

Inventorying San Francisco Bay Area Parking Spaces: Technical Report Describing Objectives, Methods, and Results Dataset

Dataset available at: <https://transweb.sjsu.edu/research/2123-Bay-Area-Parking-Inventory>

(This dataset supports report **Inventorying San Francisco Bay Area Parking Spaces: Technical Report Describing Objectives, Methods, and Results**, <https://doi.org/10.31979/mti.2022.2123>)

This U.S. Department of Transportation-funded dataset is preserved by the Mineta Transportation Institute (MTI) in the MINETA Repository housed at San José State University (SJSU) (<https://transweb.sjsu.edu/>), and is available at <https://transweb.sjsu.edu/research/2123-Bay-Area-Parking-Inventory>

The related final report **Inventorying San Francisco Bay Area Parking Spaces: Technical Report Describing Objectives, Methods, and Results**, is available from the National Transportation Library's Digital Repository at <https://rosap.ntl.bts.gov/view/dot/60934>

Metadata from the MINETA Repository record:

Abstract:

The San Francisco Bay Area is one of the most progressive transportation regions in the deployment of high-capacity transit and use of policies to encourage active transportation. Yet like many other metro regions, there remains a dearth of knowledge on the abundance and location of parking infrastructure supply. Parking infrastructure remains one of the least catalogued infrastructure but is perhaps the most spatially dominating set of assets. This research estimates the extent and location of parking supply, including on-street and off-street spaces for the nine-county Bay Area. This parking space inventory is the most detailed assessment of parking infrastructure produced for the Bay Area, and represents an important starting point for addressing the impacts of and crafting policy for future transportation goals.

Key findings from the parking census include:

1. The nine-county Bay Area has 15 million parking spaces, enough parking to wrap around the planet 2.3 times.
2. Twenty percent of the region's unincorporated land is devoted to driving and storing cars.
3. There are approximately 2.4 spaces for every car and approximately 1.9 parking spaces for every person in the Bay Area.

This technical report, and accompanying San Francisco Parking Census dataset, was the result of a partnership between MTI and SPUR, a nonprofit public policy organization in the San Francisco Bay Area.

Publications:

- Inventorying San Francisco Bay Area Parking Spaces: Technical Report Describing Objectives, Methods, and Results (Full Report)

Authors:

- RMIKHAIL CHESTER, PHD: Dr. Mikhail Chester is an Associate Professor of Civil, Environmental, and Sustainable Engineering and Director of the Metis Center for

Infrastructure and Sustainable Engineering at Arizona State University. Broadly, his work addresses the challenges of positioning infrastructure for increasingly complex future environments, and the technical and governance strategies needed to engage with this complexity. Specific to urban infrastructure, he's led studies to quantify the extent and implications of metro region parking supply in Los Angeles and Phoenix, including urban heat island effects.

- **ALYSHA HELMRICH, PHD:** Dr. Alysha Helmrich is an urban systems engineer with a BS and MS in Environmental and Ecological Engineering from Purdue University and a PhD in Civil, Environmental, and Sustainable Engineering from Arizona State University. Her research interests include urban resilience, infrastructure systems, systems-thinking, and decision-making under uncertainty.
- **RUI LI:** Rui Li is a PhD Candidate in Civil, Environmental, and Sustainable Engineering at Arizona State University. Her research interests focus on transportation infrastructure climate vulnerability analysis. She has led research efforts to study large-scale transportation network vulnerability to climate hazards including California roadway risk to post-wildfire debris flows and heat mitigation infrastructure and travel behavior change for metro active transport across Phoenix.

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Dataset description:

This dataset contains 1 file collection described below.

2123-Dataset.zip:

- readme.txt
- ParkingRequirementsbyCity.html
- parkingcodes.xlsx
- parking_density_Employee_Capita Folder
 - table fields.txt
 - schema.ini
 - parking_density_Employee_Capita.shx
 - parking_density_Employee_Capita.shp.xml
 - parking_density_Employee_Capita.shp
 - parking_density_Employee_Capita.sbx
 - parking_density_Employee_Capita.sbn
 - parking_density_Employee_Capita.prj
 - parking_density_Employee_Capita.dbf
 - parking_density_Employee_Capita.csv.xml
 - parking_density_Employee_Capita.csv
 - parking_density_Employee_Capita.cpg
- parking_density_acre Folder

- table fields.txt
- schema.ini
- parking_density_acre.txt.xml
- parking_density_acre.shx
- parking_density_acre.shp.xml
- parking_density_acre.shp
- parking_density_acre.sbx
- parking_density_acre.sbn
- parking_density_acre.prj
- parking_density_acre.dbf
- parking_density_acre.csv
- parking_density_acre.cpg

File Type Descriptions:

- The .txt file type is a common text file, which can be opened with a basic text editor. The most common software used to open .txt files are Microsoft Windows Notepad, Sublime Text, Atom, and TextEdit (for more information on .txt files and software, please visit <https://www.file-extensions.org/txt-file-extension>).
- The .html file extension is mainly related to the Hypertext Markup Language that provides means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. It is the main language for writing web pages. HTML formats texts, tables, images, and other content that will be displayed on the page that can be viewed using any web browser (for more information on .html files and software, please visit <https://www.file-extensions.org/html-file-extension>).
- The .xlsx file types are Microsoft Excel files, which can be opened with Excel, and other free available software, such as OpenRefine.
- The ini file extension is primarily used for configuration files in many Windows applications. A typical .ini file contains set of parameters for the program to be used when its started. Probably short for initialize. (for more information on .ini files and software, please visit <https://www.file-extensions.org/ini-file-extension>)
- The .xml file type is commonly used for files written in Extensible Markup Language (XML). XML is a human-readable, machine-understandable, general syntax for describing hierarchical data, applicable to a wide range of applications (for more information on .xml files and software, please visit <https://www.file-extensions.org/xml-file-extension>)
- The shp file extension is used for ESRI Shape format, a popular geospatial vector data format for geographic information systems software. A shapefile stores non-topological geometry and attribute information for the spatial features in a data set. A shapefile consists of a set of 3 mandatory files, along with several optional files. Each file in the set shares the shapefile name with a different extension. The main file .shp stores the geometry and must always have an index file shx. A dBASE file dbf stores all the attributes of the shapes in the main file. Additionally, a projection file prj stores the projection information (for more information on .shp files and software, please visit <https://www.file-extensions.org/shp-file-extension>).

- A .shx file contains compiled shape data (building blocks, fonts) in form of the machine language compiled version of an shp file. The file type is associated with AutoCAD , a CAD development platform, developed and sold by Autodesk, Inc (for more information on .shx files and software, please visit <https://www.file-extensions.org/shx-file-extension>).
- The sbx file extension is associated with the ArcView GIS application used to view and edit GIS data. The .sbx file contains spatial index for read-write shape used to fast access to shape files (for more information on .sbx files and software, please visit <https://www.file-extensions.org/sbx-file-extension-arcview-spatial-index-for-read-write-shape-file>).
- The sbn file extension is mainly associated with ArcView / ArcGIS geography software from ESRI. The sbn file contains binary spatial indexes, which are used only by ESRI software. The format is not documented, and is not implemented by other vendors (for more information on .sbn files and software, please visit <https://www.file-extensions.org/sbn-file-extension>).
- The prj file extension is traditionally used for files that contain projects. Projects contain settings, positions of saved windows, development notes and other raw data that won't be present in the final file (for more information on .prj files and software, please visit <https://www.file-extensions.org/prj-file-extension>).
- The dbf file extension is traditionally used for database file by many database applications. The original program, which used the DBF file extension for its database, was dBase. A major legacy of dBase is its dbf file format, which has been adopted in a number of other applications. For example, the shapefile format developed by ESRI for spatial data in a geographic information system uses .dbf files to store feature attribute data (for more information on .dbf files and software, please visit <https://www.file-extensions.org/dbf-file-extension>).
- The .csv, Comma Separated Value, file is a simple format that is designed for a database table and supported by many applications. The .csv file is often used for moving tabular data between two different computer programs, due to its open format. The most common software used to open .csv files are Microsoft Excel and RecordEditor, (for more information on .csv files and software, please visit <https://www.file-extensions.org/csv-file-extension>).
- The cpg file extension is associated with the ArcGIS, a geographic information system for Microsoft Windows operating system, developed by Esri. The cpg file stores codepage for identifying a characterset (for more information on .cpg files and software, please visit <https://www.file-extensions.org/cpg-file-extension-arcgis-codepage>).

National Transportation Library (NTL) Curation Note:

As this dataset is preserved in a repository outside U.S. DOT control, as allowed by the U.S. DOT's Public Access Plan (<https://ntl.bts.gov/public-access>) Section 7.4.2 Data, the NTL staff has performed ***NO*** additional curation actions on this dataset. NTL staff last accessed this dataset at <https://transweb.sjsu.edu/research/2123-Bay-Area-Parking-Inventory> on 2022-04-06. If, in the future, you have trouble accessing this dataset at the host repository, please email NTLDataCurator@dot.gov describing your problem. NTL staff will do its best to assist you at that time.