BMC Transportation Improvement Program Dashboard

USER GUIDE

Contents

1. Overview

This document contains documentation and reference materials supporting the BMC Transportation Improvement Program dashboard development. The purpose of this dashboard is to allow users to explore transportation projects in the BMC area and apply filters to zoom into projects of interest.

This document is organized into **User Guide** and **Technical Documentation** sections. The goal of the **User Guide** section is to describe the core functionality of the dashboard from a user's perspective, providing an overview of the dashboard organization and highlighting specific features of interest. The goal of the **Technical Documentation** section is to equip developers with the tools and knowledge needed to make updates to the data showcased in the dashboard.

2. User Guide

The dashboard is structured around two tabs, **Summary** and **Project Details**. Each tab displays the same underlying data, with the **Summary** tab displaying summaries of the selected projects and the **Project Details** tab displaying the attributes and funding breakdown of each individual project.

2.1 Dashboard Components

2.1 Summary

The **Summary** tab allows for the user to explore the total funding allocated to transportation projects in the BMC region. Users can segment the data by various attributes using the filters pane on the left hand side of the dashboard (1). High-level scalar summaries of the filtered projects such as Total Funding and Number of Projects, segmented by mappable and non-mappable projects, can be found in the top right hand side of the dashboard (2). Mappable projects selected will be shown in the Project Locations Map (3). Users can view project funding by category and type with an option to drill down (4). The projects are further summarized as distributions of funding in charts on the bottom (5).
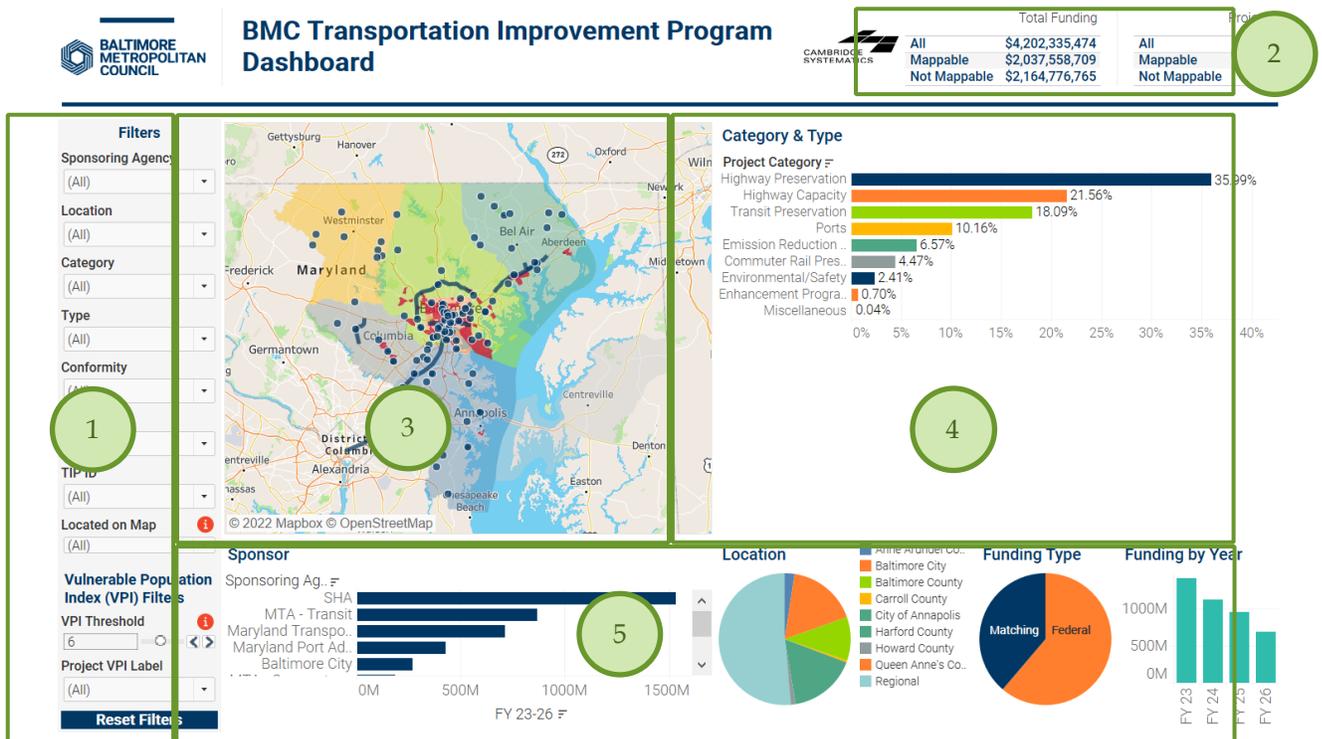

Figure 1 BMC TIP Dashboard Summary Tab

<u>**Summary** Main Components</u>
1 – Project Filters
2 – Total Funding and Number of Projects Selected
3 – Project Locations Map
4 – Project Funding by Category and Type
5 – Project Funding by Sponsoring Agency, Location, Funding Type and Year

2.2 Project Details

The **Project Details** tab allows for users to read project attributes and funding in detail. It is filtered using the same filters applied on the Summary tab, and displays the project attributes on the left (1) and project funding on the right (2).

Project Details (Filtered)
This table is filtered using the same filters applied on the Summary tab.

Mappable	Location	Sponsoring Agency	Project Category	Project Type	Project Name	TIP ID	Project Description	YOP	Federal	Matching
Mappable	Anne Arundel County	Anne Arundel County	Highway Capacity	New or ext..	Hanover Road Corridor I..	11-1801-42	This project is to provide design and right-of-..	TBD		$11,600,000
			Highway Preservation	Bridge repair/deck replacement	Conway Road Bridge ov..	11-2106-13	This project will replace the existing bridge al..	2027	$1,500,000	$375,000
					Furnace Avenue B..	1-1103-13	This project will reconstruct the existing brid..	2026	$985,0..	..37,000
					Hanover Road E..	2105-13	This project will replace the existing bridge al..	2026	$1,061..	..000
					Harwood Road..	208-13	This project will replace the existing bridge o..	2023	$2,200..	..000
					Jacobs Road B..	2107-13	This project will replace the existing bridge al..	2027	$728..	..000
					Magothy Bridge R..	1-1402-13	This project will replace the bridge deck and ..	2024	$3,470,0..	..98,000
					O'Connor Road Bridge o..	11-1403-13	This project will replace the bridge over Deep..	2026	$5,887,000	$2,049,000
					Polling House Road Brid..	11-1602-13	This project will replace the existing bridge al..	2026	$1,060,000	$315,000
				Other	McKendree Road Culver..	11-1601-19	This project is to remove and replace the cul..	2024	$1,012,000	$813,000
			Transit Preservati..	New bus fa..	Parole Transportation C..	11-2101-66	This project will provide a multi-modal transp..	2025		$16,087,000
		SHA	Highway Capacity	Roadway widening	MD 2: US 50 to Arnold R..	61-2301-41	This project will provide a continuous third la..	2026	$462,000	$133,000
					MD 3: Waugh Chapel R..	61-2302-41	This project will provide a continuous third la..	2026	$370,000	$112,000
					MD 170: Norcross Lane..	61-2303-41	This project will include widening of MD 170 ..	2025	$707,000	$16,000
					MD 175: Sellner Road/R..	61-1701-41	This project widens MD 175 from Sellner Roa..	2025	$42,524,000	$2,494,000
					MD 214: MD 468 to Ca..	61-2304-41	This project will add an additional lane in eac..	2026		$480,000
			Highway Preserva..	Bridge repa..	MD 173: Bridge Replace..	61-2101-13	The project will replace bridge no. 0204600 o..	TBD	$263,000	$87,000
	Baltimore City	Baltimore City	Emission Reductio..	Bicycle/ped..	Greenway Middle Branc..	12-2102-03	The Middle Branch Phase 2 project involves t..	2025	$1,525,000	$382,000
			Environmental/Saf..	Bicycle/ped..	Frederick Avenue ADA U..	12-2303-25	Upgrade ADA pedestrian facilities including c..	2028	$640,000	$160,000
				Bicycle/ped..	Northern Parkway at Fal..	12-2301-39	This project seeks to construct the following:..	2027	$4,000,000	$1,000,000
			Highway Preservation	Bridge repair/deck replacement	41st Street over I-83, M..	12-2002-13	The 1,238-foot long bridge was originally buil..	2030	$15,640,000	$3,910,000
					Brehms Lane over Herri..	12-2005-13	The 92-foot long bridge was originally built in..	2028	$480,000	$120,000
					Hanover Street Over CSX	12-2008-13	The 367-foot long bridge was originally built i..	2027	$735,000	$185,000
					Harford Road Bridge Ov..	12-2106-13	The 100 foot bridge that carries Harford Roa..	2024	$9,000,000	$3,500,000
					Howard Street over I-83,..	12-2009-13	The 979-foot long bridge was originally built i..	2030	$800,000	$200,000
					I-83 Concrete Deck Mill ..	12-1604-13	This work will include but will not be limited t..	2026	$10,720,000	$2,680,000
					Monroe Street Ramp ov..	12-1801-13	This project will replace the bridges carrying ..	2031	$23,520,000	$5,880,000
					Moravia Road Ramp Bri..	12-1605-13	This work will include but will not be limited t..	2029	$960,000	$240,000
					Orleans Street Bridge ov..	12-1601-13	This work will include but will not be limited t..	2028	$5,512,000	$628,000
					Perring Parkway Ramp ..	12-1215-13	This project includes replacement of the Perr..	2025	$8,000,000	$2,000,000
					Radecke Avenue and Si..	12-1603-13	This project includes replacement of the dete..	2026	$7,600,000	$1,900,000
					Remington Avenue Brid..	12-1602-13	This work will include but will not be limited t..	2024	$7,200,000	$1,800,000
					Sisson Street Bridge ove..	12-1216-13	The 133-foot long bridge was originally built i..	2024	$1,500,000	$6,000,000
					Waterview Avenue over ..	12-2015-13	The 75-foot long bridge was originally built in..	2027	$5,384,000	$596,000
					Wilkens Avenue Bridge ..	12-1403-13	This project involves replacement of the brid..	2025	$11,040,000	$2,760,000
				Facility reh..	Russell Street Pavement..	12-2302-11	Roadway rehabilitation work includes concre..	2027	$4,320,000	$1,080,000
				Road resurfacing/ rehabilitation	25th Street Rehabilitatio..	12-2001-11	Roadway rehabilitation work includes concre..	2027	$8,000,000	$2,000,000
					Belair Road Complete St..	12-1404-11	Design and construction for street, sidewalk, ..	2026	$6,640,000	$1,660,000
					Fremont Avenue Rehabil..	12-2007-11	Roadway rehabilitation work includes concre..	2025	$5,600,000	$1,400,000
					Madison Street Rehabilit..	12-2010-11	Roadway rehabilitation work includes concre..	2025	$6,800,000	$1,700,000

Figure 2 BMC TIP Dashboard Project Details Tab

Project Details Main Components
1 – Project Attributes
2 – Funding by Type

2.2 Dashboard Sections

2.2.1 Project Filters

Data filters that allow users to zoom into the project segments of greatest interest are located on the left hand panel as shown in *Figure 1*. Users can select one or more filters at any instance to create a subset of the projects to be included in the display.

Users can select the desired options from a dropdown menu that appears after clicking the downward arrow on the right of each filter box. The figure on the right shows the full list of filters.

To view projects by the VPI of the census tract they are located in, users should change the VPI threshold using the slider or left and right arrows, and then use the "Project VPI Label" filter to select whether they want to display projects that are above or below the VPI threshold.

The "Reset Filters" button is located on the bottom of the filters panel. Clicking on this button resets all filters to the original view, where all filters are showing (All) values, and the VPI threshold is set to 6.

Filters

Sponsoring Agency
(All)

Location
(All)

Category
(All)

Type
(All)

Conformity
(All)

YOP
(All)

TIP ID
(All)

Located on Map
(All)

Vulnerable Population Index (VPI) Filters

VPI Threshold
6

Project VPI Label
(All)

Reset Filters

2.2.2 Total Funding and Number of Projects Selected

The top-right banner shows summary statistics based on the projects selected by users. These statistics ignore the "Located on Map" filter and show both types of projects for comparison.

Total Funding			Projects	
All	$4,202,335,474		All	131
Mappable	$2,037,558,709		Mappable	95
Not Mappable	$2,164,776,765		Not Mappable	36

2.2.3 Project Locations Map

The map in the middle of the tab shows the locations of the projects selected. Hovering over a sensor bubble will display a tooltip with sensor information. Hovering over the map will show a toolbar on the left side of the map, where users can control layers displayed, zoom in or out of the map, reset the map view to the original, and change the cursor function to zoom area, pan, or a selection tool. Users may also filter the rest of the views by using the selection tool to select a subset of projects.

Layer control allows users to change the layers shown. The "TIP Points" and "TIP Lines" layers show the navy lines and bubbles of the project locations, while the "VPI Layer" shows users the tracts that have VPIs above the VPI threshold set by the user in the filters panel. Tracts with VPI at or above the threshold will be shaded red, while tracts below the threshold will be transparent. If the "Tracts by VPI" layer is being displayed, these tracts will be their respective county colors.
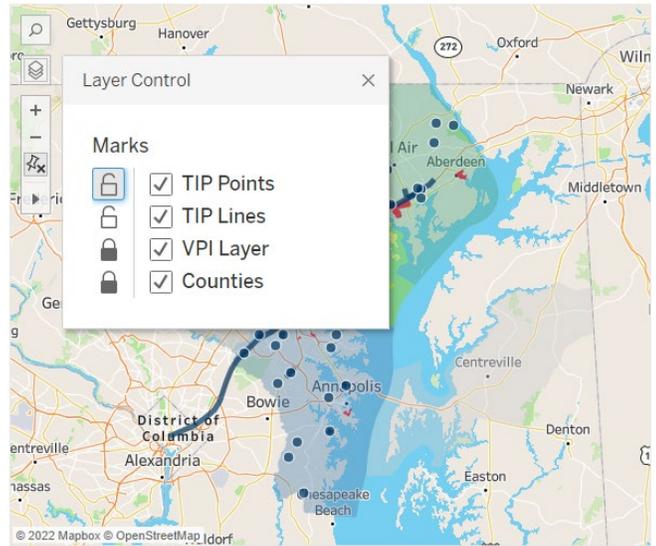
2.2.4 Project Funding by Category and Type

The panel on the right shows the funding breakdown by project category. By hovering over the project category column, a small '+' icon will appear. Clicking on this icon will expand the chart, allowing the user to view funding by project type. If the user wishes to return to the original view, they can hover over the project category column and click on the '-' icon that appears.

Users can also filter projects by category by clicking on the project category column, project type column or the bar chart area. This will filter projects (of all types) in the category selected and will be reflected on the map, charts in the bottom panel and summaries in the top right panel.
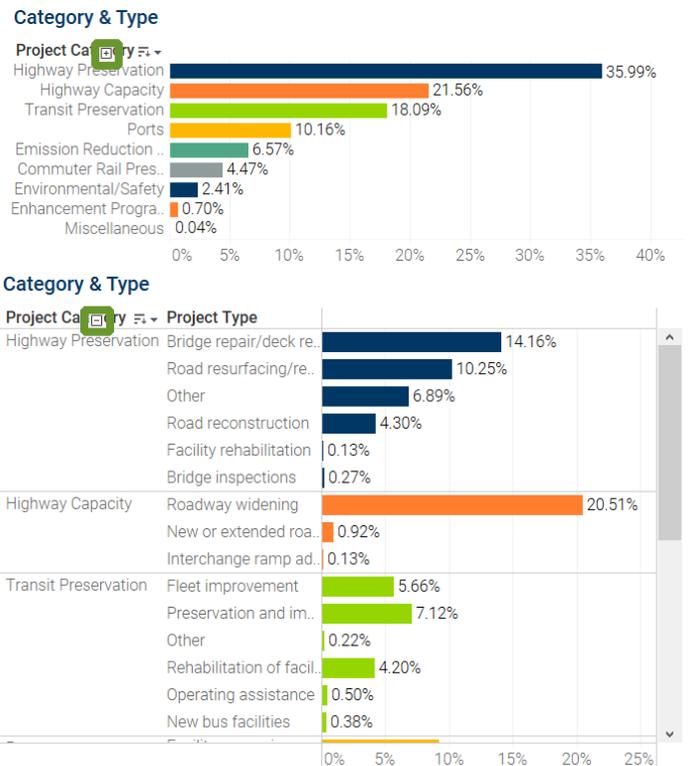
2.2.5 Project Funding by Sponsoring Agency, Location, Funding Type and Year

The panel on the bottom of the tab shows funding breakdown by sponsoring agency, location, funding type and year.

Users can filter projects by sponsoring agency, location or funding type by clicking on the chart area of the subset of projects they wish to view. This will filter only projects in the field selected and will be reflected on the map, charts in the bottom and right panels and summaries in the top right panel.
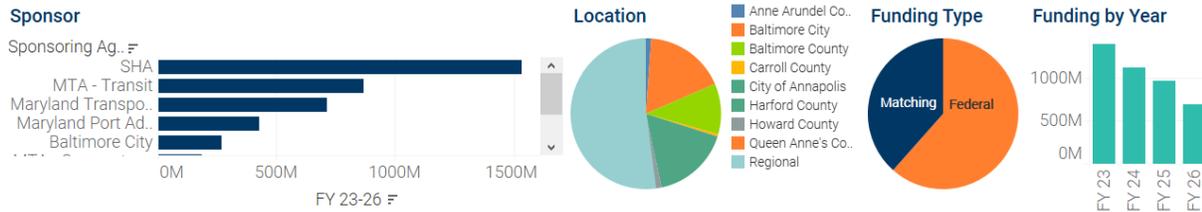
2.3 Dashboard Features

Each dashboard is equipped with auxiliary features that help enhance the user experience and provide a rich set of "details on demand," or further details that are hidden in a visualization's default state but are available upon user need via user interaction (e.g., tooltips).

2.3.1 Quick Tips

- **Info Bubbles**   Users can hover over the red (i) bubble placed near a filter or component to enable a tooltip that shows additional information about that filter or component.

- **Reset Individual Filters**   Users can reset a specific filter to its default selection (in most cases ALL) by clicking the *Clear Filter* button that shows up when hovering over the downward arrow in the filter box.

- **Tooltips**   Users can hover over chart and map components to obtain further details via tooltips.
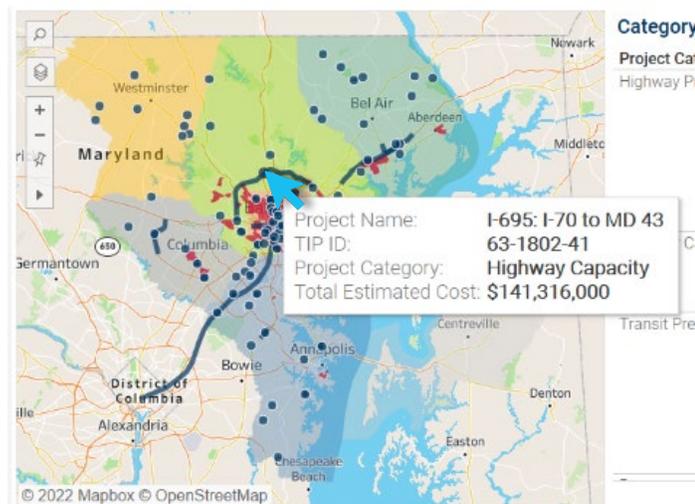
2.4 Saving Data and Images

Users can save data, tables, charts, and map images from the dashboard corresponding to the filter selections that are made. Users can also save the whole dashboard as an image or save any specific table, map, or chart as an image or data file. The procedures for saving are described in the subsequent sections.

2.4.1 Saving as Images

Through Tableau Online, to save the dashboard as an image, users can navigate to **Choose a format to download > Image** on the main menu bar of Tableau Online.

Through Tableau Reader, to save the dashboard as an image, users should exit the full-screen view and navigate to **Dashboard > Export Image** on the main menu bar of Tableau Reader. Users will be asked to provide a file name and folder location to save the dashboard as an image.

2.4.2 Exporting as PowerPoint

Through Tableau Online, to save the dashboard as a PowerPoint, users can navigate to **Choose a format to download > PowerPoint** on the main menu bar of Tableau Online as shown in Figure 4.1.

Through Tableau Reader, to save the dashboard and/or the elements of the dashboard as a PowerPoint, users may navigate to **File > Export as PowerPoint** on the main menu bar. Users will be asked to select the content to include in the PowerPoint slide from the following three options:

- **This View** – Tableau generates a PowerPoint slide with the current view.

- **Specific sheets from this dashboard** – Users can select and generate PowerPoint slides for each element selected (i.e., the selected charts, maps, summaries generated in separate sheets).

- **Specific Sheets from this workbook** – Users can select and get PowerPoint slides on each element selected (i.e., the selected charts, maps, summaries generated in separate sheets). In this case, users will find the elements/sheets in the Tableau file. Please note that, the last two options will provide the same outcome for the LOCUS dashboard in question.

Finally, users will be asked to provide file name and folder location to save the dashboard as a PowerPoint file.

2.4.3 Exporting as PDF

Similar to exporting as PowerPoint, users can also export the dashboard and its element to a PDF file. To do so, users may navigate to **File > Print to PDF** on the main menu bar in Tableau Reader or select **PDF** as download option in Tableau Online. Likewise, in PowerPoint export, users will have options to export only the dashboard using **Active sheet** option. Users can export all the different sheets with different elements of the dashboards (i.e., the entire workbook) in a single PDF file by selecting **Entire workbook**. Finally, users will be asked to provide a file name and folder location to save the dashboard as a PDF file.

2.4.4 Saving a Chart or Table

To save a specific table or data for any chart shown on the dashboard, Tableau Reader users must select the specific table or chart first. Then, users may navigate to **Menu > Worksheet > Export > Image**.

Cross-tabulation can also be generated by selecting ***Crosstab to Excel*** option. This procedure will generate the crosstab in an Excel sheet, but the file is ***NOT*** automatically saved. Users must save the file in Excel software to store the data on their local system.

Tableau Reader users can copy and paste a chart or underlying data to a presentation slide or document using the quick export feature of the dashboard. Users need to right-click on a chart and navigate to ***Copy*** option to copy the chart as an image, data table, or cross-tabulation and paste it in a document.