

## Assignment 1

I have chosen three datasets with spatial extents that approximately correspond to the boundaries of San Luis Obispo County, California. The first is a set of polygons representing the census tract boundaries with San Luis Obispo County. The second is a set of lines representing trails managed by San Luis Obispo County Parks and Recreation. The third is a set of points representing bus stops served by the San Luis Obispo County Regional Transit Authority

Details about each of these datasets are listed in the table below.

	<i>Census tract boundaries</i>	<i>County trails</i>	<i>Regional Transit Authority Bus Stops</i>
<i>Spatial extent</i>	San Luis Obispo County	San Luis Obispo County	San Luis Obispo County
<i>Unit of observation</i>	Census tracts	Named trails	Bus stops
<i>Number of observations</i>	54	34	345
<i>Spatial data type</i>	Multipolygon	Multiline	Point
<i>Spatial data format</i>	R simple features	geoJSON	GTFS (csv)
<i>Coordinate reference system</i>	NAD 83	WGS 84	WGS 84
<i>Data source</i>	Walker and Herman (2022)	County of San Luis Obispo (2020)	San Luis Obispo Regional Transit Authority (2022)

## Variables

- Census tract boundaries
  - **GEOID:** An identifier for the census tract
  - **NAME:** The name of the census tract
  - **P00100:** The population of the census tract, based on the 2010 decennial census
- County trails
  - **TrailName:** The name of the trail
  - **SystemName:** The name of the trail system the trail belongs to
  - **Region:** The region of the county in which the trail is located
  - **Length:** The length of the trail
  - **LengthUnits:** The units associated with the length in the length column
  - **TrlSurface:** The type of surface on the trail
  - **AgencyName:** The name of the agency that owns the trail
  - **ZipCode:** The zip code in which the trail is located
  - **ImageURL:** A URL to an image of the trail.
  - **ManagingAgency:** The level of the agency that manages the trail.
  - **Dogs:** Indicates whether dogs are allowed on the trail.
  - **Equestrian:** Indicates whether horses are allowed on the trail.
  - **MtnBike:** Indicates whether mountain bikes are allowed on the trail.

- **StBike:** Indicates whether the trail is suitable for street bikes
- **Hike:** Indicates whether the trail is suitable for hiking
- **Difficulty:** Indicates whether the trail is easy, moderate, challenging, or strenuous
- Bus stops
  - **Stop name:** The name of the bus stop

## References

County of San Luis Obispo (2020). County Trails. County of San Luis Obispo Open Data. <https://opendata.slocounty.ca.gov/datasets/SLOCounty::county-trails/about>. Accessed August 11, 2022.

San Luis Obispo Regional Transit Authority (2022). GTFS Feed. <http://slo.connexionz.net/rtt/public/resource/gtfs.zip>. Accessed August 11, 2022.

Kyle Walker and Matt Herman (2022). tidycensus: Load US Census Boundary and Attribute Data as 'tidyverse' and 'sf'-Ready Data Frames. R package version 1.2. <https://CRAN.R-project.org/package=tidycensus>

## Acknowledgements

My classmate, Alicia Seeley showed me how to get the number of bus stops from a GTFS feed.