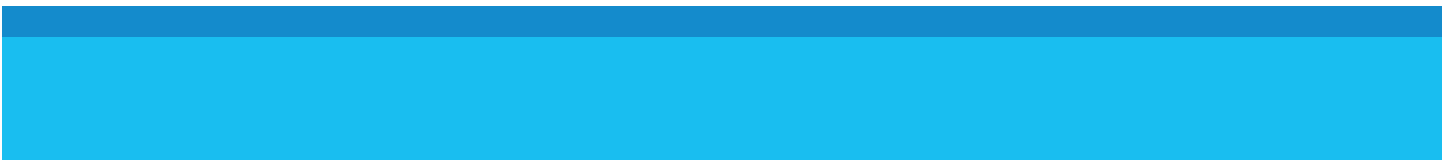


BMC Freight & Commercial Vehicle Dashboard

USER GUIDE



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1. Overview

This document contains documentation and reference materials supporting the **BMC Freight & Commercial Vehicle (CV)** dashboard development. The purpose of this dashboard is two-fold: (1) to allow users to explore in detail model output for a specific year and (2) to compare model output across multiple model run years.

2. User Guide

Two distinct dashboards were created for this effort – **Commercial Vehicle (CV) & Freight**. The organization of and functions available in both of these dashboards is largely identical. Both dashboards are structured around two tabs, **Trip Flows** and **Yearly Trend Analysis**. Each tab displays the same underlying data, with the **Trip Flows** tab displaying one discrete year of model output and the **Yearly Trend Analysis** tab displaying multiple years to allow comparison. Because of the identical basic structure and functionality of both dashboards, the User Guide will focus only on one of the dashboards, Commercial Vehicles, but can be applied readily to the Freight dashboard.

2.1 Trip Origin/Destination Flows

The **Trip Flows** tab – which displays trips and tours of Freight vehicles in the Freight Dashboard and trips and tours of Commercial Vehicles in the CV Dashboard – allows for the user to explore the results of one specific year of model output, selected in parameter (1). Users can segment the data by trip (2) or tour-level (3) attributes using the dropdowns in the gray filters pane on the left hand side of the dashboard. High-level scalar summaries of the model output, such as Total Daily Trips, can be found in the top right hand side of the dashboard (4). Trip O/D flows are summarized in both the CV Trip Origins map (5) as well as the O/D Pairs bar chart below the map (6). The data is further summarized by time of day (7) as well as across user-chosen distribution and segmentation attributes in bar charts on the right hand side of the tab (8).

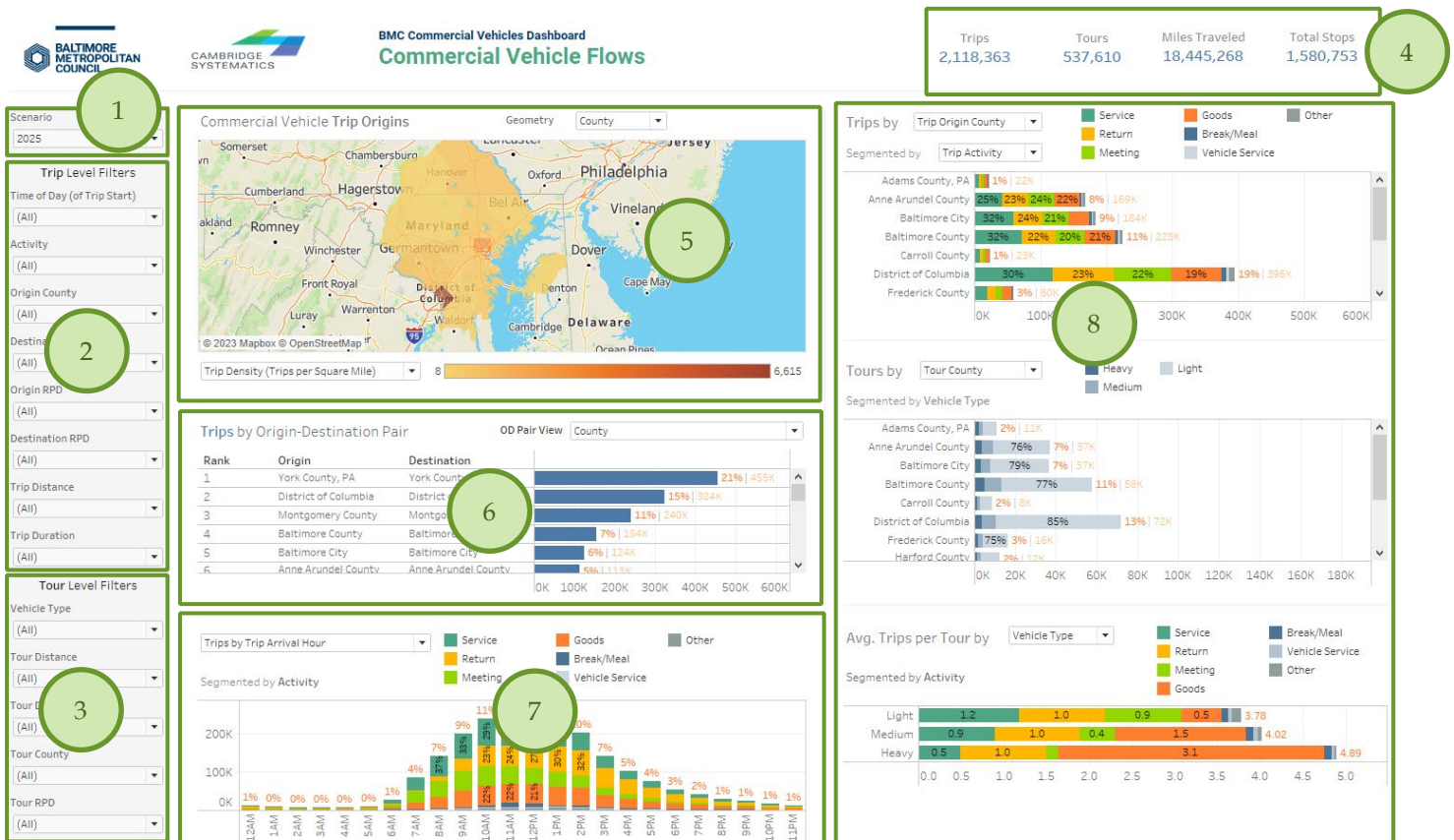


Figure 1 BMC Freight & CV Dashboard Trip Flows Tab

Trip O/D Flows Main Components

- 1 - Model Year Selector
- 2 - Trip Level Filters
- 3 - Tour Level Filters
- 4 - Regionwide Summaries

- 5 - Trip Origin Map
- 6 - O/D Flow Table
- 7 - Trips/Tours by ToD
- 8 - Trips/Tours segments chart

2.2 Yearly Trend Analysis

The **Yearly Trend Analysis** tab allows for users to compare the model results across model run years. The general organization of the dashboard is similar to that of the **Trip Flows** tab. Users can segment the data by trip or tour attribute using the filters pane on the left hand side of the dashboard (1). Yearly total distributions are available for Trips and Tours, respectively (2). Trips and Tours are further summarized as yearly distributions across a variety of distribution and segmentation attributes in the right-hand-side bar charts (3).

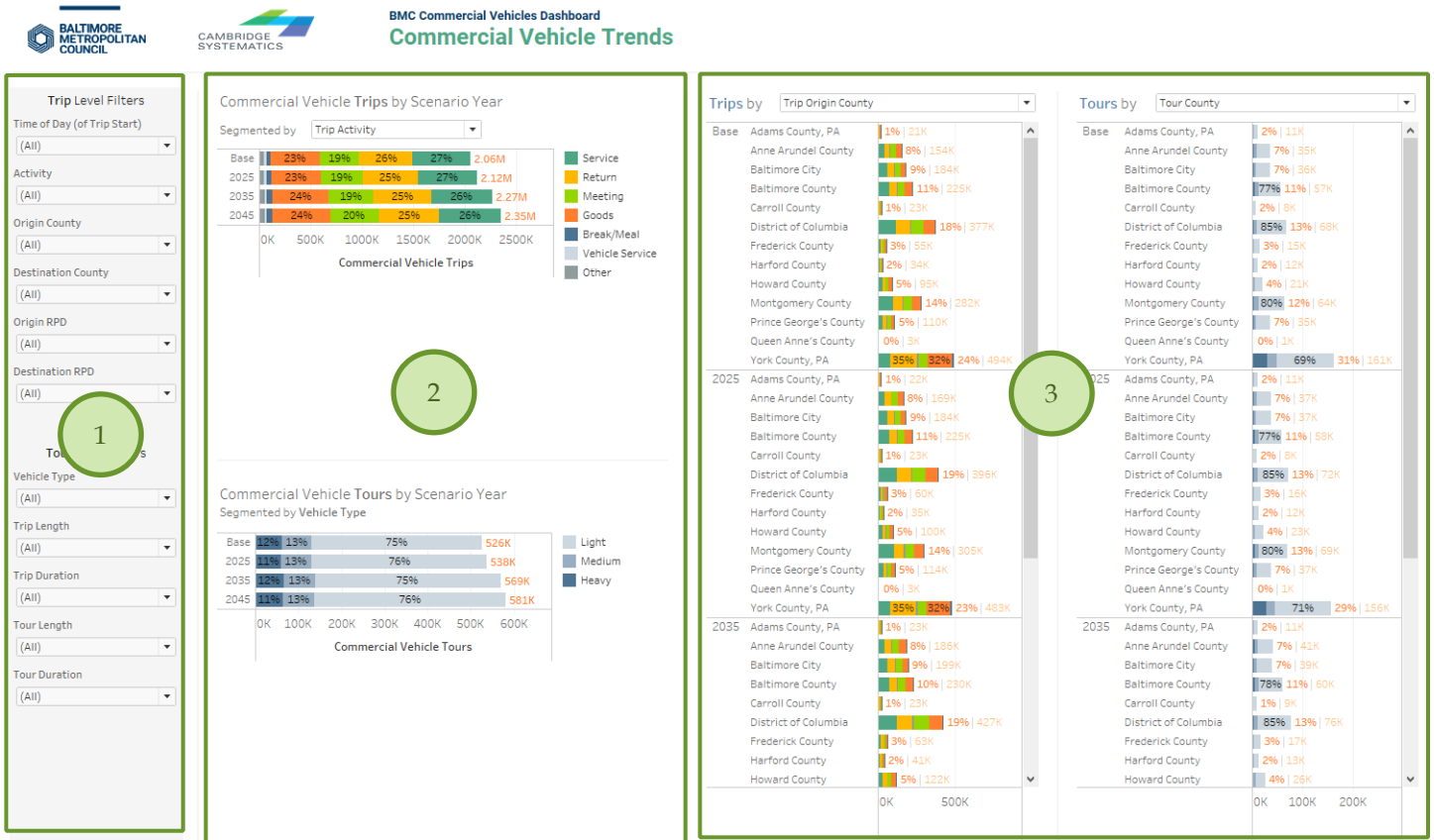


Figure 2 BMC Freight & Commercial Vehicle Dashboard Yearly Trends Tab

Yearly Trend Analysis Main Components

- 1 - Trip & Tour Filters
- 2 - Yearly Total Charts
- 3 - Yearly Trip Segments Charts

2.3 Dashboard Sections

2.3.1 Trip & Tour-Level Filters

In both dashboard tabs, filters allow users to segment the data at the trip-level and tour-level. Filter selections are combinative and apply to all charts in the display across all tabs.

Users can select the desired filter values from a dropdown menu that appears after clicking the downward arrow on the right of each filter box.

Trip Level Filters

Time of Day (of Trip Start)
(All) ▼

Activity
(All) ▼

Origin County
(All) ▼

Destination County
(All) ▼

Origin RPD
(All) ▼

Destination RPD
(All) ▼

Trip Distance
(All) ▼

Trip Duration
(All) ▼

Tour Level Filters

Vehicle Type
(All) ▼

Tour Distance
(All) ▼

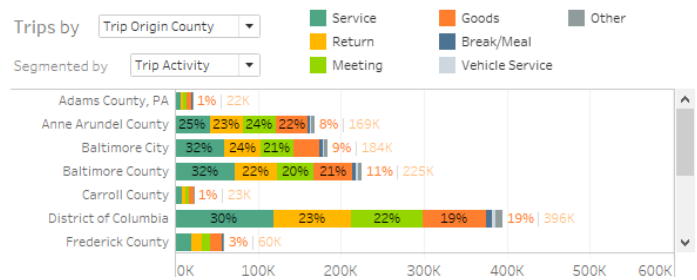
Tour Duration
(All) ▼

Tour County
(All) ▼

Tour RPD
(All) ▼

2.3.2 Trip & Tour Segments Charts

In both dashboard tabs, trips can be broken down by a **Distribution Attribute** (*Trip Origin County* in the example screenshot) and a **Segmentation Attribute** (*Trip Activity*). In the **Yearly Trend Analysis** tab, these distributions are further broken down by model Year.



2.3.3 Regionwide Summaries

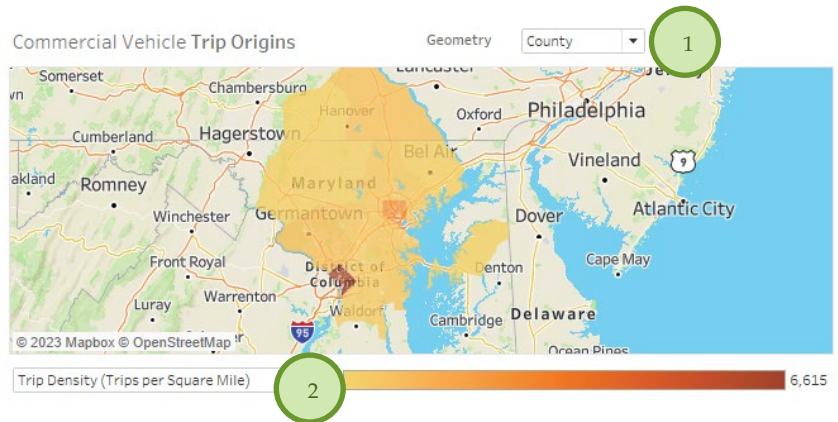
The top-right banner of the **Trip Flows** tab displays regionwide summary statistics, with respect to selected filters.

Trips	Tours	Miles Traveled	Total Stops
2,118,363	537,610	18,445,268	1,580,753

2.3.5 Trip Flows Map

The **Trip Origins** map summarizes trips by trip origin. Note that the reason that the dashboard does not contain a Destination map is that trip flows by location are identical for Origin & Destination, per model design.

Users can choose the **Geometry** (1) that is displayed in the map. The available choices are: Regional Planning District (RPD), Transportation Analysis Zone (TAZ), or County. The user can choose the method in which the geometries are summarized and colored in (2):. The available options are Total Trips or Trip Density (i.e., Trips per Square Mile).

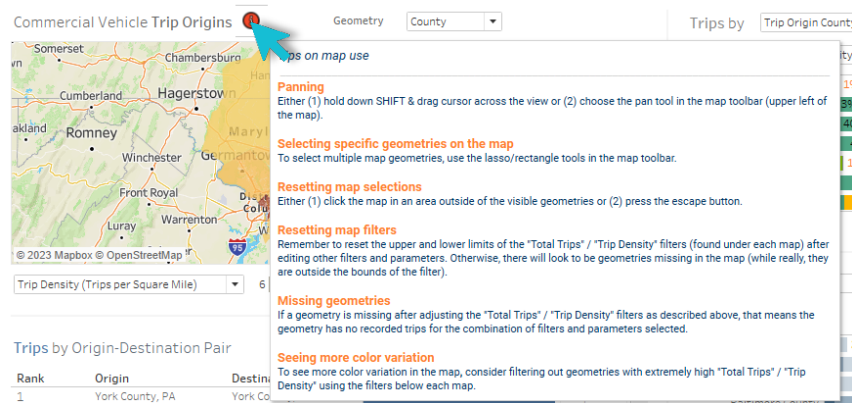


2.4 Dashboard Features

Each dashboard is equipped with auxiliary features that help enhance the user's experience.

2.4.1 Quick Tips

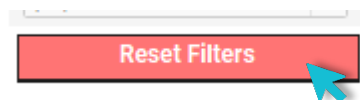
- **Info Bubbles** Users can hover over the red (i) bubbles placed near components to enable tooltips that show additional information about that filter or component.



- **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 filter box.



- **Reset All Filters** Users can reset all filters simultaneously by pressing the Reset Filters button. Note that pressing this button will reset filters on *both* tabs.



- **Tooltips** Users can hover over chart components (such as geometries or bar segments) to obtain further details via tooltips.



2.5 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.

2.5.1 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.

2.5.2 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.

2.5.3 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.

2.5.4 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.