EMPLOYMENT AND ECONOMIC DEVELOPMENT

Accessing Tableau dashboards with screen-reader technology

Tableau is a software for visualizing data. Some DEED data products include visual Tableau dashboards. These dashboards display charts, maps, and tables. For many dashboards, the data that the dashboard is built from can be downloaded as an excel spreadsheet via a hyperlink that appears in the webpage above the Tableau dashboard.

The following is a guide for interacting with Tableau dashboards using screen-reader technology. Specific commands or quick keys may differ among screen-reader software. Guidance below is provided for JAWS and NVDA.

Please contact EconomicAnalysis.DEED@state.mn.us (DEED) for feedback and input for this reference guide.

JAWS commands

Identifying a Tableau dashboard embedded in a webpage

Tableau dashboards are embedded in webpages as iframes. A Tableau dashboard iframe title is generated by Tableau and will read “data visualization.”

Table 1: Identifying a Tableau dashboard embedded in a webpage

Description	Quick Key
Identify all frames in a webpage	INSERT+F9 to activate list feature
Locate embedded Tableau dashboard in the webpage	M. You can also use TAB until you enter the Tableau dashboard application.
Enter the Tableau dashboard	ENTER

Navigating within a Tableau dashboard

Note: Tableau software has its own set of keyboard commands which may not align with the commands of standard assistive technologies. The interaction between Tableau’s keyboard commands and JAWS or other screen-reader commands may produce unexpected results. Here is a Tableau-created guide on keyboard accessibility for Tableau on the web.

Screen readers have two main modes: browse mode and focus mode (sometimes called forms mode). Using browse mode within a tableau dashboard will "skip" some objects in the dashboard. Therefore, use the TAB key (SHIFT+TAB key) to navigate a Tableau dashboard.

Table 2: Navigating within a Tableau dashboard

Description	Quick Key
Navigate between Objects in the dashboard	TAB (SHIFT+TAB)
Activate a hyperlink (redirect)	ENTER
Activate a dashboard button	ENTER or SPACEBAR

Using filters in a Tableau dashboard

There are different types of filters that can appear in a Tableau dashboard. When you encounter a filter, alt text has been used to announce the type of filter.

Table 3: Using filters in a Tableau dashboard

Description	Quick Key
Activate filter	ENTER
Navigate to the first item in a filter list	TAB
Navigate items in a SINGLE CHOICE filter	DOWN or UP ARROW
Check or uncheck an item in a SINGLE CHOICE filter	SPACEBAR or ENTER
Navigate items in a MULTI-SELECT filter	ALT+RIGHT ARROW (ALT+LEFT ARROW)
Check or uncheck an item in a MULTI-SELECT filter	CTRL+SPACEBAR
Navigate to the filter's apply button (if relevant)	TAB
Activate the apply button	ENTER
Exit a filter	ESC

Interacting with a chart or graph within a Tableau dashboard

When encountering a chart or graph on a Tableau dashboard, you can choose to open the data window to display the underlying data of the chart or graph. Alternatively, you can choose to enter into the chart or graph and interact with the marks within the visualization.

Table 4: Interacting with a chart or graph within a Tableau dashboard

Description	Quick Key
Enter into a visualization (when the focus is on the visualization)	ENTER
Open the data window	SHIFT+ENTER
Navigate the menu items in the data window	TAB

Description	Quick Key
Navigate the data cells in the data window	RIGHT, LEFT, UP, and DOWN ARROW
Close the data window	CTRL+F4
Enter into a chart or graph (a visualization)	ENTER
Activate navigation of marks in a chart or graph	ENTER
Navigate between marks in a chart or graph	RIGHT, LEFT, UP, and DOWN ARROW
Select (or activate) a mark in a chart or graph	SPACEBAR (You will hear the screen reader announce "mark." Press SPACEBAR at this point to activate/select the mark.)
Exit the chart or graph and move to the next Object in the dashboard	ESC or TAB

NVDA Commands

Identifying a Tableau dashboard embedded in a webpage

Tableau dashboards are embedded in webpages as iframes. Using browse mode, tab until the screen reader announces "Application." If in focus mode, the screen reader announces "Data Visualization Frame."

Table5: Identifying a Tableau dashboard embedded in a webpage

Description	Quick Key
Locate embedded Tableau dashboard in the webpage	TAB until you enter the Tableau dashboard application. In browse mode, "Application" will be announced. In focus mode, "Data Visualization Frame" will be announced.

Navigating within a Tableau dashboard

Note: Tableau software has its own set of keyboard commands which may not align with the commands of standard assistive technologies. The interaction between Tableau's keyboard commands and NVDA or other screen-reader commands may produce unexpected results. Here is a Tableau-created guide on keyboard accessibility for Tableau on the web.

Screen readers have two main modes: browse mode and focus mode (sometimes called forms mode). Using browse mode within a tableau dashboard will "skip" some objects in the dashboard. Therefore, use the TAB key (SHIFT+TAB key) to navigate a Tableau dashboard.

Table 6: Navigating within a Tableau dashboard

Description	Quick Key
Navigate between Objects in the dashboard	TAB (SHIFT+TAB)
Activate a hyperlink (redirect)	ENTER
Activate a dashboard button	ENTER or SPACEBAR

Using filters in a Tableau dashboard

There are different types of filters that can appear in a Tableau dashboard. When you encounter a filter, alt text has been used to announce the type of filter.

Table 7: Using filters in a Tableau dashboard

Description	Quick Key
Activate filter	ENTER
Navigate to the first item in a filter list	TAB
Navigate items in a SINGLE CHOICE filter	DOWN or UP ARROW
Check or uncheck an item in a SINGLE CHOICE filter	SPACEBAR or ENTER
Navigate items in a MULTI-SELECT filter	After navigating to the first item in a filter list, ensure that NVDA is in Focus Mode. You can switch between Focus Mode and Browse Mode using the NVDA key + SPACEBAR. Once in Focus Mode, to navigate items in a multi-select filter: DOWN or UP ARROW
Check or uncheck an item in a MULTI-SELECT filter (Once in Focus Mode)	SPACEBAR
Navigate to the filter's apply button (if relevant)	TAB
Activate the apply button	ENTER
Exit a filter	ESC

Interacting with a chart or graph within a Tableau dashboard

When encountering a chart or graph on a Tableau dashboard, you can choose to open the data window to display the underlying data of the chart or graph. Alternatively, you can choose to enter into the chart or graph and interact with the marks within the visualization.

Table 8: Interacting with a chart or graph within a Tableau dashboard

Description	Quick Key
Enter into a visualization (when the focus is on the visualization)	ENTER
Open the data window	SHIFT+ENTER
Navigate the menu items in the data window	TAB
Navigate the data cells in the data window	RIGHT, LEFT, UP, and DOWN ARROW
Close the data window	CTRL+F4
Enter into a chart or graph (a visualization)	ENTER
Activate navigation of marks in a chart or graph	ENTER
Navigate between marks in a chart or graph	RIGHT, LEFT, UP, and DOWN ARROW
Select (or activate) a mark in a chart or graph	SPACEBAR (You will hear the screen reader announce "mark." Press SPACEBAR at this point to activate/select the mark.)
Exit the chart or graph and move to the next Object in the dashboard	ESC or TAB

Downloading the data from a Tableau dashboard (JAWS and NVDA)

Tableau dashboards are embedded in a webpage as an iframe. There are three options for downloading data from a Tableau dashboard.

- Option 1: Download data using the hyperlink above the embedded dashboard in the webpage.
    - Step 1: Search for the hyperlink in the webpage above the embedded dashboard that says, "Download the Excel data."
    - Step 2: Select the hyperlink.
    - Step 3: An accessible excel spreadsheet containing the same information as the Tableau dashboard is downloaded into your downloads folder.
- Option 2: Download data from the data window.
    - Step 1: Navigate to a chart, map, or table in the dashboard.
    - Step 2: Press SHIFT+ENTER, SHIFT+ENTER (Use this command twice.)
    - Step 3: The data window will open on the screen.
    - Step 4: Use the TAB key until you get to the "Download" button.
    - Step 5: Press ENTER.
    - Step 6: The data is downloaded into your downloads folder as a .csv file.
- Option 3: Use the download button that is in the bottom ribbon of the embedded dashboard. (Note: The screen reader may not announce the names of the selection options in Step 6 below. In this case, use Option 1 or Option 2 above.)
    - Step 1: Use TAB until you navigate to the bottom ribbon. The first button focused on the bottom ribbon says, "View on Tableau Public."
    - Step 2: Use the RIGHT ARROW key to navigate to the download button.

- Step 3: Press ENTER to open the download options.
- Step 4: Press the DOWN ARROW key to focus on “Crosstab.”
- Step 5: Press ENTER. This opens the “Download Crosstab” dialog box.
- Step 6: Use the DOWN and UP ARROW keys to focus on which sheet on the dashboard you want to download the data for. (For example, “table,” or “map.”)
- Step 7: Press ENTER to select the sheet of your choice.
- Step 8: Press TAB.
- Step 9: Use the RIGHT and LEFT ARROW keys to select Excel or CSV format for download
- Step 10: Press TAB to navigate to the download button.
- Step 11: Press ENTER to initiate the download.
- Step 12: The data is downloaded into your downloads folder.

Resources and Future accessibility updates

Keyboard guide from Tableau: Keyboard Accessibility for Tableau on the Web - Tableau

Tableau software periodically provides updates to its accessibility. A list of accessibility improvements by release number can be accessed here.

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