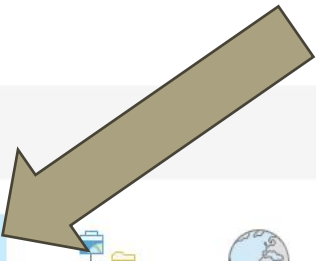


Step by Step GIS mapping Assignment 2

Create a Folder Assignment X



New Project



Start without a template

Recent Projects

Find

	Mapping uHMT Location C:\Users\Tarendra\OneDrive - CUNY\CREST-uHMT\Map-and-Plots\Mapping uHMT Location\Mapping uHMT Location.aprx	7/2/2024 3:09 PM
	DEM-ESA-NYC C:\Users\Tarendra\Documents\ArcGIS\Projects\DEM-ESA-NYC\DEM-ESA-NYC.aprx	3/7/2023 2:12 PM
	MyProject30 C:\Users\Tarendra\Documents\ArcGIS\Projects\MyProject30\MyProject30.aprx	4/16/2024 3:40 PM
	MyProject29 C:\Users\Tarendra\Documents\ArcGIS\Projects\MyProject29\MyProject29.aprx	4/9/2024 5:56 PM
	MyProject28 C:\Users\Tarendra\Documents\ArcGIS\Projects\MyProject28\MyProject28.aprx	4/9/2024 3:32 PM
	MyProject27 C:\Users\Tarendra\Documents\ArcGIS\Projects\MyProject27\MyProject27.aprx	3/12/2024 4:29 PM
	MyProject26 C:\Users\Tarendra\Documents\ArcGIS\Projects\MyProject26\MyProject26.aprx	3/12/2024 4:28 PM
	MyProject25 C:\Users\Tarendra\Documents\ArcGIS\Projects\MyProject25\MyProject25.aprx	3/12/2024 1:18 PM
	MyProject24 C:\Users\Tarendra\Documents\ArcGIS\Projects\MyProject24\MyProject24.aprx	3/5/2024 8:47 PM
	MyProject23 C:\Users\Tarendra\Documents\ArcGIS\Projects\MyProject23\MyProject23.aprx	12/12/2023 4:56 PM
	Harlem-Schools C:\Users\Tarendra\Documents\ArcGIS\Projects\Harlem-Schools\Harlem-Schools.aprx	6/27/2023 12:46 PM
	Demographics-NYC	



Learning Resources

Recent Templates

[Learn more about creating project templates](#)

Start with another template

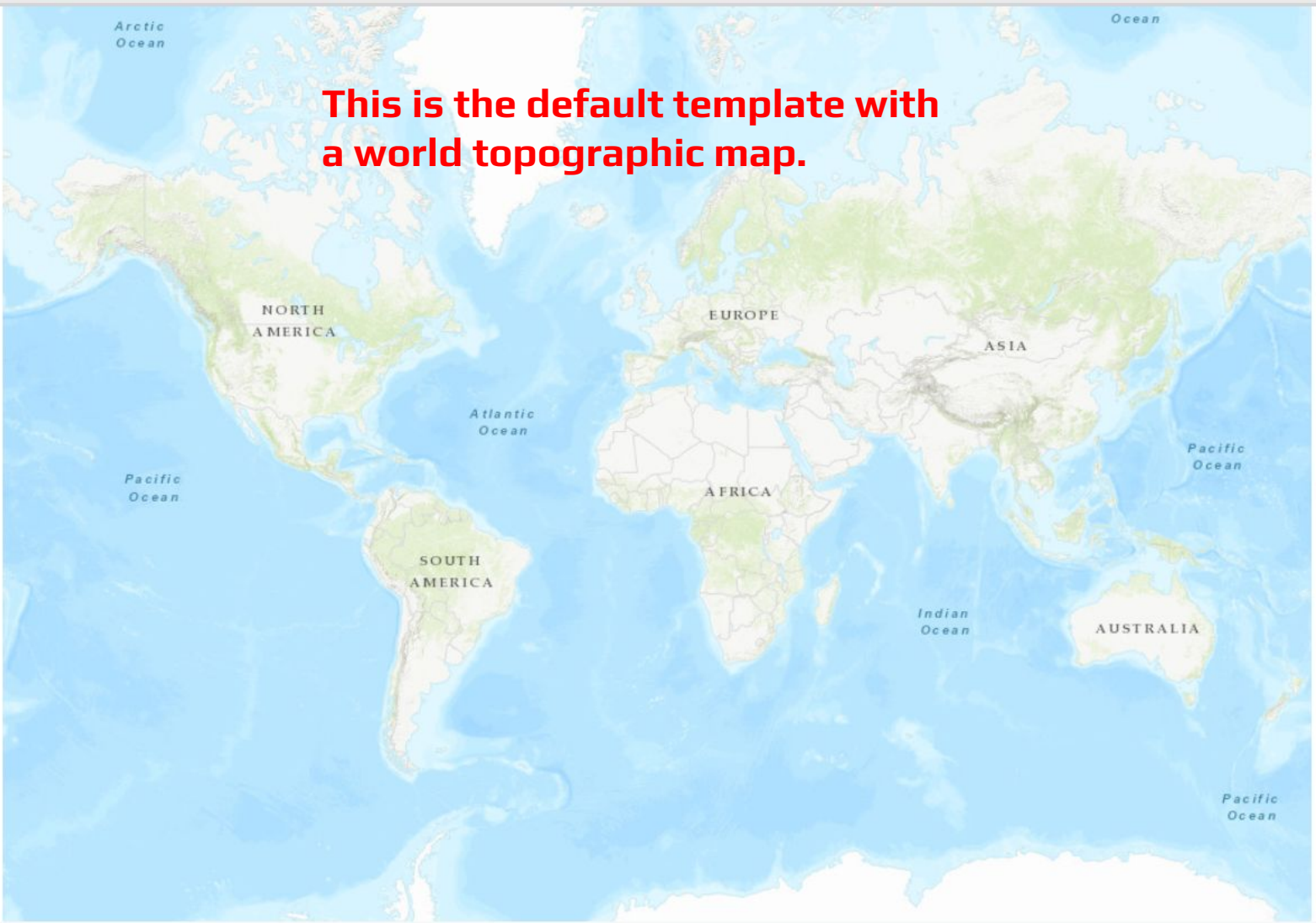
Open another project

Contents

Search

Drawing Order

- Map
- Topographic



Downloads > Assignment2-USA-Energy >

Name	Date modified	Type
USA_states	7/21/2024 5:19 PM	File folder
Assignment 2	2/17/2022 4:52 PM	Adobe Acrobat D...
USA-TotalEnergyCO2Capita	7/7/2017 1:12 PM	Microsoft Excel W...

You have provided the Data in table format in an Excel file.
State name, code, CO2 emission, Energy Cap in BTU for each state.

The objective is to create a map using this data to show both data in same map.

	A	B	C	D	E	F	G
1	State	Code	EnergyCapitaMBtu	CO2EmissionsMMT	Population2014		
2	Alaska	AK	818	35	736705		
3	Alabama	AL	404	123	4843214		
4	Arkansas	AR	376	69	2966912		
5	Arizona	AZ	211	93	6719993		
6	California	CA	196	358	38680810		
7	Colorado	CO	276	92	5349648		
8	Connecticut	CT	209	35	3591873		
9	District Of Columbia	DC	271	3	659005		
10	Delaware	DE	293	13	934948		
11	Florida	FL	207	228	19888741		
12	Georgia	GA	282	140	10087231		
13	Hawaii	HI	198	18	1416349		
14	Iowa	IA	496	82	3108030		
15	Idaho	ID	318	17	1633532		
16	Illinois	IL	314	234	12867544		
17	Indiana	IN	444	207	6595233		
18	Kansas	KS	390	70	2899360		
19	Kentucky	KY	401	139	4413057		
20	Louisiana	LA	921	218	4647880		
21	Massachusetts	MA	213	64	6749911		
22	Maryland	MD	234	62	5967295		
23	Maine	ME	309	17	1330719		
24	Michigan	MI	291	163	9915767		
25	Minnesota	MN	350	95	5453109		
26	Missouri	MO	314	132	6060930		
27	Mississippi	MS	386	64	2992400		
28	Montana	MT	394	32	1022867		
29	North Carolina	NC	257	127	9934399		
30	North Dakota	ND	865	59	739904		
31	Nebraska	NE	459	52	1881145		
32	New Hampshire	NH	234	15	1328743		
33	New Jersey	NJ	262	114	8925001		
34	New Mexico	NM	326	50	2083024		
35	Nevada	NV	233	37	2833013		

Second assignment is mapping USA data

Shared with me > CUNY HIRES > GIS-ArcGIS

Type People Modified

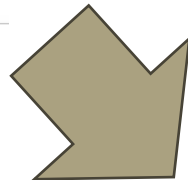
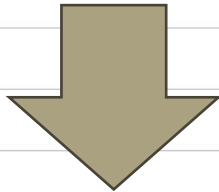
Name ↑

Assignments Data- Downloads

Assignments pdf Map - Uploads

Lessons - Presentations

GIS - Syllabus



Shared with ... > Assignments pdf Ma... > Assignment 2 -_USA E...

Type People Modified

Name ↑

Owner

Last modified

File size

⋮

USA_states

me

6:30 PM

—

⋮

Assignment 2.pdf

me

Feb 17, 2022

223 KB

⋮

USA-TotalEnergyCO2Capita.xlsx

me

6:28 PM

13 KB

⋮

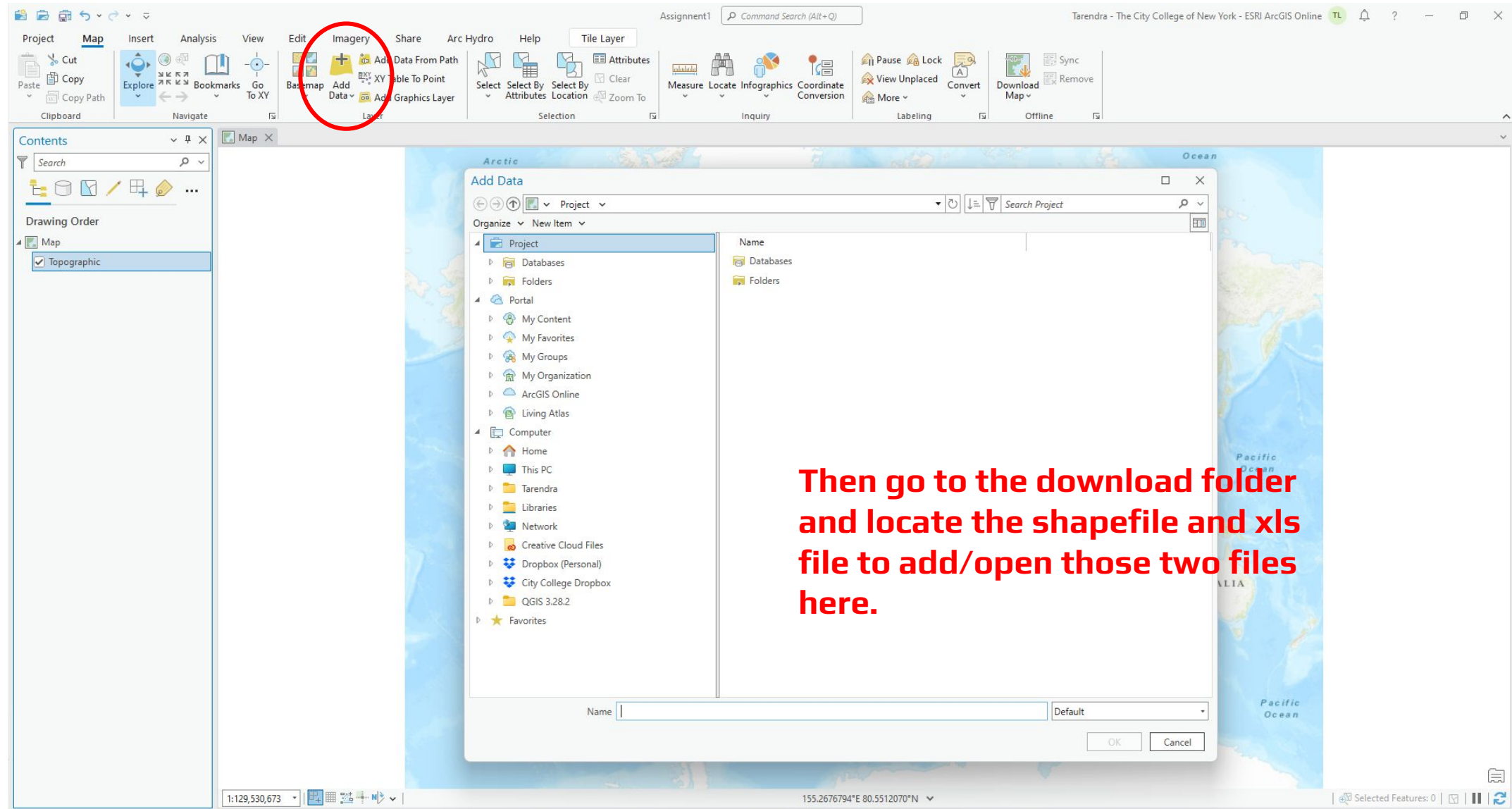
Download the data file.

You also provided a *shapefile* of a USA map that has a polygon representing each states.

The shapefile is a file that opens in ArcGIS software.

So, we will use the USA map shapefile and Excel data to create a map of Energy demand and CO2 emissions from each states.

- Now you already extracted the data from the Zip file. Let's add these data to ArcGIS software.



Contents

Search

Drawing Order

- Map
 - Topographic

Add Data

Tarendra Lakhankar Downloads Assignment2-USA-Energy USA_states Search

Organize New Item

Name	Type	Geometry
cb_2013_us_state_500k.shp	Shapefile	Polygon

Name: cb_2013_us_state_500k.shp | Default

OK Cancel

Element

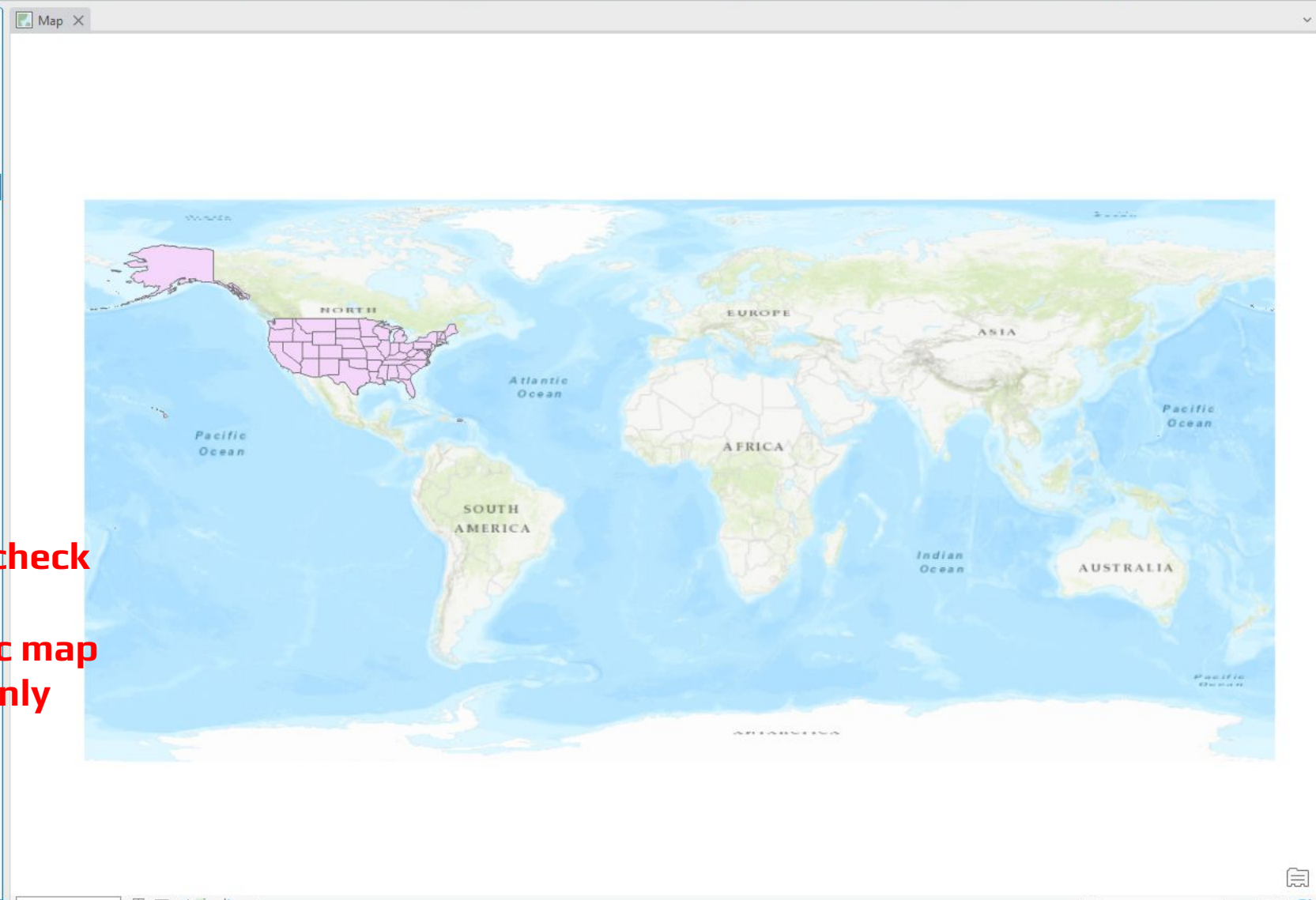
Select an element.

Contents

Search

Drawing Order

- Map
 - cb_2013_us_state_500k
 - Topographic



Element

Select an element.

Catalog Element Geopr... Modify... Explora... Dockp... Manag...

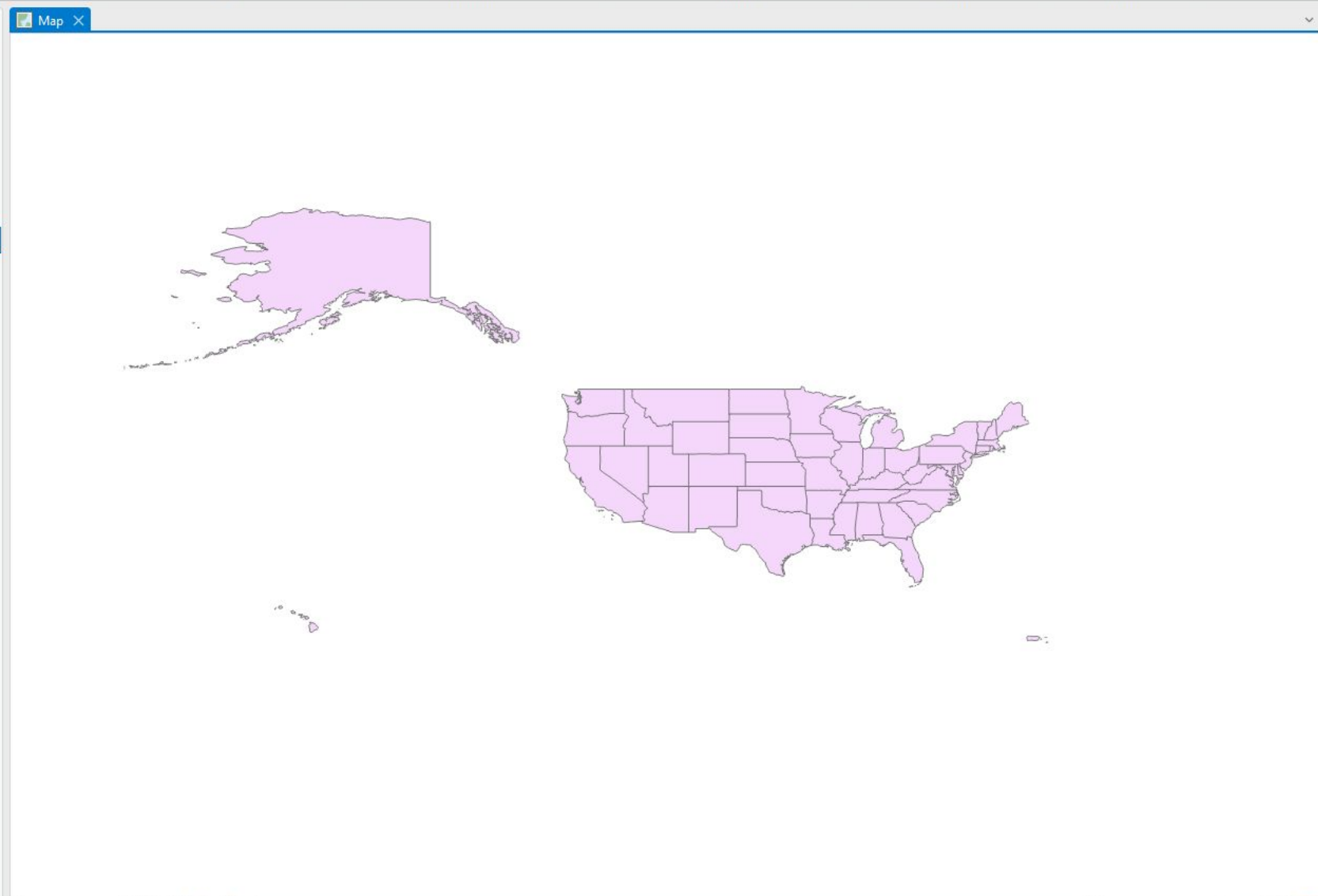
You can uncheck global topographic map and show only USA map.

Contents

Search

Drawing Order

- Map
 - cb_2013_us_state_500k
 - Topographic



Element

Select an element.

Selected Features: 0

Catalog Element Geopr... Modify... Explora... Dockp... Manag...

Contents

Search

Drawing Order

- Map
 - cb_2013_us_state_500k
 - Topographic

Map

Add Data

Organize New Item

Name	Type	Geometry
USA_states	Folder	
USA-TotalEnergyCO2Capita.xlsx	Excel	

Name: Default

Open Cancel

Element

Select an element.

Project Map Insert Analysis View Edit Imagery Share Arc Hydro GRAIP Lite Help Standalone Table

Clipboard: Cut, Copy, Copy Path, Paste

Navigate: Explore, Bookmarks, Go To XY

Layer: Basemap, Add Data

Selection: Select, Select By Attributes, Select By Location, Clear, Zoom To

Inquiry: Measure, Locate, Infographics, Coordinate Conversion

Labeling: Pause, Lock, View Unplaced, More, Convert

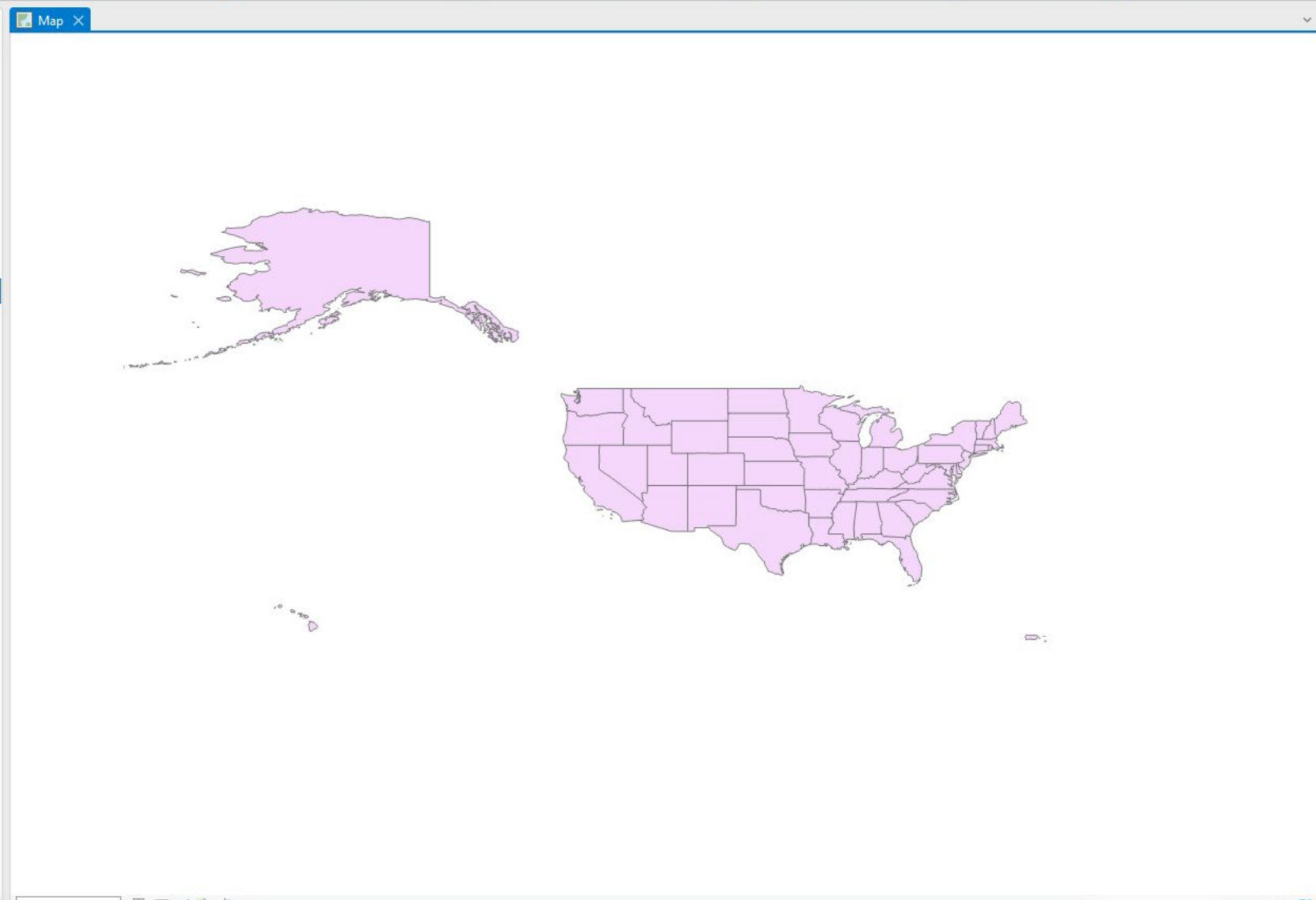
Offline: Download Map, Sync, Remove

Contents

Search

Drawing Order

- Map
 - cb_2013_us_state_500k
 - Topographic
- Standalone Tables
 - EnergyAndCO2S



Element

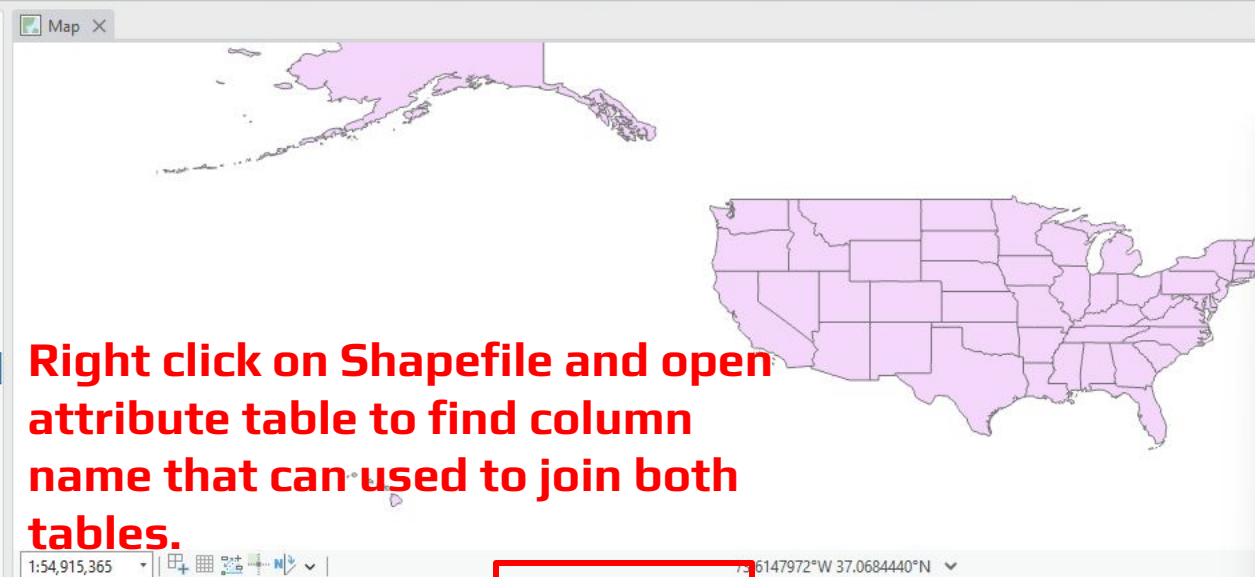
Select an element.

Contents

Search

Drawing Order

- Map
 - cb_2013_us_state_500k
 - Topographic
 - Standalone Tables
 - EnergyAndCO2\$



cb_2013_us_state_500k

FID	Shape	STATEFP	STATENS	AFFGEOID	GENID	STUSPS	NAME	LSAD	ALAND	AWATER	
1	0	Polygon	04	01779777	0400000US04	04	AZ	Arizona	00	294205037082	1027846143
2	1	Polygon	05	00068085	0400000US05	05	AR	Arkansas	00	134772954601	2958815561
3	2	Polygon	08	01779779	0400000US08	08	CO	Colorado	00	268432676592	1170523775
4	3	Polygon	09	01779780	0400000US09	09	CT	Connecticut	00	12541965607	1815409624
5	4	Polygon	11	01702382	0400000US11	11	DC	District of Columbia	00	158347880	18636405
6	5	Polygon	13	01705317	0400000US13	13	GA	Georgia	00	148962779995	4947803555
7	6	Polygon	16	01779783	0400000US16	16	ID	Idaho	00		
8	7	Polygon	17	01779784	0400000US17	17	IL	Illinois	00		
9	8	Polygon	19	01779785	0400000US19	19	IA	Iowa	00		
10	9	Polygon	20	00481813	0400000US20	20	KS	Kansas	00		
11	10	Polygon	22	01629543	0400000US22	22	LA	Louisiana	00		
12	11	Polygon	24	01714934	0400000US24	24	MD	Maryland	00		
13	12	Polygon	27	00662849	0400000US27	27	MN	Minnesota	00		

EnergyAndCO2\$ - MyProject30 - ArcGIS Pro

Field:	Selection:	Rows:			
State	Code	EnergyCapitaMBTU	CO2EmissionsMMT	Population:	
1	Alaska	AK	818	35	731
2	Alabama	AL	404	123	484
3	Arkansas	AR	376	69	296
4	Arizona	AZ	211	93	671
5	California	CA	196	358	386
6	Colorado	CO	276	92	534
7	Connecticut	CT	209	35	359
8	District Of Columbia	DC	271	3	65
9	Delaware	DE	293	13	93
10	Florida	FL	207	228	198
11	Georgia	GA	282	140	100
12	Hawaii	HI	198	18	141
13	Iowa	IA	496	82	310
14	Idaho	ID	318	17	163
15	Illinois	IL	314	234	128
16	Indiana	IN	444	207	65
17	Kansas	KS	390	70	28
18	Kentucky	KY	401	139	44
19	Louisiana	LA	921	218	46

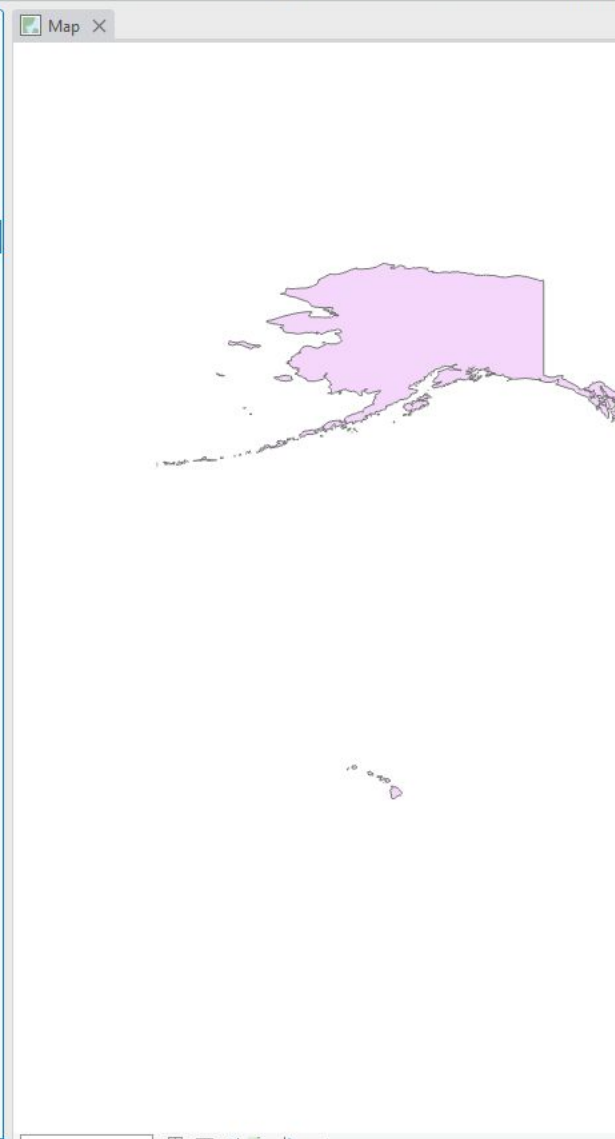
In this case, to join both table, you can use:
Name column (from shapefile) and State column (Data file)
OR
STUSPS column (from shapefile) and Code column (Data file)

Contents

Search

Map

- cb_2013_us_state_500k
- Topographic
- Standalone Tables
- EnergyAndCO2S



Add Join

Input Table: cb_2013_us_state_500k

Input Field: STUSPS

Join Table: EnergyAndCO2S

Join Field: Code

Keep all input records

Index join fields

Validate Join

OK

Element

Select an element.

ected Features: 0

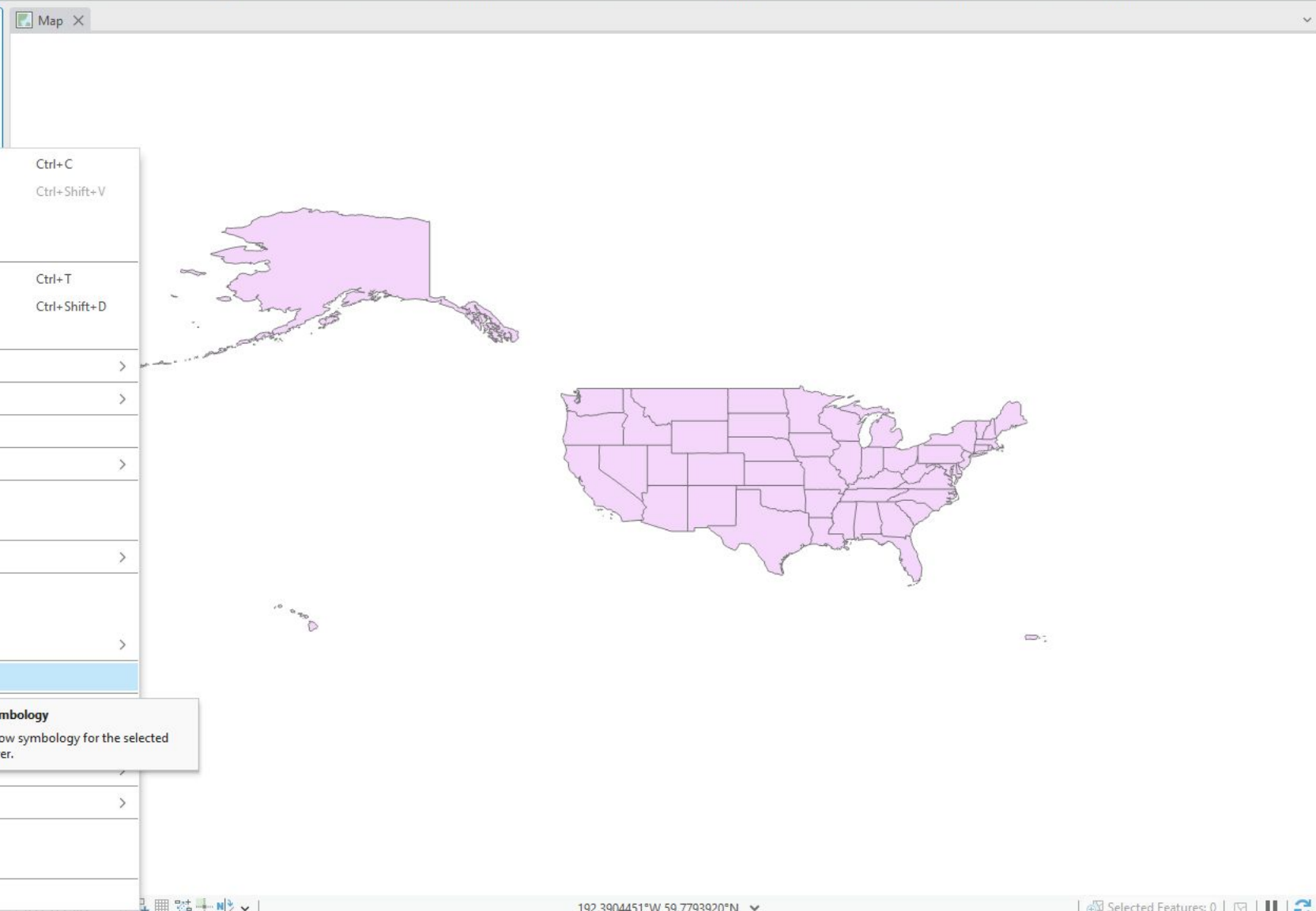
Catalog Element Geopr... Modify... Explora... Dockp... Manag...

Contents

Search

Drawing Order

- Map
- cb_2013
- Topogra
- Standalone
- EnergyA



- Copy Ctrl+C
- Paste Properties Ctrl+Shift+V
- Remove
- Group
- Attribute Table Ctrl+T
- Data Engineering Ctrl+Shift+D
- Add Error Layers
- Data Design >
- Create Chart >
- New Report
- Joins and Relates >
- Zoom To Layer
- Zoom To Make Visible
- Selection >
- Label
- Labeling Properties...
- Convert Labels >
- Symbology
- Disable Pop-ups
- Configure Pop-up
- Data >
- Sharing >
- View Metadata
- Edit Metadata
- Properties

Symbology
Show symbology for the selected layer.

Element

Select an element.

Catalog Element Geopr... Modify... Explora... Dockp... Manag...

Project Map Insert Analysis View Edit Imagery Share Arc Hydro GRAIP Lite Help Feature Layer Labeling Data

Clipboard: Cut, Copy, Copy Path, Paste

Navigate: Explore, Bookmarks, Go To XY

Layer: Add Graphics Layer, Add Data

Selection: Select, Select By Attributes, Select By Location, Clear, Zoom To

Inquiry: Measure, Locate, Infographics, Coordinate Conversion

Labeling: Pause, Lock, View Unplaced, More, Convert

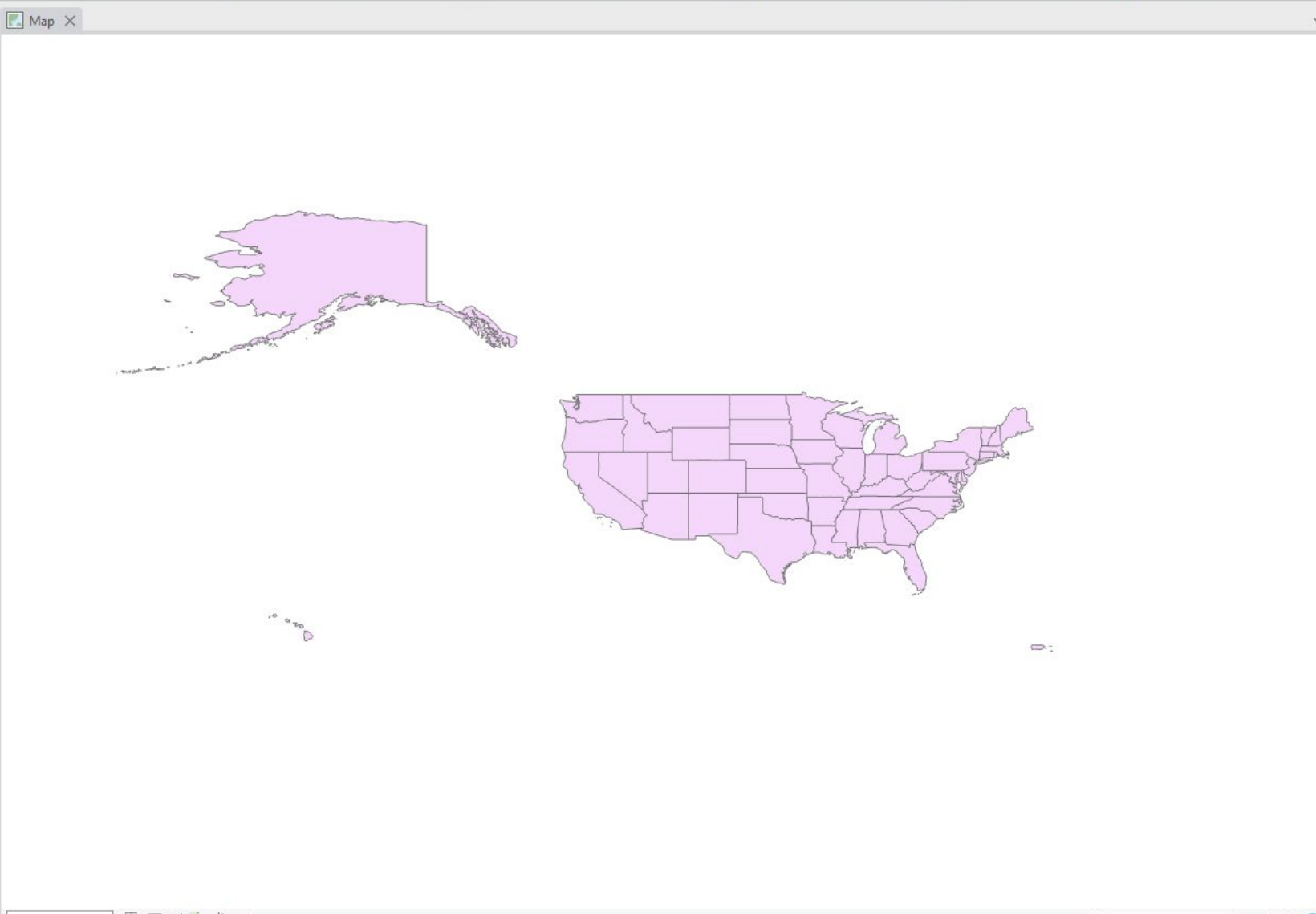
Offline: Download Map, Sync, Remove

Contents

Search

Map

- cb_2013_us_state_500k
- Topographic
- Standalone Tables
- EnergyAndCO2S



Symbology - cb_2013_us_state_500k

Primary symbology

Single Symbol

Symbolize your layer using one symbol

- Single Symbol: Draw using single symbol.

Symbolize your layer by category

- Unique Values: Draw categories using unique values of one or multiple fields.

Symbolize your layer by quantity

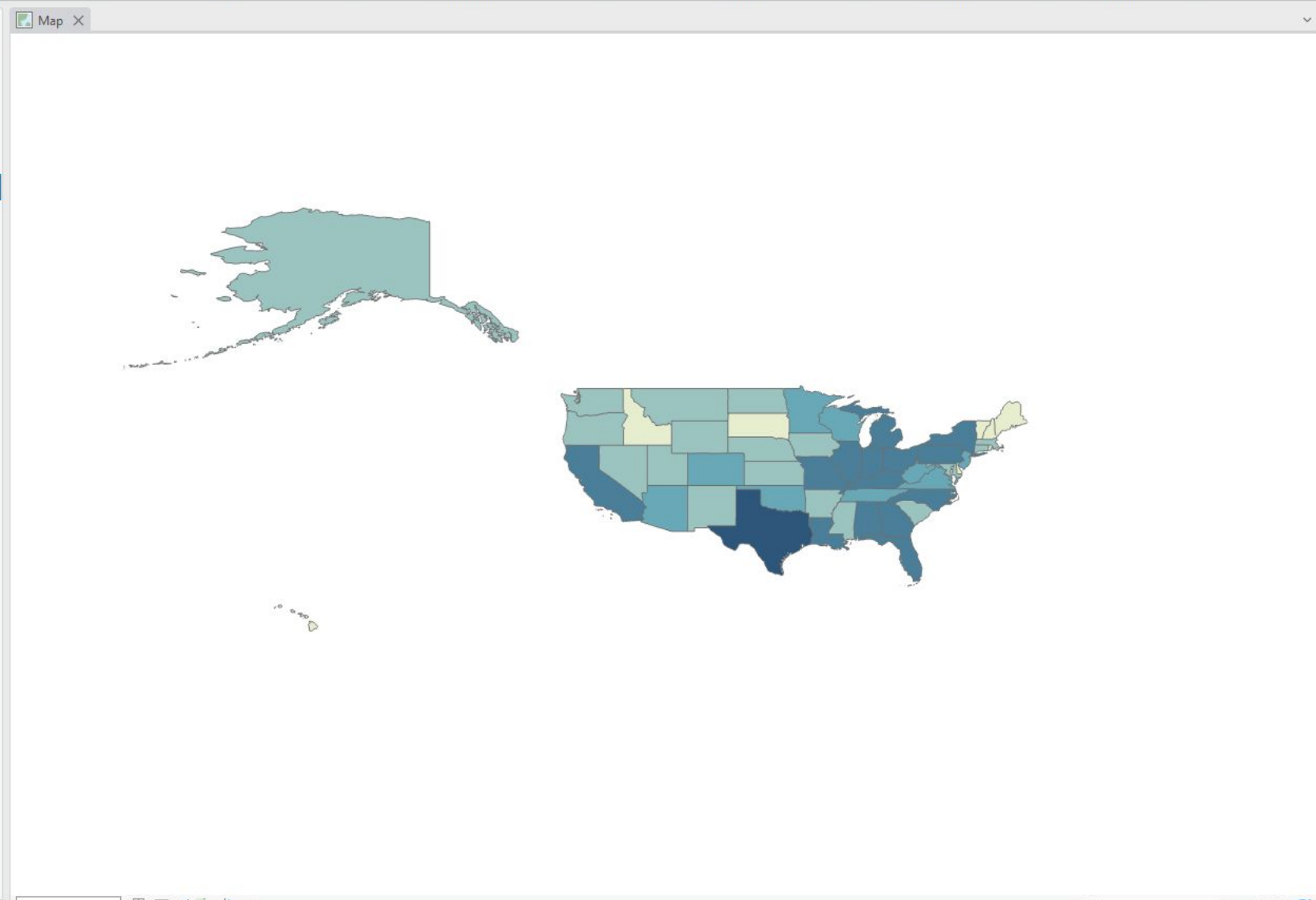
- Graduated Colors: Draw quantities using graduated colors. (Selected)
- Bivariate Colors: Draw quantities using bivariate colors.
- Unclassed Colors: Draw quantities using an unclassed color gradient.
- Graduated Symbols: Draw quantities using graduated symbols.
- Proportional Symbols: Draw quantities using proportional symbols.
- Dot Density

Contents

Search

Drawing Order

- Map
 - cb_2013_us_state_500k
 - CO2EmissionsMMT
 - 3.000000 - 18.000000
 - 18.000001 - 52.000000
 - 52.000001 - 82.000000
 - 82.000001 - 114.000000
 - 114.000001 - 170.000000
 - 170.000001 - 358.000000
 - 358.000001 - 642.000000
 - Topographic
- Standalone Tables
 - EnergyAndCO2S



Symbology - cb_2013_us_state_500k

Primary symbology

Graduated Colors

Field: CO2EmissionsMMT

Normalization: <None>

Method: Natural Breaks (Jenks)

Classes: [Class list]

Color scheme: [Color bar]

Classes Histogram Scales

Symbol	Upper value	Label
[Lightest Yellow]	≤ 18	3.000000 - 18.000000
[Light Yellow]	≤ 52	18.000001 - 52.000000
[Yellow-Green]	≤ 82	52.000001 - 82.000000
[Green]	≤ 114	82.000001 - 114.000000
[Dark Green]	≤ 170	114.000001 - 170.000000
[Dark Blue-Green]	≤ 358	170.000001 - 358.000000
[Darkest Blue]	≤ 642	358.000001 - 642.000000

Contents

Search

Drawing Order

- Map
- cb_2013
- CO2Emissi...
- 3.00000
- 18.0000
- 52.0000
- 82.0000
- 114.000
- 170.000
- 358.000

Topogra...

Standalone

EnergyA...

Copy (Ctrl+C)

Paste Properties (Ctrl+Shift+V)

Group

Attribute Table

Data Engineering

Add Error Layers

Data Design

Create Chart

New Report

Joins and Relates

Zoom To Layer

Zoom To Make Visible

Selection

Label

Labeling Properties...

Convert Labels

Symbology

Disable Pop-ups

Configure Pop-ups

Data

Sharing

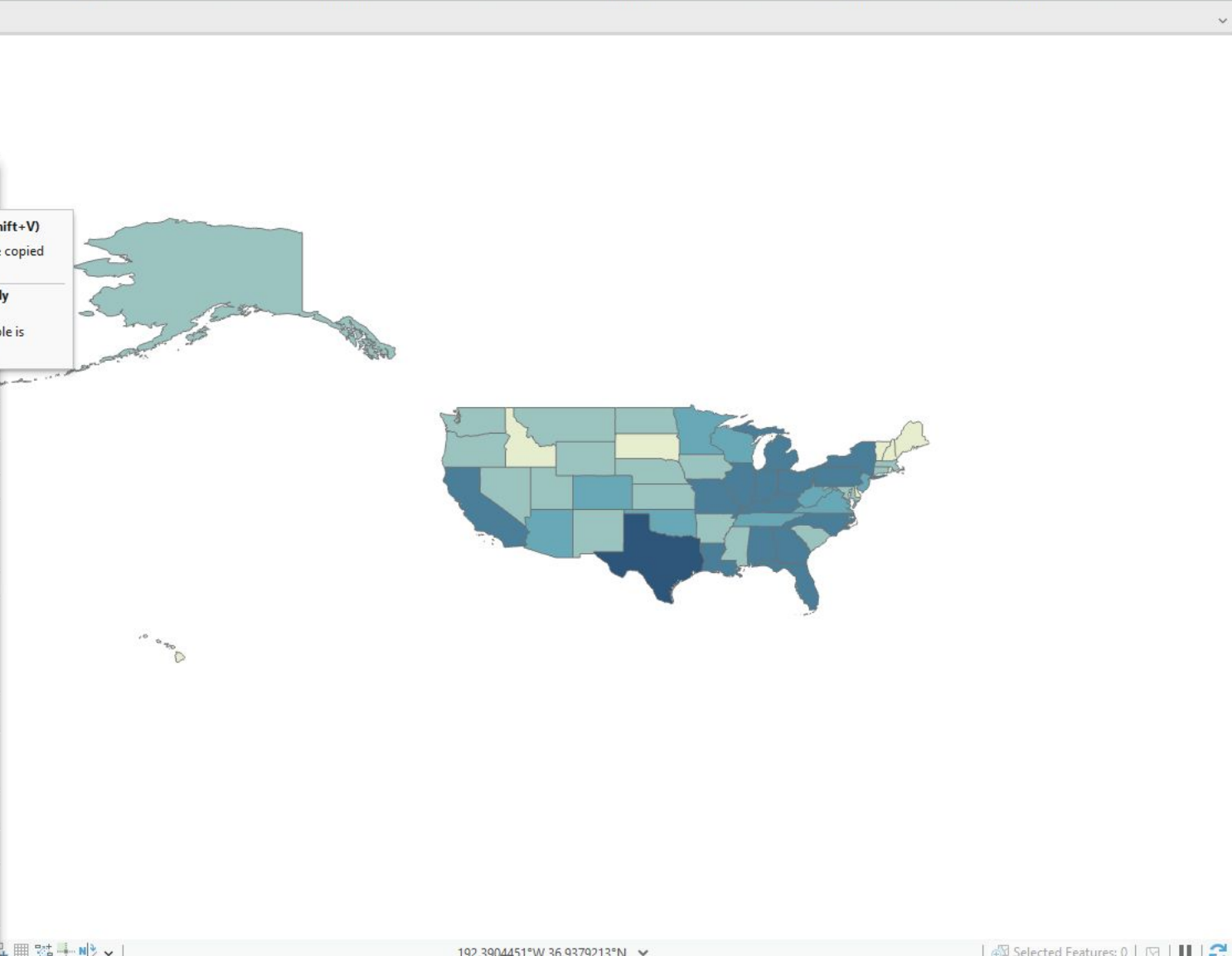
View Metadata

Edit Metadata

Properties

Paste Properties (Ctrl+Shift+V)
 Paste the properties of the copied layer to this layer.

This command is currently unavailable.
 No layer or standalone table is copied to the clipboard.



Symbology - cb_2013_us_state_500k

Primary symbology

Graduated Colors

Field: CO2EmissionsMMT

Normalization: <None>

Method: Natural Breaks (Jenks)

Classes: 7

Color scheme

Classes Histogram Scales

Symbol	Upper value	Label
Light Yellow	≤ 18	3.000000 - 18.000000
Light Green	≤ 52	18.000001 - 52.000000
Medium Green	≤ 82	52.000001 - 82.000000
Dark Green	≤ 114	82.000001 - 114.000000
Blue-Green	≤ 170	114.000001 - 170.000000
Dark Blue	≤ 358	170.000001 - 358.000000
Very Dark Blue	≤ 642	358.000001 - 642.000000

Catal... Symb... Elem... Geop... Modi... Explo... Dock... Mana...

Project Map Insert Analysis View Edit Imagery Share Arc Hydro GRAIP Lite Help Feature Layer Labeling Data

Clipboard: Paste, Copy, Cut, Copy Path

Navigate: Explore, Bookmarks, Go To XY

Layer: Basemap, Add Data

Selection: Select, Select By Attributes, Select By Location, Clear, Zoom To

Inquiry: Measure, Locate, Infographics, Coordinate Conversion

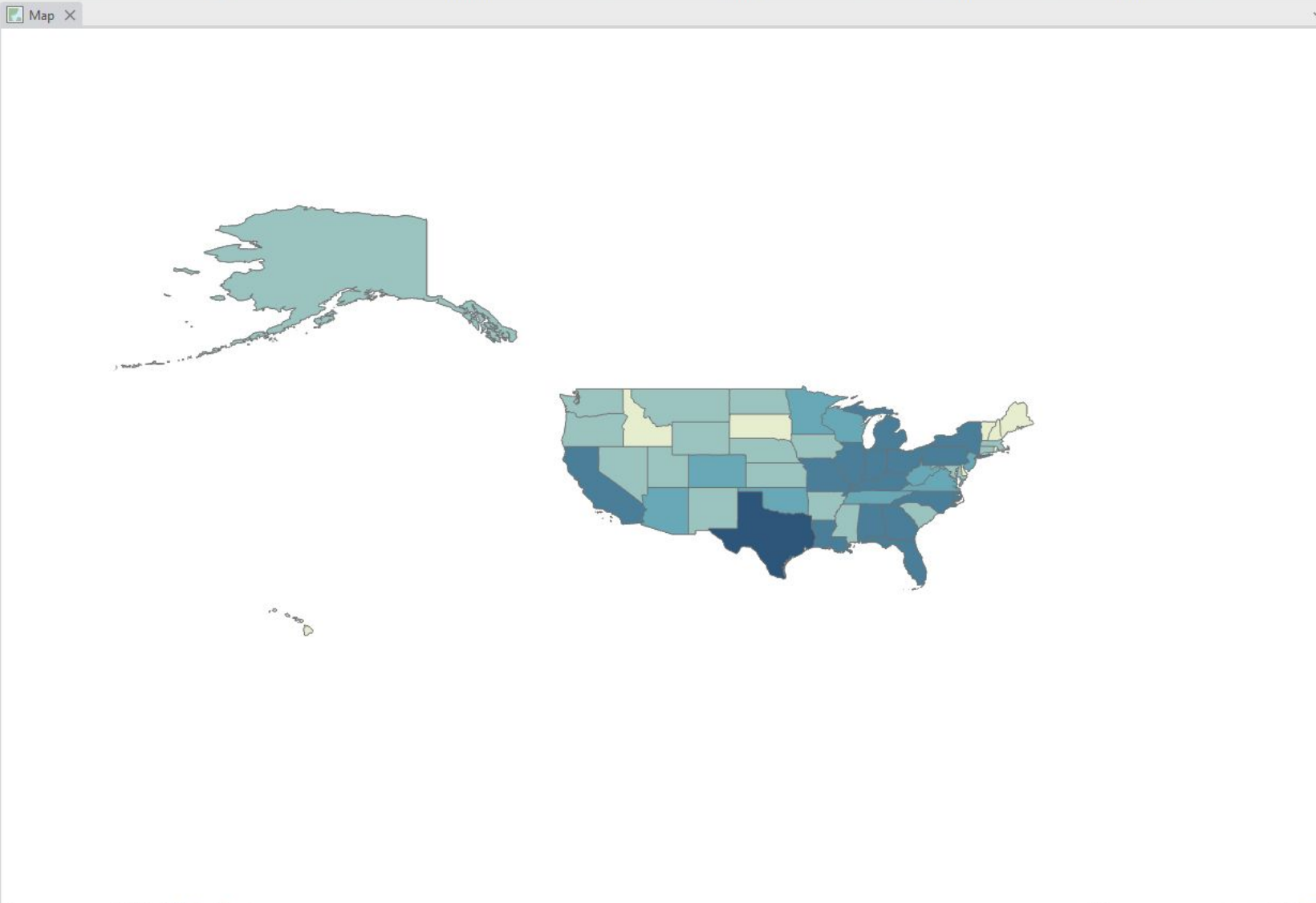
Labeling: Pause, Lock, View Unplaced, More, Convert

Offline: Download Map, Sync, Remove

Paste (Ctrl+V) Paste from clipboard.

Drawing Order

- Map
 - cb_2013_us_state_500k
 - CO2EmissionsMMT
 - 3.000000 - 18.000000
 - 18.000001 - 52.000000
 - 52.000001 - 82.000000
 - 82.000001 - 114.000000
 - 114.000001 - 170.000000
 - 170.000001 - 358.000000
 - 358.000001 - 642.000000
- cb_2013_us_state_500k
 - CO2EmissionsMMT
 - 3.000000 - 18.000000
 - 18.000001 - 52.000000
 - 52.000001 - 82.000000
 - 82.000001 - 114.000000
 - 114.000001 - 170.000000
 - 170.000001 - 358.000000
 - 358.000001 - 642.000000
 - Topographic
 - Standalone Tables
 - EnergyAndCO2S



Symbology - cb_2013_us_state_500k

Primary symbology: Graduated Colors

Field: CO2EmissionsMMT

Normalization: <None>

Method: Natural Breaks (Jenks)

Classes: 7

Color scheme: [Color bar]

Classes Histogram Scales

Symbol	Upper value	Label
[Light Yellow]	≤ 18	3.000000 - 18.000000
[Light Green]	≤ 52	18.000001 - 52.000000
[Medium Green]	≤ 82	52.000001 - 82.000000
[Dark Green]	≤ 114	82.000001 - 114.000000
[Teal]	≤ 170	114.000001 - 170.000000
[Dark Teal]	≤ 358	170.000001 - 358.000000
[Dark Blue]	≤ 642	358.000001 - 642.000000

Contents

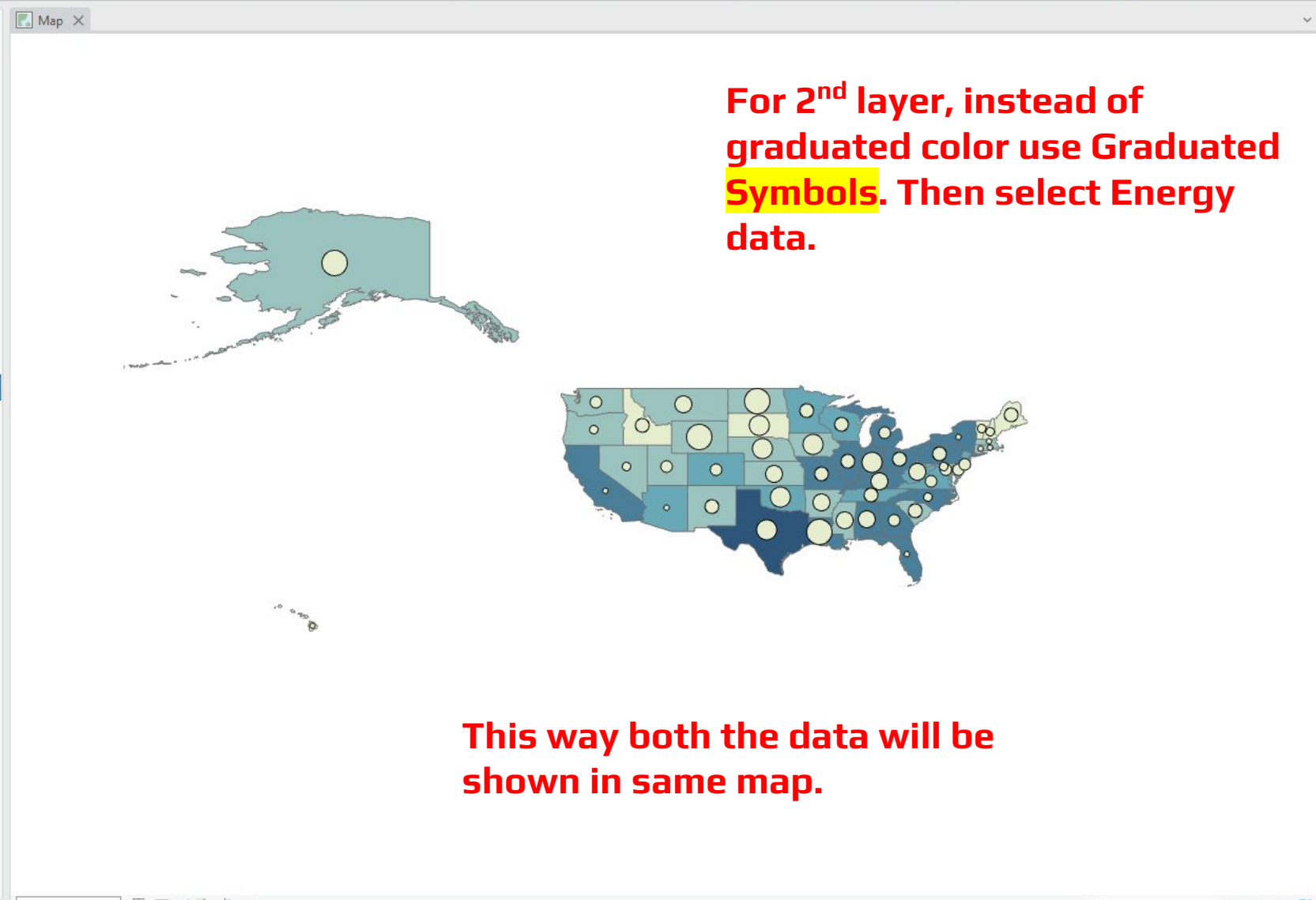
Map

Drawing Order

- Map
 - cb_2013_us_state_500k
 - CO2EmissionsMMT
 - 3.000000 - 18.000000
 - 18.000001 - 52.000000
 - 52.000001 - 82.000000
 - 82.000001 - 114.000000
 - 114.000001 - 170.000000
 - 170.000001 - 358.000000
 - 358.000001 - 642.000000
 - cb_2013_us_state_500k
 - EnergyCapitaMBtu
 - 190.000000 - 213.000000
 - 213.000001 - 257.000000
 - 257.000001 - 293.000000
 - 293.000001 - 350.000000
 - 350.000001 - 407.000000
 - 407.000001 - 496.000000
 - 496.000001 - 921.000000

Standalone Tables

- EnergyAndCO2S



Symbology - cb_2013_us_state_500k

Primary symbology

Graduated Symbols

Field: EnergyCapitaMBtu

Normalization: <None>

Method: Natural Breaks (Jenks)

Classes: 7

Minimum size: 4 pt, Maximum size: 18 pt

Template: Background

Draw graduated symbols above all layers

Classes Histogram

Symbol	Upper value	Label
◦	≤ 213	190.000000 - 213.000000
○	≤ 257	213.000001 - 257.000000
○	≤ 293	257.000001 - 293.000000
○	≤ 350	293.000001 - 350.000000
○	≤ 407	350.000001 - 407.000000
○	≤ 496	407.000001 - 496.000000
○	≤ 921	496.000001 - 921.000000

Project Map Insert Analysis View Edit Imagery Share Arc Hydro GRAIP Lite Help Feature Layer Labeling Data

New Map New Layout New Report New Notebook Toolbox Task Import Map Import Layout Connections Add Folder New Investigation Point Map Notes Line Map Notes Polygon Map Notes Text Map Notes 1:1,000 Text Map Notes 1:25,000 Text Map Notes 1:250,000

Link Analysis Measurements Styles Favorites

Cont

ANSI - Portrait

Letter 8.5" x 11"	Legal 8.5" x 14"	Tabloid 11" x 17"	ANSI C 17" x 22"	ANSI D 22" x 34"	ANSI E 34" x 44"
-------------------	------------------	-------------------	------------------	------------------	------------------

ANSI - Landscape

Letter 8.5" x 11"	Legal 8.5" x 14"	Tabloid 11" x 17"	ANSI C 17" x 22"	ANSI D 22" x 34"	ANSI E 34" x 44"
-------------------	------------------	-------------------	------------------	------------------	------------------

Architectural - Portrait

Architectural A 9" x 12"	Architectural B 12" x 18"	Architectural C 18" x 24"	Architectural D 24" x 36"	Architectural E 36" x 48"
--------------------------	---------------------------	---------------------------	---------------------------	---------------------------

Architectural - Landscape

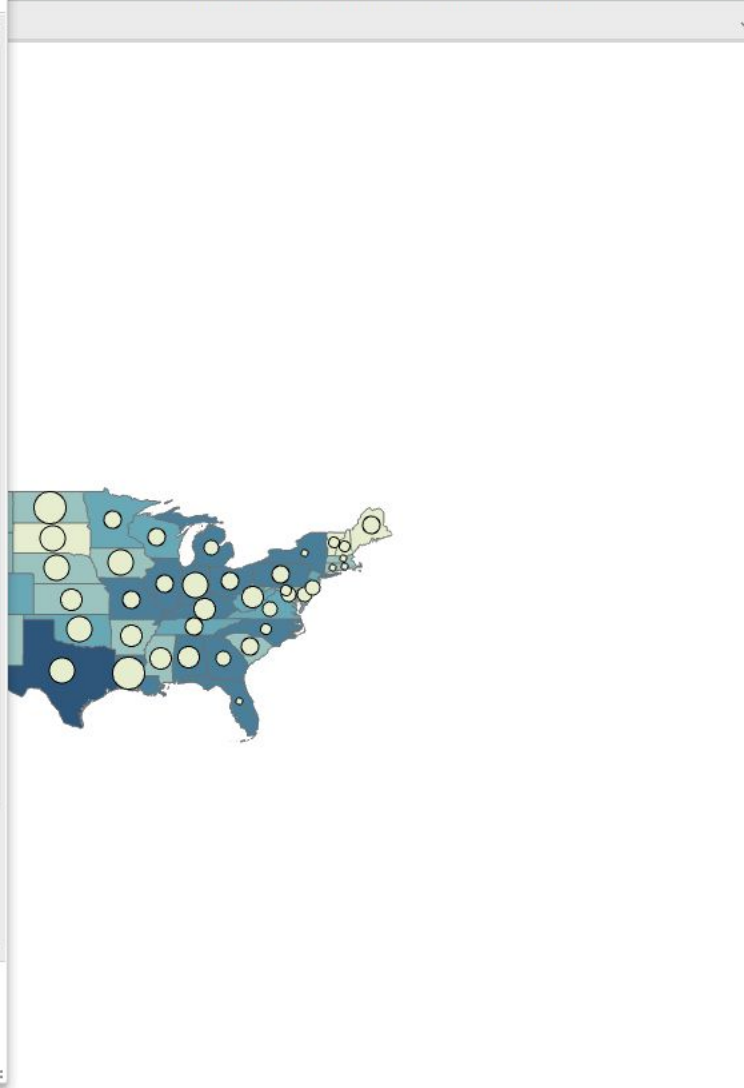
Architectural A 9" x 12"	Architectural B 12" x 18"	Architectural C 18" x 24"	Architectural D 24" x 36"	Architectural E 36" x 48"
--------------------------	---------------------------	---------------------------	---------------------------	---------------------------

ISO - Portrait

A5 148 mm x 210 mm	A4 210 mm x 297 mm	A3 297 mm x 420 mm	A2 420 mm x 594 mm	A1 594 mm x 841 mm	A0 841 mm x 1189 mm
--------------------	--------------------	--------------------	--------------------	--------------------	---------------------

ISO - Landscape

Import layout file...
Custom page size...
Select page from printer...



Symbology - cb_2013_us_state_500k

Primary symbology

Graduated Symbols

Field: EnergyCapitaMBtu

Normalization: <None>

Method: Natural Breaks (Jenks)

Classes: 7

Minimum size: 4 pt Maximum size: 18 pt

Template: Background

Draw graduated symbols above all layers

Classes Histogram

Symbol	Upper value	Label
◊	≤ 213	190.000000 - 213.000000
○	≤ 257	213.000001 - 257.000000
○	≤ 293	257.000001 - 293.000000
○	≤ 350	293.000001 - 350.000000
○	≤ 407	350.000001 - 407.000000
○	≤ 496	407.000001 - 496.000000
○	≤ 921	496.000001 - 921.000000

Project Layout **Insert** Analysis View Imagery Share Arc Hydro GRAIP Lite Help

New Map New Layout New Report New Notebook New Notebook Import Map Import Layout Task

Connections Add Folder New Investigation Knowledge Graph

Map Frame Rectangle Extent Indicator Grid Refresh Map Series

North Arrow Scale Bar Legend Chart Frame Table Frame Additional Surrounds

Graphics and Text Add New Import Add Item

Contents

Search

Drawing Order

- Layout

Map

Map (1:54,915,365) Source: View

Create a map frame for the open map view at this scale.

Default Extent

Other

<None>

Symbology

Select a layer in the Contents pane.

Project Layout **Insert** Analysis View Imagery Share Arc Hydro GRAIP Lite Help

New Map New Layout New Report New Notebook Toolbox Import Map Import Layout Task

Connections Add Folder New Investigation Map Frame Rectangle Extent Indicator Grid Refresh Map Series

North Arrow Scale Bar Legend Chart Frame Table Frame Additional Surrounds

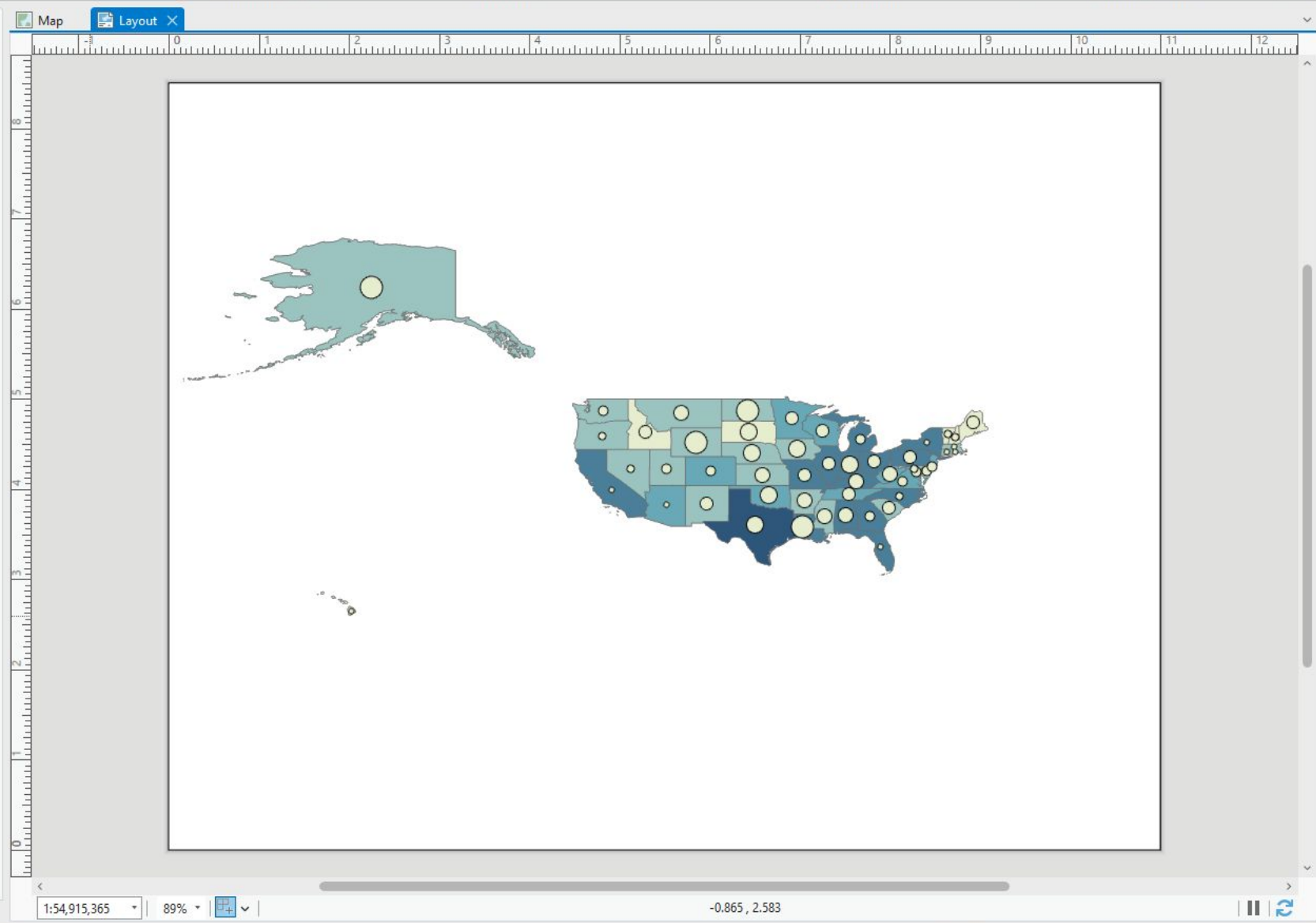
Graphics and Text Dynamic Text Add New Import Add Item

Contents

Search

Drawing Order

- Layout
 - Map Frame
 - Map
 - cb_2013_us_state_500k
 - CO2EmissionsMMT
 - 3.000000 - 18.000000
 - 18.000001 - 52.000000
 - 52.000001 - 82.000000
 - 82.000001 - 114.000000
 - 114.000001 - 170.000000
 - 170.000001 - 358.000000
 - 358.000001 - 642.000000
 - cb_2013_us_state_500k
 - EnergyCapitaMBtu
 - 190.000000 - 213.000000
 - 213.000001 - 257.000000
 - 257.000001 - 293.000000
 - 293.000001 - 350.000000
 - 350.000001 - 407.000000
 - 407.000001 - 496.000000
 - 496.000001 - 921.000000
 - Topographic
 - Standalone Tables
 - EnergyAndCO2S



Symbology

Select a layer in the Contents pane.

Catal... Symb... Elem... Geop... Modi... Explo... Dock... Mana...

You can use different color or shape to show your data.

Also make sure that label format to 2 decimal digits.

Its time to show your creativity.

Now you can follow same process you did in assignment 1 to add Title, North Arrow, Scale Bar, Your Name and Export the map as pdf to upload at Google Folder that has been shared with you.