

Accessing Local Employment-Household Dynamics (LEHD) Data

1. Learning Objectives

- Learn how to use LEHD data using the On The Map tool
- Understand what data is available through LEHD

2. Introducing LEHD

1. Today, we will be walking you through a couple exercises using the On the Map tool. We will look at commute patterns. The lab will cover the basics, but it will not be comprehensive. If you want to find out what other information is available or are looking for more resources, there is good documentation at: https://lehd.ces.census.gov/applications/help/onthemap.html#!what_is_onthemap
2. Before we get started let's review briefly some terms that On the Map uses:

Total All Jobs A count of all jobs that meet a user's specification of geography, years, and/or labor market segments.

Total Primary Jobs A count of primary jobs that meet a user's specification of geography, years, and/or labor market segments. A primary job is the highest paying job for an individual worker for the year. The count of primary jobs is the same as the count of workers.

Total Private Jobs A count of private-sector jobs that meet a user's specification of geography, years, and/or labor market segments.

Total Private Primary Jobs A count of private-sector primary jobs that meet a user's specification of geography, years, and/or labor market segments. A primary job is the highest paying job (either public or private) for an individual worker for the year.

Jobs by Worker Age The categories are Age 30 or younger, Age 31 to 54 years, and Age 55 or older.

Jobs by Earnings The categories are \$1,250 per month or less, \$1,251 to \$3,333 per month, and More than \$3,333 per month.

Jobs by Industry Type (2-digit NAICS) The categories are all 2-digit NAICS codes, otherwise known as industry sectors. See the U.S. Census Bureau's [documentation on NAICS](#) for more information on these industry sectors.

Report Settings A section at the bottom of each report summarizing the settings and selection area(s) chosen in the Analysis Settings popup.

3. Let's also briefly cover some mapping terms:

Add Buffer to Selection One of the options found in the Selection tab. This tool allows the user to buffer the point(s), line, polygon, or selected features. For more information on the selection tools available in OnTheMap, please read [How To Use the OnTheMap Selection Tools](#) [PDF, 856KB].

Add Layer Selection One of the options found in the Selection tab. This tool allows the user to select an area by picking one or more features in a particular map layer. The user chooses the layer type (County, Places, Census Tract, etc.) from the drop-down box and then selects features in the map by clicking in (Points tool) or drawing a line or polygon across the boundaries of the desired features. For more information on the selection tools available in OnTheMap, please read [How To Use the OnTheMap Selection Tools](#) [PDF, 856KB].

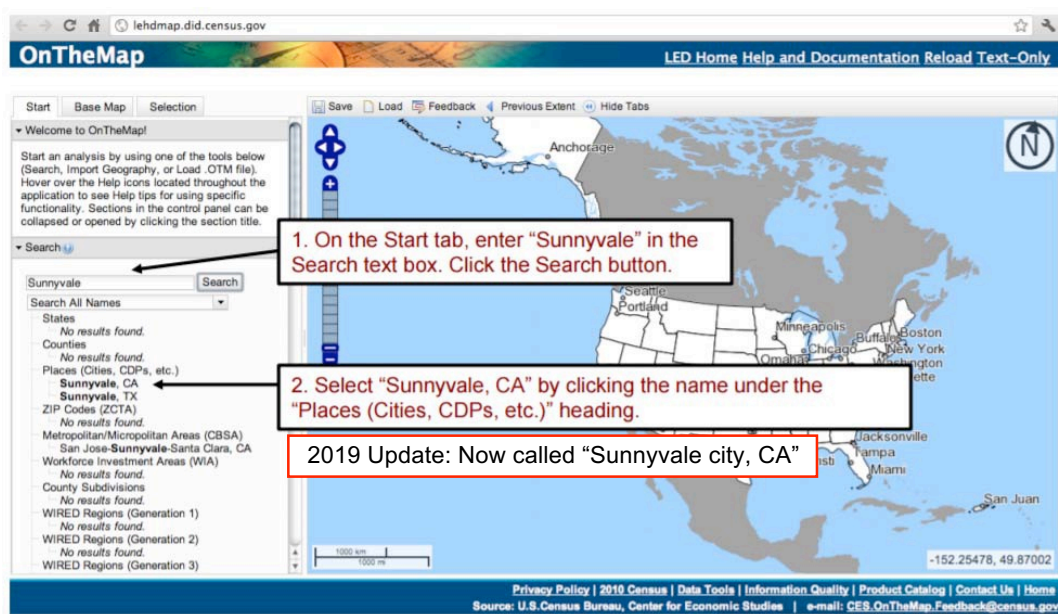
Advanced Area Selection This optional step allows users to define a second selection area and use this new area to either a) limit the destinations from/to the first selection area (Create Paired Area) or b) add, intersect, or subtract this area from the first selection area. The default choice is to skip this step and proceed with only the first selection area. Advanced Area Selection can be accessed by clicking 'Add Advanced Selection' in the Perform Analysis popup or 'Confirm and Add Advanced Selection' in the Selection tab. For more information on how to use advanced selections in OnTheMap, please read [How To Use Advanced Selection Areas](#) [PDF, 1.6MB].

3. Starting Up

Click the following link to go to the LEHD website: <https://onthemap.ces.census.gov/>. The link will bring up an interface with a map to the right and a navigating screen to the left. We are going to start by evaluating two basic questions:

- Where do workers live?
- Where do residents work?

Step 1. Use the search bar under the “Start” tab at the top left of the screen to define your geographic area of interest. The search bar will bring up all the geographic areas that match your search term. You need to click on the desired name. I am going to do the city of Sunnyvale, because I know it’s an area that struggles with bad congestion during commute periods.



Step 2. After a map of Sunnyvale appears, click on “Perform Analysis on Selection Area” to start our investigations. This will bring up a large box with multiple selection options. You need to make 4 choices (screen shot available on next page):

1. **Home/Work Area:** Select either “Work” or “Home” as your interest. “Work” indicates that you will analyze people who work in Sunnyvale, and “Home” indicates that you will analyze people who live in Sunnyvale. For now, choose “work”
2. **Analysis Type:** This determines the general geographic type of analysis that you will be conducting. Select “Destination” and select “Places” from the drop down menu. This will give us data on the home location of Sunnyvale workers.
3. **Year:** This gives you the year of analysis.
4. **Job Type:** This determines the categories of jobs that you will be analyzing (the definition of each is explained above. Select “Primary Jobs.”

Analysis Settings

Destination Analysis in 2009 by Primary Jobs

Home/Work Area
Determines whether the selection area is analyzed on where workers live ("Home") or where workers are employed ("Work").
☐ Home
☒ Work

Analysis Type
Determines the type of results that will be generated for the selected area.
☐ Area Profile
 Labor Market Segment: All Workers
☐ Area Comparison
 Areas to Compare: Places (Cities, CDPs, etc.)
 Labor Market Segment: All Workers
☐ Distance/Direction
☒ Destination
 Destination Type: Places (Cities, CDPs, etc.)
☐ Inflow/Outflow
 Note: Home/Work choice does not affect results

Year
Determines the year(s) of data that will be processed in the analysis.
☒ 2009
☐ 2008
☐ 2007
☐ 2006
☐ 2005
☐ 2004
☐ 2003
☐ 2002

Job Type
Determines the scope of jobs that will be processed in the analysis.
☐ All Jobs
☒ Primary Jobs
☐ All Private Jobs
☐ Private Primary Jobs

1. Select "Work" to indicate that you want to analyze people who work in Sunnyvale. (Selecting "Home" would indicate that you want to analyze people who live in Sunnyvale.)

2. Select "Destination" to get information on where Sunnyvale workers return home. (Hence "Home Destination.") You can change the Destination Type to look at home locations by county, city, zip code, census tract, etc.

3. Select year(s) of interest.
 2019 Update: Now select up to 2015.

4. In most cases, select "Primary Jobs" – the default setting.

5. Click "Go!"

Step 3. Review the results. The map shows the job counts in Sunnyvale by the locations where workers live. To the right, you will see a pie chart with the home locations as percentages. What do you notice? Do you see anything that would explain why traffic might be significant during commute periods?

Step 4: There are multiple tools for refining the results beyond our initial default selections. Several of these options are available immediately on the left panel.

- To look at specific market segments click through the "Labor Market Segment Filter." What filters do you think would be interesting to check out?
- To quickly change through years click on a different year. Are travel patterns the same now as they were 10 years ago?

2019 Note: Will need to choose 2005 and 2015 in your analysis selection(s) to see both easily from the map. This can be done using the procedure following in Step 4.

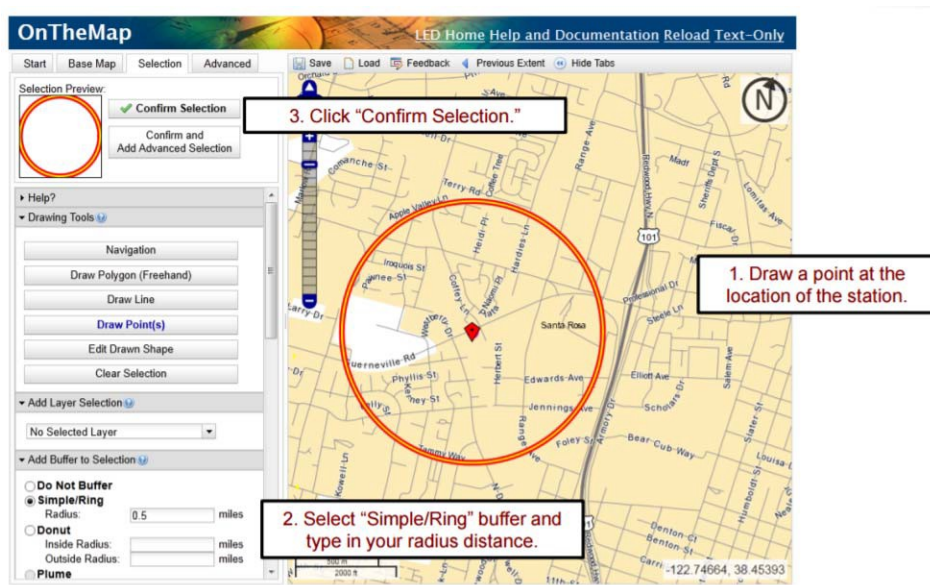
Step 4. Let's go back to the data selection pop-up and change the analysis to look at "Work Destinations." You can do this by selecting "Change Settings" at the bottom left of the screen. When the pop-up comes up click on "home" in the "Home/Work Area" box. What do you find?

4. Worker Flows (and more selection options)

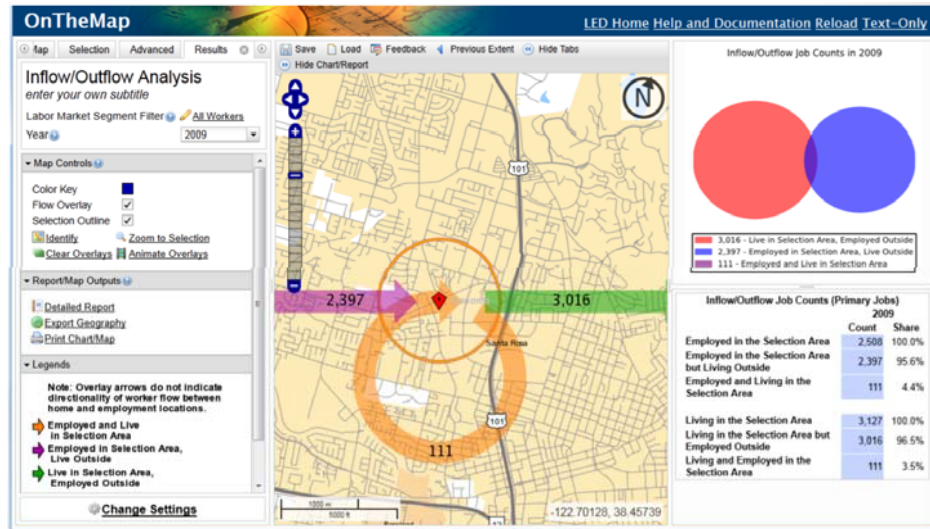
In the first part of the lab, we used the search bar to find a location. For this part of the lab, let's look at the other options under the selection tab on the panel at the left. Under "Drawing Tools," you will find three selection options: Draw Polygon, Draw Line, and Draw Point.

We are going to create a selection area that is a circle with radius that is a half mile.

1. Before doing anything, make sure to clear out any previous selections (i.e. the outline for Sunnyvale) by clicking "Clear Selection" Under the "Drawing Tools" panel.
2. Under "Add Layer Selection" make sure that "No Selected Layer" is shown.
3. Under "Drawing Tools," click "Draw Point" and place the point in an area of interest. You can search for a specific address using the search bar under the start tab. I am going to use search for the address of the Sunnyvale Train Station. It is 121 W Evelyn Ave, Sunnyvale, CA 94086.
4. Under "Add Buffer," select "Simple/Ring" buffer and type in a distance of 0.5 miles.
5. Click confirm. Make sure that only one buffer or selection is visible. You can analyze on multiple buffers, but it is significantly more complex and often less useful.



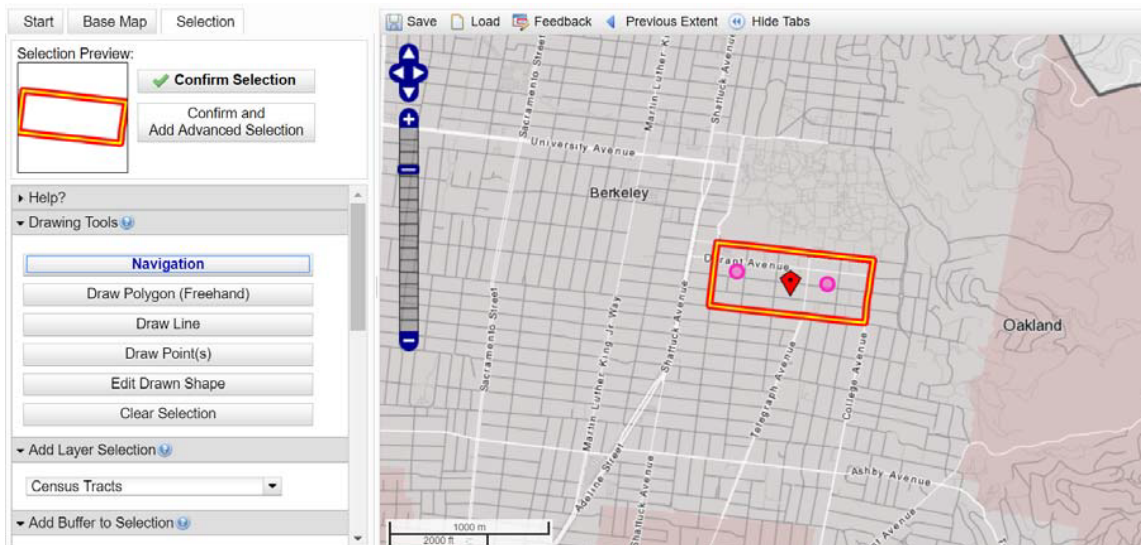
Now, set up your analysis. Follow the same steps as before only this time under "Analysis Type" choose select "Inflow/Outflow." This will allow us to see the inflow and outflow of people from the selection area. There are three arrows. The arrow leaving the circle is for people who live in the area and work elsewhere. The arrow entering the circle is for people who live elsewhere and work in the study location. The final group of people, represented by the circle arrow, live and work in the bounded area.



The other selection that might interest you is how to select a Census Tract. Again, you can clear out your previous selection by clicking on the “Selection” tab at the top of the left panel and then selecting “clear selection” under the drawing tools. To select a census tract we follow a fairly similar process.

1. First, zoom in on the map to general location of your Census Tract. At this point, you should have a good idea as to where the tract is located.
2. Go to the “Add Layer Selection” under the selection tab. Choose “Census Tract” from the drop down menu. This tells On the Map that you want the final selection to be based on Census Tract boundaries.
3. Now go to drawing tools and select the “Draw Point” tool. Place a point in your Census of interested (use multiple points if you are selecting multiple tracts).
4. Click “Confirm Selection” and the boundary of the Census Tract should be illuminated.
5. Confirm that the selected area matches the tract you want to investigate and then chose “Perform Analysis.” Think about what type of analysis you would be interested in and select a set of characteristics for analysis.

2019 Note: You can also select a Tract by searching under the “Start” tab. Simply search the number and then choose the Tract in your county/state.



5. Exporting Data

The On the Map interface provides you with quick data on the map and in a box to the bottom right of the screen. However, you can also download the data. Under the Results banner there are three options for exporting your work under “Report/Map Outputs”.

1. Detailed Report— This is of most use to you. It provides options to export the results as a PDF, to Excel (XLS), and to HTML. We recommend that you export the data to Excel (XLS). This will allow you to manage the data and create high quality attractive visuals.
2. Export Geography— This produces a shapefile which can be used in ArcGIS.
3. Print Chart Map— This exports all of the parts of the visualizations. It can be helpful for quickly putting together a map out of the best parts of the On the Map visualization.



The screenshot shows a web interface titled "Detailed Report View". At the top, there are three export buttons: "Export to PDF", "Export to XLS", and "Export to HTML". Below these buttons is a section titled "Inflow/Outflow Report". This section contains two tables. The first table is titled "Selection Area Labor Market Size (Primary Jobs)" and shows data for 2014. The second table is titled "In-Area Labor Force Efficiency (Primary Jobs)" and also shows data for 2014.

Selection Area Labor Market Size (Primary Jobs)		
	2014	
	Count	Share
Employed in the Selection Area	1,746	100.0%
Living in the Selection Area	1,518	86.9%
Net Job Inflow (+) or Outflow (-)	228	-

In-Area Labor Force Efficiency (Primary Jobs)		
	2014	
	Count	Share
Living in the Selection Area	1,518	100.0%
Living and Employed in the Selection Area	57	3.8%