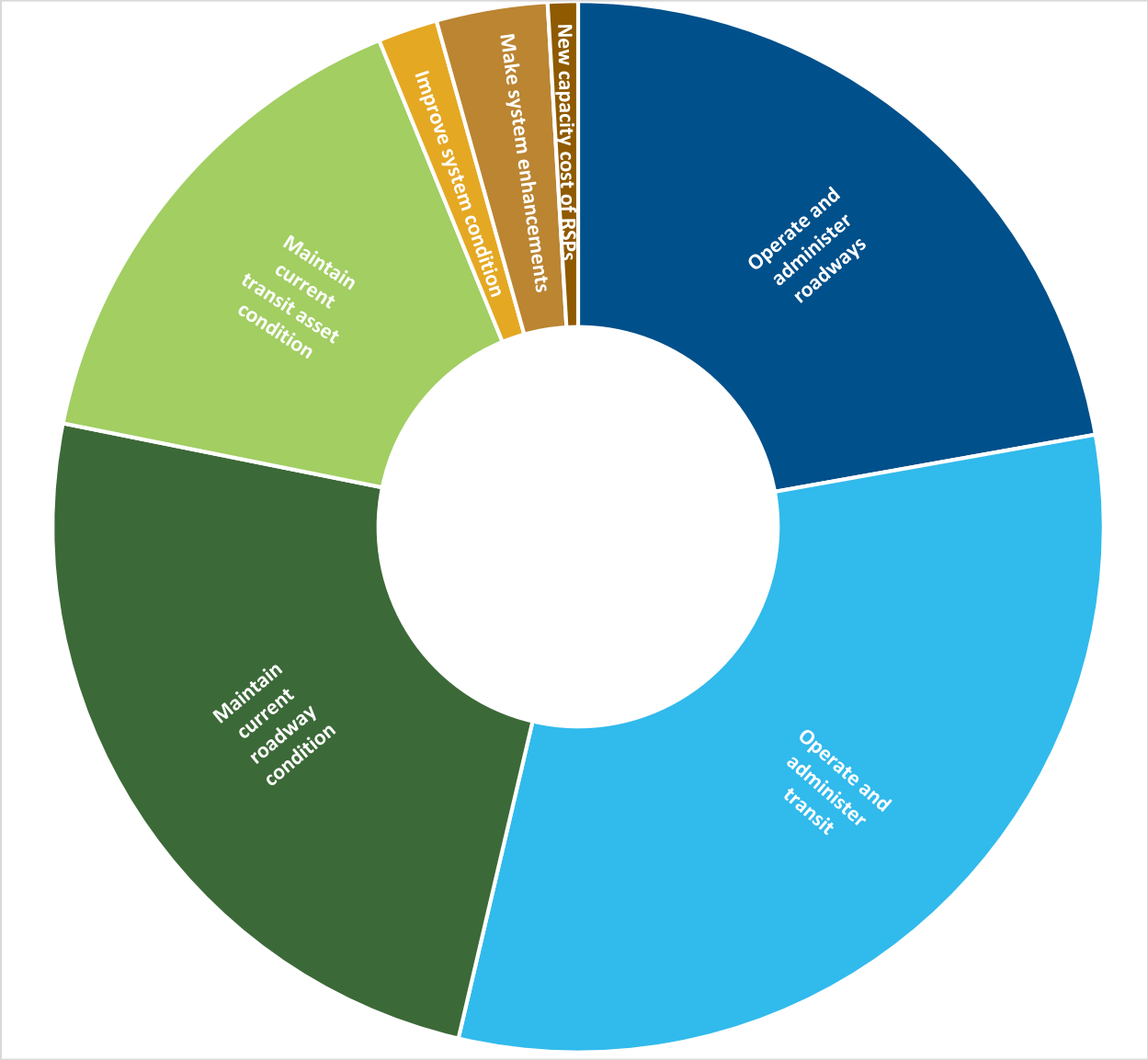
<sup>13</sup> Eno Center for Transportation, "Delivering the Goods: Recommendations for Funding a Federal Freight Program," May 2016, <https://www.enotrans.org/wp-content/uploads/2016/05/DeliveringTheGoods.pdf?x43122>.



# Expenditures

The financial plan for transportation prioritizes how to invest available revenues by allocating planned expenditures into different categories. These categories account for funding for administering, operating, maintaining, improving, enhancing, and expanding northeastern Illinois' transportation system. The following section provides an overview of these categories.

**ON TO 2050 expenditure allocations, 2019-50, in year of expenditure dollars**



## Operations and administration

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 - \$114.9 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. Illinois Tollway and IDOT District 1 operating and administrative expenditures were forecasted using a linear trendline based on the most recent 15 years of available data. During the planning period, annual growth averaged 2.0 percent for IDOT District 1 and 2.2 percent for the Illinois Tollway. Tollway interest payments were forecast on a linear trendline using 2011-15 data, and growth averaged 2.9 percent annually during the planning period. Series A bond payments were forecast to grow 2.0 percent annually during the planning period, and it was assumed that 45 percent of these costs were attributable to the region.

2017 county budget documents provided baseline county expenditures. Municipal and township expenditures were estimated from the local highway operations expenditures reported to the 2012 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 2.4 percent annually during the planning period due to growth in inflation.

### ***Transit expenditures - \$162.9 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 2.4 percent annually during the planning period.

## Capital maintenance 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 most recent data available indicate that 76.5 percent of National Highway System roadways are of acceptable ride quality, 9.3 percent of bridges are in poor condition, and 68.4 percent of transit assets are in a state of good repair. 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.

Note that continuing current levels of investment will lead to worsening asset condition; maintaining current condition actually represents a significant increase in investment over current regional investment practices. For instance, with only current levels of funding available for transit maintenance, the system would significantly deteriorate, with just 41.9 percent of assets in a state of good repair at the end of the planning period.

Based on analysis and input from transportation agencies, staff inflated maintenance costs for year-of-expenditure using a 2.5 percent rate. Over the past 32 years, the average annual percent change in the U.S. Consumer Price Index was 2.6 percent, down from nearly 3 percent in the 26 years prior to the GO TO 2040 2014 update. FHWA's National Highway Construction Cost Index has been essentially flat since 2009, while Engineering News Record's national construction cost index has experienced average annual increases of just 2.7 percent over the past several years.

### ***Roadway capital expenditures - \$126.8 billion***

Capital maintenance includes costs for expressways, arterials, collectors, and local roads. Various state, county, municipal, and township transportation departments provided feedback on modeling assumptions, unit costs, and lifecycle assumptions. Unit cost assumptions were assumed to increase 2.5 percent annually.

To estimate capital maintenance expenditures for the National Highway System (NHS),<sup>14</sup> staff used the Highway Economic Requirements System-State (HERS-ST) model, an optimization model that identifies projects based on deficiencies in the roadway network and selects the projects with the highest benefit given different constraints and objectives defined by the user. The model forecasts pavement condition using the current condition of roadways as well as factors such as truck volume. If the current or forecasted conditions meet a deficiency threshold of International Roughness Index less than 170, HERS-ST will identify potential improvements and calculate their benefit-cost ratios. The scenario used assumed that current pavement conditions would be maintained during the planning period. Upcoming IDOT and Illinois Tollway pavement improvement projects were accounted for in the model.

CMAAP staff created a 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

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<sup>14</sup> Chicago Metropolitan Agency for Planning, Congestion Management Networks, [http://www.cmap.illinois.gov/mobility/roads/cmp#Congestion\\_Management\\_Networks](http://www.cmap.illinois.gov/mobility/roads/cmp#Congestion_Management_Networks)



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 highway assets in the region.

**Transit capital expenditures - \$81.4 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 2019-48, with extrapolation for the final two 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.

## Improve system condition

This category constrains investments to help achieve targets for various performance measures. Federal transportation law requires that short- and long-range transportation planning efforts incorporate performance measures for infrastructure condition, safety, and other topics. Based on the limits of available data and methodologies, this funding allocation incorporates pavement, bridge, and transit asset condition measures. ON TO 2050 allocates \$9.5 billion toward improving the condition of both transit assets and NHS roadways and bridges. These estimates use the same methodology as the capital maintenance expenditures. The following table provides an overview of how the financial plan allocates funds toward meeting system condition goals.

**Allocations toward meeting asset condition goals, 2019-50, in billions (year of expenditure dollars)**

Transit assets from 68% to 73% in state of good repair	\$4.7
NHS roadways from 24% to 10% in poor condition	\$3.8
NHS bridges from 8.7% to 6.5% in poor condition	\$1.0
<b>Total allocation for improving system condition</b>	<b>\$9.5</b>

## System enhancements

This category includes capital and operational enhancements or improvements not already constrained under other categories. Examples include bicycle, pedestrian, and ADA improvements; highway management and operations, including intelligent transportation systems; expansions that do not meet the RSP definition; and intersection improvements. It is assumed that the \$17.5 billion constrained in this category is sufficient to reasonably provide for smaller improvements to the system.





## Regionally significant projects

To identify RSPs, CMAP solicited candidate projects from partner agencies as well as from the public, then undertook an extensive evaluation of the benefits of the projects, which is documented in the Project Benefits Report appendix. This category will constrain specific projects that meet one of the following criteria:

- 1) Costs at least \$100 million and either
  - a) changes capacity on the NHS or is a new expressway or principal arterial
  - b) changes capacity on transit services with some separate rights-of-way or shared right-of-way where transit has priority over other traffic
- 2) Costs at least \$250 million and improves the condition of a particular road or transit facility

The constrained RSPs total \$45.6 billion, which takes into account incremental operating costs (\$3.7 billion) and capital costs (\$18.7 billion for new capacity and \$23.3 billion for reconstruction elements) as well as anticipated cost inflation by the time the project is constructed and begins operation. Except for highway or transit extensions, most projects include reconstruction elements. The cost of maintaining existing infrastructure is accounted for in the operations and administration element of the financial forecast, meaning that the allocation for RSPs constrains the cost associated with new capacity.

ON TO 2050 acknowledges that tolling will be needed to defray the costs of rebuilding the expressway system and that value capture will be required to fund transit needs. The plan assumes that tolling would be implemented on the entire facility following most planned reconstruction projects, generating revenue to support \$14.6 billion in bond funds to offset project costs. Transit projects can also generate revenue that can be used to offset their costs. Transit Facility Improvement Areas – in which a form of value capture can be used to fund transit capital investments – are assumed to generate revenue to support \$2.97 billion in bond funds to offset transit project costs. The amount constrained for new capacity after taking tolling and value capture into account totals \$4.9 billion.



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The Chicago Metropolitan Agency for Planning (CMAP) is our region's comprehensive planning organization. The agency and its partners are developing ON TO 2050, a new comprehensive regional plan to help the seven counties and 284 communities of northeastern Illinois implement strategies that address transportation, housing, economic development, open space, the environment, and other quality-of-life issues.

ON TO 2050 is scheduled for adoption in October 2018.