

# **GIS: a very basic introduction**

By Vanessa Casillas (Graduate Fellow)

# Agenda

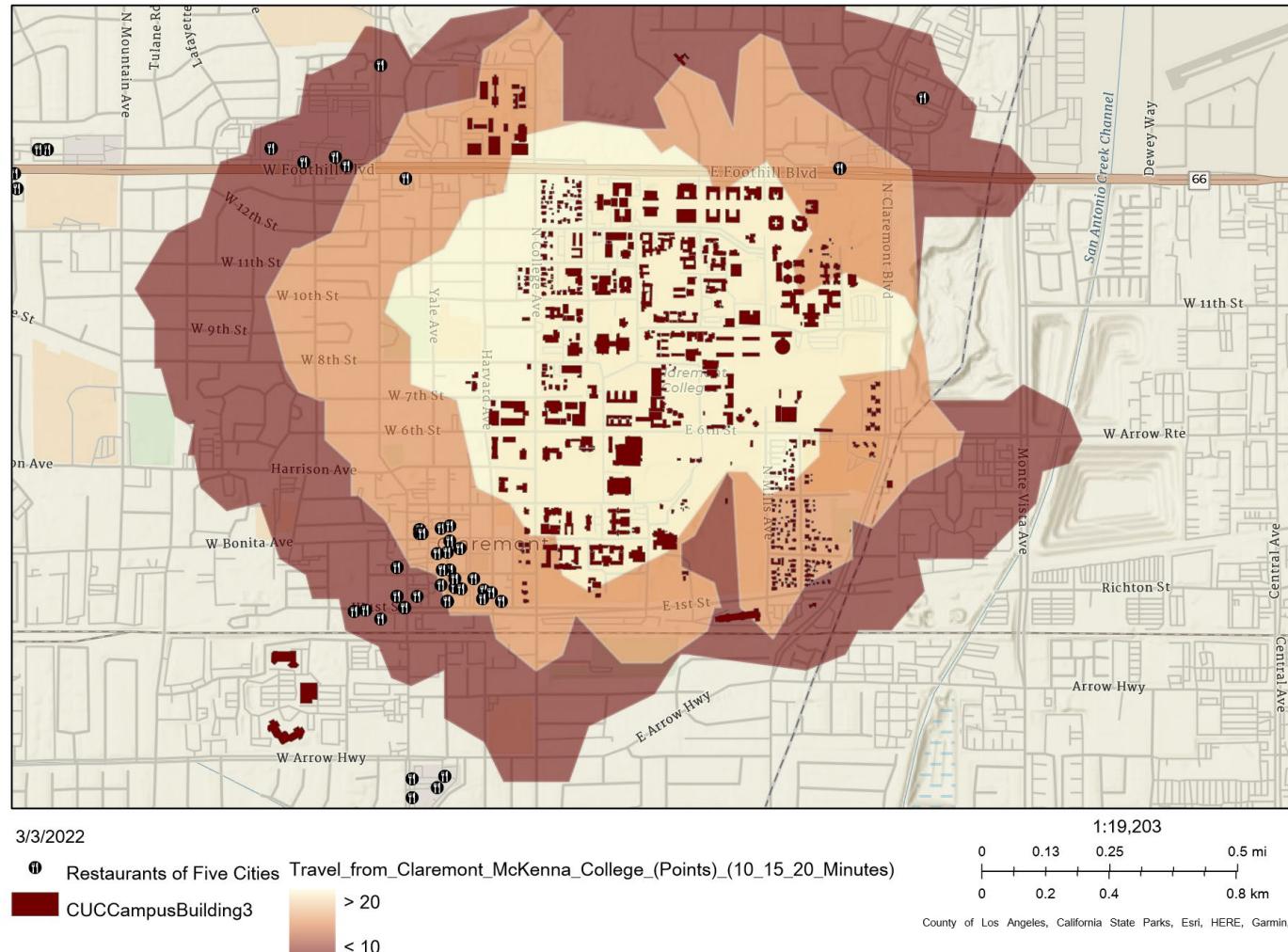
- Overview of ArcGIS online
- What is GIS?
- Classic ArcGIS online overview
- Layers
- Edits
- Send to New ArcGIS Online
- Print and Share
- Endnotes

# Goal

## Goal

- Navigate ArcGIS Online
- Make a simple map
- Show your map your group or organization
- Make a PDF print for presentations and reports

## Class Map

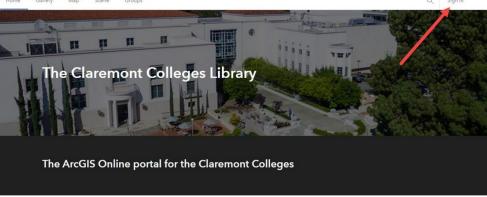


# CMC – ArcGIS

**Get an ArcGIS Account**

You can access ArcGIS Online directly with your Single Sign-On (SSO) credentials when you click "Sign In" from the [Claremont Colleges Library ArcGIS Portal](#).

[Access the Claremont ArcGIS Portal](#)



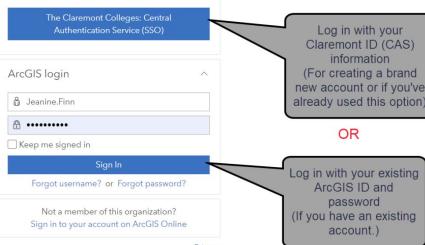
The Claremont Colleges Library  
The ArcGIS Online portal for the Claremont Colleges

The Claremont Colleges Library Portal, sign in link is in the top right

If you have existing credentials from ArcGIS Online, you can continue to log in with those.

Sign in to The Claremont Colleges Library 

**Two ways to log in to ArcGIS**



ArcGIS login

Jeanine.Finn

Keep me signed in

Sign In

Forgot username? or Forgot password?

Not a member of this organization?  
Sign in to your account on ArcGIS Online

Privacy

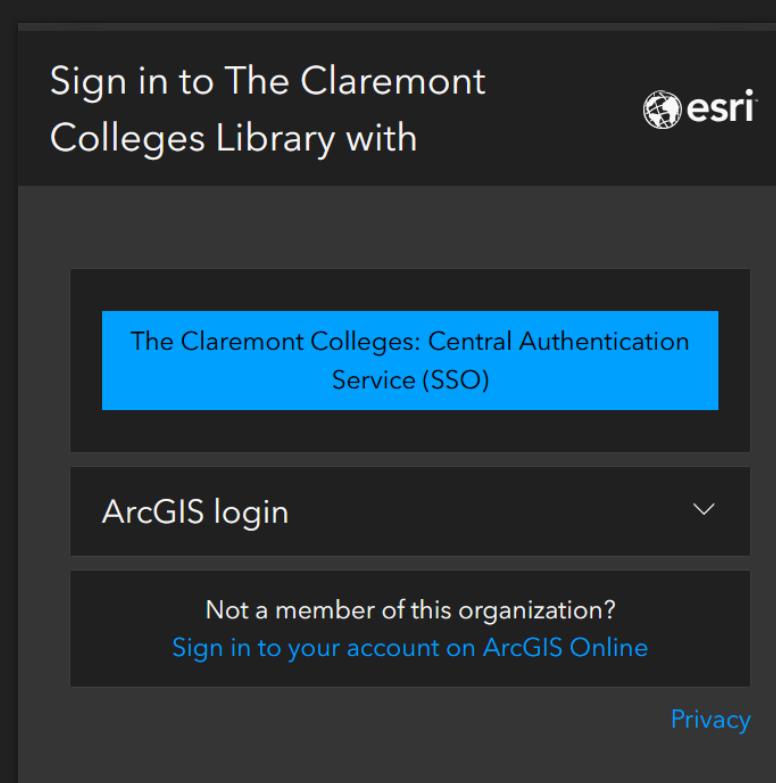
Log in with your Claremont ID (CAS) information  
(For creating a brand new account or if you've already used this option)

OR

Log in with your existing ArcGIS ID and password  
(If you have an existing account.)

ArcGIS sign on screen. Two ways to log in to ArcGIS: 1. Login with your Claremont ID (CAS) information (for creating a brand new account or if you've already used this option). OR 2. Log in with your existing ArcGIS ID and password (if you have an existing account).

# Organization and login



# Home view

The Claremont Colleges Library

Home    Gallery    Map    Scene    Groups    Content    Organization    [Search](#)    [Bell icon](#)    [More icon](#)    [Vanessa Casillas](#)    [VanCasillas@cmc.edu.cl...](#)

Overview    Members

The Claremont Colleges Library

Subscription ID: 9377927143

System health: ✓ All systems operational

Newest members

View all members

Charidy Paige  
Mirek Vanis  
Nathan Shankar  
Jon Burkart

Administrative contacts

JF Jeanine Finn

Open Data groups

View all

B Basemaps 2019  
Contributors: 1 Items: 32

HMC Clinic  
Contributors: 9 Items: 0

Latest content

Rincon Crater  
by claremontcolleges  
Created: Dec 31, 2021  
Updated: Dec 31, 2021  
View Count: 9

RinconCrater  
by claremontcolleges  
Created: Dec 31, 2021  
Updated: Dec 31, 2021  
View Count: 5

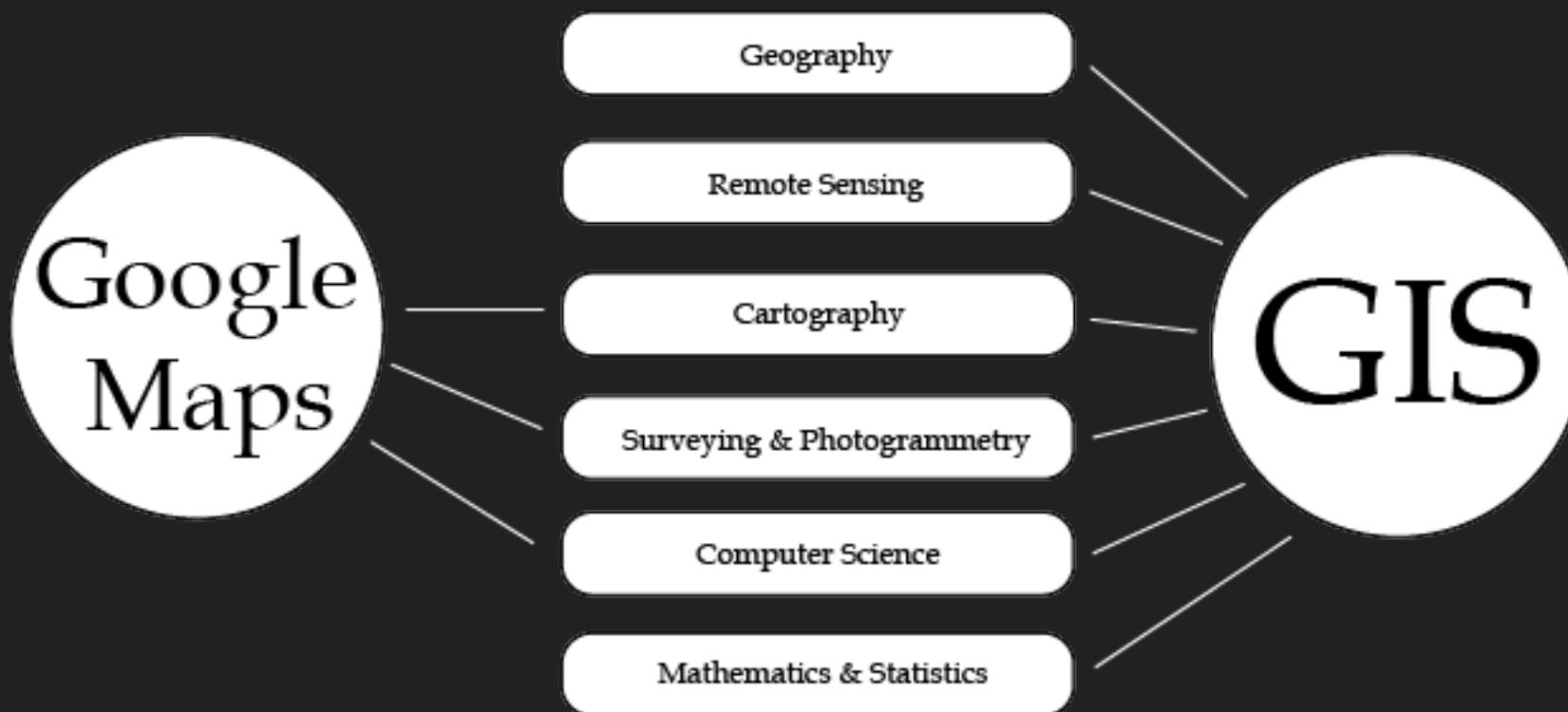
2022 Dia Mundial de la Tierra Con...  
by CWeisman21@cmc.edu.clare...

Created: Dec 21, 2021  
Updated: Jan 4, 2022  
View Count: 3

View all content

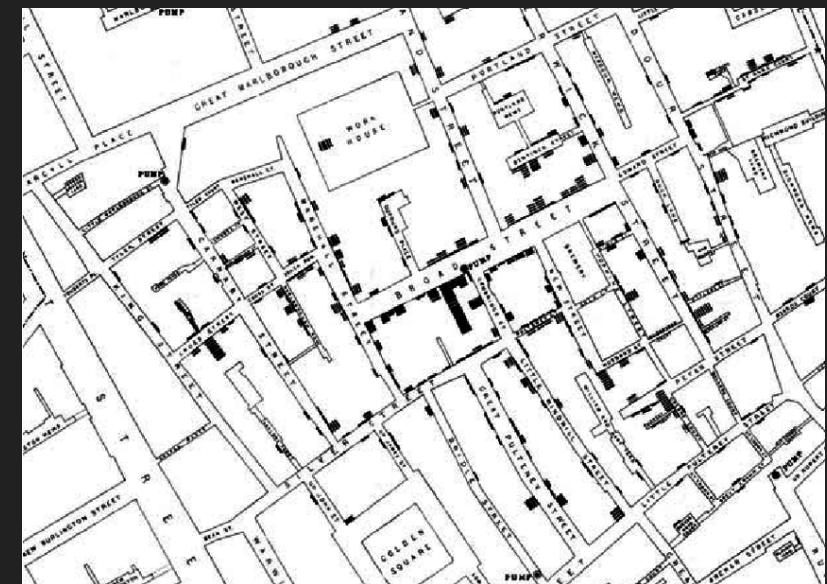
Trust Center | Contact Esri | Report Abuse | Contact Us

# First Question people think of when learning GIS: GOOGLE MAPS – Is it GIS?



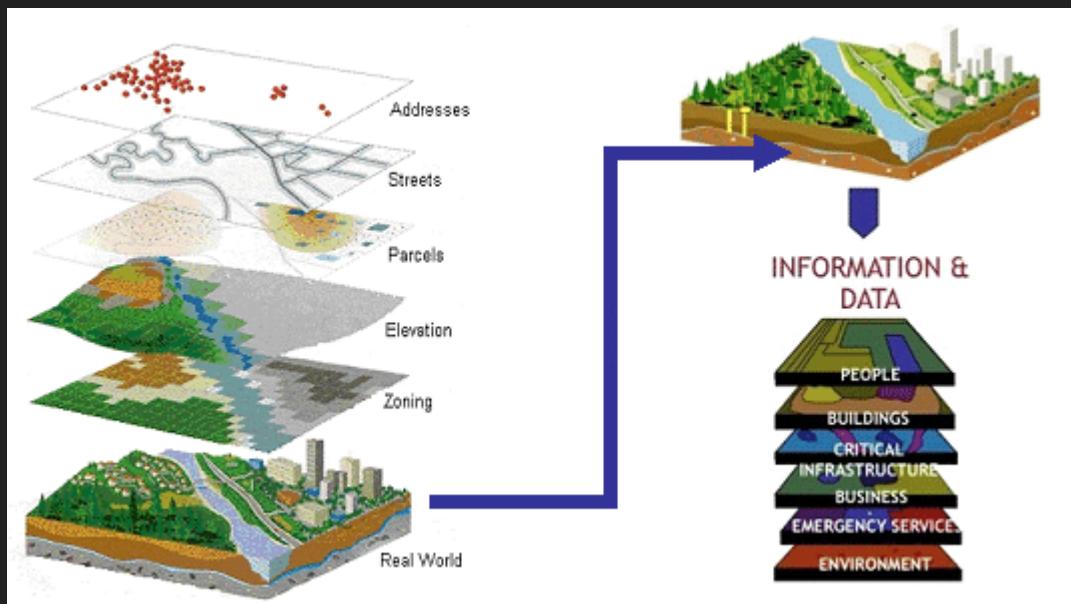
# GIS? Quick Overview

- GIS: Geographic Information Systems
  - Storing, retrieving, comparing spatial data
- ESRI: Environmental Science Research Institute (The Science of Where)
  - **Jack Dangermond** Redlands
- 1854 Cholera Epidemic – London: Dr. John Snow
  - Mapped cholera deaths
  - Determined water pump source

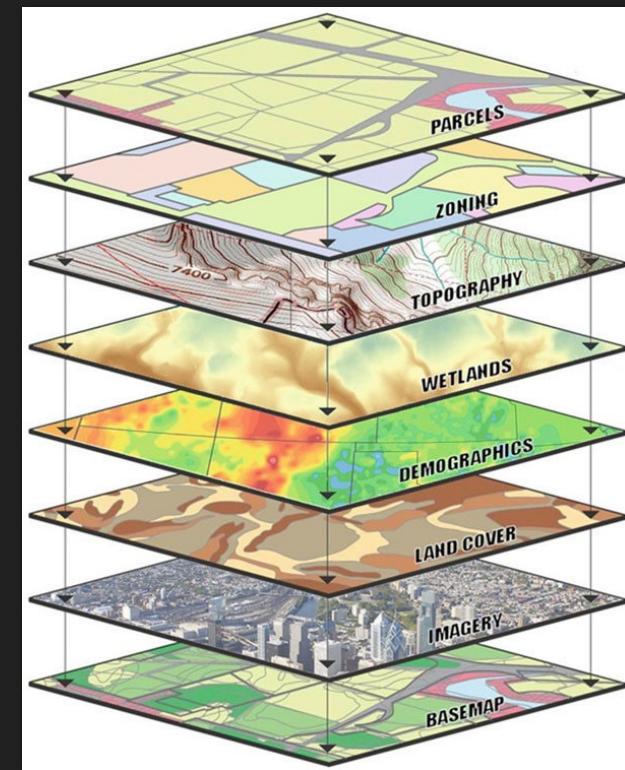


[https://www.researchgate.net/figure/John-Snows-famous-map-of-the-1854-Broad-Street-epidemic-attempted-to-positively\\_fig1\\_220144184](https://www.researchgate.net/figure/John-Snows-famous-map-of-the-1854-Broad-Street-epidemic-attempted-to-positively_fig1_220144184)

# Layers and Layers and Layers



Shukla, Yogita. (2012). Innovative Geospatial Solutions - Key to India's Transport Infrastructure.



Kolios, Stavros & Vorobev, Andrei & Vorobeva, Gulnara & Stylios, Chrysostomos. (2017). WebGIS Applications for Weather, Marine, and Atmospheric Environments. 10.1007/978-3-319-53086-4\_2.

# Planning a Map: a simple map

1. Problem – why are we making a map?
2. Data – what layers do we need?
3. Analysis – what layers do we need to adjust or make?
4. Edits – who is looking at the map?
5. Results – does it tell a visual story?



# Classic ArcGIS

Home ▾ My Map

Details Add Basemap Analysis

About Content Legend

Make your own map

It's easy to make your own map. Just follow these steps:

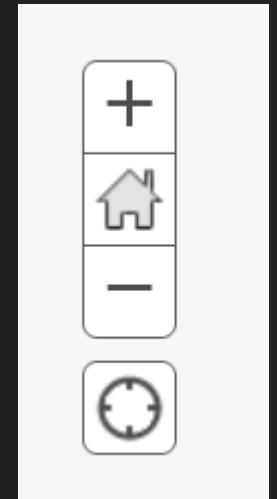
1. Choose an area.  
Pan and zoom the map to an area or search by its name or address.
2. Decide what to show.  
Choose a Basemap then Add layers on top of it.
3. Add more to your map.  
Add notes to draw features on the map.
4. Save and share your map.  
Give your map a name and description then share it with other people.

Save Share Print Directions Bookmarks Find address or place

0 2 4 km

County of Los Angeles, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA | County of Los Angeles, Esri, HERE, Garmin, SafeGraph, METI/NASA, U...

esri

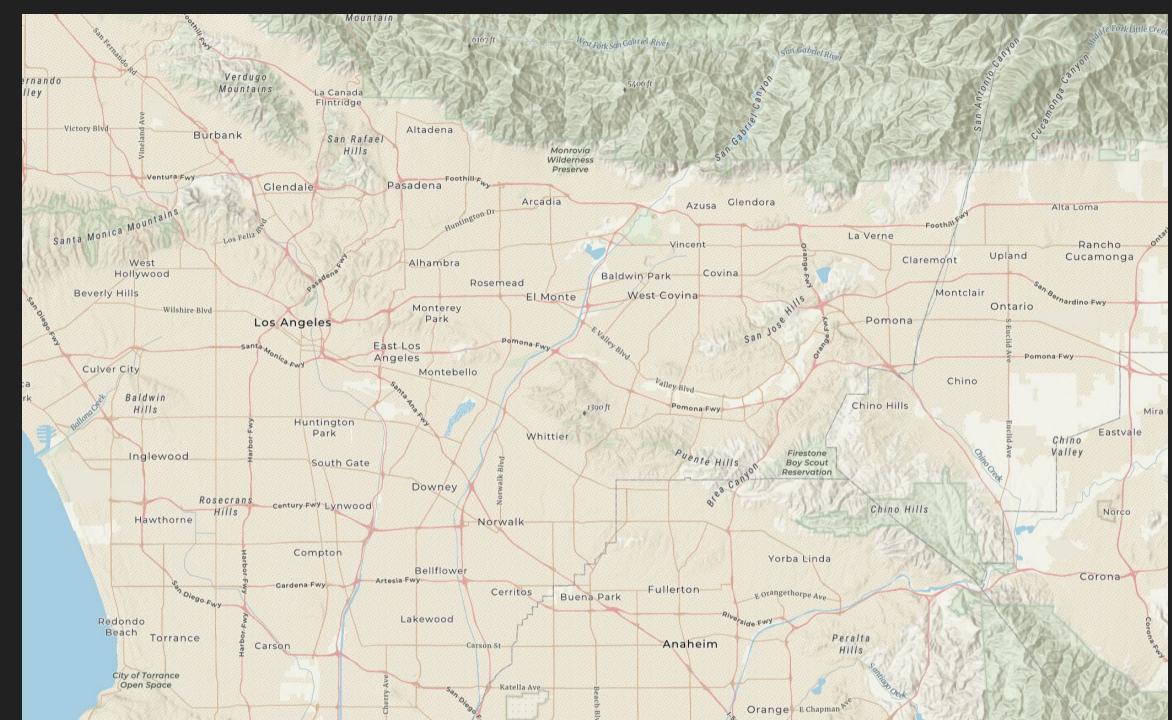


# Base Maps

Basemap | Analysis

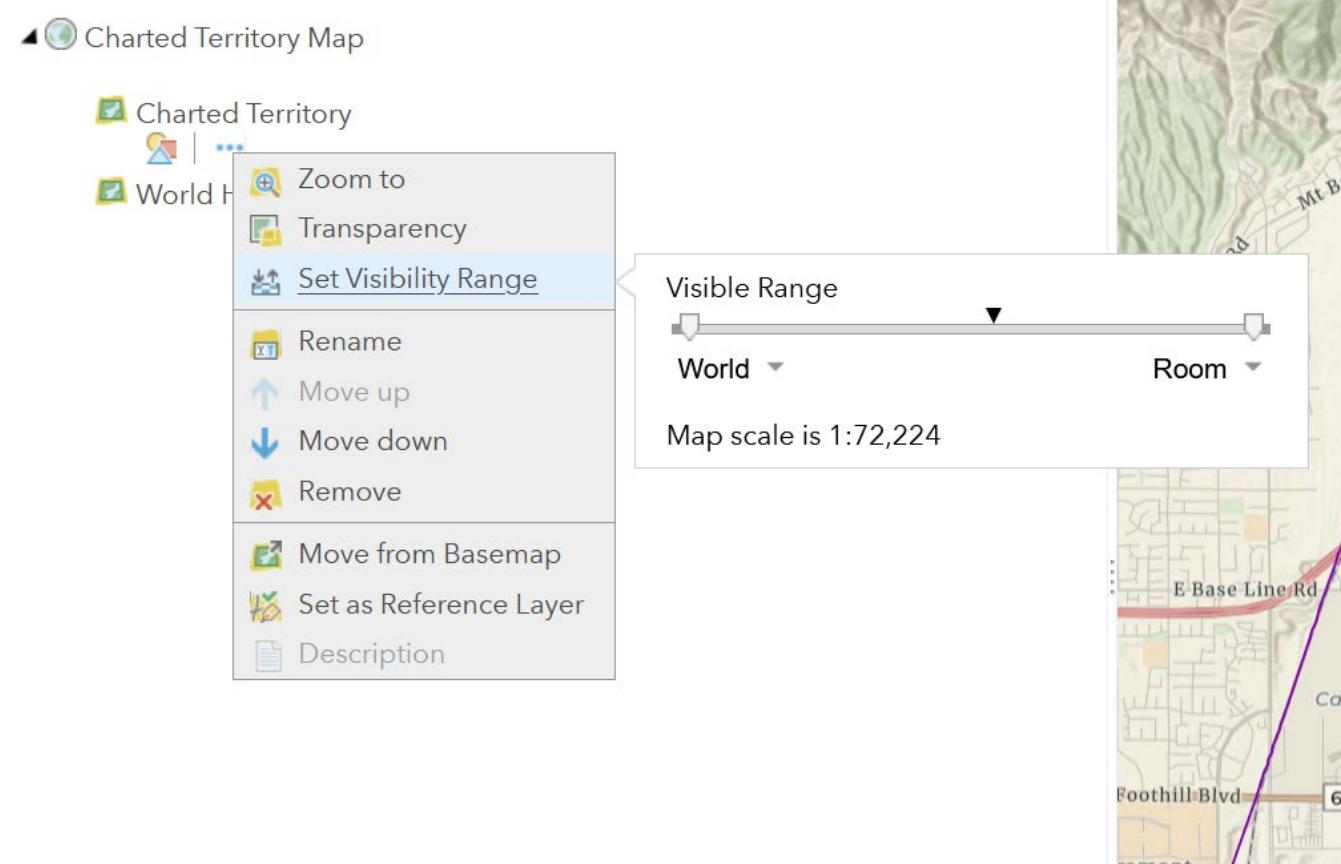
Select a basemap

- BFS Wingtra Aerial Survey
- Charted Territory Map
- Colored Pencil Map
- Community Map
- Dark Gray Canvas
- Dark Gray Canvas
- Firefly Imagery Hybrid
- Human Geography Dark
- Human Geography Map
- Human Geography Map
- Imagery
- Imagery Hybrid



# Base map

Overview



# Living Atlas

Layers and layers and layers

The screenshot shows the 'Living Atlas' search interface with a search bar at the top containing the text 'schools'. Below the search bar, it displays '245 layers' found. The results list four items:

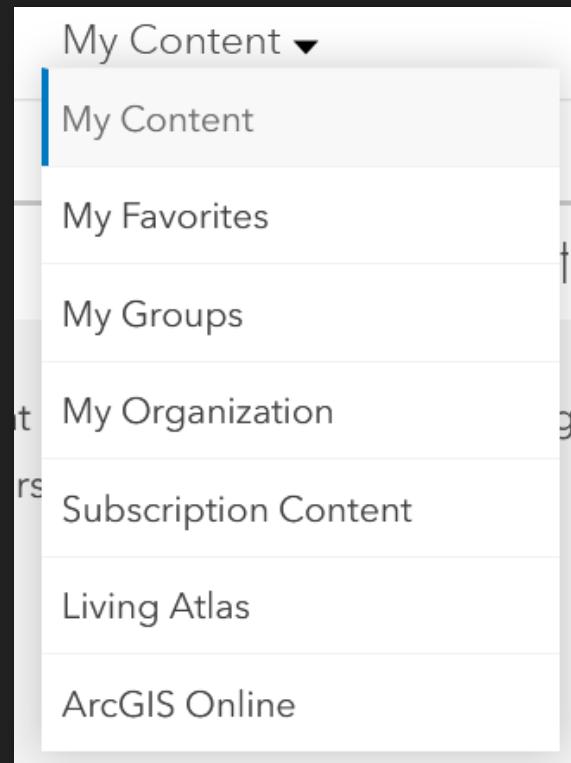
- School District Boundaries - Current by National Center for Education Statistics, Updated: 2/18/22
- NZ School Enrolment Zones by Eagle Technology Group Ltd, Updated: 10/19/21
- NZ Schools Directory by Eagle Technology Group Ltd, Updated: 3/3/22
- U.S. Public Schools (with Placekey) by esri\_placekey, Updated: 10/9/20

Each result item includes a small thumbnail image, the layer name, the source organization, and the last update date.

The screenshot shows the 'Add' ribbon in a map application. At the top left is a yellow plus icon labeled 'Add'. To its right is a 'Basemap' button with a grid icon. Below the ribbon, there is a search bar with the placeholder text 'Search for Layers'. Below the search bar is a blue header bar with the text 'Browse Living Atlas Layers'. The main content area contains four options:

- Add Layer from Web
- Add Layer from File
- Add Map Notes

# My Content



# Reading Layers and giving credit



School District Boundaries - Current 

Feature Layer by National Center for Education Statistics

Updated: January 6, 2022

 Authoritative 

This composite file contains elementary, secondary, and unified school district boundaries collected for the National Center for Education Statistics by the U.S. Census Bureau.

Description

This composite file contains elementary, secondary, and unified school district boundaries collected for the National Center for Education Statistics by the U.S. Census Bureau.

The National Center for Education Statistics' (NCES) Education Demographic and Geographic Estimate (EDGE) program develops annually updated school district boundary composite files that include public elementary, secondary, and unified school district boundaries clipped to the U.S. shoreline. School districts are single-purpose administrative units designed by state and local officials to organize and provide public education for local residents. District boundaries are collected for NCES by the U.S. Census Bureau to support educational research and program administration, and the boundaries are essential for constructing district-level estimates of the number of children in poverty.

The Census Bureau's School District Boundary Review program (SDRP) (<https://www.census.gov/programs-surveys/sdrp.html>) obtains the boundaries, names, and grade ranges from state officials, and integrates these updates into Census TIGER. Census TIGER boundaries include legal maritime buffers for coastal areas by default, but the NCES composite file removes these buffers to facilitate broader use and cleaner cartographic representation. The NCES EDGE program collaborates with the U.S. Census Bureau's Education Demographic, Geographic, and Economic Statistics (EDGE) Branch to develop the composite school district files. The inputs for this data layer were developed from Census TIGER/Line and represent the most current boundaries available. For more information about NCES school district boundary data, see <https://nces.ed.gov/programs/edge/Geographic/DistrictBoundaries>.

Previous collections are available for the following years:

- SY 2019-20 TL 20
- SY 2018-19 TL 19
- SY 2017-18 TL 18
- SY 2015-16 TL 17
- SY 2015-16 TL 16
- SY 2013-14 TL 15
- SY 2013-14 TL 14

## Terms of Use

All information contained in this file is in the public domain. Data users are advised to review NCES program documentation and feature class metadata to understand the limitations and appropriate use of these data.

## Credits (Attribution)

NCES EDGE

## Owner

 National Center for Education Statistics

Managed by:  
 OpenDataMgr\_NCES

**View count:** 994,240

**Created:** March 16, 2020

**Shared with:** Everyone (public)

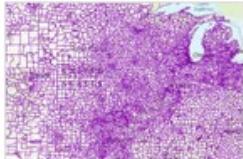
- Title
- Updated
- Description
- Terms of Use
- Credits (Attribution)
- Owner
- Managed by
- View Count
- Created
- Shared with

# Libraries

Living Atlas ▾

Q schools

Items: 238

 School District Boundaries - Current  
by National Center for Education Statistics  
Updated: 1/6/22

☰   

ArcGIS Online ▾

Q claremont

Items: 183

 Claremont City Boundary  
by bsims\_hplanning  
Updated: 10/26/20



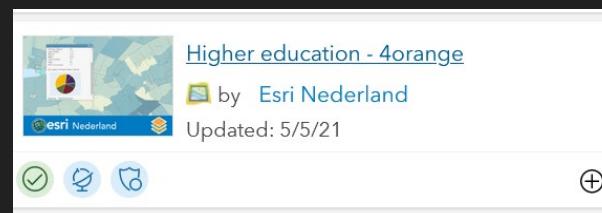
# All fun and games till you run out of Credits!!!

## ○ Credits vs. Free

- Story time! (every GIS specialist has one) The time I blew all my credits on converting all addresses from regular mail to address to geocodes

## ○ Addresses vs. Geocodes

- latitude versus longitude



Add layer

Living Atlas ▾

Items: 238

School District Boundaries - Current  
by National Center for Education Statistics  
Updated: 1/6/22

NZ School Enrolment Zones  
by Eagle Technology Group Ltd  
Updated: 10/19/21

NZ Schools Directory  
by Eagle Technology Group Ltd  
Updated: 1/7/22

U.S. Public Schools (with Placekey)  
by esri\_placekey  
Updated: 10/9/20

Private School Locations - Current  
by National Center for Education Statistics  
Updated: 10/28/21

Public School Locations - Current  
by National Center for Education Statistics  
Updated: 6/29/21

# Credits Talk

My settings

General

Licenses

Credits

## Credits

Credits

Remaining **299.50**

Assigned **300.00**

Credits are the currency used across ArcGIS and are consumed for specific transactions and types of storage. Any ArcGIS software that interacts with ArcGIS Online can use credits. Most of what you do in ArcGIS Online does not require credits. In many cases, credit-consuming activities carry a relatively low cost.

[Learn more about credits](#)

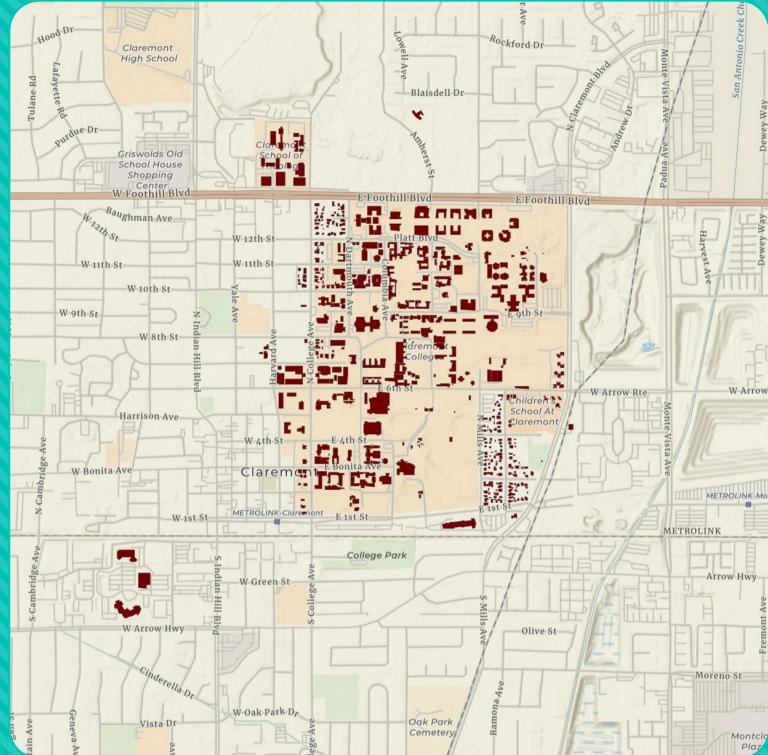
Details Add | Edit Basemaps

ArcGIS Online ▾

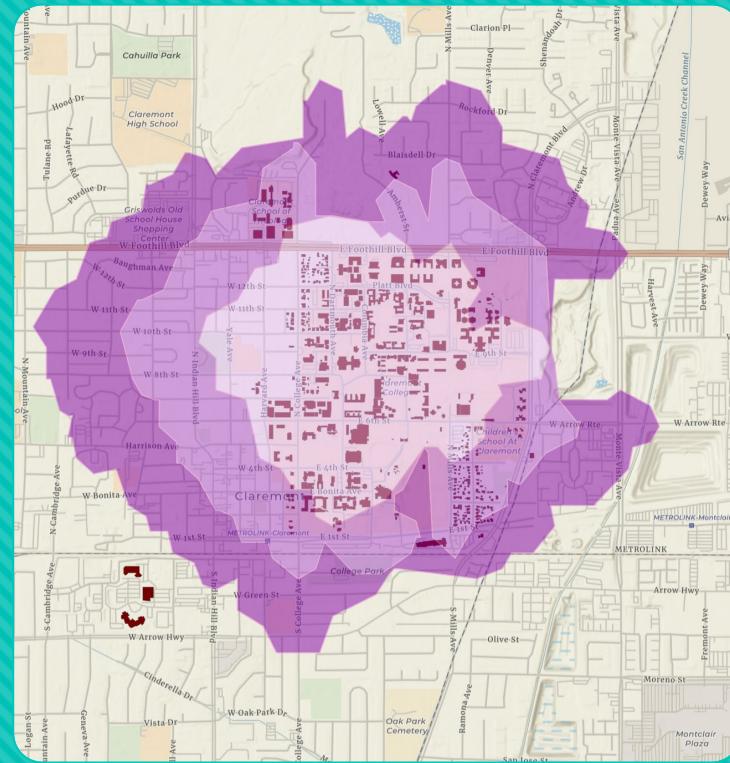
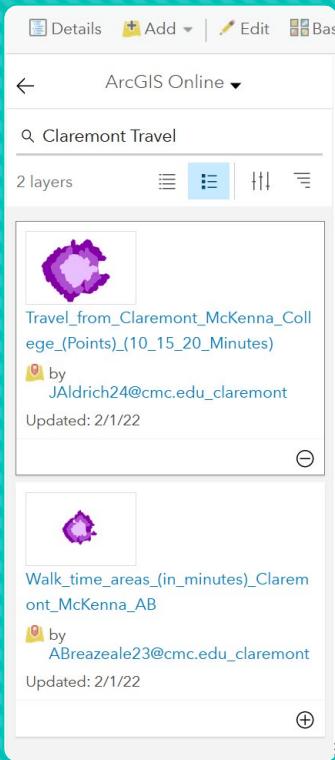
Q. claremont campus

9 layers

- CUCCampusBuilding3 by claremontcolleges Updated: 12/1/15
- CampusBuildingCUC by claremontcolleges Updated: 11/8/15
- ZhangCensus2010 by claremontcolleges Updated: 11/2/15



# Claremont Campus



# Claremont Travel Distance

Details Add ▾ Edit Basemaps

ArcGIS Online ▾

claremont restaurants

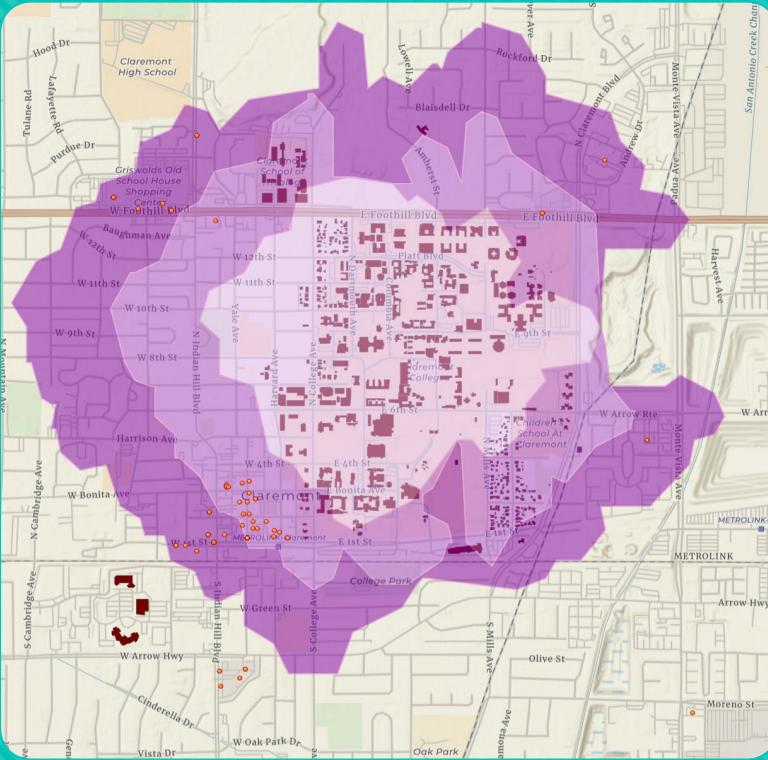
3 layers

Five Cities Demography by Yang\_AGIS Updated: 4/23/17

Restaurants of Five Cities by Yang\_AGIS Updated: 4/2/17

Restaurants in five cities by Yang\_AGIS Updated: 4/21/17

This screenshot shows the ArcGIS Online search interface. The search term 'claremont restaurants' has returned three results. The top result is 'Five Cities Demography' by Yang\_AGIS, updated 4/23/17, which includes a pie chart icon and a thumbnail image of a diverse crowd. The second result is 'Restaurants of Five Cities' by Yang\_AGIS, updated 4/2/17, with a thumbnail image of a restaurant interior. The third result is 'Restaurants in five cities' by Yang\_AGIS, updated 4/21/17, with a thumbnail image of a meal.



# Claremont Restaurants

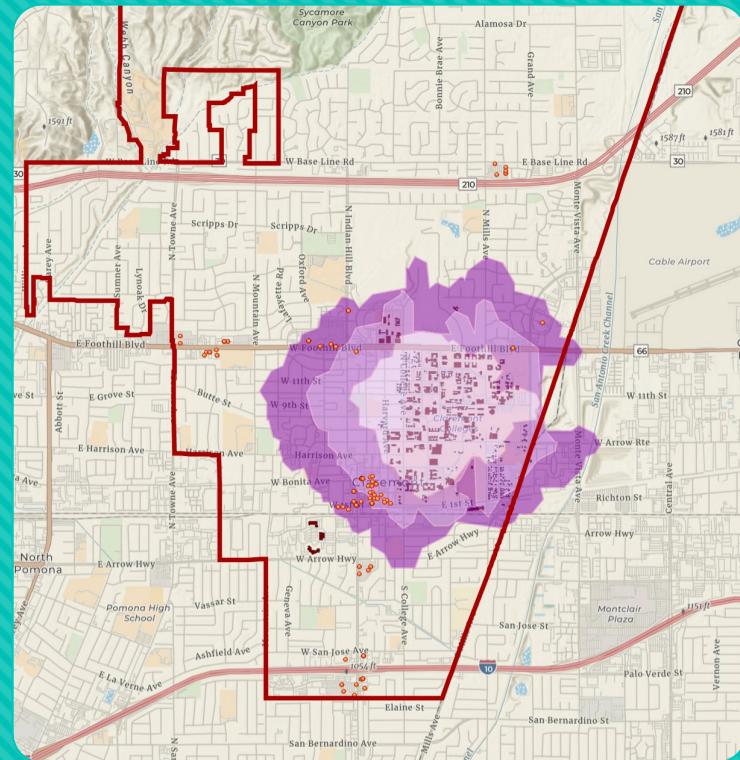
ArcGIS Online ▾

Q claremont

213 layers

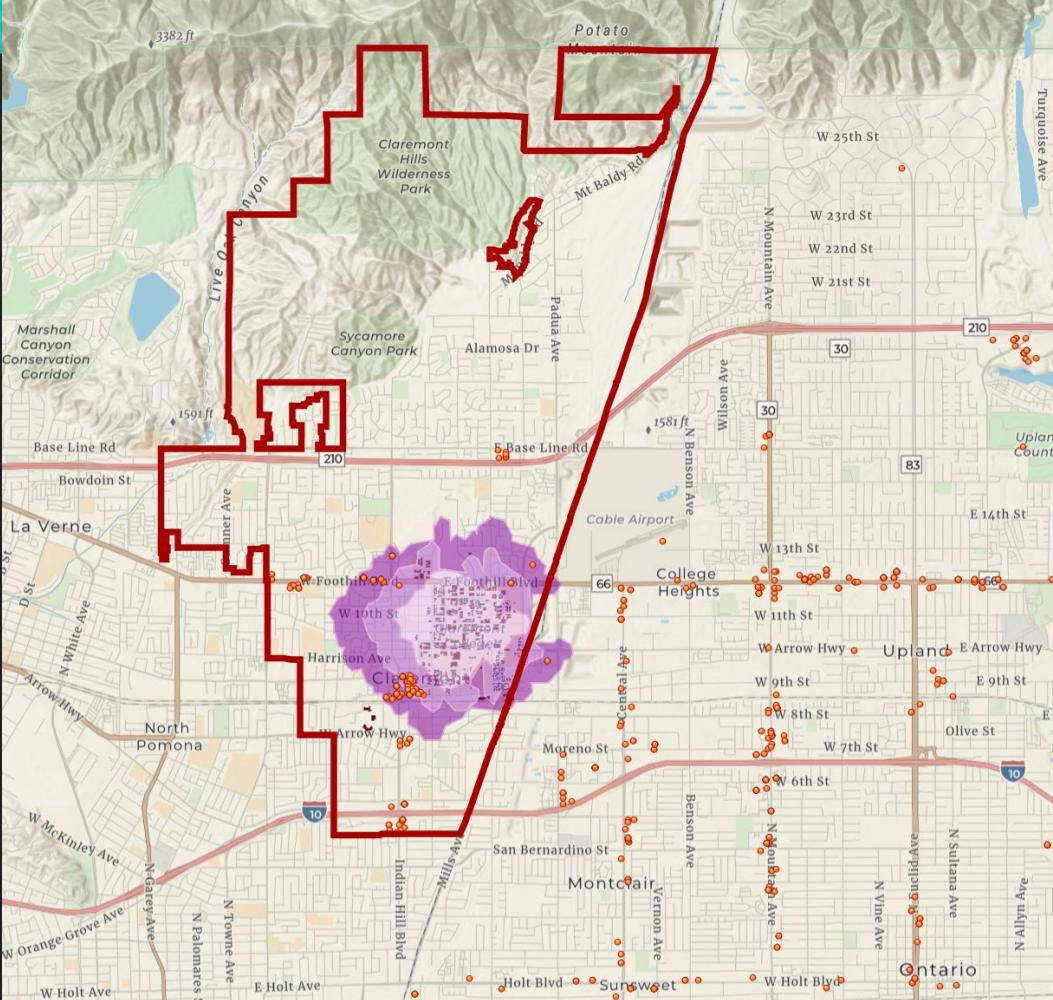
Claremont City Boundary  
by bsims\_hplanning  
Updated: 10/26/20

Claremont Housing Element City Boundary Mask 10mi  
by bsims\_hplanning  
Updated: 11/18/20

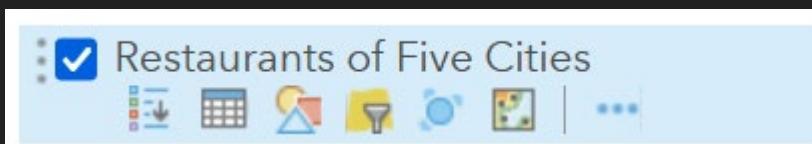


# Claremont City Boundary

# So much information – it hurts my eyes!



# Filter



Filter: Restaurants of Five Cities

Create + Add another expression  Add a set

Display features in the layer that match the following expression

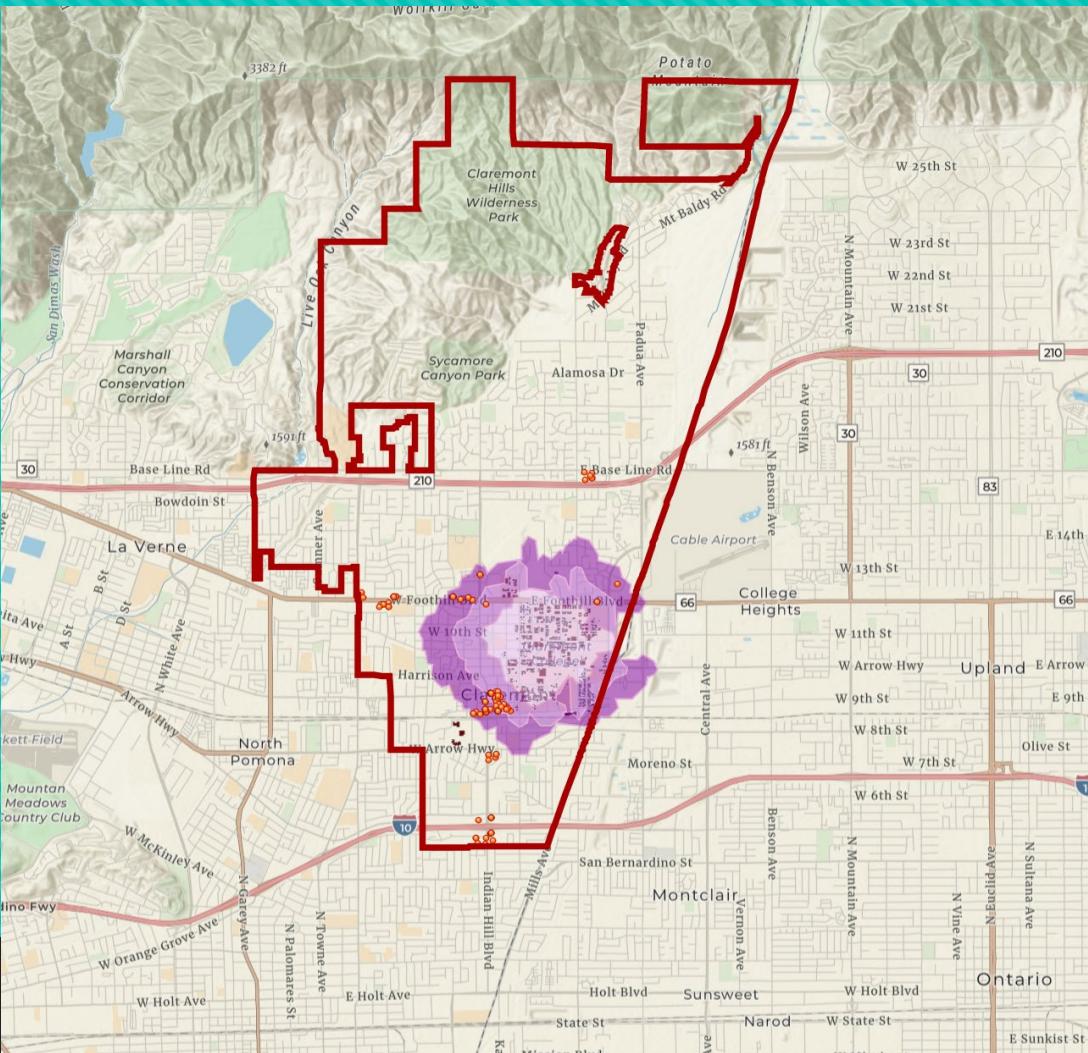
city is Claremont  Value  Field  Unique

Ask for values

CLOSE

APPLY FILTER APPLY FILTER AND ZOOM TO

# Result

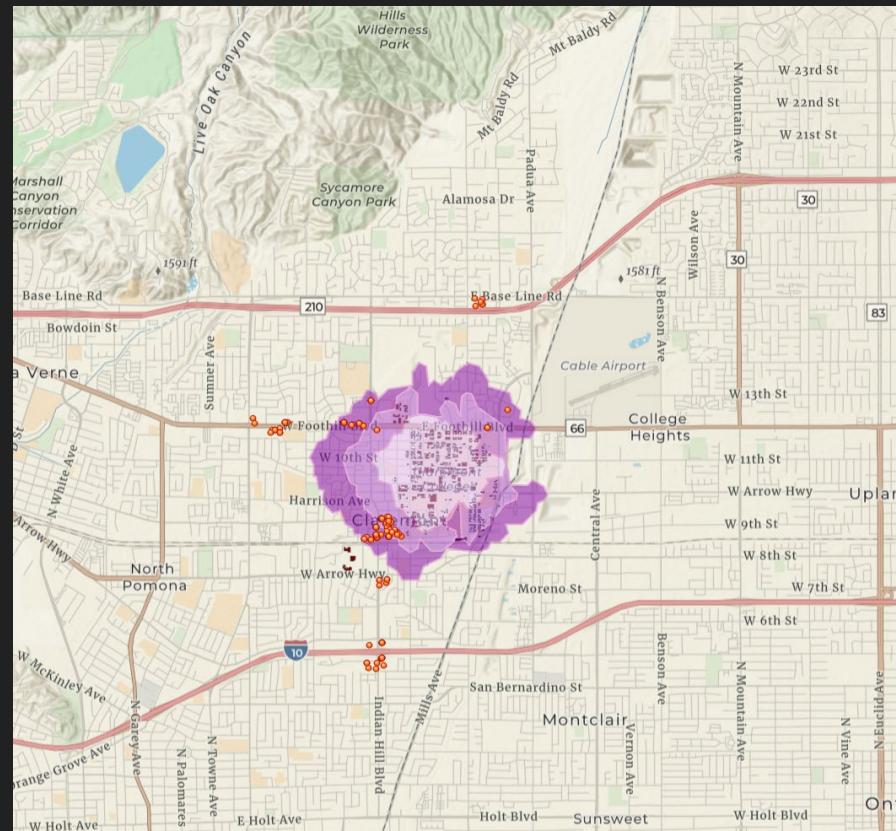


# Uncheck Claremont City Boundary

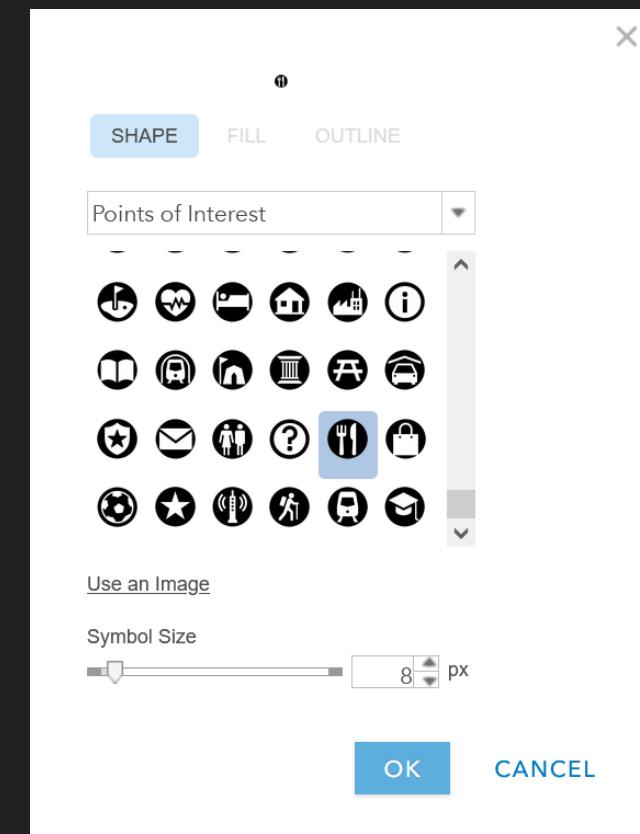
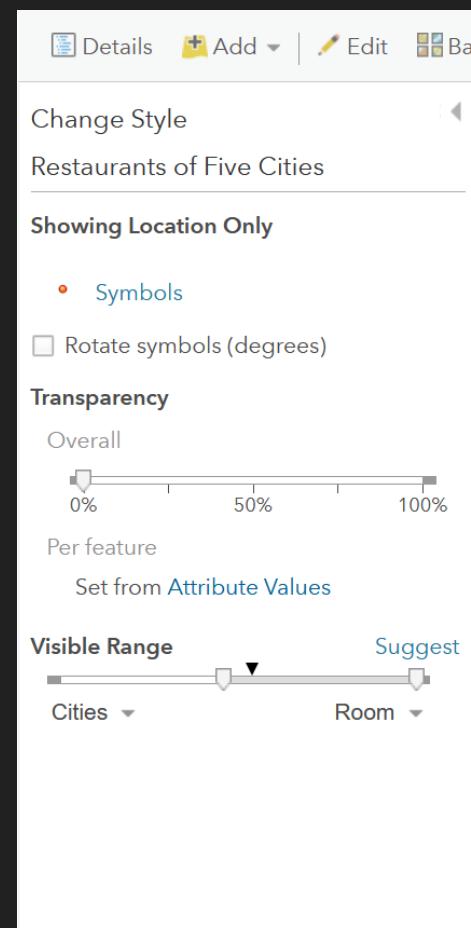
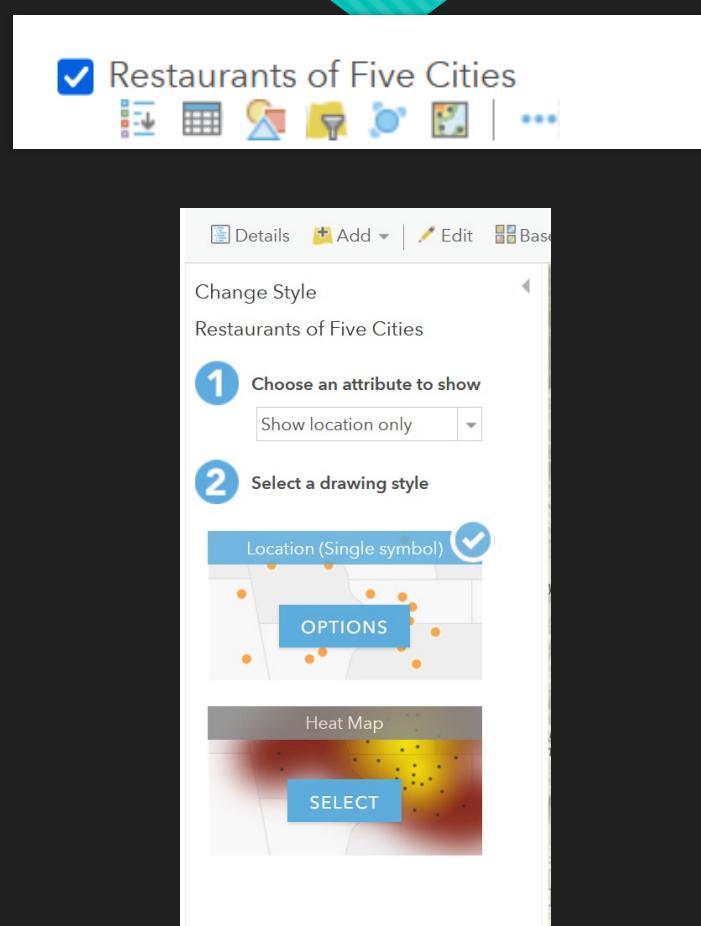
Details Add ▾ Edit Basemaps

Contents

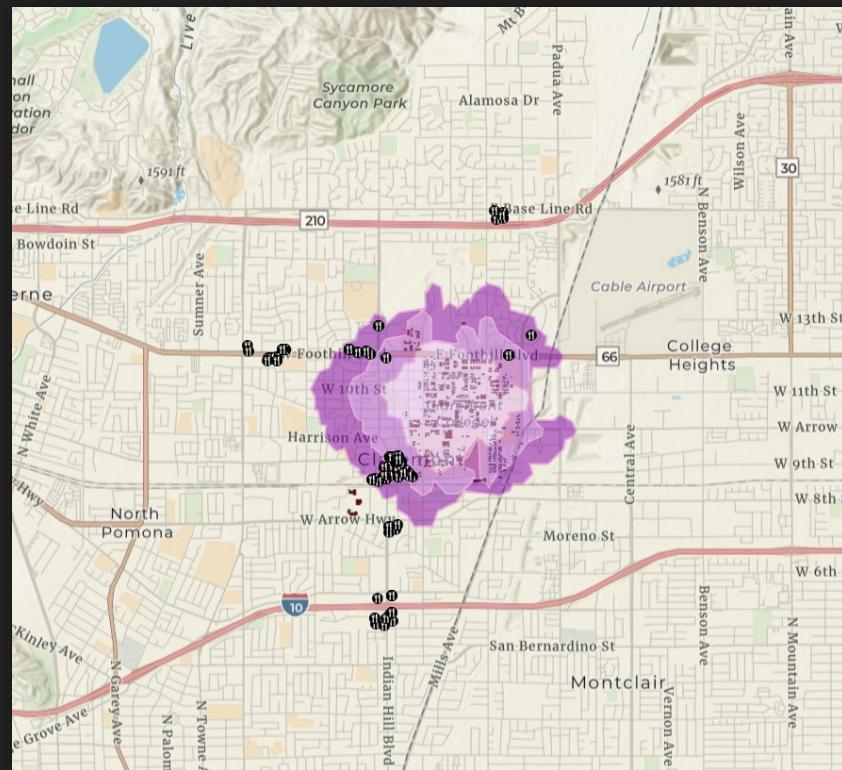
- Claremont City Boundary
- Restaurants of Five Cities
- Travel from Claremont McKenna College (Points) (10 15 20 Minutes)
- CUCCampusBuilding3



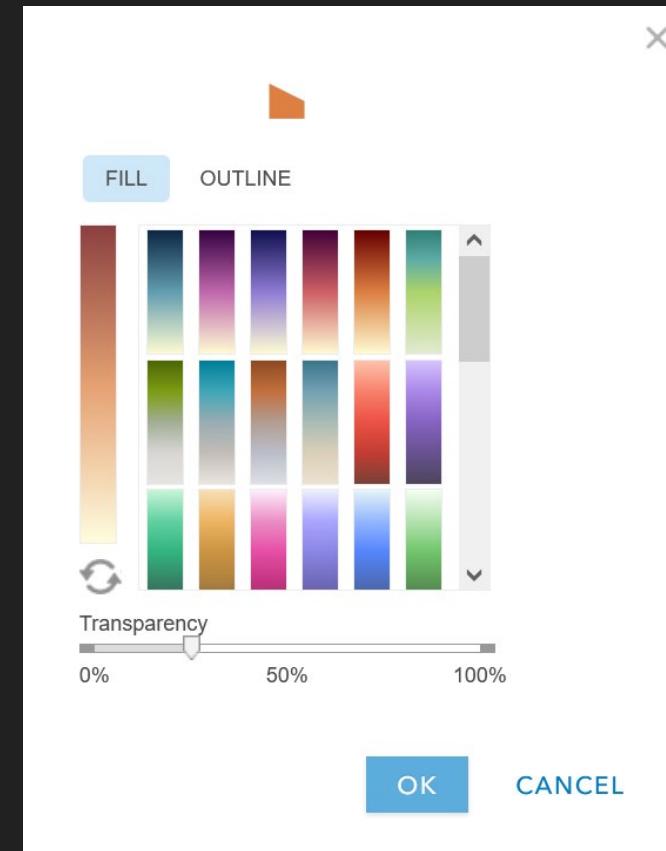
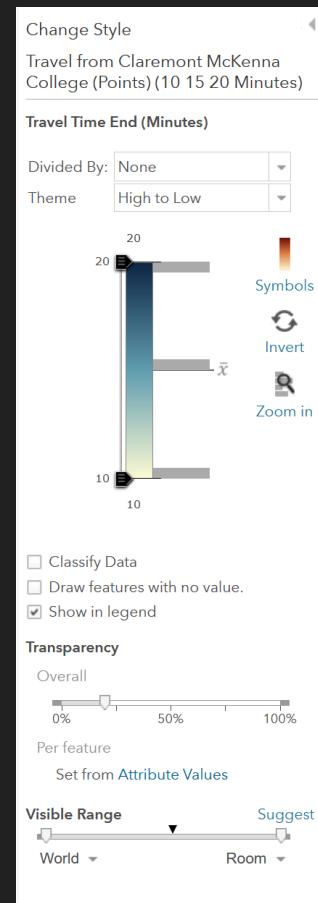
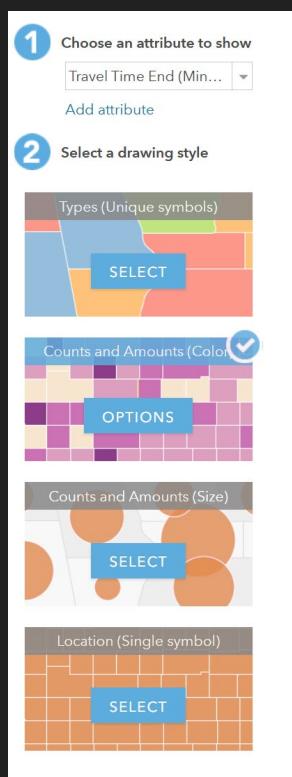
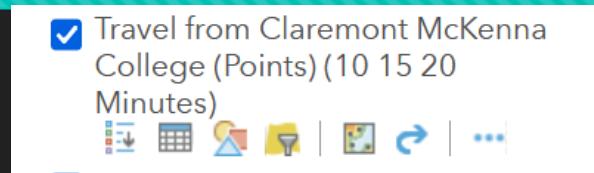
# Point Icons



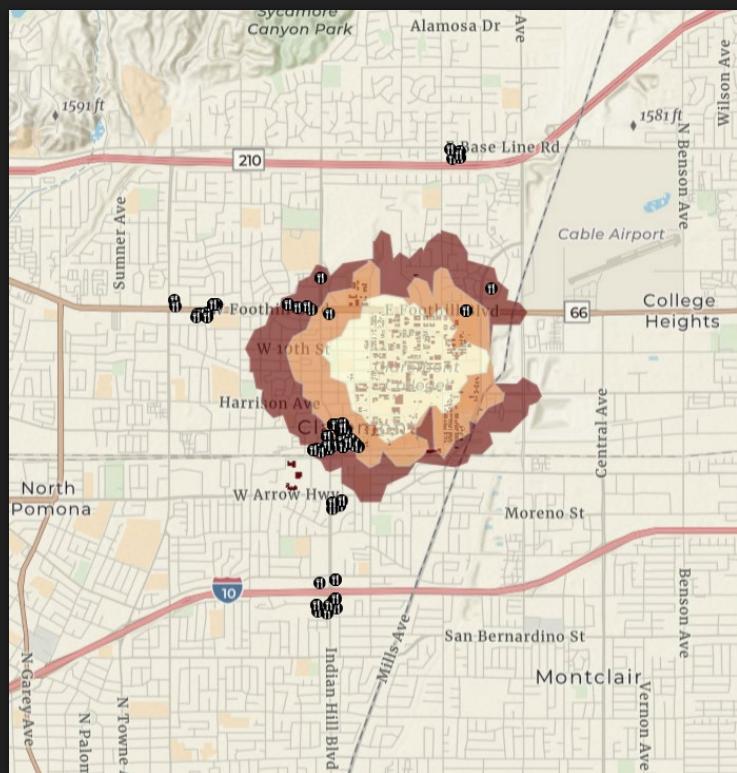
# Result



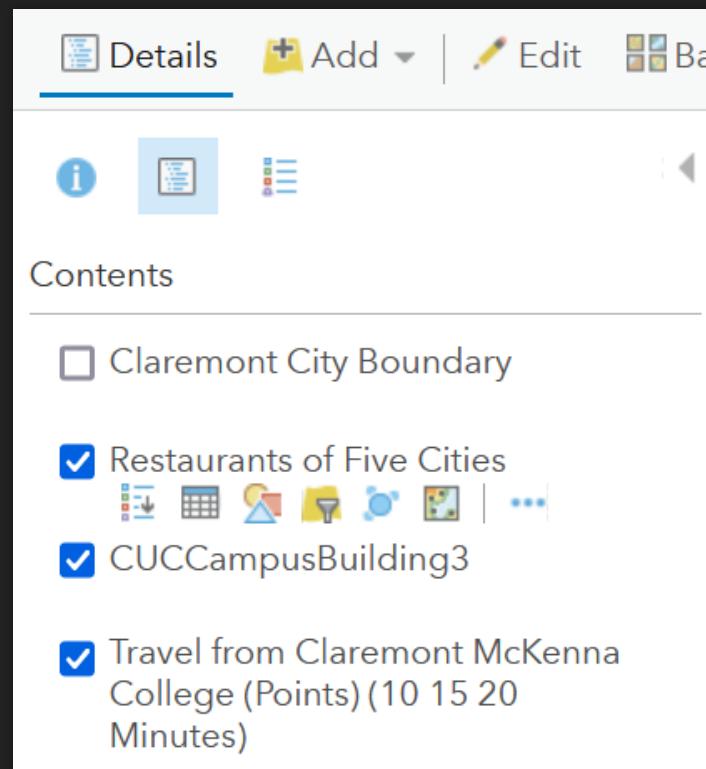
# Traveling around Claremont

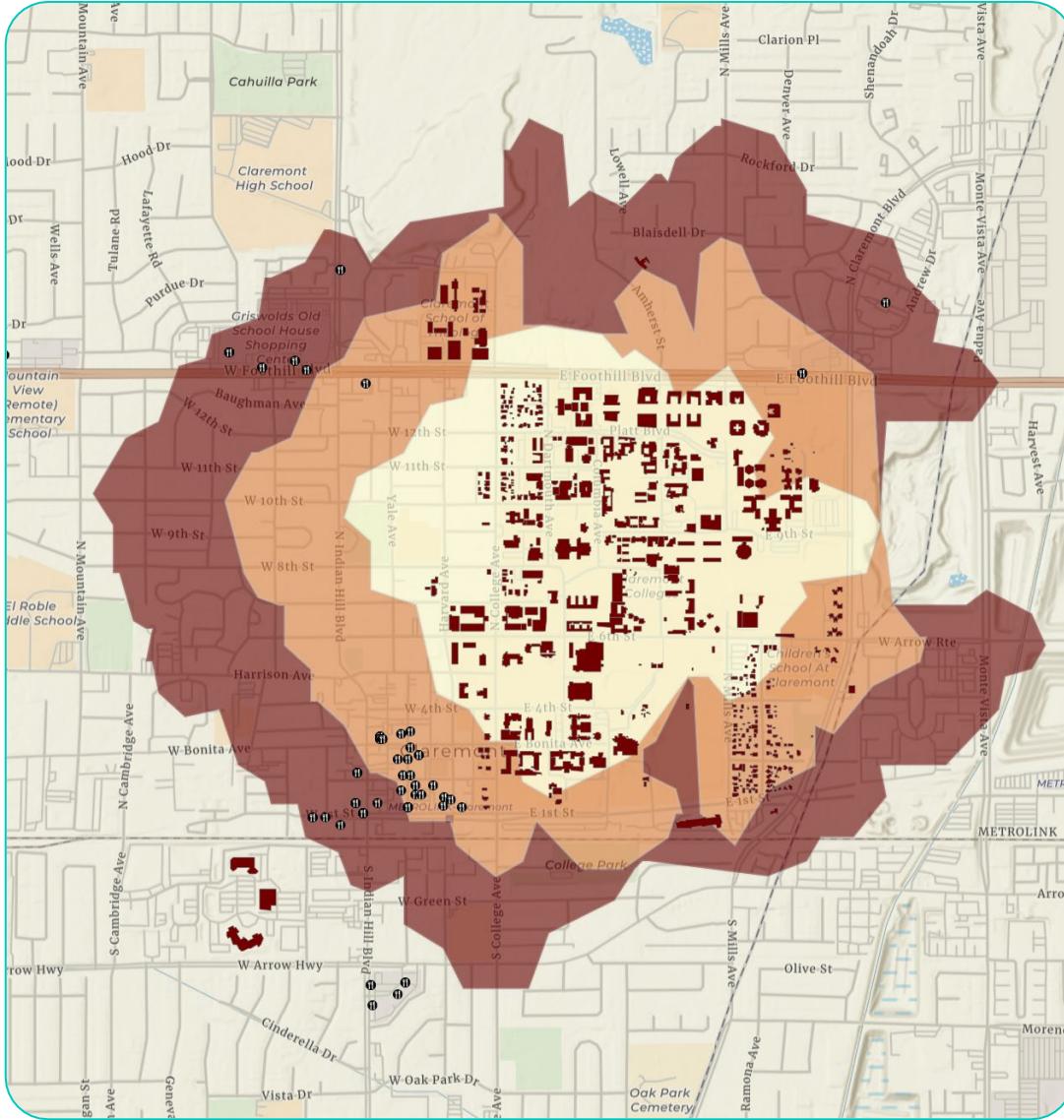


# Result



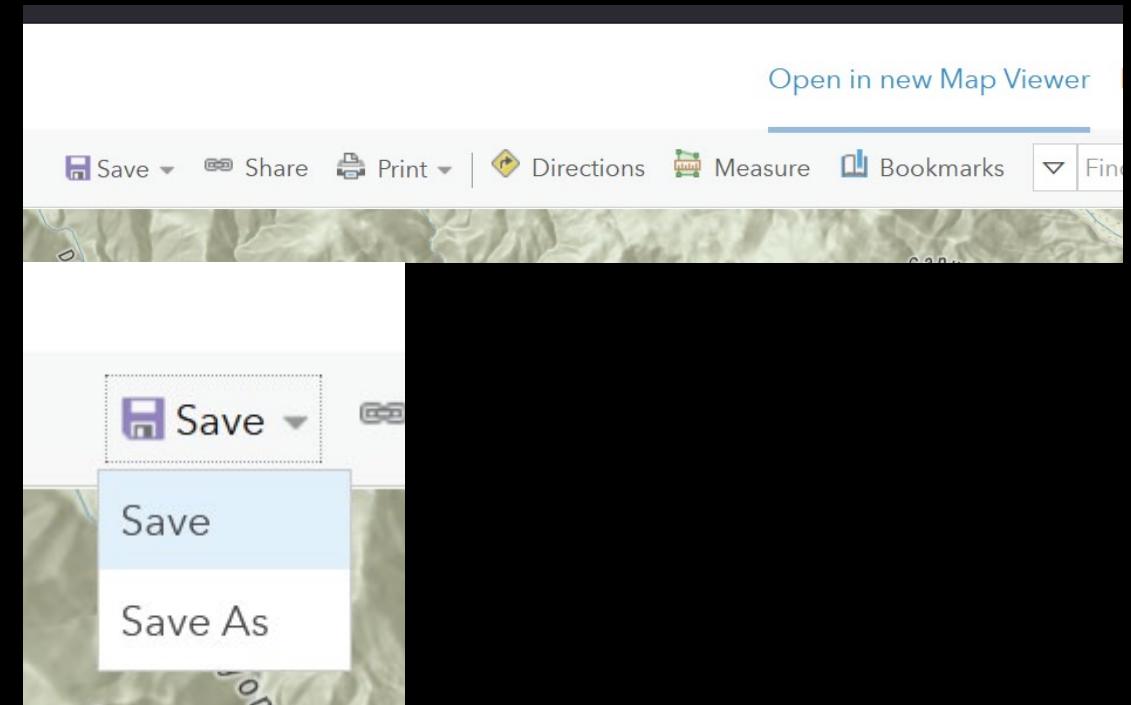
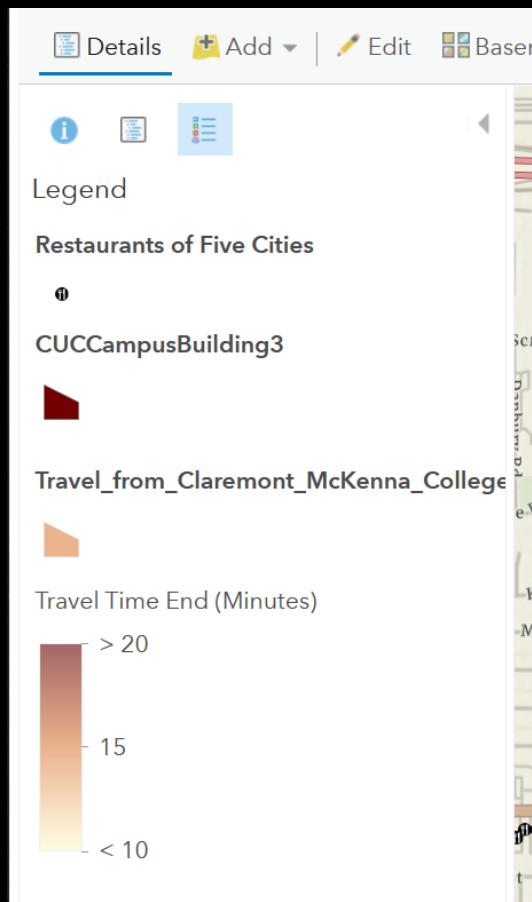
# Move Layers Around



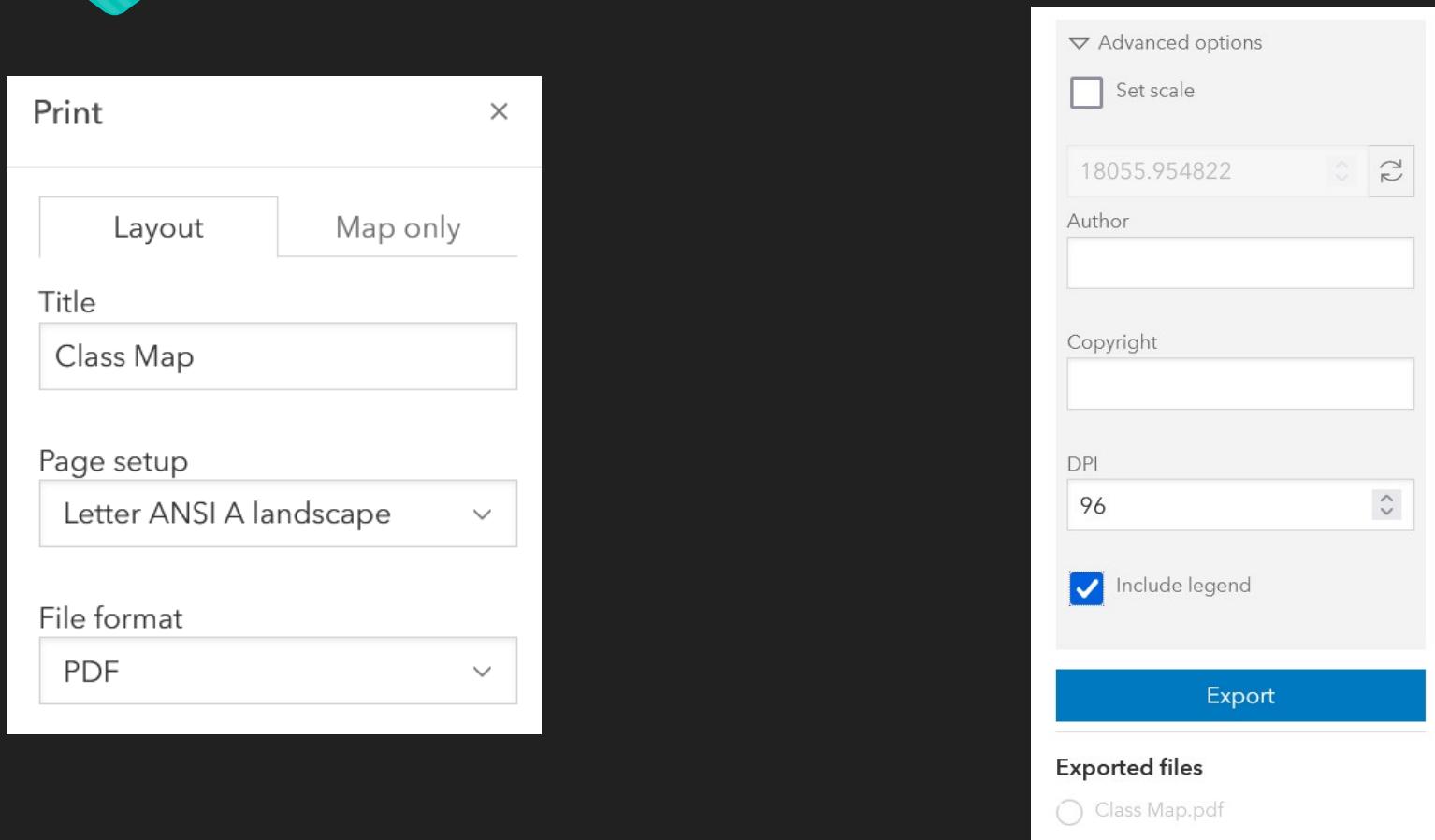


A better  
visual story

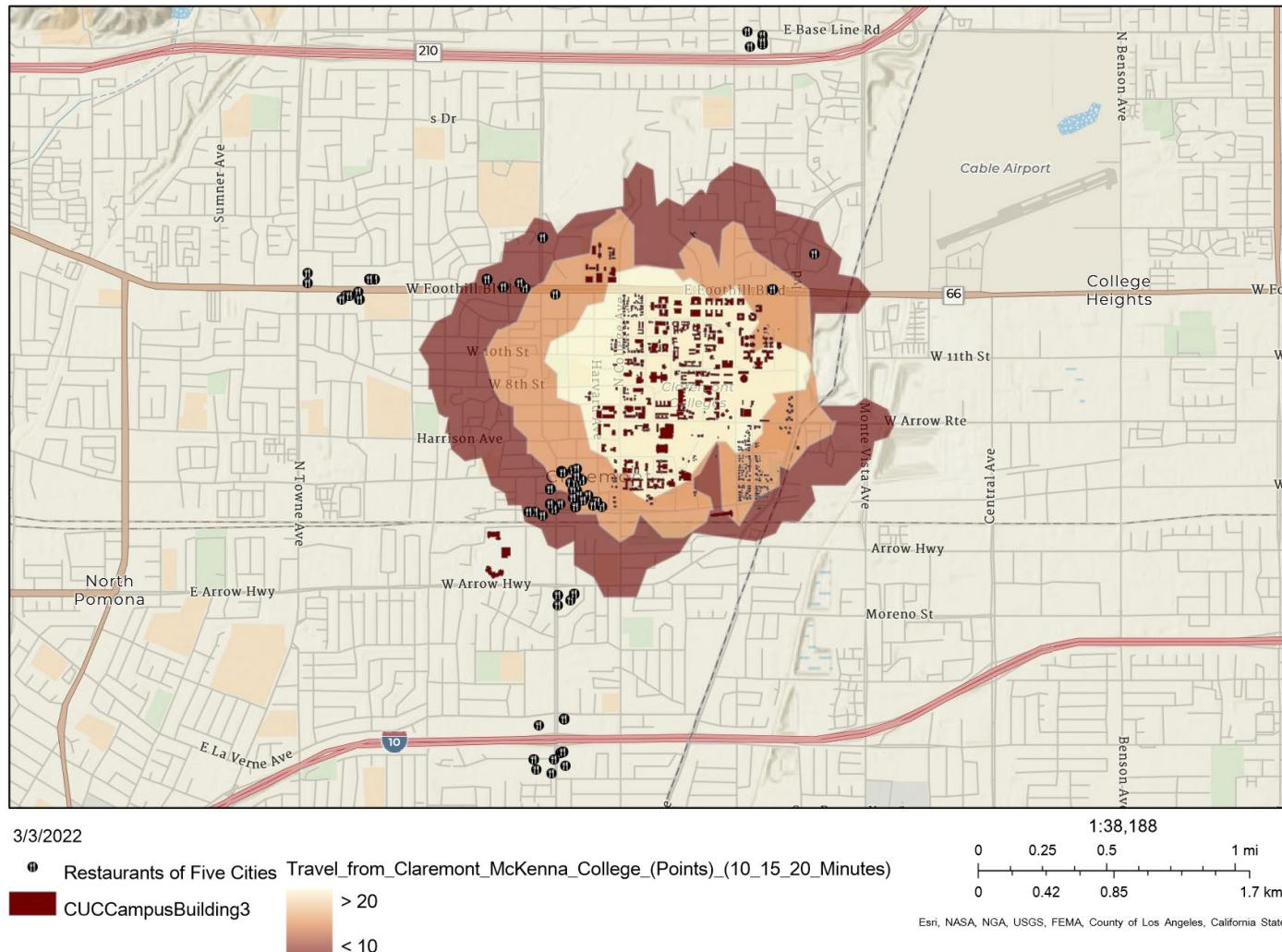
# Legend and Save



# Printing a Map



## Class Map



# Edit your Layers Information

The screenshot shows the ArcGIS Item Details page for a feature layer titled "Travel\_from\_RC\_Public\_Schools\_(5\_Miles)". The page includes sections for Overview, Data, Visualization, Usage, and Settings. The Data section displays a thumbnail of the layer, its description ("Feature layer generated from Create Drive Times"), credits ("Feature Layer (hosted) by VanCasillas@cmc.edu\_claremont"), and metadata like creation date (Jan 7, 2022), update date (Jan 7, 2022), and view count (10). A "Layers" section lists the single polygon layer. The "Comments" section has a comment input field. The "Edit" menu on the right offers options like Open in Map Viewer, Open in Scene Viewer, Open in ArcGIS Desktop, Publish, Create View Layer, Export Data, Update Data, Share, and Metadata.

- Title
- Updated
- Description
- Terms of Use
- Credits (Attribution)
- Owner
- Managed by
- View Count
- Created
- Shared with

# QCL Workshops

<https://www.cmc.edu/qcl/workshops>

The screenshot shows the Claremont McKenna College website with a maroon header. The header includes the college's name, navigation links for Students, Faculty, Alumni, Families, Athletics, Map, Mail, Employment, GIVING, and a search icon. A red banner at the top of the page contains the text "CMC Returns - Read the latest COVID-19 updates, policies, and procedures for the spring semester" with a close button. The main title "QCL Workshops" is displayed prominently in white on a maroon background. Below the title, there is a breadcrumb trail: Home > QCL: Murty Sunak Quantitative and Computing Lab > QCL Workshops. There are also "View", "Edit", and "Revisions" buttons. A "Book a Workshop" button is located on the right. The "ACADEMICS" section is open, showing links to Academic Resources, Explore Academic Resources, Office of the Registrar, Office of Institutional Research, Accreditation and Assessment, Institutional Review Board, Library, and Center for Writing and Public Discourse.

# QCL Workshops

Home > QCL: Murty Sunak Quantitative and Computing Lab > QCL Workshops

View Edit Revisions

Book a Workshop

## Spring 2022 Schedule

Date	Time	Workshop Title	Level	Registration
Mon, 01/24/22	5pm-7pm	Get Equipped with LaTeX	(Level 1)	Closed
Fri, 01/28/22	10am-12pm	Excel 1	(Level 1)	Closed
Mon, 01/31/22	5pm-7pm	R Programming Basics	(Level 1)	Closed
Fri, 02/04/22	10am-12pm	Data Wrangling with R	(Level 2)	Closed
Mon, 02/07/22	5pm-7pm	Excel 1	(Level 1)	Closed

**ACADEMICS**

Academic Resources ^

Explore Academic Resources

Office of the Registrar

Office of Institutional Research

Accreditation and Assessment

Institutional Review Board

Library

Center for Writing and Public Discourse

# Resources

ESRI: <https://www.esri.com/en-us/home>

ArcGIS: <https://learn-arcgis-learngis.hub.arcgis.com/>

# Contact

- QCL: QCL@cmc.edu
- Vanessa: vanessa.casillas@claremontmckenna.edu