

User's Guide

Spring 2018, Edition 1

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Intended Audience

This guide is intended for users who are enthusiastic for running corrections with government datasets, intend to visualize them and share their analysis using TruthTree web application.

About TruthTree

TruthTree is a web application & a vizipedia which seeks to unite all the public data in the world into a data-visualization tool and reference platform that can facilitate data-driven understanding and consensus regarding geography, politics, and culture for geographical entities at all scales.

The initial data set covers Government investment data over 30+ years at multiple levels (state, city, county) for the whole USA. TruthTree allows users to create a visual which is similar to data driven version of wikipedia. Also, it allows users to interactively explore complex data sets as mentioned, run correlations and visualize them in various ways through a web browser (currently time series charts and table view). Users can save interesting visualizations and create 'stories' that are persisted, with added optional commentary, so they are available to be searched/viewed and become part of the dataset. Share persisted visualizations/pages on social media. Make the whole system usable, available, secure, scalable

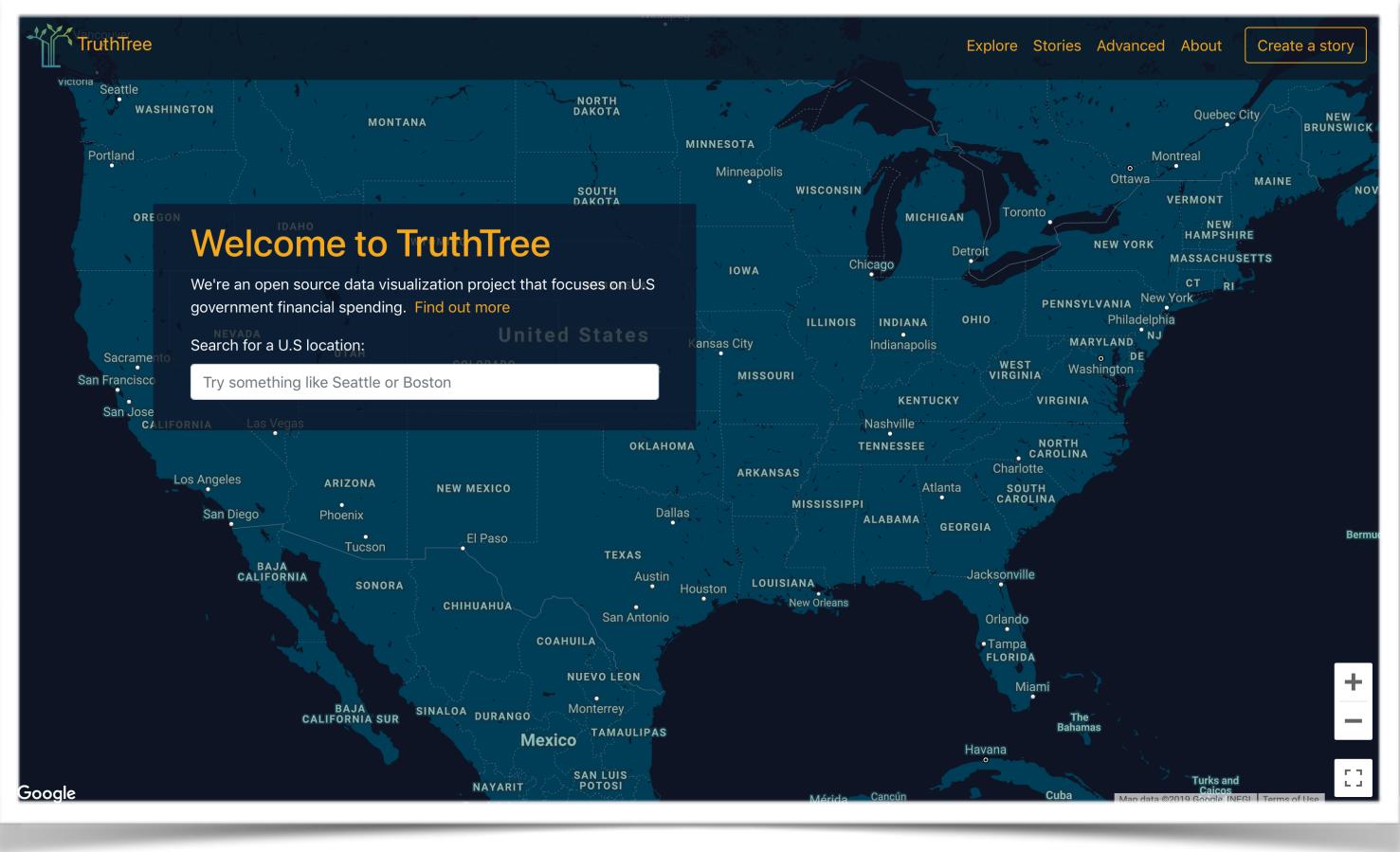
Key Features

Some of the salient features of TruthTree application are listed below:

- Exploring any location of interest
- Create Stories based on user's analysis and sharing it
- Obtaining insights of locations which have a similar trend with respect to attributes of location of interest

TruthTree Navigation

TruthTree is a web application. User can navigate to TruthTree Admin panel by accessing the url: <https://truthtree.wiki>. Below home page will be displayed.

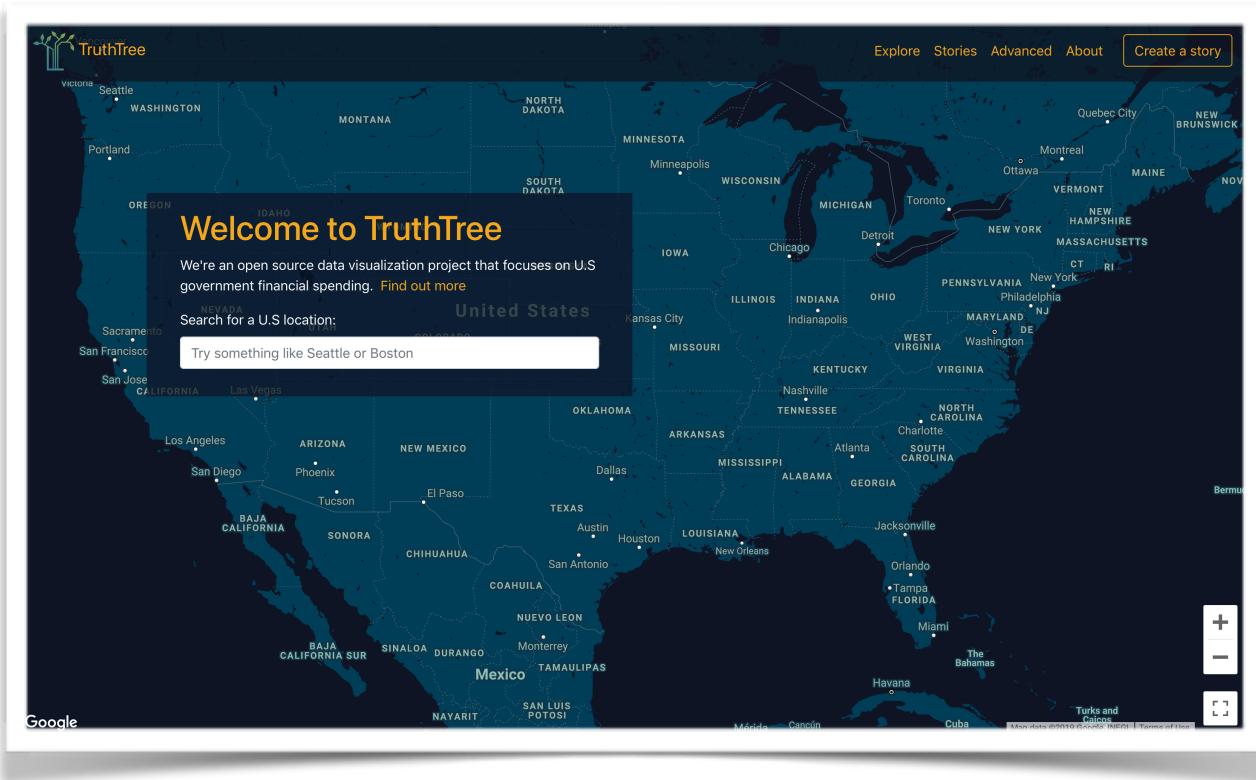


Exploring Location Of Interest Workflow

On landing, 'Explore' tab is selected by default and the map of the united states is displayed.

Selecting Location Of Interest

1. User can type the location name in the search box provided. User has the ability to search through state, city or county.



2. A list of 10 top search hits are displayed in a dropdown and the location markers are dropped on the map of United States.



The screenshot shows the TruthTree map interface. A search bar at the top contains the text "mass". Below it is a dropdown menu listing several locations in Massachusetts, including Franklin County, Winthrop Town City, Norfolk County, Berkshire County, Plymouth County, Middlesex County, Dukes County, Worcester County, and Hampshire County. To the right of the search bar is a map of the Northeastern United States and parts of Mexico and Canada. A callout box highlights "DUKES COUNTY, MASSACHUSETTS" on the map. The URL "https://truthtree.wiki/explore/counties/middlesex-county/221009009" is visible at the bottom of the map area.

3. User can click on the location name in the dropdown or select the markers on the map shown above to navigate to the explore details page of that location

The screenshot shows the TruthTree data exploration interface. On the left is a sidebar with a tree structure of categories: All Other Non-insurance Funds, Long Term Debt Outstanding, Intergovernmental Revenue Local, Long Term Debt Outstanding, Nonguaranteed, Intergovernmental Revenue State, Long Term Debt Issued - Unspecified Issue, Interest on General Debt, Bond Funds Cash and Securities, Income Taxes, Totals, Libraries, Total Utilities, Fire Protection, Health, Long Term Debt Retired, Full Faith and Credit, General Public Buildings, and Solid Waste Management. The main area has tabs for "Table View" and "Time Series View". Under "Table View", there is a "Selected Attributes: None" header, a "Normalization attribute: Gross" dropdown, and an "Export as csv" button. The table lists city populations:

Name	Population
Tucson city	531,641
Fresno city	520,052
Denver city and county	682,545
Washington dc city	672,228
Indianapolis city	853,173

Below the table are buttons for navigation and a selected location panel showing "Selected Location: seattle-city Population: 684451". It also includes a filter for "Select range of Population for filtering other cities: -25% to 25%" and a dropdown for "Select year of data to be displayed: 2016".

Table View

1. The list of locations are generated based off population. By default, locations within +25% and -25% the selected location's population are shown. User can modify the population range filter criteria by using the slider at the bottom of the screen.

The screenshot shows the TruthTree platform's Table View feature. On the left, a sidebar lists various budget categories like 'All Other Non-insurance Funds', 'Long Term Debt Outstanding', and 'Solid Waste Management'. The main area displays a table of cities with their populations:

Name	Population
Denver city and county	682,545
Washington dc city	672,228
Indianapolis city	853,173
Louisville-jefferson county metro government	763,623
Baltimore city	621,849

Below the table is a red-bordered section containing a slider for filtering other cities' populations. The slider is set between -15% and 25%. To the right of the slider, it says 'Select year of data to be displayed: 2016'. At the bottom of the page, it says 'Selected Location: seattle-city Population :684451'.

2. On the left hand panel of the explore details page, a list of attributes are displayed. They are categorized into groups called collections. User has the ability to expand each category/collection by clicking on them. This in turn displays a list of attributes, which user can select upon clicking. This will show up as a **column** in the table as well as badges in the '**Selected Attributes**' section.
3. The attributes can be deselected by clicking on the same attributes in side bar or on the 'x' icon of the corresponding badges. (Note: the list of attribute is searchable using the box at the top of the left side bar)

The screenshot shows a data visualization interface with a sidebar of categories on the left and a main content area on the right.

Left Sidebar (Categories):

- All Other Non-Insurance Funds
- Cash and Securities
- Oth Nonin Fd Cash Sec (highlighted with a red box)
- Long Term Debt Outstanding
- Intergovernmental Revenue Local
- Long Term Debt Outstanding, Nonguaranteed
- Intergovernmental Revenue State
- Long Term Debt Issued - Unspecified Issue
- Interest on General Debt
- Interest on Gen Debt (highlighted with a red box)
- Bond Funds Cash and Securities
- Income Taxes
- Totals
- Libraries
- Total Utilities
- Fire Protection
- Health
- Long Term Debt Retired, Full Faith and Credit
- General Public Buildings
- Solid Waste Management

Main Content Area:

Selected Attributes: All Other Non-insurance Funds Cash and Securities - Oth Nonin Fd Cash Sec Interest on General Debt - Interest on Gen Debt

Table View Time Series View

Normalization attribute: Gross

Export as csv

Name	Population	Oth Nonin Fd Cash Sec	Interest on Gen Debt
Tucson city	531,641	347,124,000	24,932,000
Fresno city	520,052	534,001,000	36,280,000
Denver city and county	682,545	977,501,000	262,347,000
Washington dc city	672,228	4,081,525,000	561,678,000
Indianapolis city	853,173	1,821,943,000	174,316,000

Selected Location: seattle-city Population: 684451

Select range of Population for filtering other cities: -25% to 25%

Select year of data to be displayed: 2016

4. The values in each of the selected attributes column can be normalized by:

- Gross: By default, this is selected. It represents the original data
- Per Capita: The data is divided by the corresponding location's population
- By Revenue: The data is divided by the corresponding location's total revenue

5. The data in the columns are year specific, by default 2016 is selected. User has the ability to change the year criteria, by selecting a different value from the 'Year' dropdown in the bottom right corner of the explore details page . The corresponding data in the table will also reflect the new year criteria selected.

Selected Attributes: Long Term Debt Outstanding - All Other

Table View Time Series View

Normalization attribute: Gross

Export as csv

Name	Population	All Other
Tucson city	531,641	1,081,536,000
Fresno city	520,052	897,802,000
Denver city and county	682,545	6,590,802,000
Washington dc city	672,228	11,983,552,000
Indianapolis city	853,173	5,430,269,000

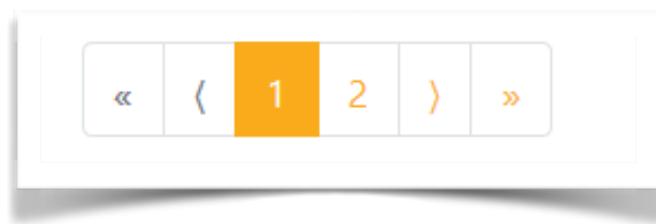
Selected Location: seattle-city Population: 684451

Select range of Population for filtering other cities:
-25% to 25%

« < 1 > »

Select year of data to be displayed:
2014

6. User can also sort the data in the table in ascending or descending order by clicking on the up / down arrow icons next to the column headers.
7. If there are more than 50 locations for the filter criteria applied, the user may toggle between pages by using the page controls at the bottom of the panel.



Data Export

1. User will also be able to export the data displayed in the table view as CSV file for further analysis.

The screenshot shows the TruthTree Data Export interface. On the left, there is a sidebar with a search bar and a list of categories such as 'All Other Non-insurance Funds', 'Cash and Securities', 'Long Term Debt Outstanding' (with sub-options like 'All Other', 'Gen Other NEC', 'Electric Utility', 'Water Utility', 'Total', 'General', 'Total Utility'), 'Intergovernmental Revenue Local', 'Long Term Debt Outstanding, Nonguaranteed', 'Intergovernmental Revenue State', 'Long Term Debt Issued - Unspecified Issue', 'Interest on General Debt', 'Bond Funds Cash and Securities', 'Income Taxes', 'Totals', and 'Libraries'. The main area has tabs for 'Table View' (selected) and 'Time Series View'. A sub-header says 'Selected Attributes: Long Term Debt Outstanding - All Other'. Below this is a table with columns 'Name', 'Population', and 'All Other'. The table data is as follows:

Name	Population	All Other
Tucson city	531,641	1,081,536,000
Fresno city	520,052	897,802,000
Denver city and county	682,545	6,590,802,000
Washington dc city	672,228	11,983,552,000
Indianapolis city	853,173	5,430,269,000

Below the table are navigation arrows («, <, >, ») and a page number '1'. A red box highlights the 'Export as csv' button in the top right corner. At the bottom, there is a section for filtering other cities by population range (-25% to 25%) and a dropdown for selecting the year (2014).

Time Series View

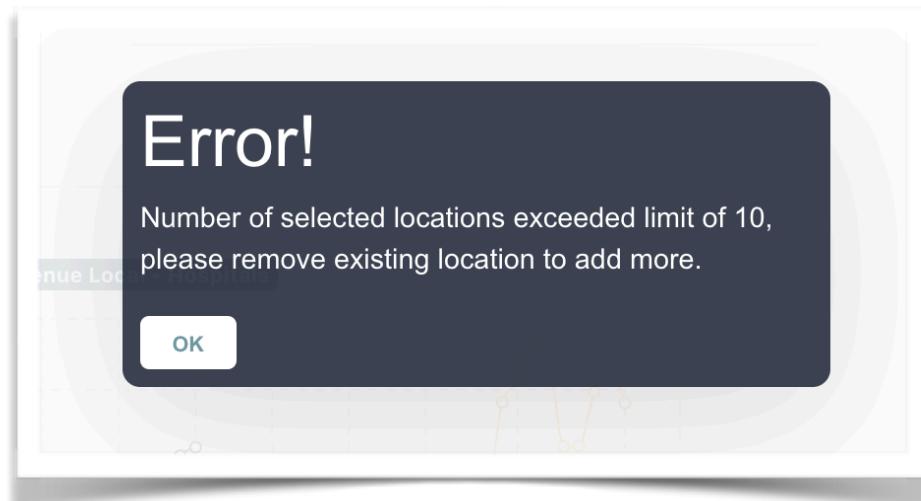
In the explore section, we have another format of viewing the data for location of interest and related location in for the time series chart.

1. User can navigate to this view by clicking on '**Time Series View**' tab, all the filter criteria applied in the table view is valid to this view as well, with the same attributes, year and population range selection.

2. All the locations displayed in the table view are carried over to this view. By default, 10 locations are selected to be displayed in the charts. User has the ability to can add/remove more locations from this list using the checkboxes below the normalization section..

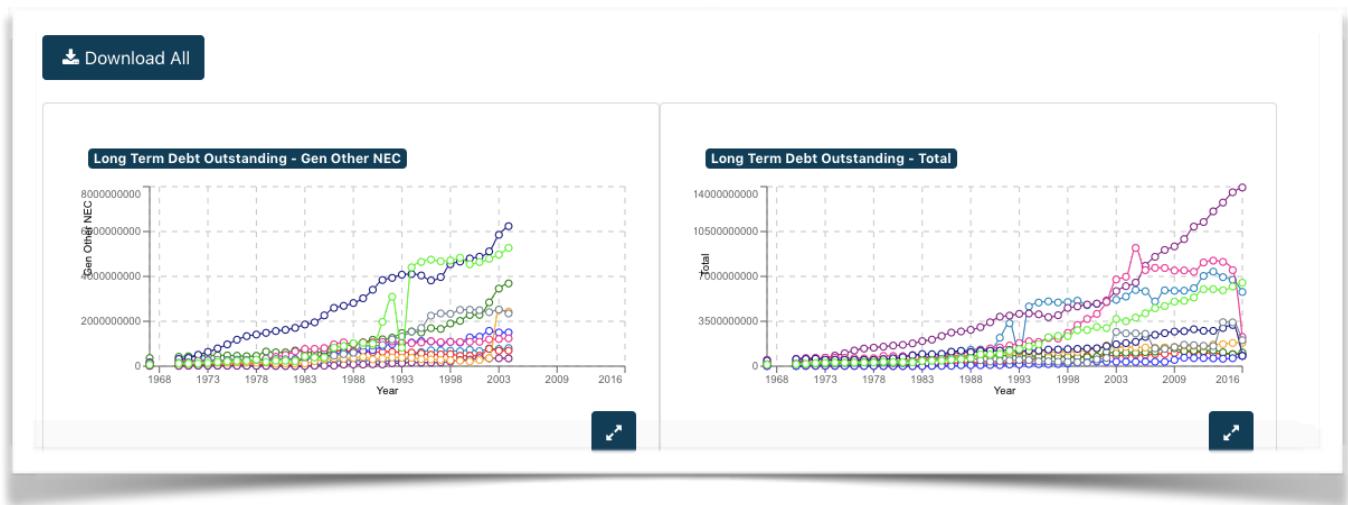
The screenshot shows a user interface for selecting locations. At the top, there are two tabs: 'Table View' and 'Time Series View', with 'Time Series View' being active. Below the tabs, a dropdown menu labeled 'Normalization attribute:' is set to 'Gross'. A section titled 'Select locations from the selected range to be plotted in the graph:' contains a grid of checkboxes. The locations listed are: tucson city, indianapolis city, detroit city, columbus city, memphis city, milwaukee city, fresno city, louisville-jefferson county metro government, las vegas city, oklahoma city city, el paso city, denver city and county, baltimore city, albuquerque city, portland city, fort worth city, washington dc city, boston city, charlotte city, nashville-davidson county metropolitan government, and seattle city. A blue button at the bottom left says 'Download All' with a download icon.

3. Maximum of 10 locations can be selected at a time, if user tries to select more than 10 location, a user message is displayed as below:

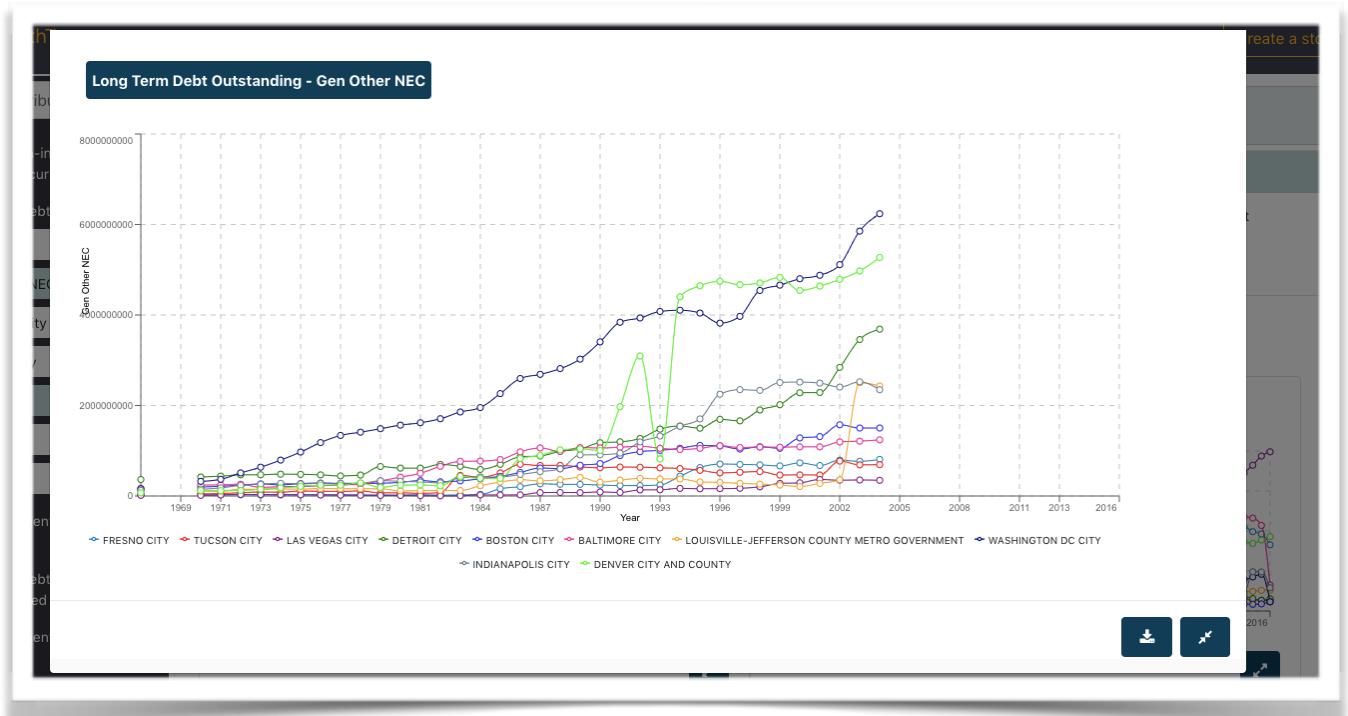


4. User will be able to view the trend of the selected attribute values over the years.

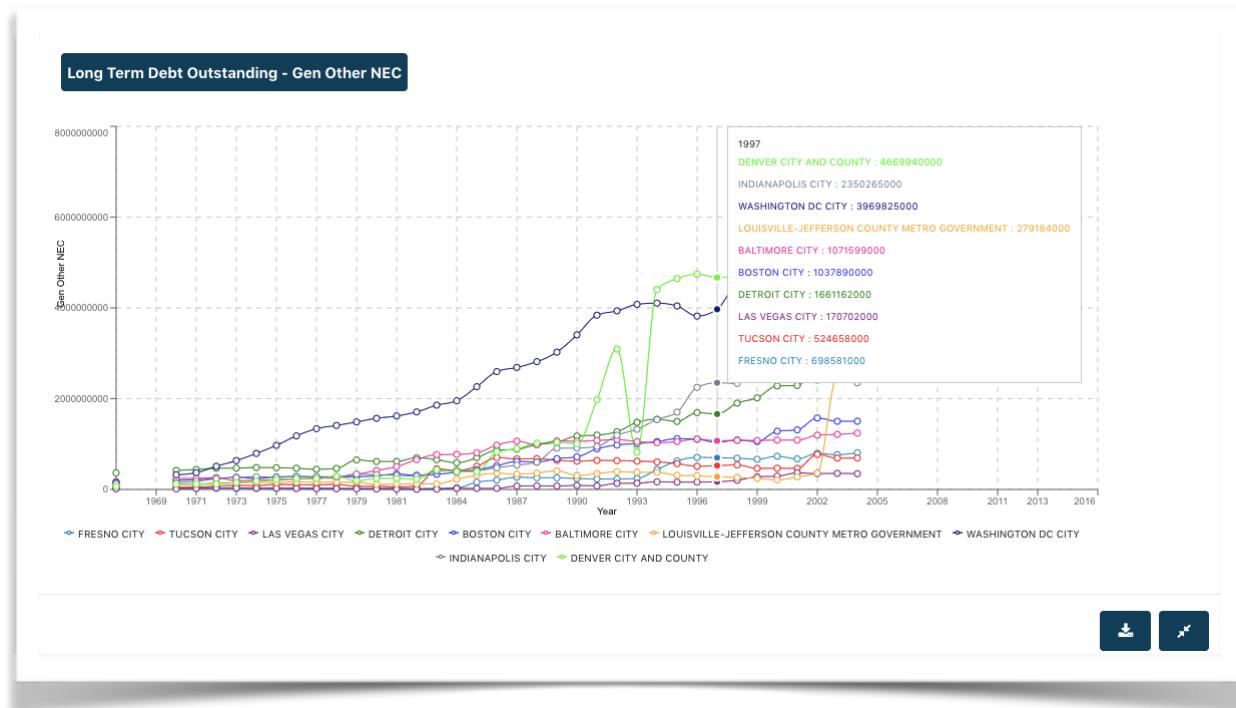
One chart per selected attributes will be displayed



5. If user need to analyze an individual chart more, there is an option to expand the time series graph for each individual attribute using a the expand button as shown above



6. Hovering over any year in the time series chart will display details about that year for all the location selected.



7. Also, user can change the population range, add/remove attributes similar to table view

Download Chart(s)

There is an ability for the user to download the above mentioned time series charts. This can be done in 2 methods as below:

1. To download all the charts for the selected attributes, user can click 'Download All' button in the time series tab. This downloads a zip file of all the charts in the current view.

TruthTree

Explore Stories Advanced About Create a story

Search Attributes

Selected Attributes: Long Term Debt Outstanding - Gen Other NEC Long Term Debt Outstanding - Total

Table View Time Series View

Normalization attribute: Gross

Select locations from the selected range to be plotted in the graph:

tucson city fresno city denver city and county washington dc city
 indianapolis city louisville-jefferson county metro government baltimore city boston city
 detroit city las vegas city albuquerque city charlotte city
 columbus city oklahoma city city portland city nashville-davidson county metropolitan government
 memphis city el paso city fort worth city seattle city
 milwaukee city

Download All

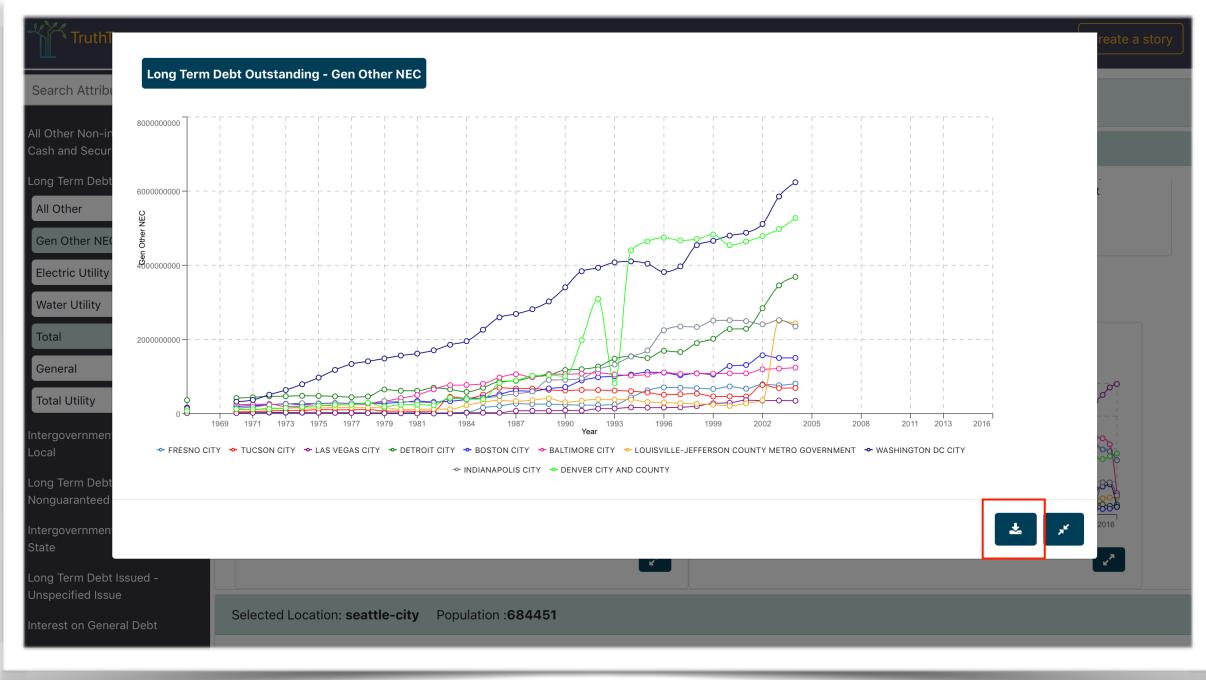
Long Term Debt Outstanding - Gen Other NEC Long Term Debt Outstanding - Total

Selected Location: seattle-city Population :684451

Select range of Population for filtering other cities: 25% to 25%

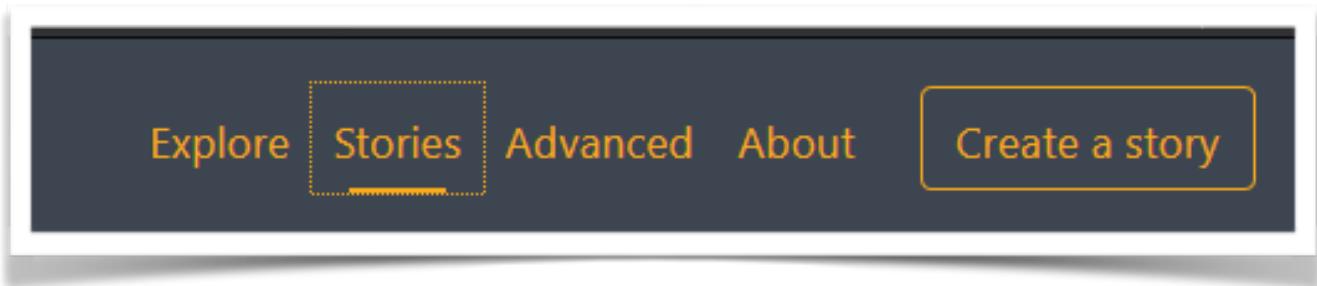
Select year of data to be displayed:

2. User even has the ability to download individual charts. When user is in the expanded view of a chart, user can click 'Download' icon in the bottom right corner of the modal which downloads the jpeg version of the chart displayed.



Stories Workflow

A Story is a blog post which any user can create to share images, links, and facts that they have found through TruthTree. A Story can be created from any page using the “Create a story” button in the website header ribbon, and can be viewed from the “Stories” website tab.



Story Creation:

1. To create a story, click the button '**Create a story**' displayed at top right position of the page. A popup forum will appear.
2. Before a story can be submitted, the user must include the **Author Name, Story Title** and any **Content** for the story's body. This is where the user can detail what they are sharing. To add an image, simply drag and drop it within the section labeled "Tell us what you found" seen below.
3. The user may add tags to the story, so that it is easier to find by other users. To add a tag, enter tag(s) in the "**Tags**" field, separated by either ";" or by using the "Enter" or "Return" key on the keyboard.

x

Create a story

Author Name *

Story Title *

Tags

Normal **B** I ~~S~~ “ “ “ “

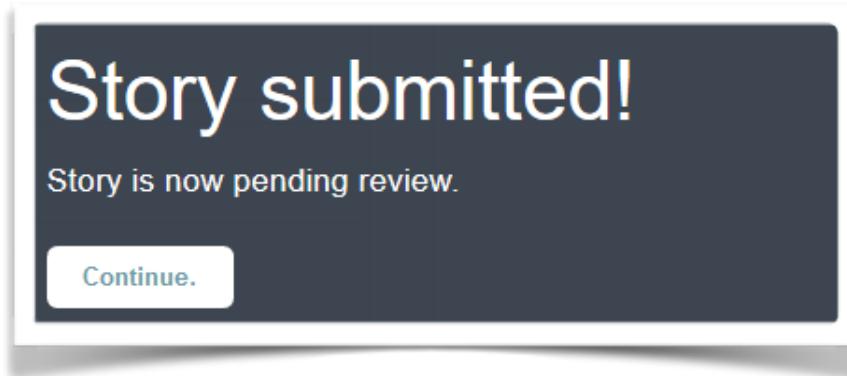
Tell us what you found

I'm not a robot reCAPTCHA
Privacy - Terms

Submit

Discard

4. Finally, the user must fulfill the Captcha requirement and click '**Submit**'. Once submitted, the user will be greeted with the following message.



5. The story will be reviewed by a site administrator for profanity and inappropriate images.
6. User may cancel the process of story creation at any time by instead clicking '**Discard**', or clicking outside of this popup area.

View Story

Users will only be able to view a story, once it has been approved by the admin.

1. Click the '**Stories**' tab in the page header. Below page is displayed:

The screenshot shows the TruthTree website's 'Stories' page. At the top, there is a navigation bar with links for 'Explore', 'Stories' (which is underlined), 'Advanced', 'About', and a 'Create a story' button. Below the navigation bar, a green header bar says 'Trending Stories'. On the left, there is a search bar with the placeholder 'Search stories by title or tag name' and a 'Sort By:' dropdown set to 'Upvotes'. The main content area contains three story summaries in boxes:

- TEST TITLE**: Includes 'TEST TAG 1', 'TEST TAG 2', 'TEST TAG 3', 'TEST CONTENT', and interaction counts '31' and '101'.
- Minimum wage in NH**: Includes 'Minimum Wage', 'NH', and the text 'New Hampshire Minimum Wage Law requires that...'. It also shows interaction counts '16' and '3'.
- Colorado Interest Rates Laws**: Includes 'Colorado' and the text 'Each state has limits on the amount of inter...'. It shows a page navigation bar with buttons for '«', '<', '1', '2', '>', and '»'.

A message 'Please select a story to view its details!' is displayed in a box on the right side of the page.

2. The page displayed is divided into two panels when viewed on desktop browsers. By default, the top trending stories are displayed in a list of summaries.

Trending Stories

Sort By: Recent Upvotes

Search stories by title or tag name

TEST TITLE

TEST TAG 1 TEST TAG 2 TEST TAG 3

TEST CONTENT

1 31 1 101

Minimum wage in NH

Minimum Wage NH

New Hampshire Minimum Wage Law requires that...

1 16 1 3

Colorado Interest Rates Laws

Colorado

« { 1 2 } »

3. The user may refine the displayed list by typing a search term in the search bar. As the user types, a smart search function will return a list of stories whose title, tags, or content resemble that term.
4. If there are more than 15 stories, the user may toggle between pages of stories by using the page controls at the bottom.

« { 1 2 } »



5. The user also has the ability to sort the stories by **Recent** or **Upvotes**.
6. To view a story in details, click any story from the list in the left panel it. The story details will be displayed in the right panel.

Minimum wage in NH

Tags: **Minimum Wage** **NH**

Description:
New Hampshire Minimum Wage Law requires that every employer keep a true and accurate record of all hours worked daily by each employee except for employees who are exempt under 29 U.S.C. section 213(a) of the Fair Labor Standards Act.

Unless otherwise provided by statute, no person, firm or corporation shall employ any employee at an hourly rate lower than that set forth in the federal minimum wage law, which is **\$7.25**. These limitations shall not apply to employees engaged in household labor, domestic labor, farm labor, outside sales representatives, summer camps for minors, newspaper carriers, non-professional ski patrol and golf caddies.

A tipped employee of a restaurant, hotel, motel, inn or cabin who customarily and regularly receives more than \$30 a month in tips directly from the customer will receive a base rate from the employer of not less than **45 percent of the applicable minimum wage**.

Except for employees of employers who are covered by the Fair Labor Standards Act, and seasonal employees of employers operating less than six months, employees shall be paid at the rate of time and one half for all time worked in excess of 40 hours in any week.

Author: **S S**

 16  3

Upvote / Downvote Story

When the users are viewing a story, they have the ability to upvote/downvote a story, to let other users know about their view with respect to a particular story.

1. From the right panel in the **Stories** page, the user may upvote or downvote the story by clicking the “**thumbs-up**” or “**thumbs-down**” icons respectively, which will influence the story’s visibility for other users.
2. A user will only be able to upvote or downvote a story, but not both. If user tries to do so, the following message will be displayed.



Advanced Search Workflow

TruthTree has a feature to search for locations which have similar trend with respect to a location of interest, based on selected attributes (like “Parks and Recreation Expenditure”, “Property Taxes”, “Police Protection Expenditure”) , normalization type (like “By Population”, “By Revenue”) and a year (for multiple attributes) / a year range (for single attribute).

1. Click on ‘**Advanced**’ tab in the header of TruthTree application. Below screen will be displayed for the user.

The screenshot shows the 'Similar Places Search' page of the TruthTree application. At the top, there's a navigation bar with links for 'Explore', 'Stories', 'Advanced', 'About', and 'Create a story'. The main form has several input fields: 'Location of Interest' (a dropdown menu labeled 'Select a location'), 'Selected attributes' (a dropdown menu labeled 'Select...'), 'Normalization' (a dropdown menu labeled 'Please Select'), and 'Year' (a dropdown menu). Below these are two date selection fields: 'Start Year' and 'End Year'. A large 'Search' button is located at the bottom right of the form area.

2. For example, if a user wants to search for places like “Massachusetts” with similar “Park and Recreational Expenditure” from 2005 to 2008, normalized by “Revenue”. Below are the steps to do so:

- Select a location of interest by clicking on “**Select a location**” dropdown & type in your choice of location (state, city or county) like “Massachusetts”.

The screenshot shows the 'Similar Places Search' page on the TruthTree platform. At the top, there's a navigation bar with links for Explore, Stories, Advanced, About, and a 'Create a story' button. Below the navigation is a section titled 'Similar Places Search' with a light green header. On the left, there are two dropdown menus: 'Location of Interest' set to 'Select a location' and 'Selected attributes' set to 'Please Select'. A search bar contains the text 'Massachusetts'. To the right of the search bar are fields for 'Start Year' and 'End Year', both currently set to 'Please Select'. A large dropdown menu is open, listing various locations in Massachusetts, including Franklin County, Winthrop Town City, Norfolk County, Berkshire County, Plymouth County, Middlesex County, Dukes County, Worcester County, and Hampshire County. A 'Search' button is located at the bottom right of this dropdown.

- Select one or more attribute(s) from “**Selected Attributes**” dropdown list.
User has the ability to search through the attributes list by typing in the provided search box.

This screenshot shows the same 'Similar Places Search' interface as the first one, but with a different selection in the 'Selected attributes' dropdown. The 'Location of Interest' dropdown is now set to 'MASSACHUSETTS'. The 'Selected attributes' dropdown now contains the text 'Parks and Recreation'. A search bar below it lists three options: 'Current Expenditure Parks and Recreation', 'Direct Expenditure Parks and Recreation', and 'Total Expenditure Parks and Recreation'. The rest of the interface, including the normalization and year selection fields, remains the same as in the first screenshot.

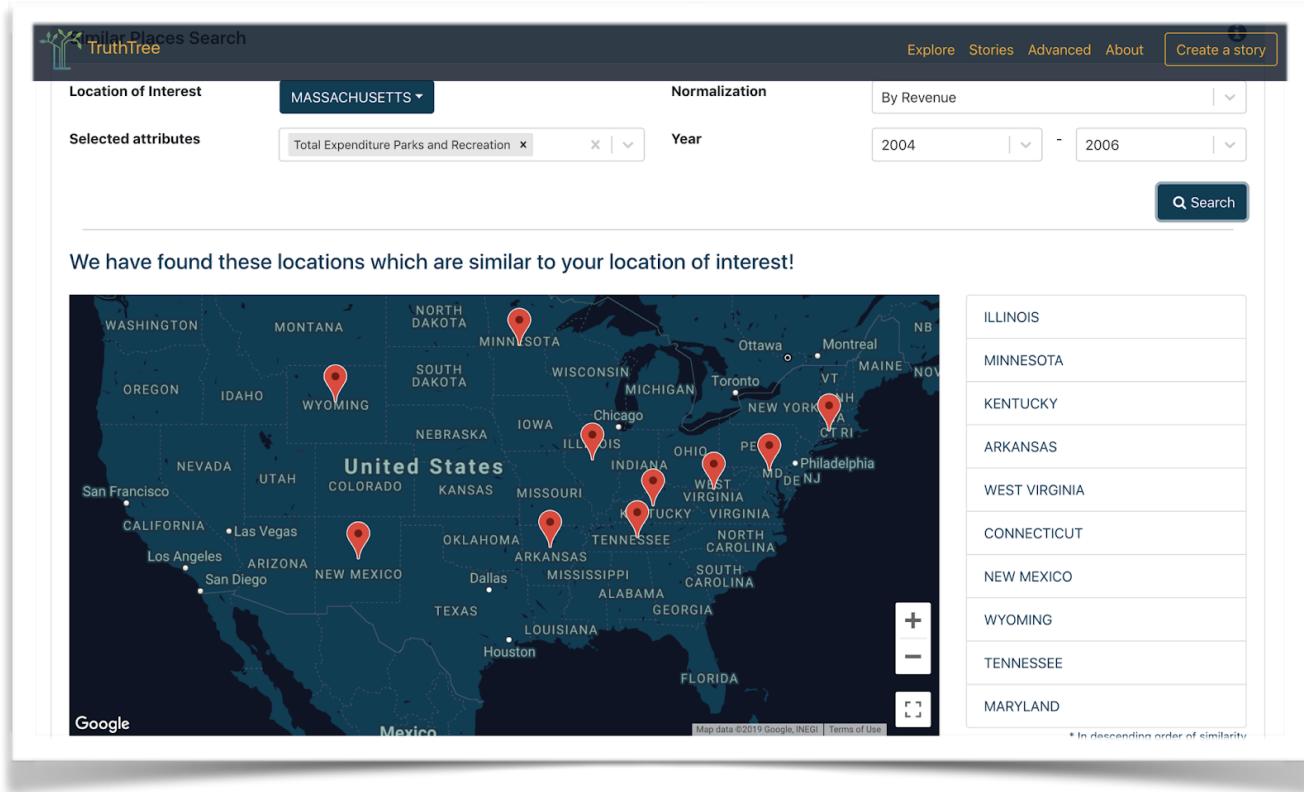
- Select the type from the “**Normalization**” dropdown. There are 2 types of normalization provided ‘By Population’ (data is divided by the corresponding location’s population) & ‘By Revenue’ (data is divided by the corresponding location’s total revenue)

The screenshot shows the 'Similar Places Search' page on the TruthTree website. At the top, there's a navigation bar with links for Explore, Stories, Advanced, About, and a 'Create a story' button. Below the navigation is a search form. In the 'Location of Interest' field, 'MASSACHUSETTS' is selected. Under 'Selected attributes', 'Total Expenditure Parks and Recreation' is listed. The 'Normalization' section has a dropdown menu open with two options: 'By Population' (selected) and 'By Revenue'. A 'Year' input field is also present. A 'Search' button is located at the bottom right of the search area.

- Select the year range from Start Year and End Year dropdown lists for a single attribute criteria. And click '**Search**' button.

This screenshot shows the same 'Similar Places Search' page as above, but with more details visible. The 'Normalization' dropdown now shows 'By Revenue'. The 'Year' section has two dropdown menus: 'Start Year' set to '2004' and 'End Year' with a dropdown menu open showing years from 2010 to 2016, where '2016' is selected. The rest of the interface remains the same with the location and attribute filters.

3. Based on the filter criteria applied in the above process, a result set is displayed. Here you have the States which are similar to "Massachusetts" based on the "Total Expenditure Parks and Recreation" as selected attribute, "By Revenue" as normalization type and in the year range 2004 - 2006.



4. Similarly for multiple attributes, the only a single is presented as the filter criteria unlike year range. For example, "Seattle" with similar "Property Taxes" & "General Construction Expenditure", normalized by "Population" in the year 2004.



TruthTree

Explore Stories Advanced About Create a story

Similar Places Search

Location of Interest: SEATTLE CITY, KING COUNTY, WASHINGTON

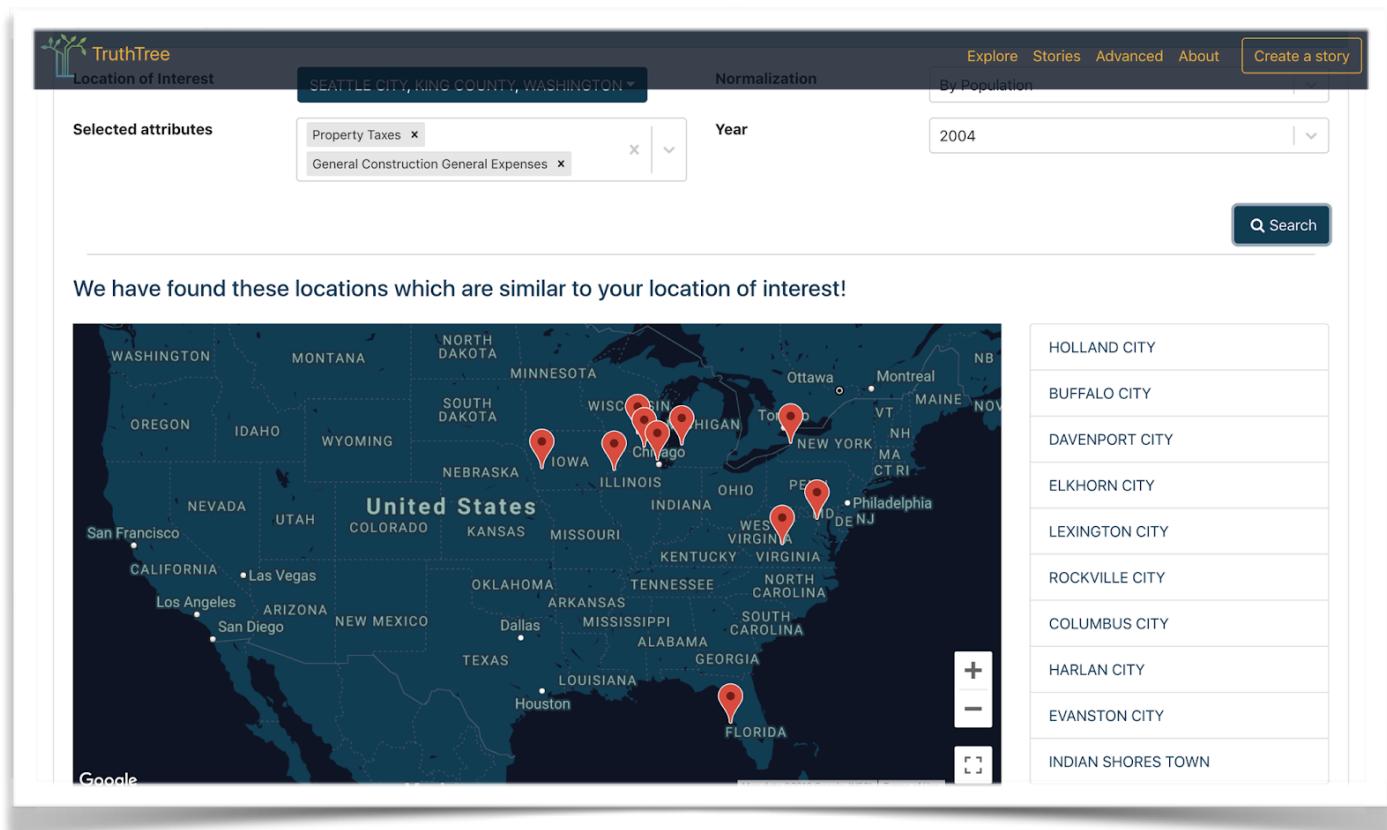
Selected attributes: Property Taxes, General Construction General Expenses

Normalization: By Population

Year: 2004

Search

5. And corresponding result will be displayed as below.



About

By click on '**About**' tab in the application header, user can navigate to the information page of the TruthTree and a video on how to use the platform is displayed.

The screenshot shows the TruthTree application's 'About' page. At the top, there is a dark header bar with the 'TruthTree' logo on the left and navigation links 'Explore', 'Stories', 'Advanced', 'About', and a 'Create a story' button on the right. Below the header, the main content area has a dark background. It features the 'TruthTree' logo and the text 'A Public Data Vizipedia/Wiki-Laboratory'. A horizontal line separates this from the main description: 'TruthTree seeks to unite all the public data in the world into a data-visualization tool and reference platform that can facilitate data-driven understanding and consensus regarding geography, politics, and culture for geographical entities at all scales.'