# Financial Modernization and Risk Analysis (MARA) Study: Residual Expenditures Module Summary

MARA Study Overview

As directed by HB 330, the Financial Modernization and Risk Analysis Committee (MARA) has undertaken a study of the long-term financial needs of the state and local governments, while considering changes in demographics, technology, and the economy. The MARA committee relies on a data-driven approach to identify potential financial concerns for the state and local governments. As such, the MARA committee has developed a forecasting model based on a range of data sources with the goal of identifying future financial risks to the state's revenues and expenditures, as well as considering impacts on local governments' revenues and expenditures. This approach has a medium- to long-term time focus, from present to 2040.

MARA Beige Module Overview

The 2040 MARA model is broken into "modules". The modules reflect different aspects of the revenues and expenditures of state government, local government, and school districts. The diagram at the right shows the current components.
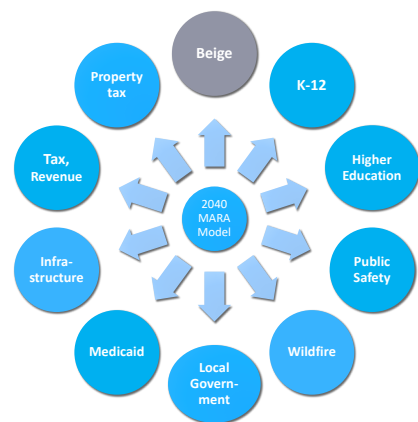
The Residual Expenditures module, often referred to as the Beige module, is an expenditure component designed with the intent of capturing growth in all the smaller sections of government that are not specifically modeled. This is done such that total expenditures are captured, and a complete picture of spending can be viewed.

Key Takeaways: MARA Residual Module

➢ This is a catch all module to capture any expenditures not specifically modeled

➢ The forecast is basic regression on past data using both population and the consumer price index (CPI). This approach causes the forecast period to closely mimic historical trends

➢ The deviation from historic trend that does occur happens in FY 2022 due to higher-than-trend inflation

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MARA Residual Module – Data Sources

Data for the tax and revenue module is sourced from the Montana Statewide Accounting, Budgeting and Human Resources Systems (SABHRS), eREMI population projections, and IHS population and economic projections.

MARA Residual Expenditure Module – Methodology

Several steps are needed to create the residual module:

1. Define what "residual" is.
   a. The SABHRS accounting data contains many fields such as revenue vs expenditure type, department, subclass, etc. which allow a user to organize the data. The other modules will have a flag to identify which expenditure or revenue lines are associated with that specific module. The residual expenditure is defined as all expenditures not flagged as an otherwise called-out module.
2. Create a summed definition of the historic data.
   a. With the lines of SABHRS defined as other, those lines can be summed up as a defined variable for use in both showing the history as well as the forecast.
3. Forecast - regressing off the historic data, IHS consumer price index (CPI) forecasts, and the selected population forecast.
   a. Both CPI and population forecasts are used for the regression forecast with equal weight being given to each metric. Historically, CPI and population moved in step with each other so a regression would typically work better using only one of the variables. With recent inflation pressure, this relationship is not holding. This forecast methodology addresses this issue by doing distinct regressions with each variable and then taking the average of the outputs.

MARA Revenue Module – Stakeholder Awareness and Participation

Legislative Fiscal Division (LFD) has or is in the process of receiving feedback on the residual module from the Bureau of Business and Economic Research at the University of Montana as well as ECONorthwest, a consultant group based on the west coast.
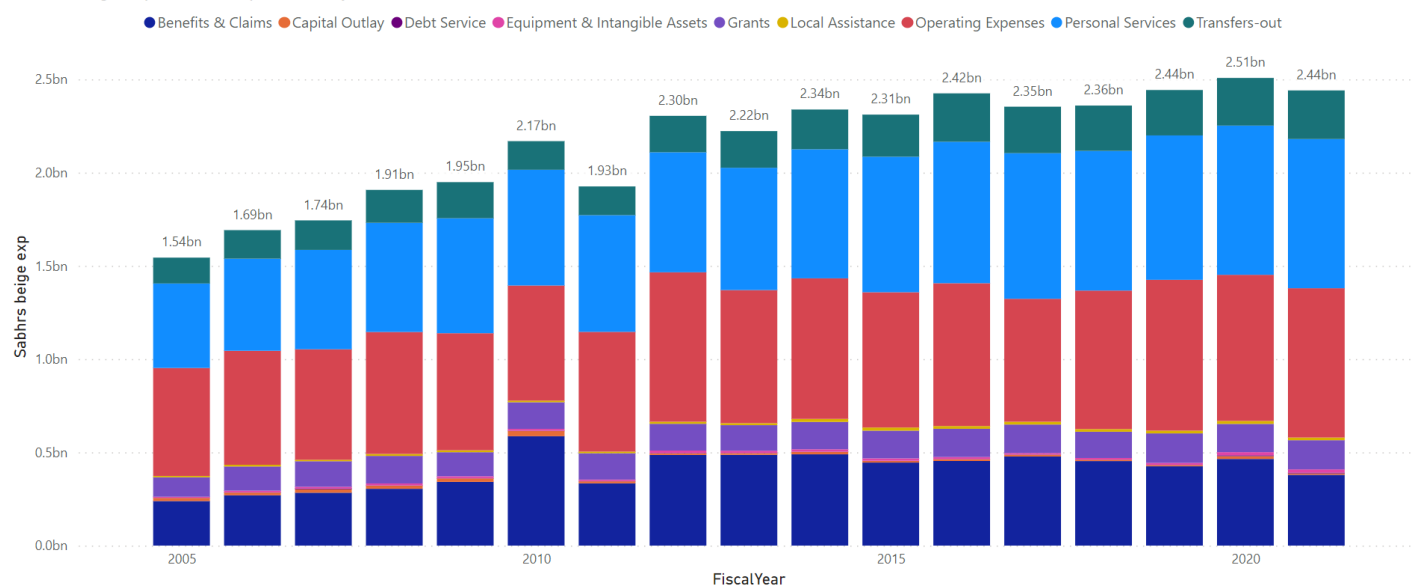
MARA Tax and Revenue Module – Findings

Key forecast findings are not yet available for the residual module. This is due to the nature of this module being the catch-all, certain pieces of the expenditures would not make sense as a forecast and still need to be removed. An example would be the COVID funding that is not expected to be present in future years.

Other preliminary findings are producing future research items. Shown in the adjacent figure are the current historic residual values for HB 2 only. The large departmental source in green is non-Medicaid programs in the Department of Health and Human Services (DPHHS). Since this is such a large component of the residual module, there may be additional benefit in developing a module for non-Medicaid related programs in DPHHS like what was developed for the university system (MUS) and infrastructure.

Figure 1
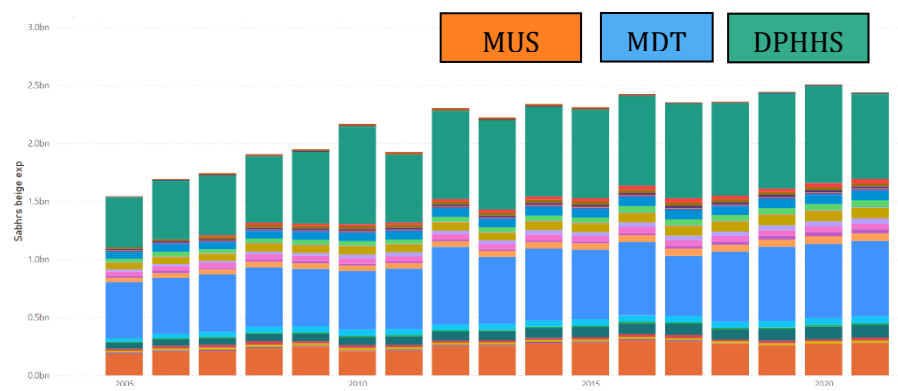
An additional finding that supports previous anticipated work is the breakdown of the residual by type of expenditure. While this analysis is not confined to HB 2, continuing the focus on HB 2 displays that personal services (blue) and operating (red) make up a large portion of the expenses. This would likely be even greater if the modules discussed above were modeled separately. The size of these expenditure areas highlights the possibility that personal services may be a useful area on its own to model alongside the remainder of this residual module.

MARA Tax and Revenue Module – Limitations

While this methodology produces reasonable results in aggregate, caution must be used when diving into deeper and deeper subsections of the data, as those filtered views may produce undependable results.

Specific expenditures will need to be removed to account for issues such as large one-time expenditures or double counting through transfers. This is a work in progress and census methodology is likely to be used to help accomplish this, however, this issue does currently cause problems when all sources of authority are included.

MARA Tax and Revenue Module – Future Research

Several areas still need to be split out from beige and have their own forecasts created including transportation, the university system, and likely additional DPHHS expenditures. Creating these additional modules would move some of the largest remaining expenditure areas out of residual and allow residual to focus on the multiple smaller sections of expenditures.

Running a Personal Services module alongside the residual forecast would additionally move a large expenditure area that generates considerable legislative interest from the residual module.