



# BUILD

Building Initiative for Low-Emissions Development Program

## BUILD Geographic Information System (GIS) Tool User Guide

*Disclaimer: The BUILD GIS Tool is available for informational purposes only and shall not to be used for BUILD eligibility screening, determinations, or claims thereof. It has been created by the California Energy Commission (CEC) based on publicly available data. The CEC does not guarantee the accuracy of the Tool or data contained therein and is not responsible for any misuse or misrepresentation of the Tool or data contained therein. All BUILD program eligibility determinations will be made by CEC pursuant to applicable program requirements, including program guidelines.*



## INTRODUCTION

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The California Energy Commission (CEC) administers the [Building Initiative for Low Emissions Development \(BUILD\) Program](#). The BUILD Program provides incentives for the deployment of near-zero-emission building technologies in low-income residential buildings that reduce greenhouse gas (GHG) emissions significantly beyond what otherwise would be expected to result from the implementation of the prescriptive standards described in California Code of Regulations, Title 24, Part 6 (California Energy Code). BUILD encourages adoption of clean energy technologies in affordable housing developments, thereby improving access to clean energy for low-income Californians. BUILD is designed to support market transformation toward building decarbonization by reducing the up-front costs and perceived risk of adopting new technologies, in the challenging and complex affordable and low-income new housing sector.

The BUILD team developed this GIS tool to facilitate public access to BUILD program application and census tract data. The tool allows users to query metrics for existing BUILD projects and other property locations. For complete details on program eligibility, incentives, required documentation downloadable forms, and the terms and conditions of program participation, including the BUILD Program Guidelines, please consult the [BUILD webpage](#).

All potential applicants are encouraged to request technical assistance for support in submitting incentive applications and in their project design. To request technical assistance please contact the BUILD Technical Assistance Provider, the Association for Energy Affordability, at [BUILD@aea.us.org](mailto:BUILD@aea.us.org). For general program questions or other issues, please contact BUILD staff at [BUILD@energy.ca.gov](mailto:BUILD@energy.ca.gov)



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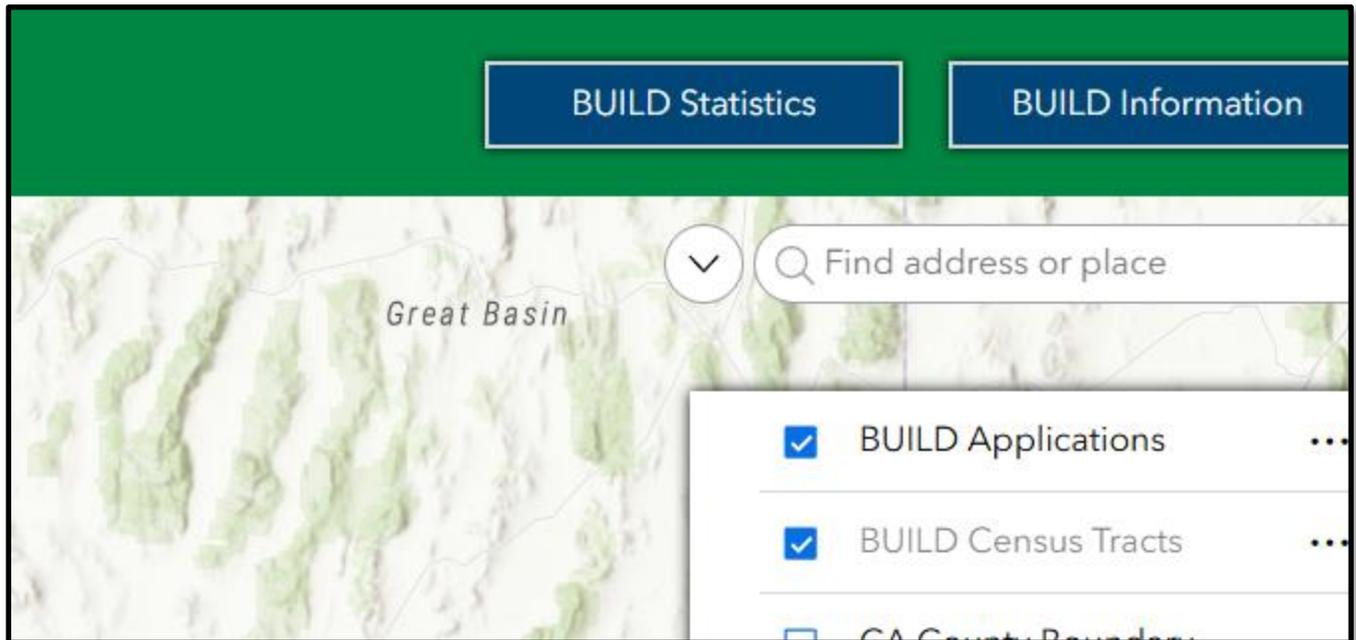
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## Overview

The GIS tool/website is comprised of three main pages: The Map Tool, the Statistics Page, and the Information Page. The Map page displays all BUILD projects by eligibility type and New Adopter status. Layers are adjustable, projects are interactable, and the sidebar provides basic overview statistics as well as a table view of the projects.

The Statistics page contains many of the graphs and statistics needed for reports, check ins, and other general upkeep. The Information page provides a set of links and descriptions for applicants to find tools and useful sites related to BUILD. Navigation between all pages is done through the buttons on the top right of all three pages (see below).



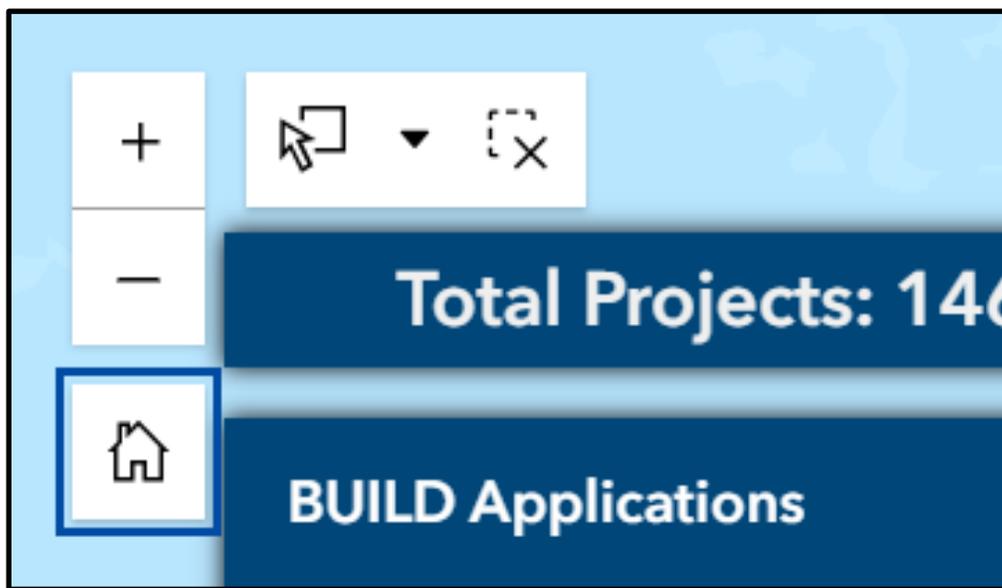


## 1. Map Page Features

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### 1.1. Major Navigation:

The map of California depicts all BUILD Projects as different color squares and diamonds. To pan across the map, drag with the left mouse button. To zoom in and out, you can use the mouse wheel or click the plus and minus buttons on the top left of the map. Clicking on a point on the map will display a pop-up showing information on that point using current visible layers.



In addition to the zoom in and out buttons on the top left of the map (above), there are three other map tools.

- **Select** – The mouse and square symbol button selects multiple projects on the map by drawing a shape around them. The default shape is a rectangle, but this can be changed by clicking the down arrow next to the button and selecting a different shape. Click the button once to activate and click it again to deactivate it.
- **Deselect** – The x and the dotted line square button is the reverse of the select button. Once projects are selected, click this button to deselect all projects.
- **Reset Zoom Level** – The button with the house symbol resets the current zoom level to the default value. Click it once and it will zoom to the default level.

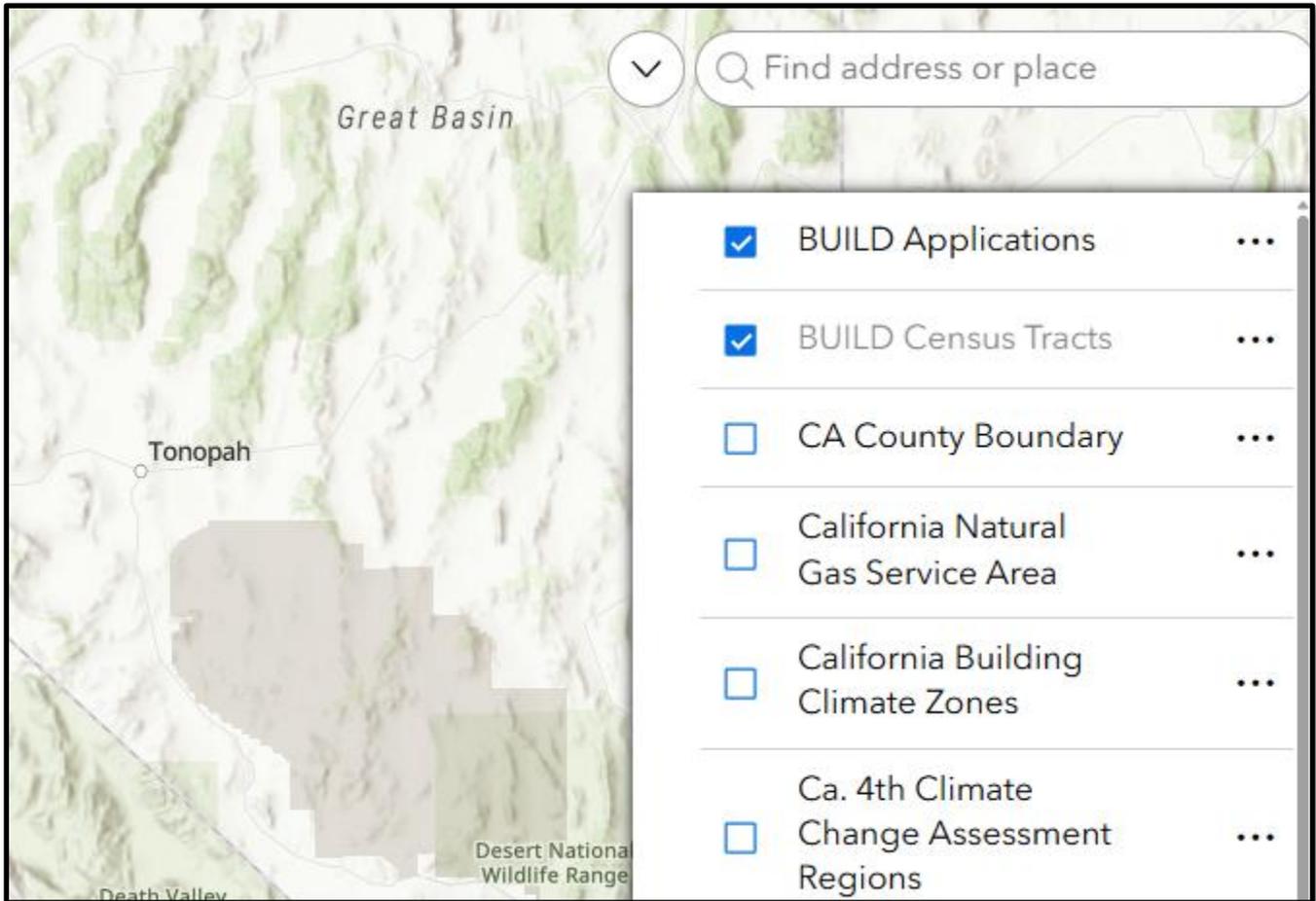
On the top right of the map screen is the Address Bar and Layer List (the Layer List is covered in 1.3 Layers, pg 9). The address bar can be clicked to input an address or BUILD project name. Should the user wish to only produce address results or only BUILD Project results, click the down arrow to the left of the bar and unselect either option. Suggested addresses and



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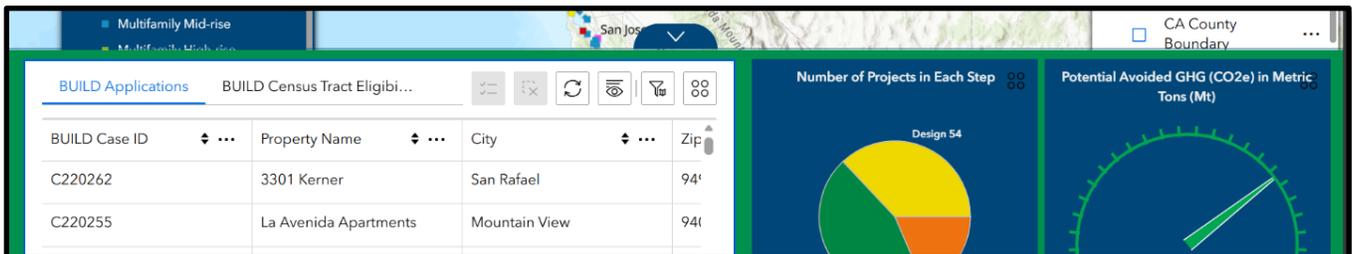
Building Initiative for Low-Emissions Development Program

BUILD Projects will appear below the bar when typed. Select the suggestion or hit enter to zoom to the desired location.



## 1.2. Bottom Panel:

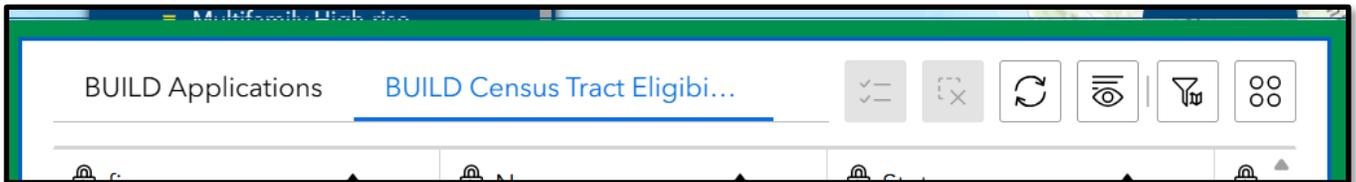
The Bottom Panel or Sidebar should be open upon first opening the BUILD GIS tool. Click the blue down arrow at the top of the bar to minimize it, and then press it again at the bottom of the screen to open the bar again. It contains three main features: a table, a pie chart, and a gauge.





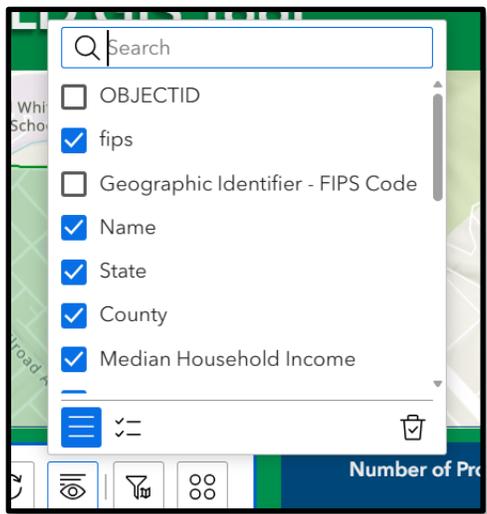
## 1.2.1. BUILD Projects Table

The Projects Table contains and displays data on each BUILD Project, including incentive amounts, Utility zones, Climate Zones, etc. Scroll left and right by dragging with the mouse or sliding the slide bars. You can select projects by clicking the row. The map will zoom to the project location. To deselect the project, click the same row again. There are several buttons and selections that allow users to navigate this table (below).



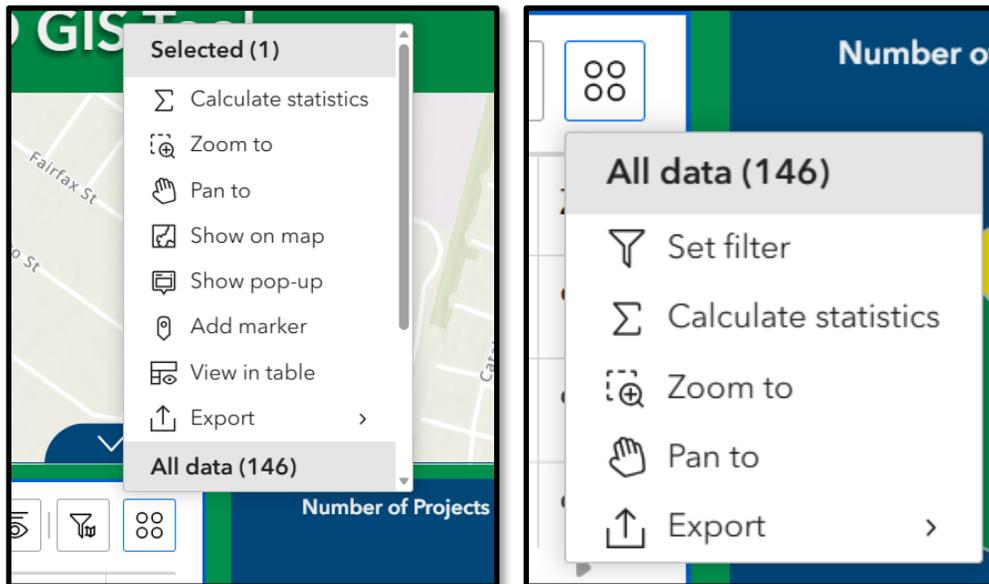
The Categories on the top-right side of the table allow you to change the displayed data based on the layers visible on the map. Make sure the layer is visible on the Layer List for it to appear as a category on the table. The button containing the X and dotted box symbol will clear any selections for any category.

The left-most button allows users to see either ONLY their selection or only highlight their selection and leave the other rows visible. Press the button to shift between these modes. Third from the left is a circle of arrows symbol button. This refreshes the data in the table. If any data is currently being updated by staff while using the GIS tool, using this button will refresh the data and display the most recent data. The fourth button, containing the eye symbol, is Show and Hide Columns. Clicking this button will pop up a menu (see below). The columns in the table will appear or disappear based on the checked boxes in the menu. Click on and off the desired metrics (the search function can help find specific metric names) and then click outside the menu to close it.





The second from the right button is the Filter by Map Extent button. Based on your current zoom level, this button will filter out all data that is not within the visible map extent. The remaining data will all be within the bounds of the map level at that moment. The final button is the waffle symbol on the far right. This is the Actions button. Clicking it opens another sub-menu (below).

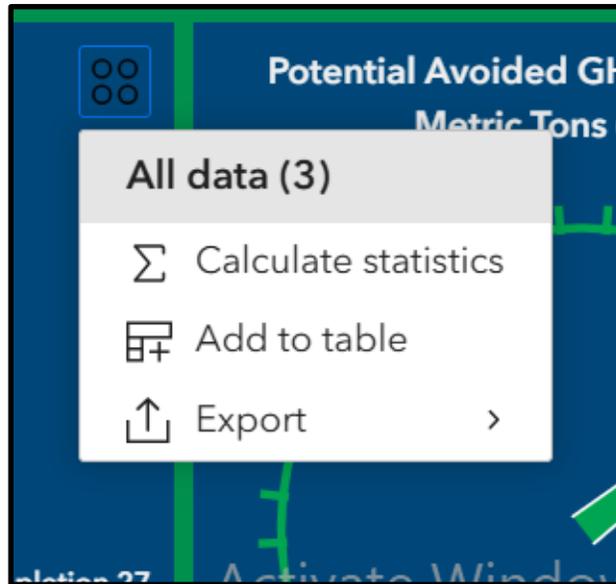


The filter option allows you to filter the data based on clauses you create. The Calculate Statistics option allows you to select a number field (Count of Values, Total Sum, etc.) and pulls up summary statistics of that field. Zoom and Pan to are automatically performed by selecting the project rows, but these buttons allow manual zoom and pan in case of errors. The final option, Export, allows users to export the data currently in the table. Multiple file types are available, including CSV, GeoJSON, and Shapefiles. When a project is selected, more options will be available. However, these tasks can be accomplished much easier by clicking on the map or using the address search bar.



### 1.2.2. Charts

The charts on the right side of the Bottom Panel display two major metrics: The count of projects in each step in the BUILD Application process and the Potential GHG Avoided in Metric Tons. There is one Actions button on the top right of each chart that only has three options (see below).



Calculate Statistics and Export function the same as in the Project Table (1.2.1, pg 6). The Add to table button adds the chart metrics to the Project Table as a category. This puts the data visualized in the chart in table format.



## 1.3. Layers

There are 9 active layers being used for the BUILD GIS Tool (2 layers are managed by BUILD staff, 3 layers are managed by CEC GIS team, and 4 layers are managed by other state agencies) including:

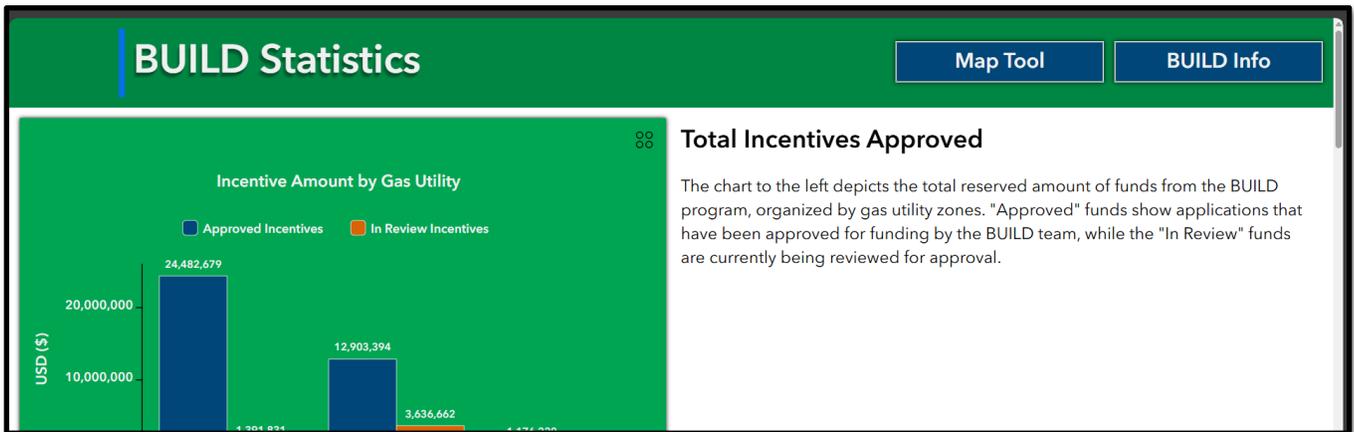
1. [BUILD Projects](#) – Managed by BUILD staff.
2. [California Natural Gas Service Area CEC](#) – Managed by the CEC’s GIS team, the layer is shared publicly.
3. [California Building Climate Zones](#) – Managed by CEC’s GIS team, Building Climate Zones of California or California Climate Zone Descriptions for New Buildings - California is divided into 16 climatic boundaries or climate zones, which is incorporated into the Energy Efficiency Standards (Energy Code). Each climate zone has a unique climatic condition that dictates which minimum efficiency requirements are needed for that specific climate zone.
4. [CA. 4th Climate Change Assessment Regions](#) – Managed by California Nature, this layer is derived from the 4th California Climate Assessment regions and enhanced using the California County Boundaries dataset (version 19.1) maintained by the California Department of Forestry and Fire Protection's Fire Resource Assessment Program, and the 3 Nautical Mile marine boundary for California sourced from the California Department of Fish and Wildlife.
5. Legislative Layers – These layers are managed by the California Department of Education, the legislative districts contain the geographically defined territories used for representation in the California State Assembly, California State Senate, and the U.S. House of Representatives from California. These layers include the:
  - [California Assembly Districts](#)
  - [California Senate Districts](#)
  - [US Congressional Districts in California](#)
6. [CA County Boundary](#) – Managed by the CEC’s GIS team.
7. [BUILD-related Census Tract Information](#) – Managed by BUILD staff, updated based on U.S. Census American Community Survey (ACS) data and U.S. Department of Housing and Urban Development (HUD) income publications. This feature layer is based on census tract polygons and implanted with additional sources to provide a snapshot of a location’s Low-Income Residential Housing Income Limit Requirements for a Multifamily Project. The dataset is based on Senate Bill (SB) 535 (2012) disadvantaged communities (DAC) and income data from the ACS 5-year estimates. The low-income communities were identified by using the income limits from HUD.



## 2. Statistics Page Features

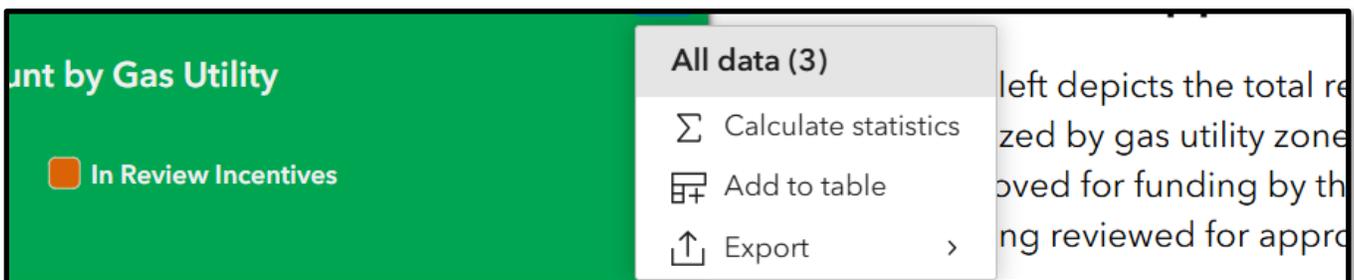
### 2.1. Overview and Navigation

The Statistics Page displays key metrics calculated from the GIS data for each application. The page can be scrolled to view all the visualized metrics. Charts are organized on the left side of the page while text information and a table are on the right side of the screen. The buttons labeled Map Tool and BUILD Info will redirect the user to those pages respectively.



### 2.2. Chart Actions

Similar to the Map tool charts, the charts in the Statistics Page have a waffle button of actions that can be taken (see below). The Calculate Statistics option allows you to select a number field (Count of Values, Total Sum, etc.) and pulls up summary statistics of that field. The Add to Table button adds the values to the table located further down in the page on the right side. This helps allow for exporting in table format. The final option, Export, allows users to export the data currently in the table. Multiple file types are available, including CSV, JSON, and FGDB.



### 2.3. Table Actions

The table located further down the page has the same actions listed on pg 6.



## 3. Information Page Features

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### 3.1. Information Links

The BUILD Information page has six clickable boxes that redirect users to helpful links or documents for the BUILD application process. Each box has a description of the link and the general contents.

- BUILD Website – redirects to BUILD’s main website
- Incentives – redirects to BUILD’s website subpage that details how incentives are calculated for applicants
- BUILD Guidelines – redirects to where BUILD Guidelines are hosted and downloadable
- BUILD Fact Sheet – redirects to BUILD s ubpage where the Program overview Fact Sheet is hosted and downloadable
- Technical Assistance – redirects to BUILD subpage that details what Technical Assistance is and how to apply
- Case Studies – redirects to BUILD subpage that showcases previous approved applicants