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MEMORANDUM

To: MPO Policy Committee

From: CMAP staff

Date: March 2, 2017

Re: ON TO 2050 Financial Plan for Transportation Update

As required by law, CMAP must prepare a financial plan, including 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). 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" (CFR § 450.322 (f) (10)).

To fulfill these requirements as part of the quadrennial long-range plan, CMAP is determining a base set of assumptions regarding revenue and expenditures trends, understanding the future implications of current policies, and developing a comprehensive, accurate, and straightforward methodology that is appropriate for a planning-level forecast. Similar to GO TO 2040, CMAP staff is performing financial analysis and conducting policy research to develop revenue and expenditure forecasts, including reasonably expected revenues, in consultation with CMAP committees, stakeholders, and experts.

This memo describes the ON TO 2050 initial forecasts for core revenues as well as expenditures to operate and administer the current system and maintain its current state of repair. The memo also compares these forecasts to GO TO 2040. CMAP will continue to refine these forecasts, based on feedback from and collaboration with implementers.

Core revenues and expenditures to operate, administer, and maintain

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 32-year ON TO 2050 planning period (2019-2050). Note that core revenues include local, state, and federal revenue streams already in place.

Draft forecasts of core revenues compared to operations, administration and capital maintenance expenditures, 2019-2050, in $ millions (year of expenditure)

Federal revenues	$61,919
State revenues	$165,007
Local revenues	$232,968
Total core revenues	**$459,894**
Roadway operating/administering expenditures	$124,562
Transit operating/administering expenditures	$172,542
Roadway capital maintenance	$126,820
Transit capital maintenance	$81,141
Total expenditures	**$505,065**
Difference between core revenues and expenditures	**($45,171)**

CMAP staff estimates that the expenditures for operating and maintaining the transportation system to its current state of repair will greatly exceed the core revenues forecasted to be available over the planning horizon 2019 to 2050. Moreover, the expected funding will not allow for additional improvements, enhancements, or expansions to the system. GO TO 2040 prioritized investments in maintaining the existing transportation system first, as well as improvements and enhancements, to achieve the goal of a modern transportation system. Pursuing expansion projects, while important, remained a lower priority than these other activities. To keep the region's transportation system in the condition it is in today, as well as fiscally constrain a limited number of modernization and expansion activities 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.

Core revenues. The core revenue forecast totals $459.9 billion over the 32-year planning period. Forecasts of core 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. 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, we do not believe the provisions contained in the **recent "lockbox" amendment** to the state constitution regarding transportation funds (**Article IX, Section 11**) to have an effect on the forecast.

As with GO TO 2040, revenue sources will be 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 fits with CMAP recommendations emphasizing the need to use state motor fuel tax revenue for all transportation modes and congestion pricing revenues to support enhanced transit service or arterial improvements in priced corridors.

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 2012, the most recent year available.

Expenditures to maintain the system. 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 structurally deficient, 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. ON TO 2050 may include targets for pavement, bridge, and transit asset condition that may represent an improvement over current conditions, as well as allocations in the fiscal constraint to meet these targets, to the extent that doing so is identified as a regional priority and feasible within funding constraints.

Staff used the Highway Economic Requirements System-State (HERS-ST) model to forecast pavement condition and expenditures on 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. 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.

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.

Maintenance costs were inflated for year-of-expenditure using a 2.5 percent rate, a reduction from the 3 percent annual increases assumed in GO TO 2040. By most measures, cost increases have been lower in recent years. 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 of the past several years.

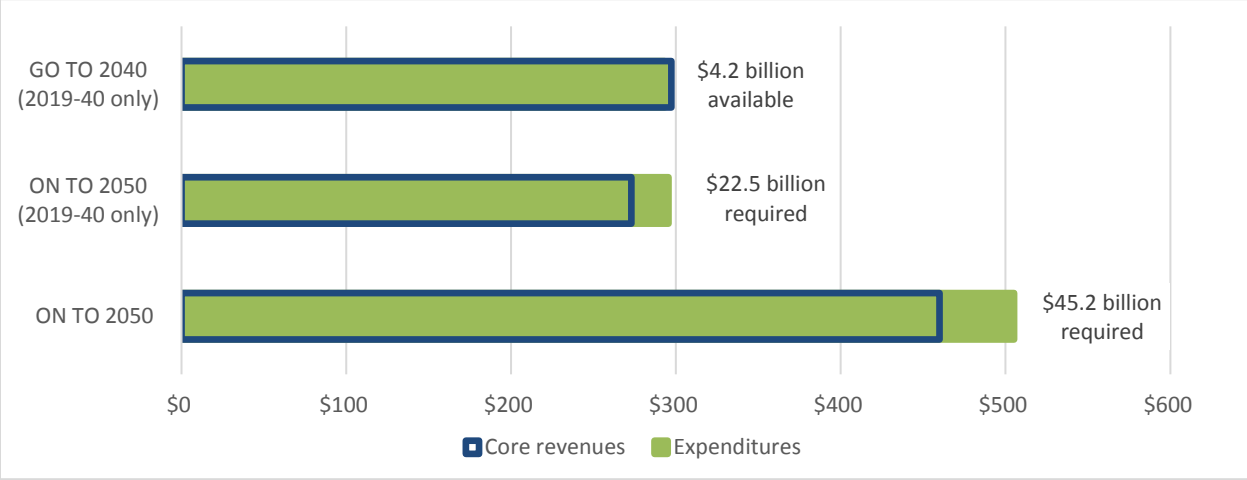
Comparison between the GO TO 2040 update and ON TO 2050

The methodology used to develop forecasts for ON TO 2050 remains largely the same as the GO TO 2040 forecast updated in 2014. There are three primary ways that the draft ON TO 2050 forecast differs from the GO TO 2040 forecast.

- Different annual **growth rates** were used when the data indicated that a different rate would better reflect trends.
- The **base from which growth rates are derived and/or applied** is different because actual or estimated 2015 and 2016 revenues were different from the GO TO 2040 forecast.
- Different **methodology** was implemented in some cases to better reflect expenditures made for transportation purposes, in particular basing maintenance forecasts on the cost of maintaining the system in its current condition.

The following chart compares the GO TO 2040 forecast to the draft ON TO 2050 forecast over the same planning horizon (2019-2040). For comparison purposes, the ON TO 2050 forecast is shown in terms of a 22-year planning period (2019-40) as well as the full 32-year planning period (2019-2050).

GO TO 2040 and ON TO 2050, core revenues as compared to maintenance, operations, and administration expenditures, in billions of year of expenditure dollars



Overall, the ON TO 2050 forecast of core revenues and operating and capital maintenance expenditures is more constrained than the GO TO 2040 forecast. Lack of increased revenues drives this result. For comparable years, more revenue was available in the GO TO 2040 forecast: core revenues exceeded expenditures by $4.2 billion in GO TO 2040 compared to a $22.5 billion deficit in ON TO 2050 However, when the entire ON TO 2050 planning period is included, expenditures exceed core revenues by $45.2 billion over the 32-year planning period.

Potential reasonably expected revenues as well as enhancement, state of good repair, or regionally significant project expenditures have not yet been addressed in this forecast.

With regard to revenues, select major differences between the two forecasts include the following:

- Federal highway revenues are lower in ON TO 2050 due to lower annual growth rate assumptions; 2.25 percent as compared to 3.6 percent in GO TO 2040.
- State motor fuel tax revenue was forecast to experience less decline in ON TO 2050 due to higher revenue in 2015 and 2016 than forecast in GO TO 2040.
- Transit passenger fare revenues are lower in ON TO 2050 due to slower than anticipated growth in fare revenue in recent years.
- RTA sales tax revenue exhibited a slightly higher forecast, in part because actual and estimated revenues generated in recent years were higher than in the GO TO 2040 forecast.

These differences drove an overall lower revenue forecast for core revenues than in GO TO 2040. However, the ON TO 2050 forecast for operating and capital maintenance expenditures is also lower than the GO TO 2040 forecast. Just as growth rates for revenues have been lower than assumed in GO TO 2040, the same is true for growth in expenditures.

- Roadway capital maintenance expenditure forecasts were lower than in GO TO 2040, in part because of low growth in unit costs since the GO TO 2040 forecasts were developed. State and local highway departments consulted by CMAP indicated that capital costs have mostly stayed constant since GO TO 2040 was adopted, rather than increasing at the rates assumed in GO TO 2040.
- Transit capital maintenance expenditure forecasts for ON TO 2050 reflect the amount necessary to keep assets in their current condition. In contrast, GO TO 2040 assumed expenditures would reflect current regional investment practices, which would increase the backlog of assets in need of maintenance.
- A 2.5 percent growth rate for roadway and transit capital maintenance expenditures was used for the draft ON TO 2050 forecast, while 3 percent growth was used for GO TO 2040. Using a lower growth rate drove the forecast lower than it otherwise would have been.

Next steps

CMAP staff would like feedback on the draft forecast contained in this document. Over the next few weeks, CMAP staff will develop options for reasonably expected revenues and revise forecasts based on feedback. This information will be presented to the MPO Policy Committee in June.

Questions

While adding in reasonably expected revenues would likely cover the full amount of this forecast, little would be left for other priorities. What approach should the region take?

- Allow the condition of transit assets, roadways, and bridges to drop?
- Allow the condition of only certain assets to drop while prioritizing other assets?
- Allocate substantially less funding to enhancing and expanding the system?
- Find other ways to reduce operating or maintenance expenditures?

Forecast methodology

This section will discuss the specific methodologies used for projecting revenues for ON TO 2050 over the 2019-2050 planning period.

Core revenues

Locally-programmed federal revenue

Draft forecast: $12.2 billion	Draft assumptions for ON TO 2050
Portion of annual federal apportionment that is sub-allocated 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.	Revenues were assumed to grow 2.25% annually. This is based on the assumption that federal funds will come to the region at a rate commensurate with growth in the economy. Congressional Budget Office projects that non-farm business sector Gross Domestic Product will grow 2.25% annually between 2019 and 2026.

Other federal transit revenue

Draft forecast: $26.2 billion	Draft assumptions for ON TO 2050
Projection includes New Starts, bus and bus facilities, State of Good Repair, and Urban Formula programs, as well as other federal transit grants.	Revenues through 2021 are based on the FFY2017-21 State/Regional Resources Table. After 2021, revenues are forecast to grow at a rate of 2.25% annually. This is based on the assumption that federal funds will come to the region at a rate commensurate with growth in the economy. Congressional Budget Office projects that non-farm business sector Gross Domestic Product will grow 2.25% annually between 2019 and 2026.

State-programmed federal highway revenue

Draft forecast: $23.5 billion	Draft assumptions for ON TO 2050
Portion of annual federal apportionment that is allocated to the State of Illinois for programming. This includes the federal fund sources of National Highway Performance Program, Surface Transportation Program-Urban, Highway Safety Improvement Program, Transportation Alternatives Program, and Recreational Trails.	Revenues were assumed to grow 2.25% annually. This is based on the assumption that federal funds will come to the region at a rate commensurate with growth in the economy. Congressional Budget Office projects that non-farm business sector Gross Domestic Product will grow 2.25% annually between 2019 and 2026. Forty-five percent of the statewide total annual apportionment was assumed to go to northeastern Illinois.

State Public Transportation Fund

Draft forecast: $22.2 billion	Draft assumptions for ON TO 2050
State funds equal to 30 percent of RTA sales tax and real estate transfer tax revenues.	Revenues from this matching fund equals 30% of forecasted Regional Transportation Authority (RTA) sales tax and real estate transfer tax estimates.

State Motor Fuel Tax

Draft forecast: $6.8 billion	Draft assumptions for ON TO 2050
Portion of state motor fuel tax retained by IDOT for the Road Fund and State Construction Account. The current rate is 19 cents per gallon (21.5 cents per gallon of diesel).	Using a methodology to account for increasing vehicle fuel economy, revenues generally decreased throughout the planning period. 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 (2009-2015) to calculate linear trendlines for AVMT. Average annual percent change in AVMT between 2019 and 2050 was 0.3% for passenger vehicles and 0.9% for other vehicles. For MPG estimates for passenger vehicles 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. For non-passenger vehicles, MPG was assumed to improve with NHTSA fuel efficiency standards for medium- and heavy-duty vehicles. After accounting for various statutory deductions, the region is assumed to receive 45% of these revenues for the purposes of funding state road construction and maintenance projects.

State motor vehicle registration fees and other state fees

Draft forecast: $25.4 billion	Draft assumptions for ON TO 2050
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 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.

Tollway revenue

Draft forecast: $84.8 billion	Draft assumptions for ON TO 2050
Toll revenues forecasted to be collected on the 286-mile system, as well as other operating revenues. The current toll rate structure went into effect in 2012. Following 2017, 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 2.0% annually.

State capital program

Draft forecast: $24.6 billion	Draft assumptions for ON TO 2050
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% annually, with Illinois Jobs Now! as a base.

Other state transit

Draft forecast: $1.4 billion	Draft assumptions for ON TO 2050
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

Draft forecast: $70.5 billion	Draft assumptions for ON TO 2050
The RTA sales tax is equivalent to 1.25% of sales in Cook County and 0.75% of sales in DuPage, Kane, Lake, McHenry, and Will counties. The RTA receives 2/3 of the collar county revenues.	Forecast was provided by the RTA. RTA sales tax revenues are assumed to grow 3% annually throughout the planning period.

Collar County Transportation Empowerment Program

Draft forecast: $7.9 billion	Draft assumptions for ON TO 2050
1/3 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.	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%.

Local allotment of state MFT

Draft forecast: $8.8 billion	Draft assumptions for ON TO 2050
Counties, townships, and municipalities receive a disbursement of state MFT	State MFT revenue was forecasted using the methods explained above.

revenue. Cook County receives a 16.74% share. 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.	

Other local revenues

Draft forecast: $81.5 billion	Draft assumptions for ON TO 2050
These are local revenues, such as property tax revenue, sales tax revenue, local motor fuel taxes and impact fees used for transportation, excluding the RTA sales tax, state funds, and federal funds. Local governments with jurisdiction over transportation include counties, townships, and municipalities.	Revenues were calculated for municipalities and townships using 2012 U.S. Census of Governments data, which includes all local governments in the region. 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% inflationary adjustment. Average annual growth regionwide was 3.1%. 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.

Chicago Real Estate Transfer Tax (RETT) (portion for CTA)

Draft forecast: $3.4 billion	Draft assumptions for ON TO 2050
The $1.50 per $500 of value of the City of Chicago's RETT is transferred to the CTA.	Revenues were forecast to grow at an average annual rate of 2.1% annually.

Transit passenger fares

Draft forecast: $53.0 billion	Draft assumptions for ON TO 2050
This includes passenger fares for the CTA, Metra, Pace, and Pace ADA.	Forecast was provided by the RTA. Revenues were forecast to grow at an average rate of 2.9% annually. This assumes average annual ridership growth of 1.1% and the remaining growth is assumed to come from periodic fare increases.

Other transit operating revenue

Draft forecast: $7.8 billion	Draft assumptions for ON TO 2050
This included 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% annually, based on assumed rates of growth in system revenue and ridership.

Expenditures for administering, operating, and capital maintenance

Roadway operations expenditures

Draft forecast: $ 124.6 billion	Draft assumptions for ON TO 2050
Includes highway operations and administrative costs for IDOT District 1, Illinois Tollway, counties, townships, and municipalities. Also includes 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% for IDOT District 1 and 2.2% for the Illinois Tollway. Tollway interest payments were forecast on a linear trendline using 2011-2015 data, and growth averaged 2.9% annually during the planning period. Series A bond payments were forecast to grow 2.0% annually during the planning period, and it was assumed that 45% of these costs were attributable to the region. Municipal and township highway operations and administrative 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 expenditures were obtained from 2017 county budget documents. County, township, and municipal expenditures were assumed to grow at an average rate of 3.1 percent annually during the planning period due to growth in inflation and population.

Transit operations expenditures

Draft forecast: $172.5 billion	Draft assumptions for ON TO 2050
Includes operating, administration, and debt service costs for the RTA, CTA, Metra, Pace, and Pace ADA.	Operating and administrative expenditures were forecast to grow 3.1 percent annually during the planning period. estimated using linear trendlines of 2007-2015 actual and planned expenditure data, totaling $96.4 billion. The interest portion of debt service payments were forecast for to grow an average of 2.4% annually during the planning period.

Roadway capital expenditures

Draft forecast:	Draft assumptions for ON TO 2050
Capital maintenance costs for the interstate system, state highways, Illinois Tollway highways, and local roads.	Capital maintenance expenditures for NHS roadways were estimated using the 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 IRI ≥ 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 included as user-specified improvements. Capital maintenance expenditures for bridges were developed using a model created by CMAP staff. The CMAP bridge model is based on deterioration curves for Illinois from National Bridge Inventory (NBI) 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. Capital maintenance expenditures for non-NHS roadways and traffic signals are based on assumptions for unit costs and maintenance cycles. These assumptions are then applied to the inventory of highway assets in the region. Various state, county, municipal, and township transportation departments provided feedback on modeling assumptions, unit costs, and lifecycle assumptions. Expenditures were inflated 2.5% annually.

Transit capital expenditures

Draft forecast: $81.4 billion	Draft assumptions for ON TO 2050
Capital maintenance costs for the CTA, Metra, Pace, and Pace ADA.	Results from the RTA's COST model were used to forecast maintenance for a period of 2019-48. The final two years of the planning period were extrapolated. The scenario assumed that the current condition of assets would be maintained across the planning period. Expenditures were inflated 2.5% annually.

ACTION REQUESTED: Discussion

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