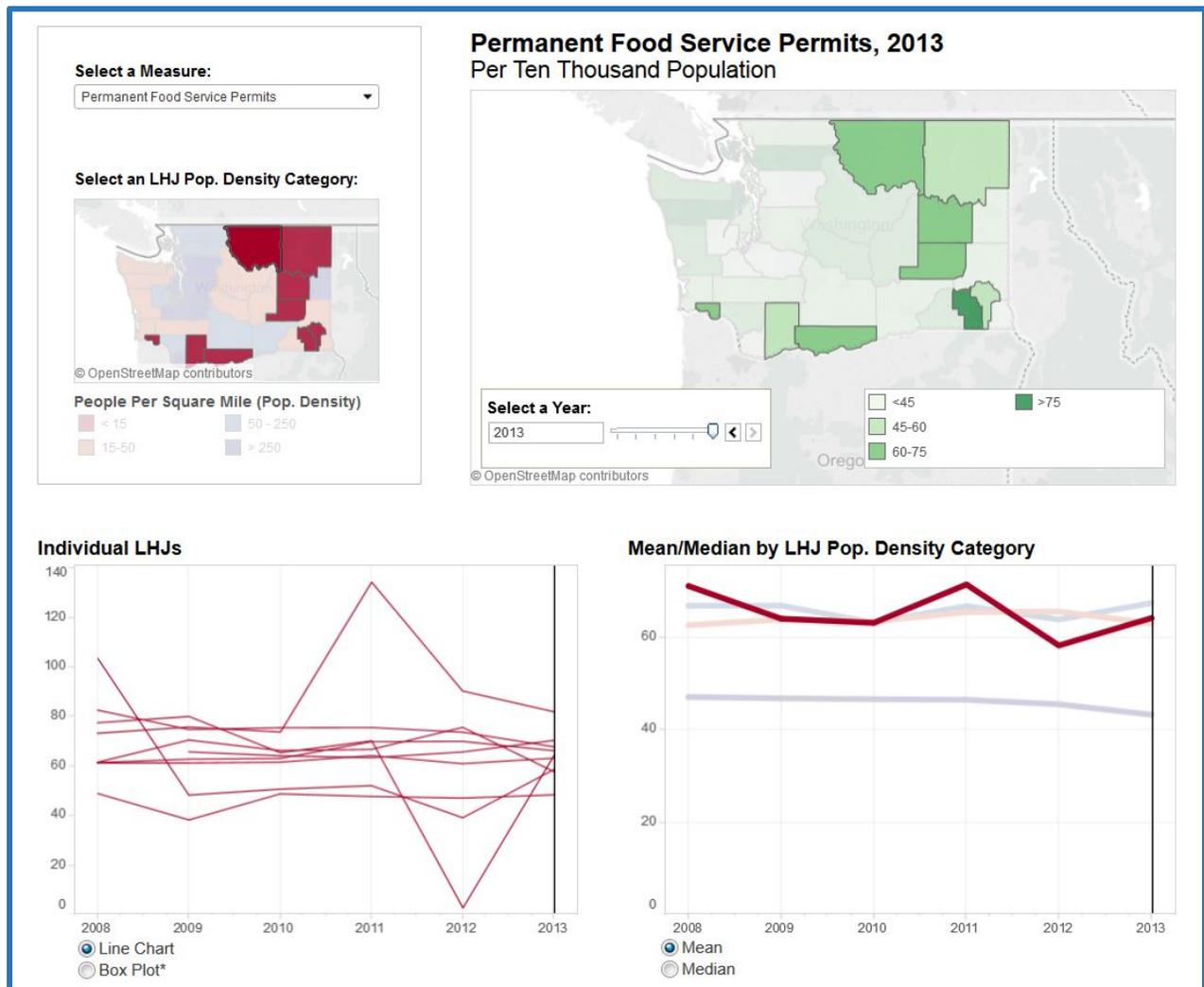


Public Health Activities and Services Tracking (PHAST)

Interactive Data Visualization Tool

User Manual



Funded by a grant from the **Robert Wood Johnson Foundation**.

<http://phastdata.org>

PHAST Interactive Data Visualization Tool

User Manual

TABLE OF CONTENTS

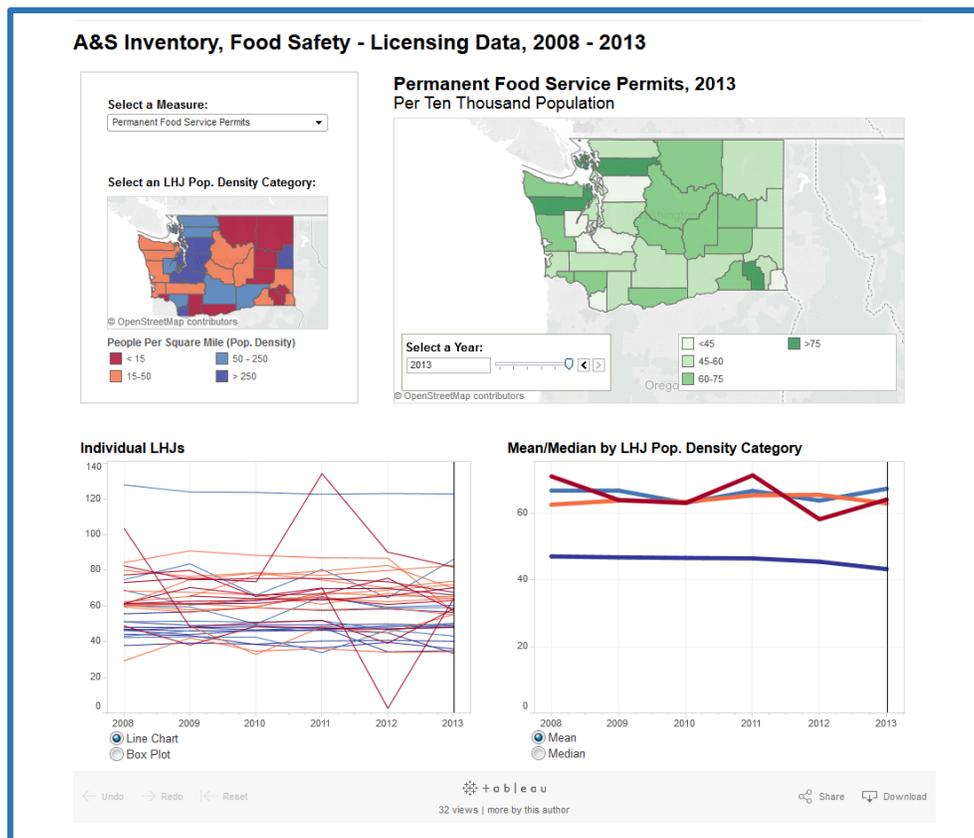
<u>TOPIC</u>	<u>PAGE</u>
Introduction.....	3
Selection Menus.....	4
Select a Measure.....	4
Main Map & Year Selector.....	4
LHJ Population Density Category Selector.....	5
Individual LHJ & Box or Line Chart Selector.....	6
Interaction Between Views.....	7
Other Functions.....	8
Sharing Options.....	8
Display Options.....	8

PUBLIC HEALTH ACTIVITIES AND SERVICES TRACKING (PHAST) INTERACTIVE DATA VISUALIZATION TOOL

INTRODUCTION

Welcome to the PHAST data visualization tool for Washington State Activities and Services Data! The tool is a dashboard that was designed to allow users to explore the public health activities and services offered by Washington State's 35 local health jurisdictions (LHJs). The Public Health Activities and Services Inventory data used by this dashboard is collected and maintained by the Washington Department of Health under the Public Health Improvement Partnership. The Inventory contains public health data collected since 2008. For more information on the Inventory, please visit the project's website at <https://fortress.wa.gov/doh/phip/PHIP/Home.mvc>.

PHAST produced an interactive dashboard with Tableau software, which will allow users to frame Washington State data in a way that is most useful to them. Our goal is to provide a dashboard that allows users to design their own visualizations, so that they can ask and answer public health questions most important to their own work. This manual describes how to use the dashboard in detail.

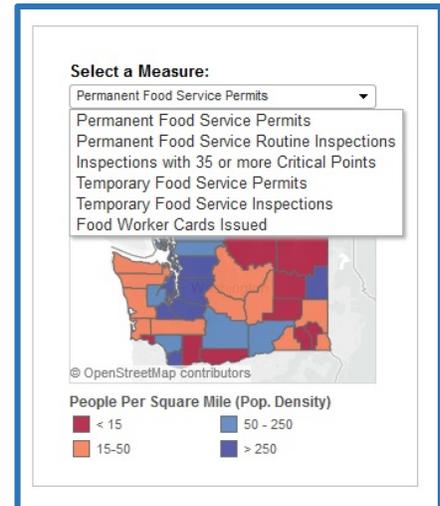


SELECTION MENUS

The Public Health Activities and Services Inventory offers a wealth of data spanning many years and covering a wide range of activities performed by the 35 Washington LHJs. The PHAST data visualization dashboard offers different data views for interacting with Washington Public Health Activities and Services Inventory data. This data can be visualized many different ways, depending on the question that you might wish to ask and answer. Each view allows you to ask different types of questions about public health activities across the different LHJs in Washington. In addition to allowing you to customize each view, the dashboard allows views to interact with one another.

SELECT A MEASURE

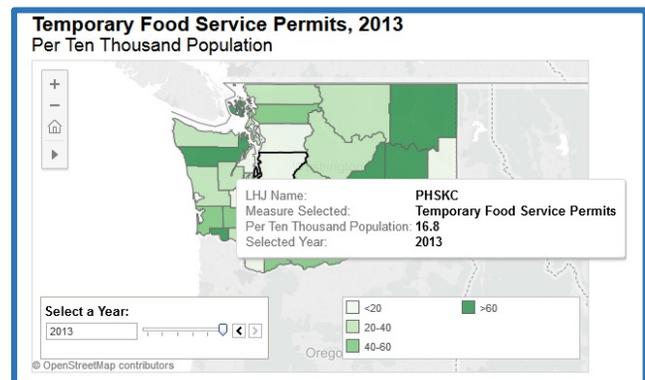
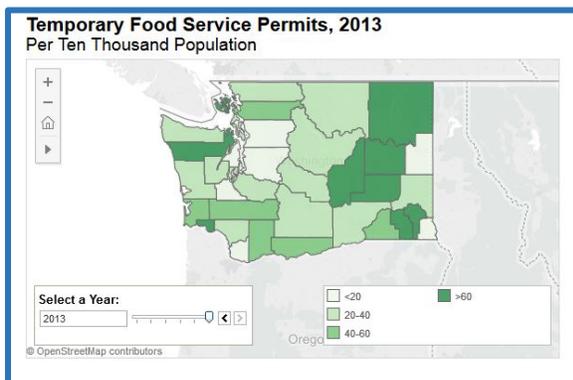
Select the type of public health data you wish to explore in the Measure Selector. Each category represents data about a particular type of activity or service offered by Washington LHJs. Only one measure may be selected at a time.



MAIN MAP & YEAR SELECTOR

The Main Map uses different shades of green to represent the selected measure's data in each LHJ by year reported. Select a year to explore with the Year Selector. While portions of the dashboard show trends in the data across the full range of years during which data was collected, the primary map on the dashboard focuses on a single year of data. Most of the dashboards offer date ranges from 2009-2013, and occasionally 2008 if data was reported that year. Only one year may be selected at a time.

Detailed information about the data underlying the visualization can be seen by hovering your cursor over one of the LHJs. A popup box will appear which contains information including the name of the LHJ, its population density, its LHJ size category (see 'LHJ Population Density Category Selector' for more information), the year and variable displayed, and the actual count per 10,000 of the variable in that LHJ.



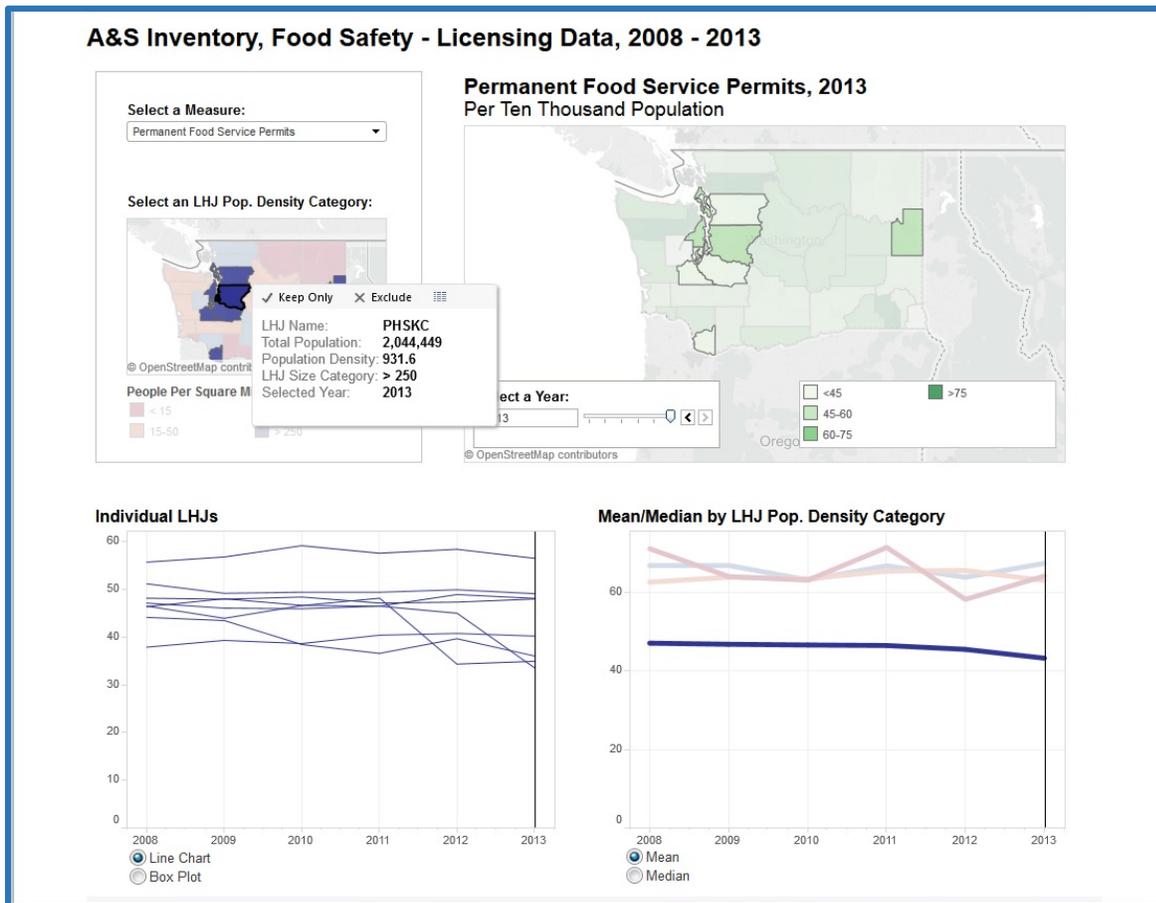
LHJ POPULATION DENSITY CATEGORY SELECTOR

The Population Density Category Selector shows the average trend of services offered by LHJs which fall within each size category. You can explore the average trend over time of specific measures.

Many public health workers are interested in seeing where their LHJ falls in relation to others in the state as well as comparing to others of a similar size and population density. Given this interest, each LHJ is classified into a category based on its population density. Throughout the various views in the dashboard, each size category is visualized using a different color (red, blue, purple, or orange).

Selecting a category will highlight LHJs in that size category in the Main Map. This selection will also transform the Individual LHJ chart to only include data about LHJs from the selected size category. The Mean/Median chart will highlight LHJs in that category. You can make the selection by either clicking on an LHJ of a given category on the Population Density Category Map, or by clicking on the color of the size category in the map's legend. Multiple size categories may be selected at one time by holding the Control key while making your selections.

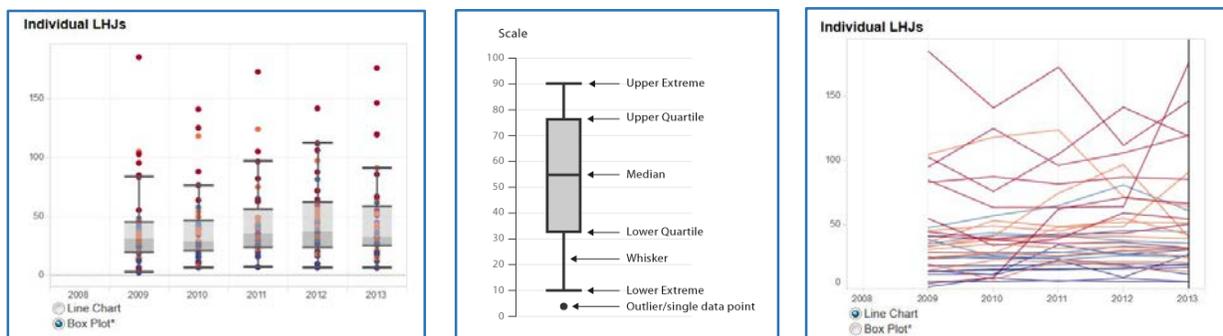
Hovering your cursor over any of the lines will give you more detailed information about the visualized data.



INDIVIDUAL LHJ CHART

The Individual LHJ Chart displays count information about all of the LHJs across every year in which there is data about the selected activity or service. This view allows you to toggle between two different types of charts—a **box plot** and a **line chart** (see 'Chart Selector' for information on how to toggle between these options). Both options produce a chart which lists years along its x-axis and counts per 10,000 population along the y-axis. Each dot represents the data point for the selected category for each LHJ over every year on the x-axis. Dots are colored according to the population density of the LHJ being represented (see 'LHJ Population Density Category for an explanation). While the position of these dots is the same in both charts, they each add other visual elements to help users understand trends in the data. Hovering your cursor over any of the data points or box plots will give you more detailed information about the visualized data.

The **line chart** connects all of the dots which represent a single LHJ over the time. This allows you to explore how the counts for a variable have changed for a particular LHJ over time. The line chart is therefore a better option for examining individual LHJ trends, but not quite as useful at comparing LHJ counts within a single year or exploring overall state distributions across years.



The **box plot** overlays a box and “whiskers” onto the dots to describe the distribution of data within a given year divided into quartiles. Each quartile contains a quarter of the data. A few of the data points may fall outside of the boxplot altogether, because their values are far outside the expected range of the other data points. These are referred to as outliers.

The box plot can be useful for determining where the provision of a service offered by a given LHJ falls in relation to its peers in a given year. The boxplot also allows you to explore how the distribution of counts within Washington State change over time. For instance, if the center of each box (the median) increases year after year for a given variable, you might draw the conclusion that state offerings of that activity are, on average, increasing over time. If the boxes become more compact or more spread out over time, you can draw conclusions about the variability of offerings between LHJs in the state. The boxplot is therefore an excellent visualization option for exploring how an LHJ compares to its peers within a given year, or how the distribution of all the LHJ activities in the state change over time. It is not particularly useful if you want to examine the trends of a given LHJ over time.

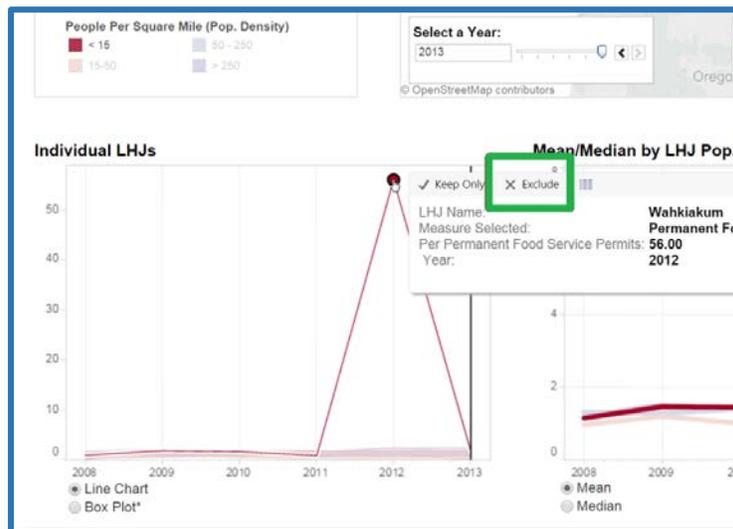
INTERACTION BETWEEN VIEWS

Each of the views within the dashboard provides a large amount of data about public health activities and services in Washington. However, the real power of this dashboard lies in its ability to foster interaction between different views. Using your cursor to click on features in one view affects the other two views in various ways.

Clicking on an LHJ in the Main Map: By clicking on any LHJ in the Main Map, you will highlight that LHJ in the map, highlight the data points representing that LHJ in the Individual LHJs Chart, and highlight the line representing that LHJ's size category in the Population Density Chart. Note that you can hold down the Control key to highlight multiple LHJs at the same time, across each of these views.

Clicking on a data point in the Individual LHJ Chart: By clicking on a data point in the box plot, or a line in the line chart, you will highlight all data points representing that LHJ in the Individual LHJ Chart, highlight that LHJ in the Main Map, and highlight the line representing that LHJ's size category in the Size Category Chart. Note that you can hold down the Control key to highlight multiple LHJs at the same time.

Excluding data points: After clicking on a data point in the Individual LHJ Chart, you have the option to exclude that data point. This is useful for exploring the effect an outlier has on the overall chart.



Clicking on a line in the Population Density Chart: By clicking on one of the lines in the Population Density Chart, you will highlight all of the LHJs in the selected size category in the Main Map. This action also transforms the Individual LHJ Chart so that it only includes data about LHJs from the selected size category. Note that you can hold down the Control key to highlight multiple size categories at the same time.

Removing your selection: By clicking within a given chart a second time (after making a selection, as described above), you will eliminate your selection and return the dashboard to its default view.

OTHER FUNCTIONS

The components of the dashboard described above provide most of the ways in which you will interact with the Public Health Activities and Services Inventory data. However, the dashboard also provides a few other functions which allow you to share your visualizations or to download the underlying dataset for more rigorous analysis.

SHARING OPTIONS

In the bottom right corner of the dashboard there are several options for sharing the visualizations you create. By clicking on the 'Share' icon, the dashboard gives you the URL to your visualization, the HTML code which can be used to insert your visualization into your own website, and options to share your visualization via Facebook or Twitter. By clicking on the 'Download' icon, you are offered the option to download the dashboard as an image, data sheet, crosstab, or PDF. You can also download the data itself as a Tableau Workbook, which is a good option if you have access to Tableau Desktop and wish to perform further analysis or to customize the dashboard to suit your own purposes.

DISPLAY OPTIONS

At the bottom left corner of the dashboard you are given three options. These icons allow you to undo, redo, and reset the entire dashboard.

