MetroBoston DataCommon

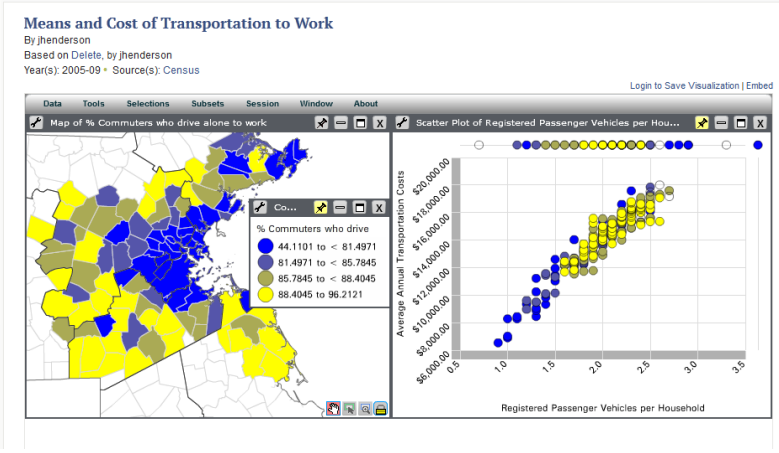
A partnership between the **Metropolitan Area Planning Council** & the **Boston Indicators Project** at the **Boston Foundation**

User Case

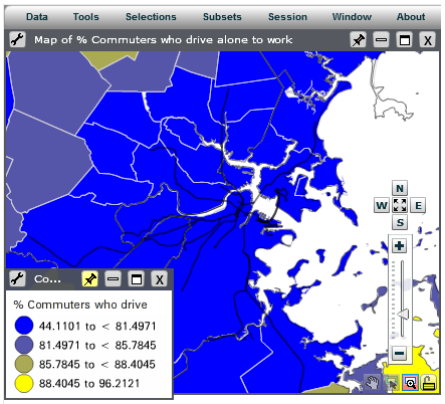
Means and Cost of Transportation to Work

You work for a regional planning agency in Metro Boston that is interested in learning more about commuting patterns in the region. You are curious to learn which communities have access to transit and which must rely on the automobile. Working for an agency that promotes sustainable and smart growth, you are looking to reduce the region's carbon footprint by reducing the number of cars on the road and promoting walking, biking, transit, and carpooling as a means of transportation to work. You decide to use the MetroBoston DataCommon to do your analysis.

You first peruse the Visualization Gallery and realize an existing user, jhenderson, has already done some work on this topic so you decide to build off of this user's work. You notice that the map displays the % of commuters who drive alone to work and the scatterplot shows average annual transportation costs by vehicles per household. Take a moment to analyze the visualizations. What do you notice about commuting patterns in the region? How are transportation costs and vehicles per household correlated with commuting patterns?



You decide to gather more information to get a better sense of how commuting patterns differ by community. You notice there are fewer commuters who drive alone to work in and around Boston, so you decide to see what other transportation options are available, such as transit. Add MBTA Subway Lines to your map (Hint: To update an existing visualization, use the wrench tool and select "Add Geometry." MBTA Subway lines can be

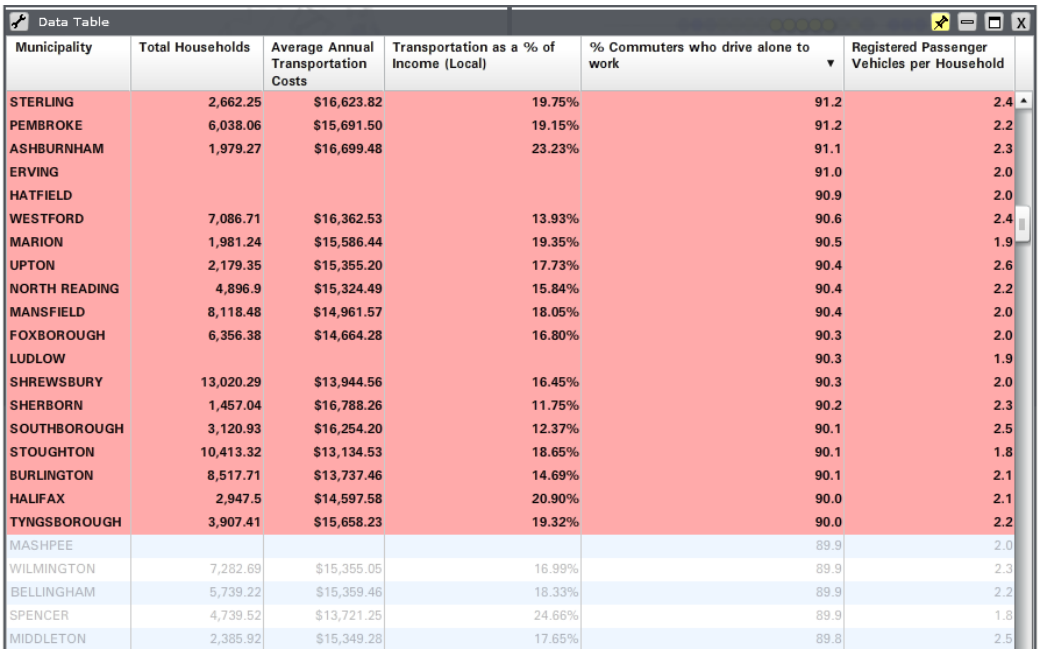


found in two different folders within the Attribute Selector window). Zoom into Boston and the surrounding communities to get a better look at the available transit. You can also make the transit lines more prominent by adjusting the weight of the line border using the Settings for that layer.

You zoom out again, and notice that some suburban communities outside the inner core are also less likely to drive alone to work, so you decide to see if there is transit available in those communities by looking for a commuter rail layer.

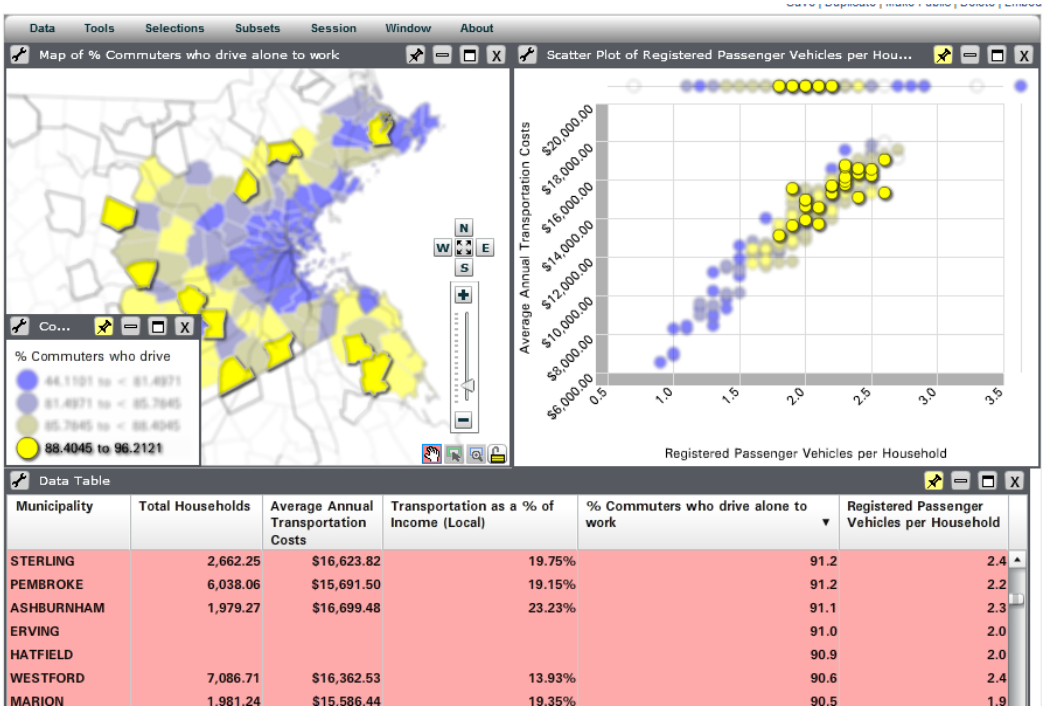
Next, you decide to add tabular data to your workspace. You add total households, average annual transportation cost, transportation as % of income, % commuters who drive alone to work, and registered passenger vehicles per household (Hint: You can find the first three fields under the Economy topic area (Housing and Transportation Costs dataset) and the rest in the Transportation topic area (Transportation to Work and Vehicle Miles Traveled datasets).

How many municipalities fall within this category: 90% or more of commuters drive alone to work? (Only include communities where this figure is 90.0% or more. Exclude those that are equal to 88.9%, etc., for the sake of this exercise). Hint: In your table, you can highlight the communities that fall within this category by sorting your data (clicking on the field name in your table that you want to sort on) and then clicking the value of the lower bound of your range, holding Shift, and then clicking the upper bound of your range. After making your selection in your table, you should also see those communities highlighted in your map and scatter plot. In the bottom right-hand corner of your screen you should see the number of records (communities) that fit your criteria.


Data Table

Municipality	Total Households	Average Annual Transportation Costs	Transportation as a % of Income (Local)	% Commuters who drive alone to work	Registered Passenger Vehicles per Household
STERLING	2,662.25	$16,623.82	19.75%	91.2	2.4
PEMBROKE	6,038.06	$15,691.50	19.15%	91.2	2.2
ASHBURNHAM	1,979.27	$16,699.48	23.23%	91.1	2.3
ERVING				91.0	2.0
HATFIELD				90.9	2.0
WESTFORD	7,086.71	$16,362.53	13.93%	90.6	2.4
MARION	1,981.24	$15,586.44	19.35%	90.5	1.9
UPTON	2,179.35	$15,355.20	17.73%	90.4	2.6
NORTH READING	4,896.9	$15,324.49	15.84%	90.4	2.2
MANSFIELD	8,118.48	$14,961.57	18.05%	90.4	2.0
FOXBOROUGH	6,356.38	$14,664.28	16.80%	90.3	2.0
LUDLOW				90.3	1.9
SHREWSBURY	13,020.29	$13,944.56	16.45%	90.3	2.0
SHERBORN	1,457.04	$16,788.26	11.75%	90.2	2.3
SOUTHBOROUGH	3,120.93	$16,254.20	12.37%	90.1	2.5
STOUGHTON	10,413.32	$13,134.53	18.65%	90.1	1.8
BURLINGTON	8,517.71	$13,737.46	14.69%	90.1	2.1
HALIFAX	2,947.5	$14,597.58	20.90%	90.0	2.1
TYNGSBOROUGH	3,907.41	$15,658.23	19.32%	90.0	2.2
MASHPEE				89.9	2.0
WILMINGTON	7,282.69	$15,355.05	16.99%	89.9	2.3
BELLINGHAM	5,739.22	$15,359.46	18.33%	89.9	2.2
SPENCER	4,739.52	$13,721.25	24.66%	89.9	1.8
MIDDLETON	2,385.92	$15,349.28	17.65%	89.8	2.5

What characterizes this selection of communities? How many vehicles do you find in these households, what is the minimum average annual transportation cost, where are these communities located?



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Now that you have a sense of communities' commuting patterns in the region you decide to save an image of your work, as well as export the data included in your table to bring to your colleagues. You want to have a larger discussion on ways to reduce the number of cars on the road in these communities to help reduce costs to the residents and reduce the overall carbon footprint of the region.