

West Ward Asset Map User Guide

LAFAYETTE COLLEGE

Lafayette College Technology Clinic 2019-2020



Greater Easton Development Partnership

Table of Contents

Part 1

Map Overview	2
The Video Bank	3
Using the Asset Map	4
Downloading QGIS	4
Introduction to Menus	5
Adding Base Layers	6
Using Attribute Tables	12
Searching Features via Attribute Tables	14
Searching Features via Map	20
Isolating Layers and Features	25
Categorizing Data	33
Using the Map for Research	37
Exporting the Map	38
Obtaining New Data	.67
Data Overview	6
Acquiring Updated Base Data	68
Acquiring Updated Accessorial Data	69
Sorting Datasets	70
Acquiring Updated Accessorial Data Sorting Datasets	69 70

Part 2

Updating the Asset Map	71
Update Prerequisites	72
Performing a Complete Map Update	74
Setting up the Map	74
Inserting Data into the Map	79
Spatially Joining Layers	88
Saving Joined Layers	
Saving the Project	
Saving Attributes	
Saving New Layer Features	115
Exporting Multiple Features	126
Performing a Partial Map Update	136
Toggle Editing via the Map	136
Toggle Editing via Attribute Tables	156
Scheme Data	
Styling the Map	
Adding Labels	
Troubleshooting	195

Map Overview

What is QGIS?

QGIS is a geographic information system software that can analyse and edit spatial information and export the product in a geographical map format. QGIS software displays information as colored shapes, thus allowing the user to see a simple visualisation of complex and extensive data with ease.

How Does the Map Work?

This map provides a **visual** representation of the assets located in the West Ward section of Easton, PA, using a combination of Northampton County data and internal GEDP data. When accessed in QGIS, the map is largely editable and can be viewed in different capacities. Data can be reorganised based on different land use code categorization. Additionally, the map can be used as a starter tool for acquiring additional information about West Ward assets.

The Video Bank

What is the Video Bank?

QGIS can be tricky to use. To make your user experience as smooth as possible, we've created a **series of video demonstrations** that teach you how to navigate, create, and edit maps in QGIS.

How Can I Access Video Bank Content?

The video bank is hosted on the Lafayette College Technology Clinic website. It is accessible at this (hyperlink here) link. You can also access the video bank by clicking the link provided here: (INSERT LONGFORM LINK)

How Do I Know Which Content Comes with a Video?

Almost all steps throughout this guidebook are accompanied by a video bank tutorial. Wherever this symbol (()) appears, it means that a video tutorial is available for this step. Videos, like all other links, will be hyperlinked and will appear <u>like this</u>. Additionally, general information will appear on a dark green slide and <u>active tutorial</u> steps will appear on a lighter background.

Using the Asset Map Downloading QGIS

To fully navigate and use the map, it must be accessed via the QGIS desktop software, therefore, you must have the QGIS software installed on your computer.

To install the QGIS software onto your desktop device, visit <u>www.qgis.org</u>. Example videos that detail the installation process are available <u>here for Windows OS</u> and <u>here for Mac OS</u>. The Linux installment process is significantly more complicated and is demonstrated <u>here</u>. To open the software after installation, simply click on the QGIS icon on your desktop.



Introduction to Menus

This is the **main toolbar** at the top of the screen. Although it has many icons and options, there are only a select few that you need to know. These will be pointed out as they become relevant.

Browser MSSQL Oracle DB2 WMS/WMTS XYZ Tiles WCS WFS WFS OWS ArcGisMapServer ArcGisFeatureSer GeoNode

On the left-hand side of the screen, there's a **browser tool** and **layer panel**. The browser panel is a quick tool for adding data to the map. It has the same file structure setup as any folder on your computer. The layers panel displays layers that are in the map and what order they appear in. Layers will be drawn from the lowest on the list to the highest, and the highest layer in the list will cover the layers below it

Coordinate 181.8,60.1 🖏 Scale L40882597 💦 🕐 Magnifier 100 🗘 Rotation 0.0 🛊 🔤 Render

At the bottom of the screen is the **status bar**. The status bar displays basic information about the map.





In the **browser panel**, there's a sub-menu called **'XYZ Layers'**. This menu controls the style of the base layer of the map. Your map will, by default, use the Open Street Map layer.



To experiment with other XYZ labels, **click on their title** from the XYZ Layer drop down menu indicated in the **browser panel** on the left.

# Sources	(2)
Sources = [] cources = nnend/["connections-vvz" "Google Mans" "" "" "https://mtl google com/vt/lvps-m&v=%7Rv%7D&v=%7Rv%7D&z=%7Rv%7D&v=%	
Sources.append(["connections-xyz", Google Haps", , , , nctps://mit.google.com/v/lyfs=max=#/bx#/bag=#/by#/baz=#/by#/by#/by#/by#/by#/by#/by#/by#/by#/by	
sources append ([connections xyz ; doogle satelifte ; ; ; ; ; netps://met.google.com/ve/lys=sate/a/ $dx/dx/dx/dx/dx/dx/dx/dx/dx/dx/dx/dx/dx/d$	
sources annend(["connections-xvz" "Google Terrain" "" "" "" "https://mtl google.com/vt/]vrs=t&v=%78x%7D&v=%78v%7D&v=%78x%7A&v=%78x%7A&v=	
"a"])	
sources.append(["connections-xvz","Google Terrain Hybrid", "", "", "", "https://mtl.google.com/vt/lvrs=p&x=%7Bx%7D&v=%%7Bx%7D&v=%%7Bx%7D&v=%%7Bx%7D&v=%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%	
"19", "0"])	
sources.append(["connections-xyz","Google Satellite Hybrid", "", "", "https://mt1.google.com/vt/lyrs=y&x=%7Bx%7D&y=%7By%7D&z=%7Bz%7D", "", "19", "0"])	
sources.append(["connections-xyz","Stamen Terrain", "", "", "Map tiles by Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under	
ODbL", "http://tile.stamen.com/terrain/%7Bz%7D/%7Bx%7D/%7By%7D.png", "", "20", "0"])	Video 30
sources.append(["connections-xyz","Stamen Toner", "", "", "Map tiles by Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under ODbL",	
"http://tile.stamen.com/toner/%7Bz%7D/%7Bx%7D/%7By%7D.png", "", "20", "0"])	
sources.append(["connections-xyz","Stamen Toner Light", "", "Map tiles by Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under	
ODbL", "http://tile.stamen.com/toner-lite/%7Bz%7D/%7Bx%7D/%7By%7D.png", "", "20", "0"])	
sources.append(["connections-xyz","Stamen Watercolor", "", "", "Map tiles by Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under	
ODbL", "http://tile.stamen.com/watercolor/%7Bz%7D/%7Bx%7D/%7By%7D.jpg", "", "18", "0"])	
sources.append(["connections-xyz","Wikimedia Map", "", "", "OpenStreetMap contributors, under ODbL", "https://maps.wikimedia.org/osm-	
int1/%7B2%7D/%7BX%7D/%7By%7D.png", "", "20", "1"])	
sources.append(["connections-xyz", "Wikimedia Hike Bike Map", "", "", "OpenStreetMap contributors, under ODDL",	
"http://tiles.wmflabs.org/hikebike/%/82%/D/%/8x%/D/%/8y%/D.png", "", "1/", "1"])	
sources.append(["connections-xyz","Esri Boundaries Places", "", "", "Requires ArcGIS Unlinesubscription",	
"https://server.arcgisonline.com/ArcGiS/rest/services/Reference/World_Boundaries_and_Places/MapServer/tile/%/BZ%/D/%/B%%/D/%/B%%/D/%/B%%/D/%/B%%/D/%/B%%/D/%/B%%/D/%/B%%/D/%/B%%/D/%/B%%/D/%/B%%/D/%/B%%/D/%/B%%/D%%/D	
"20", "0"])	
sources.append([connections-xyz , Esri Gray (dark), , , , kequires Arcois Uninesubscription , "	
<pre>cuproc appoint[[comparticips.com/arctis/cervices/cervices/cervices/cervices/arctis/cervices/cervi</pre>	
"http://canvies.ancdiscaling.ayz, Esil didy (iight; , , , requires Artors difficuscusciption , ""http://canvies.ancdiscaling.ayz, (iight; and) and) and) and and a second a	
http://services.areg.sonitie.com/Arcois/iest/services/canvas/world_Light_oray_base/mapserver/cite/Arba/A/A/b/A/D/A/b/A/D/, , 16, 0])	

Click on THIS LINK [link needed] to access the code necessary to download addition base layers. On this webpage, **select and copy** all the text **below the 'Sources' line**.





In QGIS, locate the 'Python Console' from the top toolbar. Click it.





A python console will open. **Paste in all of the text** copied from the QGIS webpage in Step 3. **Hit 'Enter'**.



An option to run this code will appear. **Click 'run'**. Once the code has been applied, your browser panel XYZ menu will be full of alternative base layers to explore.

Using the Asset Map Using Attribute Tables





Opening attribute tables allows you to view all the numerical data illustrated throughout the map. To open an attribute table, **select the relevant layer** that you want to view data for (there may only be one layer available if all layers are merged) and **right click the title**. From the menu that appears, select the **'open attribute table'** option.

Using the Asset Map Using Attribute Tables

						QU	/PC_LU_Easton_	WestWard — Fea	tures Total: 13, Filter	ed: 13, Selected:	0
						/ 18		< 8 8 8 8 6	🧏 🍸 🗷 🕸 👂 🛛		
							Code_Cheat	Code_Che_1	MUNICODE	NAME	GISACRES
						3	1	Residential	15	EASTON	861.816761383
						4	9	Agriculture & Va.	. 2	ALLEN	3004.24846019
Q	Easton_WestWard_	Parcels — Features	Total: 3226, Filtered	d: 3226, Selected: 0		5	1	Residential	2	ALLEN	1252.06792343
1		0 B S 🛢 🛯 🧏	🕇 🏾 🗣 🗭 🛛 🕼		8	6	6	Transportation,	15	EASTON	82.90406231850
1	PARCEL_ID	CAMA_ID	MAP LOSE1R	BLOCK	5	7	5	Office & Business	15	EASTON	106.698197431
2	L9SE2A 1 11	L9SE2A 1 11	L9SE2A	1	11	8	4	Warehouse & Di.	. 15	EASTON	1.41222096861
3	L9SW3B 8 9A	L9SW3B 8 9A	L9SW3B	8	9A	9	3	Industrial & Ma	15	EASTON	158.703680219
4	L9SE1B 31 9	L9SE1B 31 9	L9SE1B	31	9	10	990	Right of Way	15	EASTON CITY	759.752283270
5	L9SE1A 10 20	L9SE1A 10 20	L9SE1A	10	20	11	9	Agriculture & Va.	. 15	EASTON	381.220784574
6	L9SE1A 17 3A	L9SE1A 17 3A	L9SE1A	17	3A	12	8	Parks & Other O.	. 15	EASTON	229.813851967
7	L9SW2B 14 2	L9SW2B 14 2	L9SW2B	14	2		03	10			
8	L9SE4A 8 12-1	L9SE4A 8 12-1	L9SE4A	8	12-1		03	10			
9	L9SE1B 16 13	L9SE1B 16 13	L9SE1B	16	13		03	10			
10	L9 28 2	L9 28 2 0	L9	28	2		03	10 -			
	how All Features										



Depending on which layer you select to view, an attribute table will appear in a new window. The column labels do not make sense without the data dictionaries provided Northampton County so be sure to have them on hand when using the map. The content displayed in attribute tables will vary based on the layers. **Consult the data dictionaries** to make sense of these tables.

Using the Asset Map Searching Features Through Attribute Table



One way to search for features in the asset map is through the attribute table. To open the attribute table, **locate the joined parcel layer** in the layers menu on the left-hand side of the screen and **right click it**. From the emergent menu, select **'Open Attribute Table'**.

Searching Features Through Attribute Table

2					123 fid	abc FLAG_1_319	
			000	-	PARCEL_ID	abc FLAG_2_LER	
Project Edit View Layer Settin	ngs E	lugins Vector Ras	ien Med Mesh	He.	abc CAMA_ID	abc FLAG_3_HMS	
	جر چ		Pa Pa 📭 🍓	6	abc MAP	abc FLAG_4_FMS	
🥵 📽 Vi 🌈 🗮 🔯 🛛 🤼	1	日名友-國長	1 ~ 8 8 4		abc BLOCK	abc FLAG_5_ACT	NN
R. B. C.	Q	Joined_Parcels_LUC	— Features Total:	5231	abc LOT	abc FLAG_6_ACT	
Irowran	5 /				abc SCHDIST	abc FLAG_7_ACT	
	-	fid			abc MUNI	abc FLAG_9_BIL	SCUD *
Favorites	-	IIU	FARCEL_ID		abc FLAG	abc FLAG_10_KO	SCHU
· 🔃 Spatial Bookmarks	1	3308	L9SW2B 23 1	195	1.2 GIS_ACREAG	123 NUMBER_OF_	03
Project Home	2	3384	L9SW3C 5 4B-1	L95	1.2 ASMT_ACREA	1.2 NUMBER_OF1	03
Home	3	3377	195E1D 14 11	195	abc DEED	abc EXTERIOR	03
C:\	-	5511		LJL	abc LOCATION	abc BASEMENT	05
Arand	4	3376	L9SE1D 14 1F	L95	abc LUC	123 YEAR_BUILT	03
Garmin	- 5	3379	L9SE1D 14 1E	195	abc NBHD	abc BUILDING_S	03
	6	2270	LOCE1D 14 18	1.00	1.2 TOTAL_VALU	123 NUMBER_O_1	02
yers 🖉 s 🚽 🖬 🗖	80	5570	L9SETD 14 TB	193	1.2 BLDG_VALUE	123 NUMBER_O_2	05
V Commerctial	7	3381	L9SW3C 5 6	195	1.2 LAND_VALUE	123 NUMBER_HAL	08
V Public_QuasiPublic	8	3380	L9SE1D 14 1G	199	1.2 TOTAL_ASSE	123 TOTAL_ROOM	03
Parks_Greenspace	0	2202	105520 26 2	1.00	1.2 BUILDING_A	abc SWIMMING_P	02
V Industrial_Manufactur	3	3303	193620 20 3	192	1.2 LAND_ASSES	123 COMM_CARDS	03
Joined_Parcels_LUC	10	3382	L9SW3C 11 2	L95	1.2 SALE_PRICE	abc COMMERCIAL	08 🗸
Easton_WestWard_Par	-				SALE_DATE	abc IMPROVEMEN	
LVPC_LU_Easton_West		Show All Features			abc SALE_VALID	1.2 Shape_STAr	
✓ If OpenStreetMap	- 1	Show Air Features			abc SALE_TYPE	1.2 Shape_STLe	
Type to locate (Ctrl+K)	1	Show Selected Featu	ires		123 SQFT_LIVIN	123 Code_Cheat	° ≜ ✓ Render
	Y	Show Features Visib	le On Map		abc OWNERS_NAM	abc Code_Che_1	tender
5_Saving_Jo	1	Show Edited and Ne	w Features		abc OWNERS_N_1	123 MUNICODE	
		Field Filter		•	abc MAIL_ADDRE	abc NAME	
	Y	Advanced Filter (Exp	ression)		abc MAIL_ADD_1	1.2 GISACRES	
	*	Stored Filter Express	ions		abc MAIL ADD 2		



Once the attribute table opens up in a new window, locate the 'Show All Features' button in the bottom left. Single click it and a drop down menu will appear. From the drop down menu, select 'Field Filter'. Another menu will appear. Select the 'PARCEL_ID' option.

Using the Asset Map Searching Features Through Attribute Table

🔇 *Westward_2020 — QGIS									- 0	\times
Project <u>E</u> dit <u>V</u> iew <u>Layer</u> <u>S</u> ettin	igs <u>P</u> l	ugins Vect <u>o</u> r <u>R</u> as	les Mal Meh	1440 - 519010	1711S					
🗋 🗁 🗟 🔂 🔛 🕙	€ 🗳	a q q 🔣 q	R R 6 4	6002	🔍 🔳 📓 Σ	: = + 🖓 🔍 + 🖟	r] •			_
🥵 🎕 Vi 💪 🦏 💹 🛛	/	3 % · Z	j×ĝ₿5	e) 🔤 🔩 🖉		****	n 👌 👔 🛔	iN ain		
🔣 • 📑 • 🔂 •	Q	Joined_Parcels_LUC	— Features Total: (6231, Filtered: 6231	, Selected: 30			\Box ×		
Browser	6 🖊		8 🗈 🗧 🖬 🗣	T 🗷 🕸 🗭 🐻 I		D 🔍				0
		fid	PARCEL_ID	CAMA_ID	MAP	BLOCK	LOT	SCHD *		-
 Favorites Spatial Bookmarks 	1	3308	L9SW2B 23 1	L9SW2B 23 1	L9SW2B	23	1	03		-
Project Home	2	3384	L9SW3C 5 4B-1	L9SW3C 5 4B-1	L9SW3C	5	4B-1	03		• 8
 Home C:\ 	3	3377	L9SE1D 14 1J	L9SE1D 14 1J	L9SE1D	14	1J	03	D ab	2 ∢ ≯
 Admin Tools Arand 	4	3376	L9SE1D 14 1F	L9SE1D 14 1F	L9SE1D	14	1F	03		
Garmin	5	3379	L9SE1D 14 1E	L9SE1D 14 1E	L9SE1D	14	1E	03		
Layers	6	3378	L9SE1D 14 1B	L9SE1D 14 18	L9SE1D	14	1B	03		
	7	3381	L9SW3C 5 6	L9SW3C 5 6	L9SW3C	5	6	08		
V Public_QuasiPublic	8	3380	L9SE1D 14 1G	L9SE1D 14 1G	L9SE1D	14	1G	03	•	
✓ Parks_Greenspace ✓ Industrial_Manufacturi	9	3383	L9SE2D 26 3	L9SE2D 26 3	L9SE2D	26	3	03		
V Warehouse_Transporta	10	3382	L9SW3C 11 2	L9SW3C 11 2	L9SW3C	11	2	08 -	100.0 % 🗘	
Easton_WestWard_Par	4 abc D	ARCEL TO LONEAC					Case s	ensitive 🖂 🗐		
 ✓ LVPC_LU_Easton_West ✓ ✓ ✓ OpenStreetMap 	-	LINEAD 139					Cuse 5		•	
4	215	L9NE40							Live update	Apply
Q Type to locate (Ctrl+K)		C L9NE40	C 1 12				0.0 °		EPSG:2272	Q
ng 5 Saving Jo		L9NE40	C 1 13							
of		L9NE40	C 1 14				*			



With the data dictionary on hand, **type in the Parcel ID** of the type of asset you're interested in selecting. In this example, we chose L9NE4C 1 . Make sure to leave a space after the last value in the title you're typing. **Hit enter**.

Searching Features Through Attribute Table

🔇 *Westward_2020 — QGIS									- 0		×
Project <u>E</u> dit <u>V</u> iew <u>Layer</u> <u>S</u> et	tings [<u>Plugins Vector F</u>	Baster Mat Ma	sh/ Here (DXP)	eritis						
	🗣 🖗		P R R 🖫	4 600	Q II 🔛	Σ = • 🖓 🔍 •	T				
🦛 📽 Vo 🎤 🦏 🕅	• •				a () a () a ()	*********************			•		
• • • •	• Q	Joined_Parcels_LU	JC — Features Tot	al: 6231, Filtered: 30	, Selected: 30		—		•		
Browser	e /	88 0 %6	* 8 8 9 8 8						•		ØX
	•	fid	PARCEL_ID	CAMA_ID	MAP	BLOCK	LOT	SCHDIS"	•		*
 Favorites Spatial Bookmarks 	• 1	6 225	L9NE4C 1 8	L9NE4C 1 8	L9NE4C		8	03	•	*	
Project Home	• 2		L9NE4C 1 15	L9NE4C 1 15	L9NE4C			03	•	•	3
 Mome T ⊂:\ 	93	5666	L9NE4C 1 12	L9NE4C 1 12	L9NE4C		12	03	• •	abc /	4 F
Admin Tools Arand	4	5720	L9NE4C 1 5	L9NE4C 1 5	L9NE4C			03		_ /=	-
Garmin	5	5726	L9NE4C 1 9	L9NE4C 1 9	L9NE4C			03			
Layers	6 8	5715	L9NE4C 1 3	L9NE4C 1 3	L9NE4C			03		T de	-
	• 7		L9NE4C 1 16	L9NE4C 1 16	L9NE4C			03		1 (E	-
✓ Public_QuasiPublic	• 8	5541	L9NE4C 1 7	L9NE4C 1 7	L9NE4C			03	•	•	L
✓ Parks_Greenspace ✓ Industrial_Manufactu	9		L9NE4C 1 11	L9NE4C 1 11	L9NE4C		11	03		- €	L
✓ Warehouse_Transport	10	5594	L9NE4C 1 13	L9NE4C 1 13	L9NE4C			03 🗸	100.0 %	\$ €	L
Easton_WestWard_Pa											
LVPC_LU_Easton_West	ti abc	PARCEL_ID_ L9N						se sensitive 🔁 📋		•	a 🔻
 V P OpenStreetMap I OpenStreetMap 	21	S LINE 40 201	LINE C 0 8	LINE 4C 7 8 LINE 4C	E4C 7 5 LONE4C 7 4	LINE4C 7 2	ø	•	 Live update 	Ap	ply
Q Type to locate (Ctrl+K)		Coordi	nate 2669471.0,50	5926.4 Scale 1:	1414 -	Magnifier 100%	Rotation 0.0 °	‡ ✓ Render	EPSG:22	72 4	þ



Once you hit enter, the attribute table will reappear. This time, all the relevant entries that are classified under the Parcel ID code you entered will be highlighted. If you accidentally click off the highlight, **you can re-select all of them by clicking and dragging** the numbers on the left.

Searching Features Through Attribute Table

•Westward 2020 — OGIS								- 🗆 X	
Project Edit View Laver Settin	as Plu	gins Vector Rase Mod Me	h Heard Star	renis					
🗋 늘 🗟 🔂 🔛 🕙 🍕					🟥 Σ 🛲 🗕 🖓 🔍	- JI -			
		名友・認恵×命日	• e)		abe abe abe (2 🦂 🛐	NN		
	Q .	oined_Parcels_LUC — Features Tot	al: 6231, Filtered: 3	0, Selected: 30)	-			
Browser Ø	/ 10		TIN	NA NS 🗷 🔛	i			ØX	
0 12 7 13 0		fid PARCEL ID	CAM Pan m	ap to the sele	cted rows (Ctrl+P) K	LOT	SCHDIS *	•	72
☆ Favorites	1	6225 L9NE4C 1 8	L9NE4C 1 8 .	L9NE4C	1	8	03	- 💊	
Spatial Bookmarks Project Home	2	5685 L9NE4C 1 15	L9NE4C 1 15 .	L9NE4C	1	15	03	3 -	
A Home	3	5666 LONEAC 1 12	19NEAC 1 12		1	12	03	◯ abc ()	Vide
C:\ Admin Tools							000		
Arand	4	5720 L9NE4C 1 5	L9NE4C 1 5 .	L9NE4C			03	- E.	
Garmin	5	5726 L9NE4C 1 9	L9NE4C 1 9 .	L9NE4C			03		
ayers	6	5715 L9NE4C 1 3	L9NE4C 1 3 .	L9NE4C			03		
▲ ★ ▼ & ★ ■ ■ □	7	5535 L9NE4C 1 16	L9NE4C 1 16 .	L9NE4C		16	03		
V Public_QuasiPublic	8	5541 L9NE4C 1 7	L9NE4C 1 7	L9NE4C	1	7	03		
Parks_Greenspace						44	02		
V Industrial_Manufactur	9	5592 L9NE4C 1 11	L9NE4C 1 11 .	L9NE4C			03		
✓ Joined_Parcels_LUC	10	5594 L9NE4C 1 13	L9NE4C 1 13 .	L9NE4C	1	13	03 🗸	100.0 % 🗘 🚛	
Easton_WestWard_Par	4 abc P₫	ARCEL ID_ L9NE4C 1				a 🗌 (Case sensitive 🕄 🥅		
LVPC_LU_Easton_West		ISNE 4D 13 9	1		RIE4C 7 1	· • • • • • • • • • • • • • • • • • • •			
	215	Vine Street LINERC 5 8	LIST EAC 7 8 LISN EA	SWEAC 5 LINEAC	1 L9NE4C 7 2	•	•	Live update Apply	
Q Type to locate (Ctrl+K)	30 feat	ture(s) se Coordinate 2669471.0,50	5926.4 🛞 Scale 1	:1414 🔻	Magnifier 100%	Rotation 0.0	° ‡ ✔ Render	💮 EPSG:2272 🔍	

From here, you can locate and **click** the **'Pan map to the selected rows'** button which is available on the attribute table toolbar.

Searching Features Through Attribute Table





Once you click the pan button, the main asset map will appear. The map will be zoomed in to display the type of assets you selected to view. Be sure to click the hand icon located on the toolbar to enable scrolling so you can scroll around within this zoomed in section.

Using the Asset Map Searching Features Through Visual Map



An alternative way to search for features is through the visual map itself. To do this, locate the indicated symbol on the toolbar and **click** the **'Select Features' option**.

Searching Features Through Visual Map



A black cursor will appear, along with a draggable box marked with dashed lines. Use the cursor to **drag and select the feature you want to highlight.** The status bar will indicate when a feature has been selected.

Using the Asset Map Searching Features Through Visual Map



Next, ensure that the joined parcel layer is selected and **right click** it. Select the **'Open Attribute Table'** option.

Using the Asset Map Searching Features Through Visual Map

🔇 *Westward_2020 — QGIS	_	Friedlick	Redson	et á les			-	- <u> </u>
Project Edit View Layer Settings Plugins Vector	or Q	Joined_Parcels_LUC	— Features Total:	6231, Filtered: 6231	1, Selected: 1			
- C 💳 🗟 🖸 🐕 🖉 🖓 👘	81		8 🛛 🕹 🗖 🗖	1 🕈 🗷 🗞 🗭 🔝		D Q.		
💘 🎕 Vi 🔏 🖏 🔯 🛛 🤼 🥖 📑 🕆 🏷	-	fid	PARCEL_ID	CAMA_ID	MAP	BLOCK	LOT	SCHD *
K • • • •	1	3308	L9SW2B 23 1	L9SW2B 23 1	L9SW2B	23	1	03
Browser @ X	2	3380	L9SE1D 14 1G	L9SE1D 14 1G	L9SE1D	14	1G	03
	3	3381	L9SW3C 5 6	L9SW3C 5 6	L9SW3C	5	6	08
Spatial Bookmarks	4	3382	L9SW3C 11 2	L9SW3C 11 2	L9SW3C	11	2	08
Project Home Arrow Home	5	3383	L9SE2D 26 3	L9SE2D 26 3	L9SE2D	26	3	03
C:\ Admin Tools	6	3376	L9SE1D 14 1F	L9SE1D 14 1F	L9SE1D	14	1F	03
Arand	7	3377	L9SE1D 14 1J	L9SE1D 14 1J	L9SE1D	14	1J	03
▶ Garmin ▼ 502 502 502	rth Elde	3378	L9SE1D 14 1B	L9SE1D 14 1B	L9SE1D	14	1B	03
.ayers	Street	3379	L9SE1D 14 1E	L9SE1D 14 1E	. L9SE1D	14	1E	03
V Commercial	10	3384	L9SW3C 5 4B-1	L9SW3C 5 4B-1	L9SW3C	5	4B-1	03 🗸
✓ Parks_Greenspace	str T	Show All Features.						
V Industrial_Manufactur	7	Show All Features						
✓ Joined_Parcels_LUC Easton WestWard Par		Show Selected Features	res e On Man			opology		 ■
LVPC_LU_Easton_West1 32 502	10 7	Show Edited and Ne	w Features	502	► La	ayer Rendering		
CopenstreetMap		Field Filter		•	•	0	✓	Live update Appl
C Type to locate (Ctrl+K) Toggles the edil C	ioor T	Advanced Filter (Exp	ression)	Magni	ifier 100%	Rotation 0.0 °	♣ ✔ Render	EPSG:2272



Once the attribute table opens, find the 'Show All Features' button and select the 'Show Selected Features' option.

Searching Features Through Visual Map



A new version of the asset table will open up, however, there will only be one item in the table because only one feature is selected. When you've finished viewing this asset, you can **close this window** out.



To isolate and display certain features on the map, start by selecting the joined parcel layer from the layers menu and **right click it**. Select **'Open Attribute Table'**.

२ *Westward_2020 — QGIS	;		Q Joined_Parcels_LUC	— Features Total:	6231, Filtered: 6231,	Selected: 0		-	
Project Edit View Layer	Setting:	s <u>Plugins</u> Vect <u>or</u> <u>Raster</u>	Sal S Radi	PAI Select feat	🖢 🍸 🔳 🗞 🔎 📧 🛙 ures using an expres	sion MAP	BLOCK	LOT	SCHD*
			1 3308	L9SW2B 23 1	L9SW2B 23 1	L9SW2B	23	1	03
	1/4		2 3384	L9SW3C 5 4B-1	L9SW3C 5 4B-1	L9SW3C	5	4B-1	03
rowser	0 8	10 10 10 10 10 10 10 10 10 10 10 10 10 1	3 3377	L9SE1D 14 1J	L9SE1D 14 1J	L9SE1D	14	1J	03
			4 3376	L9SE1D 14 1F	L9SE1D 14 1F	L9SE1D	14	1F	03
Favorites	-	2-21 195E IA 30 25 195E IA 30 25	5 3379	19SE1D 14 1E	19SE1D 14 1E	I 9SF1D	14	1F	03
Project Home		30 23	6 3378	195F1D 14 1B	19SE1D 14 1B	I9SE1D	14	18	03
 Image: Home Image: C:\ 			7 3381	195W3C 5 6	195W3C 5 6		5	6	08
Admin Tools			2 2200	19561D 14 16	105510 14 16		14	16	02
Garmin	*		0 3300				14	2	03
	• ()	5 - 55E ED 16 52	9 5383	L9SE2D 20 3	L9SE2D 20 3	L9SE2D	20	5	03
	28	L95E 10 1228	10 3382	L9SW3C 11 2	L9SW3C 11 2	L9SW3C	11	2	• 80
V Commerctial	c ^	SEIDER LISER 2213 LISER 16 C	Show All Features						8
V Parks_Greenspace		ISELD DO DI LOS LOS SUSSEIC 23		TA 20 ISSEIC & 25L95E1	28-25 PKB	COIDI			
✓ ✓ Industrial_Manufa	ctur	SELD 223A USE 10 2010 USE 10 2010 USE 10 2010 USE 10 2010 USE 10 2010 USE 10 2010	USEIC 25 P	6 14 L95E1C 26 29	TELEVISION IN CONTRACT OF CONTRACT.				
✓ Varenouse_Trans	C	Losete 215 -+ Cart	26 LISELC 26 10	USEICPLI	LISEZD 26 3				
Easton_WestWard	Par	5E4A 51	13 Jackson and a second	L95E4B 2 6	Eus Park	Q Topology		₫ ▼	₽a ▼
LVPC_LU_Easton_V	Vestl	14 L95E48 1 15 L95E4B 1 14	L95E48 L D L95E4	82.9	$(p^{q+q^{q+1}})^{q+q^{q+1}}$	Layer Render	ring		
v r OpenStreetMap	•		L95E48 2 2			()		✓ Live update	Apply
Type to locate (Ctrl+K)		Coordinat	te 2670022,504384 🛞 S	cale 1:5967 -	Magnifier 100%	2 Rotation	0.0 ° 🗘 ✔ Re	nder 💮 EPSG:2272	•

Locate the 'Select features using an expression' function on the attribute table toolbar. Click it.

o 14

R *Westward_2020 — QGI	5	Q Joined_Parcels_LUC	— Features Total:	6231, Filtered: 6231	, Selected	0		-		×
Project Edit View Layer	Settings Plugins Vector Rasie	Selus Reda	PARCEL_ID	CAMA_ID	M	AP	BLOCK	LOT	SC	HD *
		1 3308	L9SW2B 23 1	L9SW2B 23 1	L9SW2B	2	3	1	03	-
		2 3384	L9SW3C 5 4B-1	L9SW3C 5 4B-1	L9SW3C	5		4B-1	03	
Browser		3 3377	L9SE1D 14 1J	L9SE1D 14 1J	L9SE1D	1-	4	1J	03	
	14 (1914 210 LISELE 21 1 191 11 11 11 11 11 11 11 11 11 11 11	4 3376	L9SE1D 14 1F	L9SE1D 14 1F	L9SE1D	14	4	1F	03	
Favorites Spatial Bookmarks	LISE LA VIE LE	5 3379	L9SE1D 14 1E	L9SE1D 14 1E	L9SE1D	1.	4	1E	03	
Project Home Ame	30 77 1986 1A 19 19 19 19 19 19 19 19 19 19 19 19 19	6 3378	L9SE1D 14 1B	L9SE1D 14 1B	L9SE1D	1-	4	1B	03	
• 🖻 C\	Q loined Parcels LUC — Select by	Expression			×	5		6	08	
Admin lools Arand	Expression Function Editor	Expression				14	4	1G	03	
Garmin		9. Search	Show Help			20	5	3	03	
Layers		▼ Fields and Valu				1	1	2	08	Ŧ
V Commercial		123 fid	_						В) 1 (77)
✓ Public_QuasiPubl ✓ Parks Greenspace		abc PARCE	L_ID			-				
V Industrial_Manuf		abc CAMA	_ID							
✓ Warehouse_Trans		abc BLOCK								
Easton_WestWar		abc SCHDI	ST			Dondoring		₫ ▼	i a	
 V PopenStreetMap 		abc MUNI abc FLAG				Rendering		✓ Live update	Apply	
Q Type to locate (Ctrl+K)	= + - / * ^ () "	\n' 1.2 GIS_AC	REAG			otation 0.0	° ‡ ✔ R	ender @ EPSG:2272	Q	
ng 5 Saving Jo	Feature L9NE4C 14 7 💌 🔍	abc DEED	ACREA							
. <u>.</u>	Preview:	abc LOCAT	ION							
	Help		Ę	Select Features	Close					



Scroll through the middle column until you find the **'Fields and Values'** option. **Single click** it. From there a drop down menu will appear. Select the **'LUC'** option from the drop down.

🔇 *Westward_2020 — QGIS	5	Q Joined_Parcels_LUC	— Features Total: (5231, Filtered: 6231	, Selected	: 0		- 🗆	×
Project Edit View Layer	Settings Plugins Vector Reside	Seus Rada	PARCEL_ID	CAMA_ID	M.	AP	BLOCK	LOT	SCHD*
		1 3308	L9SW2B 23 1	L9SW2B 23 1	L9SW2B	23	1	03	
		2 3384	L9SW3C 5 4B-1	L9SW3C 5 4B-1	L9SW3C	5	4B-	1 03	
Browser	2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3 3377	L9SE1D 14 1J	L9SE1D 14 1J	L9SE1D	14	1J	03	
		4 3376	L9SE1D 14 1F	L9SE1D 14 1F	L9SE1D	14	1F	03	
Spatial Bookmarks	1955 1A 30 25	5 3379	L9SE1D 14 1E	L9SE1D 14 1E	L9SE1D	14	1E	03	
 Project Home A Home 	30 23 (See LA 21 407 10 201	6 3378	L9SE1D 14 1B	L9SE1D 14 18	L9SE1D	14	1B	03	
▼ C:\	Q Joined Parcels LUC — Select by	Expression			×	5	6	08	
Admin roois Arand	Expression Function Editor					14	1G	03	
Garmin		Search	Show Values are	oup field		26	3	03	
Layers Commercual Public QuasiPubl Public QuasiPubl Parks_Greenspac Jindustrial_Manuf Jindustrial	"LUC" = '90' "Euc" = '90' Feature L9NE4C 147 S	abc LOT abc SCHDI abc SCHDI abc MUNI abc FLAG 1.2 GIS_AC 1.2 ASMT abc DEED abc LOCAT abc NBHD 1.2 TOTAL 1.2 BLDG 1.2 LAND 1.2 TOTAL 1.2 BLDG	ST Dou ST to e Riging Oppe value ReAG ACREA ION 90 903 VALUE VALUE VALUE VALUE VALUE VALUE VALUE	uble-click to add field r ht-Click on field name nt-Click on field name le loading options. es 90 Il Unique 10 Sc	name to le amples	loav Rendering Dation 0.0 °	2 ↓ ↓ Render	08 Carter Control of the second seco	ply
	Help		E	Sele(* Features	Close				



Double click the 'LUC' option. Green text will appear in the box on the left-hand side. Then locate the 'All Unique' button. Single click it. You can use the drop down menu or the search bar to select the right LUC number you want to highlight on the map. Click 'Select Features'.

	Q Joined Parcels LUC — Features Total: 623	1 123 fid	abc FLAG_1_319		
Q *Westward_2020 — QGIS		abc PARCEL_ID	abc FLAG_2_LER		
Project <u>E</u> dit <u>V</u> iew Layer <u>S</u> ettings <u>P</u> lugins Vect <u>o</u> r <u>I</u>	aster SCOULS I RECT DUPONTS	abc CAMA_ID	abc FLAG_3_HMS	CCUD A	
Q Q 👯 🤤 🐮 🖉 🖏 🗒 🗒 📑 🖆 🗍		abc MAP	abc FLAG_4_FMS	SCHU	
	1 3308 L9SW2B 23 1 L9	S abc BLOCK	abc FLAG_5_ACT	03	
	2 3384 L9SW3C 5 4B-1 L9	S abc LOT	abc FLAG_6_ACT	03	
	3377 L9SE1D 14 11	s abc SCHDIST	abc FLAG_7_ACT	03	
	5 5577 655676 14 15	abc MUNI	abc FLAG_9_BIL	03	1111
	4 3376 L9SE1D 14 1F L9	S abc FLAG	abc FLAG_10_KO	03	
Spatial Bookmarks	5 3379 L9SE1D 14 1E L9	S 1.2 GIS_ACREAG	123 NUMBER_OF_	03	
Project Home		1.2 ASMT_ACREA	1.2 NUMBER_OF1	02	Video 14
Home	3378 L9SE1D 14 18 L9	abc DEED	abc EXTERIOR	03	<u>viaco i i</u>
	7 3381 L9SW3C 5 6 L9	S abc LOCATION	abc BASEMENT	08	
Admin Iools	8 3380 L9SE1D 14 1G L9		123 YEAR_BUILT	03	
Garmin		abc NBHD	abc BUILDING_S		
5.55E 15.12 55E	9 3383 L9SE2D 26 3 L9	S 1.2 TOTAL_VALU	123 NUMBER_O_1	03	
Layers	10 3382 L9SW3C 11 2 L9	S 1.2 BLDG_VALUE	123 NUMBER_O_2	08 🗸	
	141- 36 USE	1.2 LAND_VALUE	123 NUMBER_HAL		
V Public QuasiPublic	Show All Features	1.2 TOTAL ASSE	123 TOTAL ROOM		
✓ Parks_Greenspace	SELC 21 Y Show All Features	1.2 BUILDING A	abc SWIMMING P		
✓ Industrial_Manufactur ₩ SE 1444	EIC 22/1 T Show Selected Features	1.2 LAND ASSES	123 COMM CARDS		
Warehouse_Transporta	The show Features Visible On Map	1.2 SALE PRICE			
V Joined_Parcels_LUC	Show Edited and New Features		abc IMPROVEMEN	a • 💕 •	
LVPC LU Easton West	15 Field Filter		1.2 Shane STAr		
✓ ✓ PopenStreetMap	Advanced Filter (Expression)		1.2 Shape STLe		
	📕 🛨 Stored Filter Expressions	123 SOET LIVIN	123 Code Cheat	Ipdate Apply	
۹. Type to locate (Ctrl+K) Co	rdinate 2671445,502999 👋 Scale 1:5967 💌 🚇	123 SQFI_LIVIN	123 Code_cheat	G:2272 😋	

Alternatively, instead of performing steps 20-23, you can **open the attribute table** for the joined parcel layer, **click 'Select Features'**, and **click 'LUC'**.

		Q Joined Parcels ILIC	- Features Total: (221 Eiltorod: 6231	Selected: 0		_ [
Q *Westward_2020 — QGIS		Somed_rarceis_coc	Teatures total. C		, selected. o		2((L)) iL	,
Project Edit View Layer Sett	ings <u>P</u> lugins Vect <u>o</u> r <u>Raster</u>	Saus Rada	A CARLS			6. Di O Cir	LOT	ccup A
🗋 📄 🖥 🔂 😫 🐒 🚺	L 🕫 Q Q 🔣 Q 🕏 🦑	fid	PARCEL_ID	CAMA_ID	MAP	BLOCK	LOI	SCHD
🖉 🎕 Vi 🖉 🖏 🔯	L/ 日名友·副日	1 3308	L9SW2B 23 1	L9SW2B 23 1	L9SW2B	23	1	03
R - B - 6 -		2 3384	L9SW3C 5 4B-1	L9SW3C 5 4B-1	L9SW3C	5	4B-1	03
Browser		3 3377	L9SE1D 14 1J	L9SE1D 14 1J	L9SE1D	14	1J	03
	ANTER A LISEAR 215 DELETER 200	4 3376	L9SE1D 14 1F	L9SE1D 14 1F	L9SE1D	14	1F	03
 Favorites Spatial Bookmarks 	LISE IA 30 25	5 3379	L9SE1D 14 1E	L9SE1D 14 1E	L9SE1D	14	1E	03
Project Home Ame	30 23 CS6 1A 10 19 CS6 1B 20	6 3378	L9SE1D 14 1B	L9SE1D 14 18	L9SE1D	14	1B	03
★ C:\		7 3381	L9SW3C 5 6	L9SW3C 5 6	L9SW3C	5	6	08
 Admin tools Arand 		8 3380	L9SE1D 14 1G	L9SE1D 14 1G	L9SE1D	14	1G	03
Garmin	S-55:EM-H6 1 105:ED 16 1 5-55:EH 14 12 T35:EIC 6 7 105:EIC 6 7 105:EIC 6 7	9 3383	L9SE2D 26 3	L9SE2D 26 3	L9SE2D	26	3	03
ayers	Lehigh Street	10 3382	L9SW3C 11 2	L9SW3C 11 2	L9SW3C	11	2	08 🗸
V Commerctial							Case con	sitivo 🖂 🕅
✓ Public_QuasiPublic	Water and Antion Street	Lipsan Black 90						
V Parks_Greenspace	BIDI SSELT 221	903						
✓ <mark></mark> Warehouse_Transport	2 19 SEE SEE SEE SEE SEE SEE SEE SEE SEE SE	USE IC 26 9	14 L9SE1C 26 29	TO BOOM				
✓ Joined_Parcels_LUC		26 LISEIC 26 10	USEICOLL	L9SE2D 26 3				
Easton_WestWard_Pa	ISE4A STATES AND ASSESSED AND ASSESSED	13	LISE4B 2 6	1	Q Topology		₫ ▼	ma 💌
LVPC_LU_Easton_West	3 14 L95E4B 1 15 L95E4B 1 14	LISE 48 LOSE 48	12.9	(at 90 and the	Layer Render	ing		
V POPenStreetMap	- Line B	L95E48 2 2					✓ Live update	Apply
Q Type to locate (Ctrl+K)	Coordina	te 2670474,503075 🛞 So	cale 1:5967 💌	Magnifier 100%	Rotation (0.0 ° 🗘 🗸 Ren	ider 💮 EPSG:2272	0



Type in the desired LUC value into the box at the bottom of the attribute table and hit enter.

*Westward 2020 — QGIS		Q Joined_Parcels_LUC	2 — Features Total:	6231, Filtered: 234	4, Selected: 234		- 1	D X
Project Edit View Laver Sett	tings Plugins Vector Rate	6018300	Star Star	T I I I		Q.		
		GIS_ACREAG	ASMT_ACREA	DEED	LOCATION	LUC	NBHD	TOTAL_V.
	*******	225 0.13	0.1343	2017-1 270353	NORTHAMPTO	90	1004	
	《/日名友·說有"	226 0.1	0.0967	741 001069	1343 FERRY ST	90	1004	
		227 0.03	0.0251	2005-1 150794	903 FERRY ST	90	1004	
		228 0.07	0.0718	624 000028	PINE ST	90	1004	
Favorites	▲ 2 21 USE IA 10 21 USE IA 20 21 USE IA	229 0.09	0.09	2010-1 102055	1000 LEHIGH DR	90	1004	
Project Home		230 0.57	0.57	2017-1 004887	JEFFERSON ST	90	1004	
		231 0.12	0.1212	2004-1 118300	1075 LEHIGH DR	90	1004	
 Admin Tools Arand 		232 0.03	0.0328	NULL	1320 LYNN ST	90	1004	
Garmin	Section 46 1 10 10 10 10 10 10 10 10 10 10 10 10 1	233 0.05	0.0466	NULL	1061 LEHIGH DR	90	1004	
ayers	Lehigh Street USE 16 19	234 0.02	0.0196	2005-1 482247	929 WALNUT AVE	90	1004	
✓ ④ ➡ ▼ ≤ ▼ ■ ■ □ ✓ ■ Commercial		4						
✓ Public_QuasiPublic	USSED WIHINGTO 221305544 16 to	abc LUC 90		20			Case ser	nsitive 🔡 🛄
✓ Parks_Greenspace	STREED 29 B USE IC 0 3 (SSE IC 23)	Show All Features		LISE				
V Industrial_Manufactu	SEE 2719 USE 298 USE 221	Three Show Selected Fea	tures	T I D I D I D I D I D I D I D I D I D I				
V Warehouse_Transport	ta Losete 215 -+	T Show Features Visi	ble On Map	95E20.26.3				
V Joined_Parcels_LUC	PSE-MISP SERVICE IN COSE AL 28	T Show Edited and N	lew Features	91 Dustant				
IVPC III Faston West	LIA L95E4B 1 15	Field Filter		•	Lawer Dende	dag		
V V OpenStreetMap	LISE4A 8 5	ү Advanced Filter (Ex	pression)	Call - Age and a	P Layer Rende	ing		
)		★ Stored Filter Expres	sions	•	•		✓ Live update	Apply
의 Type to locate (Ctrl+K)	234 feature(s) selec Coordinate	abc LUC		Magnifier 100	% 🗘 Rotation	0.0 ° 🗘 🖌 Re	ender 💮 EPSG:2272	Q



The attribute table will now contain all of the data entries categories under the value in the LUC list. In this example, the selected value was 90. Shift, click, and select all of the values in this table to highlight all of the values. Once everything is selected, click the box labelled 'abc LUC' and click the 'Show Selected Features' option.





Now, the map will create a new layer which only displays the features you selected, however, this layer will not immediately be visible because it will be buried underneath other layers. To fix this, locate the newly-created layer containing your desired features and **drag it up to the top of the layers menu list**.

Using the Asset Map Categorizing Data



To make certain layers more visible, **click on the LUC layer** you want to edit. The style menu will open on the left. **Ensure that the correct layer is selected** in the top-most drop down menu.

Using the Asset Map Categorizing Data



Then, go to the 'Color ramp' drop down menu. This feature allows you to use different shades of the same color to visually indicate different subcategories within one LUC. Click 'Classify' to see the product.

Using the Asset Map Categorizing Data



Once you've hit classify, the menu on the left will indicate which color corresponds with each subsection of the LUC.
Using the Asset Map Categorizing Data



To make this visualization even clearer, you can **toggle the other lays on and off** using the **check boxes** in the layers menu on the left-hand side.

Using the Asset Map Using the Map for Research

Whilst QGIS can provide a lot of information, such as address and codes, it does not allow for the insertion of images or additional information, such as ownership status and other relevant statistics.

If you need information on a specific asset to enable further research, **follow steps 9-19** to isolate the feature(s) you want to research. The attribute table will provide the street address which can be used as a foundation for external research.



To begin the process of exporting the map, **locate and click** the **'New Print Layout'** option on the toolbar.



A pop-up menu will appear where you can **enter the desired title for your exported map.** If you don't type anything, a random title will be generated.

Q *WestWardVisuals	- • ×
Layout Edit View Items Add Item Atlas Settings	
- 9 9 19 13 2 - 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
	Items Undo History
	Items Ø 8
	Item
	<u>Video 16</u>
	Layout Item Properties Guides
Add Map	Layout Ø ®
	▼ General Settings
	Reference map
	▼ Guides and Grid
	Grid spacing
	10.00 mm V
2 B-	Grid offset
	x: 0.00
	y: 0.00
	Snap tolerance
	5 px
	▼ Export Settings
x: 0 mm y: 13 mm	page: 1 46.7%

Once a blank canvas opens up, click the 'Add Map' button on the left of the screen.



A draggable shape feature will open. Use this feature to **allocate the desired size of your map.**

Q *WestWardVisuals	– 🗆 X	\frown
Layout Edit View Items Add Item Atlas Settings		
🗐 🔀 🕞 🕲 🖿 🗒 🔓 🖶 🖳 🦣 😓 🌜 🔶 🛷 🗉 💷 🖗 🌵 👔 💌 🔶 🔶 🧠		
🗩 🗩 💯 💢 🖉 🖳 🖉 🖉 🖳 🛼 🗤 💷		56
	350 Items Undo History	
	Items @ ®	
	💿 🔒 Item	
	✓ Map 1	
		TTA
	Layout Item Properties Guides	
	Layout © 🗷	Video 16
	▼ General Settings	<u>viueo ro</u>
	Reference map Map 1	
	▼ Guides and Grid	
Nordampto Greet	Grid spacing	
	10.00 🗢 mm 👻	
	Grid offset	
	x: 0.00	
	y: 0.00	
	Snap tolerance	
	5 px	
	▼ Export Settings	
x: 100.41 mm y:	95.88 mm page: 1 40.4%	

Once you release the click, the space will be filled with a section of the map. **Click** the **hand icon** on the left-hand side menu and use it to scroll around the map to find the desired section. You can also use the **zoom in and zoom out features** which are indicated with magnifying glass symbols on the top toolbar.





Steps 37-41 explain how to insert a second, more focused spotlight map into your map export. These steps are optional. To insert a spotlight map, **click on the regular map window** which is located behind the map export window. Use the zoom in tool to **zoom into the desired section**.



Use the 'Add Map' feature to size your second map. Remember, the 'Add Map' feature will draw exactly the image that is in the frame in the main map window.



Next, insert a translucent overlay on the large map which indicates the area depicted in the spotlight map. Move towards the right-hand side menu and **select** the **'Overview'** option.

	EaseUS Realization	- • ×
Layout Edit View Items A	Add Item Atlas Settings	
	<u>▶</u> = = = = = = = = = = = = = = = = = = =	
🗩 🗩 🛱 🎘 🕄 🖷 🕻	◎ 20 26 42 12 11 11 11 11 11 11 11 11 11 11 11 11	
	0,, 50,, 100,, 150,, 200,, 250,, 300,, 350	I Items Undo History
		Items Item
		V 🗌 Map 1
	East	
		Layout Item Properties Guides Video 17
-		Item Properties
		Map 1
	reet and a second	
		Overview 1
10 - 20 -		
		- Draw "Overview 1" everyiew
		Map frame
8-		Frame style
		Blending mode Normal
Redrawing map	x: 368.798 mm y: 140.423 mr	n page: 1 46.7%

Click the green '+' sign. 'Overview 1' will appear in the box below. Ensure that the 'Draw Overview 1 Overview' box is checked. Under the Map Frame option, ensure that 'Map 2' is selected.

🔇 *WestwardExport	EaseUS RecExperiis -	L X	
Layout Edit View Items Ad	dd Item Atlas Settings		
	」 ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●		
PP 🛱 🎜 🦷 🖷	2. 这 说 是 5. 章 8.		
m [0		
	Items	Ø B	
N -			
	V Map 2		
			Video 17
	East		
	Layout Item Properties Guid	les M S	
To -		01	
A E			
☆ -			
120			
N 8-			
-			
	x: 71.7213 mm y: 92.8602 mm page: 1 46.7% 💌 🕻		

Once the features described in step 40 are enabled, **a sheer overlay will appear on the larger map** to indicate the area depicted in the spotlight map.

Q *WestwardExport	EnseUS Real Specific	_		
Layout Edit View Items E	Add Item Atlas Settings			
- E G G S 🗁 B. (🔓 🖶 🖳 💁 🐟 三部 🙋 🔹 🔳 🔻 🔶 🚽 🖶 두 🔍			
PP72 💁	<mark>◎ 2 2 2 4 4 4 4 4 4 1 1 1 1 1 1 1 1 1 1 1</mark>			
₾ =	0,	Items Undo History	Ø X	
		Item		TTT
		✓ Map 2		
188 - Tao -		✓ Ш Мар 1		
				Video 17
۵ - ۲	East	Lavout Item Properties	Guides	<u>VIGOU 17</u>
-		Item Properties	0 8	
150				
<u> </u>				
- 01-				
width: 163.826 mm height: 7.9	2709 mm x: 180.058 mm y: 141.933 mm /	page: 1 46.7% 💌		

You can use the 'Insert Scale' option, available on the left-hand side menu, to create scales. Scales are drawn out in the same way that maps are inserted.

Using the Asset Map

Exporting the Map



To edit the details of scale bars, locate the 'Item Properties' tab on the right-hand side. Scroll down to the 'Main properties' features. In these settings, you can edit the unit of measurement.



Under the 'segment' section, you can adjust the segment increment and style.



You can also use the 'Main Properties' segment to edit the style of the scale bar.



Text boxes can be created using the 'Insert Textbox' function on the left-hand side toolbar. Textboxes can be used to create titles, citations, and general inserts. To edit the style of the text in the text box, find the 'Label' segment under the 'Item Properties'.



The only way to edit the content of text boxes is by **double-clicking the text box itself and inserting/editing text via the box which appears on the right**.



You can access the more detailed text editing menu by **double-clicking the 'Font'** option under the **'Label'** segment.

WestwardExport	EDISCOUS Reconstants	– 🗆 X	
Layout Edit View Items Add	d Item Atlas Settings		
	🖶 🚔 🗛 🗛 🔶 00 ← ↓ 1 🚽 → → 00 号 = 🔍		
PP 🛱 🕄 🐴 🗳	巡察師中学習		
, ^{βη} 0	50, 100, 110, 110, 120, 200, 120, 250, 120, 300, 120, 350, 350, 350, 350, 350, 350, 350, 35	Items Undo History	
		Items @ B	
20 0 -		Item	
		✓ T Lorem ipsum	1111
		Map 2	
		✓	
20 <u>-</u> 20	at the East		Video 10
-		Layout Item Properties Guides	<u>video 19</u>
		Item Properties	
Addregend			
A -			
A 3			
2			
2 03-			
	Loren jaum		
No -			
-			
	x: 0 mm y: 108 mm	page: 1 46.7% 👻 🍋	

You can insert a legend using the 'Add Legend' button on the left-hand side toolbar.



This is an example of how the legend will appear once initially inserted.



You can also insert a grid overlay onto your maps to help separate out the spatial distribution of certain groups of assets. To do this, find the **'Grids'** option under the **'Item Properties'** tab.



Click the green '+' symbol and a grid label will appear in the box below. Click the 'Modify Grid' button.



The specific grid settings can be edited using the panel indicated on the right-hand side. The grid can sometimes take time to load in. Don't panic if your map appears partially blank while the grid develops.



You can also design a frame to outline your maps. Frames are available under the **'Frame'** section of the **'Item Properties'** tab.

Q *Westward_2020Parcels		– 🗆 X	
<u>L</u> ayout <u>E</u> dit <u>V</u> iew <u>I</u> tems	Add Item Atlas Settings		
🗿 🖓 🕅 🕅 🔍 🖗	🖷 🖄 🖉 🚍 🖬 🗰 🖽		
(m)	0,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Items Undo History	
		Items ØX	
	Westward Landuse by Parcels 2020	Item Image: Constraint of the second s	Video 20
Add Picture	Easton	Legend Main Properties Title Parcels by Landuse	
		Map Map 1 Wrap text on Arrangement Symbols on Left Resize to fit contents	
	U U. U. C. U.S. U.S. U.S. THI D U. L. U. C. U.S. U.S. U.S. STR. DC.665 Third A.e. New York, NYUhited States ISBN Random Caston: John Wiley & Sms. Inc.665 Third A.e. New York, NYUhited States ISBN	✓ Legend Items ✓ Auto update Update All Agro_Vacant	
1 item selected	x: 0 mm y:	46 mm page: 1 44.5%	

You can experiment with inserting pictures into your export. Pictures can be added using the 'Add Picture' button on the left-hand side toolbar.

≪ *Westward_2020Parcels	×
Layout Edit View Items Add Item Atlas Settings	
문 🔁 🕞 📴 문 🔓 🖶 🐁 🖧 🦕 🔶 🛛 🕪 🔶 🔹 💌 🔶 🔸 🚽 🔶 🚽 👾 🔍	
- P P 第2 · · · · · · · · · · · · · · · · · ·	
-50 0 50 100 150 200 250 300 350	Items Undo History
	Items @ ®
Westward Landuse by	V I Westward Landuse by Parce
Parcels 2020	V B= Parcels by Landuse
	V = <scalebar></scalebar>
Parcels by Länduse	
Single Family Residential	Layout Item Properties Guides
T. Commercial	Legend
Public QuasPublic	▼ Main Properties
	Title Decole buil and use
	Map Map 1
	Wrap text on
	Arrangement Symbols on Left
	Resize to fit contents
	▼ Legend Items
Random Castory, John Wiley & Sms. Jos 665 Third A.e. New York, MUthed States 1590	Automotive Index All
₩ 8 - 976447-87333	
	Single Family Residential
1 item selected x: 0 mm v: 3	33 mm page: 1 44.5%

You can also experiment with adding shapes. Shapes are available under the 'Add Shape' button located in the toolbar on the left-hand side.



When you've finalized all the additional features you'd like, go to the top toolbar and find the **'Layout'** option. **Click** the **'Export Layout'** option.

Using the Asset Map

Exporting the Map



A 'Checking Layout' window will open. Click 'OK'.

Q Westward_2020Parcels	никовытельдения	- 🗆 X	
Layout Edit View Items Add Item Atlas Settings			
🗐 🔓 🕞 📄 🔜 🔓 🖶 🗞 🎝 🔶 🚳			
- 🗩 🗩 📜 🔁 - 📭 🤷 🖉 🖳 🖳 hilip 🖽			
μ		0 Items Undo History	
		Items	
Westward Lan Parcels 2020	Aduse by Arcels by Landuse	Image: Second state Image: Second state ✓ Image: Second state ✓	Video 21
	Agro Vacant	Layout Item Properties Guides	
	Ore Sectoria Project Contains WMS Layers Some WMS servers (e.g. UMN mapserver) have a limit for the WIDTH and HEIGHT parameter. Printing layers from such servers may exceed this limit. If this is the case, the WMS layer will not be printed	Item Properties	8
0 0.1 0.2 0.3 0.4 0.5 mi	Don't show this message again	r 0 mm - page 1 - 44 5%	

Another window will appear. Click 'close'.

🔇 *Westward_2020Parcels	HERE AND MADERIALION	- □)	×
Layout Edit View Items Add Item Atlas Settings			60
-50 0 50 100 Westward Las Parcels 2020 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	150 200 250 300 Image Export Options × • Export Options × Fage width 300 dpl • Page width 3507 px • Page height 2480 px • • Enable antialiasing • • • Crop to Content • • Image Export Options • • • Crop to Content • • • Crop to Content • • • Export • • • Crop to Content • • • Export • • • Crop to Content • • • Crop to Content • • • Bottom • • • Bottom • • • Bottom • • • Wided Szere ESN • •	Items Undo History Items Item Item Item Image: Strain S	Image: Wideo 21
	x: 134 mm	y: 0 mm page: 1 44.5%	-

An Image Export window will appear. Ensure that the desired dimensions are desired. **Hit 'Save'.**

Obtaining New Data Data Overview

Base Data

Accessorial Data

There are two types of data features throughout the map. The first category is called **base data** and includes elements such as vacant and occupied commercial space, rental status, and public green space information. All base data is available through Northampton County. Base data comprises the vast majority of the overall map data, hence why it's called base data: It creates the tangible base for the majority of the map. New and updated base data is available from the County approximately once a year. Every time that new base data is released and you want to reflect that update using the map, we recommend that you perform a complete map update. This will be explained in more detail in the next section of the guidebook.

The second type of data included in the map is called **accessorial data**. Accessorial data is any category of data that falls outside the scope of base data. Examples of accessorial data include information on trees, streetlamps, and porch initiative. Accessorial data can originate from multiple sources but the major origin of accessorial data is the GEDP.

Obtaining New Data Acquiring Updated Base Data

Updated base data is available annually via Northampton County. To access this new data free of charge, a GEDP representative must contact the County's GIS analyst, **Joseph Laky** via email at **JLaky@northamptoncounty.org**. The letter of relational acknowledgement is available at the end of the guidebook for reference.

When requesting updated data, **ensure that** you request the following:

- West Ward Boundary
- West Ward Parcels
- Lehigh Valley Planning Commission LU
 Data
- Data Dictionary for parcel data
- Data Dictionary for Northampton County Assessment LU Codes

The County will provide the data via an attachment in an email. Pages 72-73 explain how to save, store, and organise this data.

Obtaining New Data Acquiring Updated Accessorial Data

Since accessorial data originates from sources other than Northampton County, there is no rigid process for acquiring it.

Obtaining New Data Sorting Datasets

For GQIS to function correctly, it's imperative that **all data is stored in the same location on the user's computer.**

The simplest way to organize all incoming datasets is to **create a separate folder for map data on the user's computer desktop**. Every time that a) new data is downloaded or b) the map wants to save a layer, always be sure to save that information into this designated map data folder.

Every time you **create a new map**, it is recommended that you also **create a new map data folder** for that specific map to make sure that the data is easily identifiable without becoming confusing.

Updating the Asset Map Why Update?

This asset map is static, meaning that it isn't connected to the internet nor does it receive automatic updates when changes occur within the data: These changes must be accounted for manually to keep the map up to date with recent West Ward progress. Due to the nature of QGIS' single-subscription system, only one person owns the license to edit this map, meaning whoever owns the license is responsible for either providing someone else with access to update the map data, or they must update it themselves. It's crucial that the map remains as up to date as possible so as to maintain value.

Complete Updates

The first type of update is called a **complete map update**. Complete map updates require the user to essentially create a whole new map using the QGIS software because the updates to the data are so significant that it's more efficient to recreate a new map rather than make these individual edits in an existing version of the map. Complete map updates are not difficult to perform, however, we only recommend doing so when a significant data update occurs. Otherwise, we recommend **partial map updates**.

Partial Updates

Partial map updates are the second type of update. Unlike complete map updates that require starting a new map from scratch and display whole new datasets, partial map updates are the equivalent of tweaking one or two cells of data. Partial map updates are recommended when there are only a few elements that require updating. This process requires going into an existing iteration of the map and working within QGIS to make minor changes.
Updating the Asset Map

Update Prerequisites



It is very important that all data pertaining to the map you're creating/viewing is stored in the same folder to ensure that QGIS functions as desired. You can give this folder any title but do not touch any of its contents.

Updating the Asset Map

Update Prerequisites

📕 🛃 📮 GEDP_W	WWCP_Data							×
File Home Shar	e View							~ 🕐
Pin to Quick Copy Paste access Clipboard	Cut Copy path Paste shortcut	Move Copy to* to* Delete Re Organize	name	New folder Ne	¶•• 1.•	Properties • Open • • Edit • History Open	Select all Select none Invert selection Select	
← → • ↑ 📜 «	GEDP_W > GED	P_WWCP_Data v	U	Q	Search	h GEDP_WWCP_Data		
,	∧ Name	^			Date	oodified	Туре	^
📌 Quick access	Nume				Daten	noumeu	type	
Desktop 🖈	Easton_V	/estWard.cpg			10/21/	/2020 4:21 PM	CPG File	
Downloads *	Easton_V	/estWard.dbf			10/21/	/2020 4:21 PM	DBF File	•
Documente 🖈	Easton_V	/estWard.prj			10/21/	/2020 4:21 PM	PRJ File	
Documents x	Easton_W	/estWard.sbn			10/21/	/2020 4:21 PM	SBN File	_
Pictures 📌	T= Easton_W	VestWard.sbx			10/21/	/2020 4:21 PM	Adobe Illustrator Tse	u
GEDP_WWCP_Da	Easton_V	VestWard.shp			10/21/	/2020 4:21 PM	SHP File	
Music	Easton_V	/estWard.shp.xml			10/21/	/2020 4:21 PM	XML Document	
Vector Data	Easton_W	VestWard.shx			10/21/	/2020 4:21 PM	SHX File	
Videos	Easton_W	/estWard_Parcels.cpg			10/21/	/2020 4:21 PM	CPG File	2
	Easton_W	/estWard_Parcels.dbf			10/21/	/2020 4:21 PM	DBF File	
OneDrive	Easton_W	/estWard_Parcels.prj			10/21/	/2020 4:21 PM	PRJ File	
This PC	Easton_W	/estWard_Parcels.sbn			10/21/	/2020 4:21 PM	SBN File	
■ Baston_WestWard_Parcels.sbx						/2020 4:21 PM	Adobe Illustrator Tsi	u
	Easton_W	/estWard_Parcels.shp			10/21/	/2020 4:21 PM	SHP File	
Desktop	Easton_W	/estWard_Parcels.shp.xml			10/21/	/2020 4:21 PM	XML Document	
Documents	Easton M	last Mard Darcals shy			10/21	/2020 1-21 DM	CUV Cilo	~
Downloads 26 items	~ ~							

This is an example of the data provided by the County. There is a large number of files, each with different extensions. **Do not touch any of this data**. If the map you're creating/viewing contains a combination of base and accessorial data, make sure that both the base data subfolder and accessorial data subfolder are housed together in a master folder.



Open the QGIS software from your desktop. Once the program is open, there are two ways to start a new project. The first method is by clicking the box under 'Project Templates' labelled 'New Empty Project'. The second method is by going to the toolbar and identifying the 'New Project' button which is marked with a blank page icon. Both methods of opening a new project do the same thing.



Once a new project opens up, there will be two large blank spaces. The space indicated in red represents the area that your map will occupy. The area marked in green is where your layers will begin to appear once data is inserted.



In the browser panel, **scroll down** until you see the option '**OpenStreetMap**'. **Double click** on this option. By opening the street map, you're creating the foundation of the asset map.





When the street map first opens, it will be very zoomed out. Go to the toolbar located at the top of the screen and identify the 'increase zoom' icon. Hover over the relevant portion of the map and left click to zoom in. Keep zooming into Easton until your map looks like the one presented on the nest page. Remember that once you're done zooming, you need to revisit the toolbar and click on the white hand symbol which will allow you to scroll around the map instead of continuing to zoom indefinitely.



This is what your map should look like once you've finished zooming in on Easton.



To insert data into the blank map, go to the toolbar and **click the icon indicated** in this image.

Inserting Data into the Map



Clicking this icon will open up the source data manager in a separate window, as pictured here. Notice that the source data manager, by default, opens up into the vector setting (left hand side of the window).

Q *WestwardDa hots Project <u>E</u> dit <u>V</u> ie	ta — QGIS ew Layer Settings Plugins Vect <u>or R</u> aster <u>W</u> eb <u>M</u> esh Pro <u>c</u> essing <u>H</u> elp	- • ×
inic Browser Goog Open	Construct Manager Delimited Text Browser Vector Raster Vector Raster Vector Regular expression delimiter Custom delimiters PostgreSQL MSSQL Oracle DB2 Virtual Layer Wrfs / OGC API - Features XYZ	K FF8 Spring Garden Street Spring Garden Street Pearl Street Spring Garden Street<
	Vector Tile	Add Help

On the left hand side menu, select the 'Delimited Text' option.

Inserting Data into the Map

		📕 🖂 📕 🗢 🛛 GEDP_W	WCP_Data		- 🗆 🗙
Pro	🔇 *WestwardData — QGIS	File Home Share	View		~ 🕐
This PC Google Earth Screenshots Pro	Project Edit View Layer Settings Plugi	Pin to Quick Copy Paste	Cut Copy path Delete Rename	New Droperties	Select all Select none
谢 🜔 📗	· 🥷 🎕 Vi 🔏 🖷 🔯 - 1/2 / 18/ - 18/2 - 19/2 - 19/2 - 19/2	access Clipboard	organize	folder • Restory New Open	Select
Recycle Bin Internet Tech Clinic	Browser	$\leftarrow \rightarrow \lor \uparrow \blacksquare \circ 0$	GEDP_W > GEDP_WWCP_Data V じ	Search GEDP_WWCP_Data	
Explorer GIS	Google Terrain Hybrid	A Quick access	Name	Date modified	Туре
	Open Weather Map Ten	📃 Desktop 🛛 🖈	Easton_WestWard.cpg	10/21/2020 4:21 PM	CPG File
	Open Weather Map Wir	🖊 Downloads 🖈	Easton_WestWard.dbf	10/21/2020 4:21 PM	DBF File
EPSON Scan PowerPoint OBS Studio	OpenStreetMap w Street	10 × 1	Easton_westward.prj	10/21/2020 4:21 PM	PRJ File
	OpenStreetMap H.O.T.	Fictures 🕺	Easton_WestWard.sbn	10/21/2020 4:21 PM	Adoba Illustrator Tru
	OpenStreetMap Stands	GEDP WWCP De	Easton_WestWard.sbx	10/21/2020 4:21 PM	SUD Eilo
x i wi	ppenTcpoMap	Music	Easton_WestWard.shp	10/21/2020 4:21 PM	XML Document
	4 Illocal Plant	Vector Data	Easton WestWard shx	10/21/2020 4:21 PM	SHX File
Excel Word	Layers 2 🔊	Vector Data	Easton WestWard Parcels.cpg	10/21/2020 4:21 PM	CPG File
	< A + 7 4 - 2 3 4 4	Videos	Easton WestWard Parcels.dbf	10/21/2020 4:21 PM	DBF File
	▼ ✓ F OpenStreetiviap	OneDrive	Easton WestWard Parcels.pri	10/21/2020 4:21 PM	PRJ File
<u>(</u>	hi + Cong	This PC	Easton_WestWard_Parcels.sbn	10/21/2020 4:21 PM	SBN File
		3D Objects	Easton_WestWard_Parcels.sbx	10/21/2020 4:21 PM	Adobe Illustrator Tsu
Filelox QGIS 3.16		SU Objects	Easton_WestWard_Parcels.shp	10/21/2020 4:21 PM	SHP File
		Desktop	Easton_WestWard_Parcels.shp.xml	10/21/2020 4:21 PM	XML Document
		Documents	Carton MartMard Darcals shu	10/01/0000 4-01 014	
	Q Type to locate (Ctrl+K)	Downloads 26 items 1 item selecte	ed 8.29 KB		
Google EaseUS Chroma RecEvants					



Keeping the QGIS window open but minimised, locate your data on your desktop. This example illustrates the process using base data from the County, however, the process is exactly the same for adding accessorial data. Open the County data folder. There are three files in that folder that will end with the extension .shp. These files are shapefiles and they are the most important at this stage. Find the first .shp file and drag it from the files window into the layers portion of the QGIS window. Repeat this process with the other two .shp files in the folder.





You can now **close out the source data manager**. Within the layers menu in QGIS, three layers will be inserted. One of the layers will be one big block of color. You can delete this layer by **right clicking on its title**. Find and **click the 'remove layer'** option. Whilst you will opt to delete this layer, it's important that you still go through the process of inserting it. Do not attempt to bypass it.

Inserting Data into the Map





The goal is to stack the layers of the map from least detailed to most detailed. To do this, go to the layers menu. If you want to bring a layer forward, **drag and drop** it near the top of the layers menu. If you want to send a layer back, drag and drop its title towards the bottom of the title list. To bring a layer to the very front of the map, drag and drop it at the very top of the title list. To send a layer all the way to be back, drag and drop it at the very bottom of the title list.



Once you've completed all of the stages thus far, your map should look something like this with two colored layers organised from least detailed at the bottom to most detailed at the top.



Open the attribute tables for both layers of data. In the LCVP dataset, we are most concerned with the column labelled 'Code_Che_1'. This column contains categorical data in the form of descriptive labels that indicate what kind of space exists in a certain part of land.

				୍ଷ 🔍	Easton_WestWar	rd_Parcels — Featu	res Total: 3226, F	iltered: 3226, Selecte	ed: 0	_	
				. /•		 1 1	9 🧏 🕈 🔳 🖗 🗭	16 18 🛛 🗮 🖷	₽		
					PARCEL_ID	CAMA_ID	MAP	BLOCK	LOT	SCHDIST	MUNI
				1	SE1B 7 5 🔓	L9SE1B 7 5	L9SE1B	7	5	03	10
) I	gle 2	SE2A 1 11	LOSE2A 1 11	. L9SE2A	1	11	03	10
Easton_WestWard_F	Parcels — Features	Total: 3226, Filtered	l: 3226, Sel	1 3	SW3B 8 9A	●SW3B 8 9A	L9SW3B	8	9A	03	10
	8 8 8 8 8 9			ns 4	SE1B 31 9	SE1B 31 9	L9SE1B	31	9	03	10
DEED	LOCATION	LUC	NB		SE1A 10 20	L9SE1A 10 20	. L9SE1A	10	20	03	10
) NULL	410 N 10TH ST	961	C036	nS 6	SE1A 17 3A	L9SE1A 17 3A	L9SE1A	17	3A	03	10
1 2017-1 268429	1237 BUTLER ST	110	1004		SW2B 14 2	SW2B 14 2	L9SW2B	14	2	03	10
3 2018-1 245585	1042 BUTLER ST	110	04	8	SE4A 8 12-1	ESE4A 8 12-1	L9SE4A	8	12-1	03	10
3 2015-1 168639	25 N 9TH ST	110	9 004	• _ •	SE1B 16 13	SE1B 16 13	L9SE1B	16	13	03	10
3 2017-1 012712	701 -03 NORTH	500	C014		20.2		10	20	2	02	10
1 2020-1 192104	717 WOOD AV	110	1004 r	nS a	20 2	19 20 2 0	19	20	2	05	10 •
4 2004-1 065995	1415 LIBERTY S	110	1004	79	Show All Features						
640 000130	685 PEARL ST	110	004		59700.000000	0 42900.000000	00 16800.0				
1 2017-1 113473	124 N 14TH ST	400	016		263500.00000	0 202000.00000	00 61500.0				
2 2006-1 079946	675 PINE ST	562	C016		60900.000000	0 26800.00000	00 34100.0 🗸				
Show All Features											

The column labelled 'LUC' refers to land use codes, similarly to those in the Code_Che_1 column except in even more detail. The numbers that appear in the LUC column correspond to a label described in the something dictionary. Additionally, the 'Parcel_ID' column is also very important. Both attribute tables contain vital information so we need to merge the layers together in order to combine their attribute tables.



To ensure that the layers remain manageable as you progressively add more, you need to join them together to make them behave as one. To do this, **click** on one of the **layers you want to join** in the layer menu on the left. Then, click **'vector'** on the top menu. Scroll down and select **'Data Management Tools'**. Then, click **'Join Attribute Table by Location'**.

Spatial Joining

🔇 *Untitled Project — QGIS	Recall C Dec Bymerice	—	
Project Edit View Layer Settings Plugins	Vector Raster Mesh Processing Help		
🗅 📂 🗟 😰 💕 👘 🕫 🗩	Ι 💭 💬 👰 🗛 🕞 🧠 🐌 🖤 🔇 🎜 🔍 📰 💥 Σ 🛲 - 🥊	Ø ₁ + J ¹ +	
🤹 🎕 Vi 🔏 🧠 🔀 🛛 🤼 🖉 🕾	/≿ - ℤ = べ 8 = 6 + + = • • = • = • • • • • • • •	🔹 🦂 😰 🐘	
🔣 🕶 🖶 🕶 🤖 🕶	Q Join Attributes by Location	×	
Browser 🛛 🖉 🔤 🔤			
	Parameters Log	Join	•
Google Terrain Hybrid 🔺	Easton_West\ ard_Parcels [EPSG: 272]	▲ attribu	· ·
Open Weather Map Clo	C LVPC_LU_Easton_WestWard [EPSG:2272]	tes by	
Open Weather Map Ten	Selected features only	locatio	
Open Weather Map Wir	Join Laver	n	
OpenStreetMap H O T	UVDC III Easton WestWard [EDSG:2272]	This	Video 4
OpenStreetMap Monoc		takes an	
OpenStreetMap Standa 🗸 🔤	Selected reatures only	input vector	
	Geometric predicate	creates a	
Layers 🛛 🖉 🚽 🗖	✓ intersects overlaps	laver that is	
	contains within	an extended	
✓ Easton_WestWard_Parcel	equals crosses	the input 100.	0% 🗢
V LVPC_LU_Easton_WestWa		one with	
 V PopenStreetMap 			
	0%	Cancel	
62	Run as Batch Process	Run Close Help	
		Layer Rendering	
	and the second se	live update	e Apply
	Coordinate 2667141,506366 🛞 Scale 1:12935 🔹 🕋 Magnifier 100%	Rotation 0.0 ° Render ⊕ EPSG:22	72 🗨

A new window will pop up. Under the 'parameters' tab, click the first drop down menu and select the title of one of the layers you wish to join. The, click on the second drop down menu and select the other layers you want to join. Then, click 'Run'.



After you hit 'run', a progress bar will appear. Wait for it to finish.

🔇 *Untitled Project — QGIS	FinelUS Red Sympths	- 🗆 ×	
Project Edit View Layer Settings Plugins	Vector Raster Mesh Processing Help		
D 🖿 🖥 🔂 📽 🚺 🖑 🕫 🗲	I 💬 🖓 № 🗛 № 🖪 № 💁 🕓 🖾 🗮 🗮 🛠 Σ 🛲 マ 🖓 २ 🖛 マ		
🧏 🎕 Vi 🖍 🖷 🔯 🛝 / 🖶 🕱	灰・麗 長 べ 自 目 ち か 日 単 🔩 👒 📟 👒 🧠 🧠 🦷 日 🤹 日 🤹	I INN Loin	
R - D - R,	Q Join Attributes by Location	×	
Browser 🛛 🔊 🖉 👘		88	
	Parameters Log	Join *	
Google Terrain Hybrid 🔺	Algorithm 'Join attributes by location' starting	attribu	
Open Weather Map Clo	Input parameters:	tes by	
Open Weather Map Ten	Desktop/Tech Clinic GIS/Vector Data/GEDP_WWCP_Data/GEDP_WWCP_Data/	locatio	Video 4
Open Weather Map Wir	Easton_WestWard_Parcels.shp', 'JOIN' : 'C:/Users/aaberge/Desktop/ Tech Clinic GIS/Vector Data/GEDP WWCP Data/GEDP WWCP Data/	n ample Fill	
	LVPC_LU_Easton_WestWard.shp', 'JOIN_FIELDS' : [], 'METHOD' : 0,	This	
OpenStreetMap Monoc	OUTPOT : TEMPORARI_OUTPOT, PREDICALE : [0], PREFIX : }	algorithm takes an	
OpenStreetMap Standa -	Execution completed in 2.90 seconds	input vector	
	('JOINED_COUNT': 6231,	creates a	
Layers 🛛 🔊 🖉	'OUTPUT': 'Joined_layer_8/b2diil_/3a5_4/ic_b98c_6di/00/i82di'}	new vector	
	Loading resulting layers	an extended	
V Easton_WestWard_Parcel		the input	
V Joined layer 🐡		one with	
V LVPC_LU_Easton_WestWa	·		
V PopenStreetMap	0%	Cancel	
- Srinted	Run as Batch Process Change Parameters	se Help	
		 <td></td>	
	Layer Rend	lering	
		Live update Apply	
Q Type to locate (Ctrl+K)	Coordinate 2667141,506366 👋 Scale 1:12935 🔻 🖀 Magnifier 100% 🗘 Rotation	0.0 ° 🗘 Render 💮 EPSG:2272 🔍	

Once the progress bar has finished, hit 'close'.

Spatial Joining



Once the new joint layer has been created, it will exist as a temporary layer. This is indicated by the small symbol next to its title in the layers menu. Click on the symbol.

A *Untitled Project - OGIS			
Project Edit View Laver Settings Plugir	ns Vector Baster Mesh Processing Help		
		• 🖓 🔍 - II -	
		NN	
	Q Save Scratch Layer X		
Browser	Esta Shapenie	Layer Styling	
Google Terrain Hybrid	File name WestWard_Parcels_LUC_Join		
Open Weather Map Clo			
Open Weather Map Ten	Encoding	← Fill ©	🕀 🔺 Video 4
Open Weatner Map Wir	▼ Layer Options	Simple in	
OpenStreetMap H.O.T.	PESIZE NO	<u>A</u>	
OpenStreetMap Monoc	CHDT	4	
Openstreetinap standa	SHET		
Layers	Custom Options		
	14	Unit Millimeters	
✓ Joined layer □ ■		Color	
LUVPC_LU_Easton_WestWa			
▼ ✓ PenStreetMap			
- Scient -			
		C Topology	
	OK Cancel Help	► Layer Rendering	
	Bidge - Comment	↓ Live upda	te Apply
Q Type to locate (Ctrl+K)	Coordinate 2666550,503844 👋 Scale 1:12935 💌 🚔 Magnifier 1	00% ♀ Rotation 0.0 ° ♀ ✔ Render ⊕ EPSG:	272 🔍

A save window will open. In the box labelled 'File name', **enter the name** you want to save this new joint layer under. Then, **click the icon with three dots**.



A new save layer window will appear. Enter the same title in the file name box. Make sure you use the menu on the left to locate your map data folder to make sure that this layer save is saved in the same folder as the rest of your map data. Hit 'Open'.



You'll be returned to the previous save window. Hit OK.

Spatial Joining



You can rename this new joined layer at any point by **right clicking** the title name from the layer menu and **selecting 'Rename layer'**.

Performing a Complete Map Update Saving Joined Layers



To save the new joint layer you just created, find the title of the layer in the layer menu, **right click** it, **select the 'export' option**, and then select the **'save as QGIS layer style file'** option.

Saving Joined Layers





Once you've selected 'save as QGIS style layer file', a new window will open. Ensure that the drop down menu at the top is set to '**As QGIS layer style file**'. This is the default setting but you should still double check. **Click on the three dots** indicated in the circle to the right of the pop up window.

Performing a Complete Map Update Saving Joined Layers



Another window will pop up. Use the menu on the left to locate your designated map data folder. Then, **save the layer under the automatic title** that is generated for you. **Click save** to exit out of this window. The joined layer you've created is now saved. This is important for later.

Performing a Complete Map Update Saving the Project



The next step is to save the whole project. To do this, find the '**project**' button towards the left of the toolbar. Select the '**save as'** option.

Performing a Complete Map Update Saving the Project





A new window will open. Similarly to when you saved the joint layer in the designated map data folder, use the menu on the left to find the location of your designated data folder and ensure that the project is also saved in that folder. Unlike the joint layer, you can title this whatever you want. The title you insert here will be displayed as the title of the whole map so ensure that it's descriptive enough to make it clear which section of data is being shown.

Performing a Complete Map Update Saving the Project





Additionally, you want to make sure that you're saving your periodically from this point onwards. To do so, click the '**project'** button on the toolbar and select the '**save**' option. Do this every time that you make a change to the map to ensure that your progress is saved. QGIS is not an online platform so it doesn't save your work for you as you go.

Saving the Project



For convenience, we recommend that you **deselect all layers that aren't the joint layer.** To do so, go to the layer menu and **click to uncheck** the boxes to the left of layer titles you no longer wish to display.

Performing a Complete Map Update Saving Attributes



Select the combined layer from the layer menu and open the attribute table.

Performing a Complete Map Update Saving Attributes

Poject Edit View Jaye Settings Pugiet Edited Image: Settings Pugiet Image: Seting Pugiet Edited Image: Seting Pugiet Pugiet Pugiet	Q *Westward_2020 — 0	QGIS	aseUS RecExper	63			-	\times
Image: Second	Project Edit View Lay	yer <u>S</u> ettings <u>P</u> lugins Vect <u>o</u> r <u>R</u> as	ster <u>W</u> eb <u>M</u> esh Pro <u>c</u> essing <u>H</u> elp)			-	
Image: Control of the state of the stat	0 🖻 🖥 🖬 🖓 🛛 🔍	Joined_Parcels_LUC — Features Tota	al: 6231, Filtered: 6231, Selected: 0		-			(92)
Image: Sect features using an expression MAP BLOCK LOT SCHD Browser 1 2029 USE1B 32 5 95E1B 32 5 95E1B 32 5 03 Image: Sect features using an expression MAP BLOCK LOT SCHD Browser 1 2029 USE1B 32 5 95E1B 32 5 USE1B 32 5 03 Image: Sect features using an expression MAP BLOCK LOT SCHD Image: Sect features using an expression MAP BLOCK LOT SCHD Image: Sect features using an expression MAP BLOCK Log Scho Scho Image: Sect features using an expression MAP BLOCK Log Scho Scho Scho Scho Image: Sect features using an expression MAP BLOCK Log Scho	🧟 🎕 Vo 🎜 🖷 🖊		<mark></mark>	.			IN oin	
Browser 1 2029 19SE1B 32 5 L9SE1B 32 5 L9SE1B 32 5 L9SE1B 32 5 03 2 2018 19SE1B 23 21 L9SE1B 23 21 L9SE1B 23 21 19SE1B 23 21 03 0 Open We 3 2019 19SE1B 30 11 L9SE1B 30 11 03 0 Open We 3 2016 19SE1A 24 21 L9SE1A 24 21 L9SE1A 24 21 L9SE1A 24 21 03 0 OpenStre 5 2017 19SE1B 32 4 L9SE1B 32 4	R • B • C •	fid PAR Select f	eatures using an expression MAP	BLOCK	LOT	SCHD*	-	
Image: State of the state	Browser 1	2029 L9SE1B 32 5	L9SE1B 32 5 L9SE1B	32	5	03	CALCON LO	
Open We 3 2019 L9SE1B 30 11	2	2018 L9SE1B 23 21	L9SE1B 23 21 L9SE1B	23	21	03	CR 646	
OpenStre 4 2016 L9SE1A 24 21 L9SE1A 24 21 L9SE1A 24 21 03 OpenStre 5 2017 L9SE1B 32 4 L9SE1B 32 4 03 OpenStre 5 2017 L9SE1B 32 4 L9SE1B 32 4 03 OpenStre 6 2022 L9SW2B 15 19 L9SW2B 15 19 03 OSM hut 7 2023 L9SE1B 30 4 L9SE1B 30 4 03 Stamen 7 2023 L9SE1B 23 L9SE1B 19 03 V Joined P 10 2042 L9SW2B 15 17 L9SW2B 15 17 03 V Joined P 10 2042 L9SE1B 23 L9SE1B 22 3 03 14 V Joined P 10 2042 L9SE1B 29 L9SE1B 29 9 03 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14	Open We Open We 3	2019 L9SE1B 30 11	L9SE1B 30 11 L9SE1B	30	11	03	Memorial Parkway	7 🔁
OpenStre 5 2017 L9SE1B 32.4 L9SE2B 32.4 L9SE1B 32.4 L9SE1B 32.4 L9SE1B 30.4 L9SE1B 20.4 L9SE1B 20.9 L9SE1B 20.	OpenStre 4	2016 L9SE1A 24 21	L9SE1A 24 21 L9SE1A	24	21	03	illipsburg	and an
OpenTop 6 2022 L9SW2B 15 19 L9SW2B 15 19 L9SW2B 15 19 03 OSM hun Stamen T 7 2023 L9SE1B 30 4 L9SE1B 30 4 L9SE1B 30 4 03 Image: Stamen T 7 2020 L9SW2B 15 17 L9SW2B 15 17 L9SW2B 15 17 03 Image: Stamen T 9 2021 L9SE1B 22 3 L9SE1B 22 3 L9SE1B 22 3 03 Image: Stamen T 9 2021 L9SE1B 29 9 L9SE1B 29 9 L9SE1B 22 3 03 Image: Stamen T 10 2042 L9SE1B 29 9 L9SE1B 29 9 L9SE1B 29 9 03 Image: Stame T 10 2042 L9SE1B 29 9 L9SE1B 29 9 L9SE1B 29 9 03 Image: Stame T 10 2042 L9SE1B 29 9 L9SE1B 29 9 03 Image: Stame T Image: Stame T <td>OpenStre 5 OpenStre</td> <td>2017 L9SE1B 32 4</td> <td>L9SE1B 32 4 L9SE1B</td> <td>32</td> <td>4</td> <td>03</td> <td>wooners -</td> <td><u>Video 7</u></td>	OpenStre 5 OpenStre	2017 L9SE1B 32 4	L9SE1B 32 4 L9SE1B	32	4	03	wooners -	<u>Video 7</u>
OSM hur 7 2023 L9SE1B 30 4 L9SE1B 30 4 L9SE1B 30 4 03 Image: Stamment of the stamment	OpenTop 6	2022 L9SW2B 15 19	L9SW2B 15 19 L9SW2B	<mark>1</mark> 5	19	03		×.
Image: Second Street Map 8 2020 L9SW2B 15 17	OSM hun Stamen T	2023 L9SE1B 30 4	L9SE1B 30 4 L9SE1B	30	4	03		
Layers 9 2021 L9SE1B 22 3 03 ✓ Joined P 10 2042 L9SE1B 29 9 03 ✓ Joined P 10 2042 L9SE1B 29 9 03 ✓ Joined P 10 2042 L9SE1B 29 9 03 ✓ Joined P 10 2042 L9SE1B 29 9 03 ✓ VOpenStreetMap V Mutchlertown Joined P 10	<pre>8</pre>	2020 L9SW2B 15 17	L9SW2B 15 17 L9SW2B	15	17	03	CR 678	
✓ Joined P: 10 2042 L9SE18 29 9 L9SE18 29 9 L9SE18 29 L9SE18 29 L9SE1	Layers ≪ 小 ▼ ↑ ६, マ ₪	2021 L9SE1B 22 3	L9SE1B 22 3 L9SE1B	22	3	03	South Main Street	
Easton W LVPC_LU V P OpenStreetMap	Joined_P: 10	2042 L9SE1B 29 9	L9SE1B 29 9 L9SE1B	29	9	03 👻		
V V OpenStreetMap	Easton_W	Show All Features					Delaware Draw	
	 ✓ ✓ ✓ OpenStreetMa 	ap	Mutchlertown		williams	Council of the second	178	

Within the attribute map table window that will open up, find the toolbar at the top and select the icon labelled 'Select features using an expression'.

Saving Attributes





From there, a new window will open up. The box highlighted in green is where all of the coding will take place. In the middle of the new window is a list of options all highlighted in a dark gray color. Scroll down until you find the option labelled 'Fields and values' and click on the small black arrow located to the left of the text.

Saving Attributes

🔇 *Westward_2020 — QGIS	EaseUS Red	Experts		- 🗆 ×	
Project Edit View Layer Settings Plue	gins Vect <u>o</u> r <u>R</u> aster <u>W</u> eb <u>M</u> esh Pro <u>c</u> e	essing Help			
🗋 🛅 🖥 🔀 🗄 🔍 Joined_Parcels_LU	JC — Features Total: 6231, Filtered: 6231, Se	elected: 0	- 🗆 X		
🤹 🎕 V. 🖉 🖬 / 🛛 🖻 🗢 🗣 🖻 🗠	 (a) Q (b) Q (c) Q 	× 🖩 🖩 🗖 🔍		iN pin	
💦 🕶 📄 🕶 🕞 🗸 fid	PARCEL_ID CAMA_ID	MAP BLOCK	LOT SCHD	▲	
rowser 1202	29 19SE1B 32 5 19SE1B 32 5 19	9SE1B 32	03	A DUSTILLAND AND	
🛿 😋 🔻 🗃 💿 🔤 📿 Joined_Parcels_LU	UC — Select by Expression		× 03	CR SAG	
Open We Expression Function	tion Editor			Samorial Parkway	
Open We	Search Sh	now Values aroun field	03	A LEAST AND A LEAS	
OpenStre		Double dick to add field pa	03	illipsburg	
OpenStre g	abc SWIMMI	NG P to expression string.	03	tomas a start of the	
OpenStre	123 COMM_C	CARDS Right-Click on field name to open context menu sample	02	The second second	
OSM hun	abc COMMER	RCIAL value loading options.	03		
Stamen T	1.2 Shape ST	In Notes	• 03		
C' 18	1.2 Shape_ST	TLe Values Q Search	03	CR 678	
yers c	122 Code_Che	All Unique 10 San	iples 03	South Max	
 「 (」 ())	abc Code Che	e_1		Street	
✓ Joined P:	abc NAME		03	THE PROPERTY	
$LVPC_LU = + - / *$	^ () '\n' 1.2 GISACRES	S	3	Oelawace Drive	
V POpenStree Feature ALLEN	Files and Paths Fuzzy Matching		1 - Internet		
Preview: 'Residential'	General	*			
		Secolard Fachara -	Class lans Township		
Help	e Riser and	Select Features	Liose	178	
C Type to locate (Ctrl+K) Toggle	es the editing Coordinate 2661790,506890 🞗	🕉 Scale 1:30230 💌 🚔 Magnifier	100% 🗘 Rotation 0.0 °		

Once you've clicked on the small gray arrow, a list of options will drop down below. Scroll through this list of options until you find the option labelled 'Code_Che_1'. Double click on Code_Che_1. Once you've double clicked, text will begin to appear in the box on the left of the screen.
Saving Attributes

roject Edit View	Layer Settings Plugins Vector Raste	er Web Mesh Processing H	elp 54	_	П X	1
			— •			10
			III M	107	ccup A	oin .
X • D • G •	TIG PARCEL_ID	CAMA_ID MAP	BLOCK	LOI	SCHU	
wser	2029 L9SE1B 32 5	195E1B 32 5 195E1B	32	5	03	
8710	Q Joined_Parcels_LUC — Select by Expr	ression		×	03	CR 646
Open We	Expression Function Editor					stamonal Parker
Open We					03	Service To
OpenStre		Show Values	group field		03	illiochurg
OpenStre	Code_Che_1" =	123 TOTAL_ROOM	Double-click to add field n	ame		minpsourg wester
OpenStre	Agriculture & Vacant	abc SWIMMING_P	Right-Click on field name t	o	03	HECOO
OpenTop 6		123 COMM_CARDS	open context menu sample		03	X///X/
OSM hun			value loading options.			
Stamen Ti		1.2 Shape STAr	Notes	· ·	03	Contraction of the
		1.2 Shape STLe	Values Q Search		03	CR 678
ers		123 Code_Cheat	All Unique 10 Sa	mples		Sour
A . T & - B		abc Code_Che_1	Agriculture & Vacant		03	A Main Street
Joined Pa		123 MUNICODE	Commercial & Rotal		03 🚽	
Easton W		abc NAME	Industrial & Manufactur	ing	Þ	Dela Nore River
LVPC_LU_	= + - / * ^ () "\n'	1.2 GISACRES	Office & Business		3 1	Delawace Drive
🗸 才 OpenStree	Feature ALLEN	 Files and Paths Eurov Matching 	Parks & Other Outdoor	Keci	1	
	Preview: 0	General	4		H	A R R
		L DESIGNER		10051	ownship	



In the box on the left where the green text has appeared, **type an** '=' **symbol** after the last bit of green text. Then, find the button labelled 'All Unique'. Click on All Unique. Scroll through the list of options that appear in the box underneath and select the option that you're interested in. In this case, we started by sectioning out the Agricultural and Vacant data first, so we clicked 'Agricultural and Vacant'. Hit the 'Select Features' button at the bottom. Then, hit close.

Performing a Complete Map Update Saving Attributes



You can then close out of the attribute table. Now, you'll notice that the features we just selected are highlighted in a different color on the map.

Performing a Complete Map Update Saving Attributes



To save these new highlighted features, **right click** on the combined layer title in the layers menu, select **'Export'**, and then select **'Save Selected Features As'**.

Saving Attributes



A new window will appear. In the box labelled 'File Name', enter the name you want to use to locate and describe this layer of data. We called this one 'Agro_Vacant'. After entering the file name, hit the three dots next to the file name box.

Saving Attributes



Another new window will open. Using this new window, we are going to save the layer in your master folder full of map data. Just as you did before, be sure to use the menu on the left to locate your master map data folder. Once this is done, **hit save** and the window will close out.

Saving Attributes



You'll be brought back to the window we were just working in before. At this stage, make sure that the option labelled 'Save only selected features' is enabled. Also, make sure that the option to 'Add saved file to map' is enabled. Hit OK.

Saving Attributes



A new layer has now been created that displays only your agricultural and vacant data. Remember that even though we've programmed this layer to appear as an independent layer, it is still only a subsection of the larger combined layer.



Repeat this process of separating out data according to the Code_Che_1 categorisation until all layers have their own layer in the layers menu. The next step is to separate out the smaller data.

\rightarrow (File C	:/users/aaberge/Desktop/Tech%20Clinic%20GIS/Vector%20Da	ata/GEDP_WWCP_Data/GE 🔍 🛣 🕌			
pps							
dUseC	Codes_DataDi	ctionary.	pdf 1 / 28	0 ± 🖶 🗋 .			
_	_	_	Northampton County Land Use Codes				
LUC	GIS Code	Class	Description	Short Name			
90	100	R	Residential Vacant Land	Vacant Land			
90	160	R	Large Vacant Tracts with unknown potential	Vacant Land			
90	600	E	Vacant Residential Exempt Land	Vacant Land			
92	100A	R	Developer Vacant Land	Vacant Land, Developers Lots			
93	2001	С	No Zoning Under 5,000 SF (.12 acre)	No Zoning Vacant Land			
93	2002	С	No Zoning 5,000-10,000 SF (.1223 acre)	No Zoning Vacant Land			
93	2003	С	No Zoning 10,001-20,000 SF (.2346 acre)	No Zoning Vacant Land			
93	2004	С	No Zoning 20,001-30,000 SF (.4669 acre)	No Zoning Vacant Land			
93	2005	С	No Zoning 30,001-40,000 SF (.6992 acre)	No Zoning Vacant Land			
93	2006	С	No Zoning 40,001-60,000 SF (.92-1.38 acres)	No Zoning Vacant Land			
93	2007	С	No Zoning 60,001-87,120 SF (1.38-2.0 acres)	No Zoning Vacant Land			
93	2008	С	No Zoning 2.00-4.99 acres	No Zoning Vacant Land			
93	2009	С	No Zoning 5.00-9.99 acres	No Zoning Vacant Land			
93	2010	С	No Zoning 10.00-19.99 acres	No Zoning Vacant Land			
93	2011	С	No Zoning 20.00-29.99 acres	No Zoning Vacant Land			
93	2012	С	No Zoning 30.00-49.99 acres	No Zoning Vacant Land			
93	2013	С	No Zoning 50 acres - over	No Zoning Vacant Land			
94	2101	R	Residential Under 5,000 SF (.12 acre)	Residential Vacant Land			
94	2102	R	Residential 5,000-10,000 SF (.1223 acre)	Residential Vacant Land +			
94	2103	R	Residential 10,001-20,000 SF (.2346 acre)	Residential Vacant Land			
94	2104	R	Residential 20,001-30,000 SF (.4669 acre)	Residential Vacant Land			
94	2105	R	Residential 30,001-40,000 SF (.6992 acre)	Residential Vacant Land			
94	2106	R	Residential 40,001-60,000 SF (.92-1.38 acres)	Residential Vacant Land			
1000	0407	-	D 11 11 100 001 07 100 05 11 00 00				



At this stage, we advise that you review the Land Use Codes as displayed in the Data Dictionary provided by County. Whilst the Code_Che_1 categories were self-explanatory because they use categorical labels, the detailed land use codes need to translated using the Data Dictionary.



From the layers menu on the left, **select which type of data you'd like to separate** in more detail. We started with Residential data for this demonstration. **Right click on the layer title**. Then, select the **'open attribute table'** feature.



Use the toolbar on in the attribute table window to **open the expression box**. Similarly to as before, select the list labelled '**Fields and Values**' from the grey menu in the middle. **Hit the small black arrow** to the left of the text.

Q *Westward_2020 — 0	QGIS							– 🗆 X	
Project <u>E</u> dit <u>V</u> iew <u>L</u> ay	yer <u>S</u> ettings <u>P</u> lugins	Vector Rasier	Web Mest Br	cessing Help	S				
🛯 🗋 📄 🗟 🖬	s 🛛 🖑 🐥 🗩 🗩	I 🗘 🗘 🖉	Ra 🔎 🖪 🧠 🖥		0, 🔳 🔛 🐥 🕽	2 🛲 🗕 😓	0 T -		(106)
🦛 🎕 Vî 🎢 🖏 🔇	Residential — Features	s Total: 3030, Fil	tered: 3030, Selecte	ed: 0			- 🗆 ×	<u>.</u>	
		🗈 i 🗞 🗮 🔊 🥊	🗧 👅 🏘 🗭 i 🔠	. 🗴 🖬 🛯 🖷 🗆	Q _				
Browser	fid	PARCEL_ID	CAMA_ID	MAP	BLOCK	U	OT SCHD	• · · · · · · · · · · · · · · · · · · ·	
L C T T 0 1	2548 L9	ISW2C 14 1	L9SW2C 14 1	L9SW2C	14	1	03	· ·	
Favorites 2	2549 19	SW2C 14 6	195W2C 14 6	L9SW2C	14	6	03	e Symbol 💌	
Spatial Bookn Project Home 2	🔇 Residential — Select	t by Expression				×	02	Fill	
Home	Expression Function	Editor					03	Simple Fill	Video 8
▼ C:\ 4		•	0 Search	Chow Uala			03		<u>viaco o</u>
Admin Tor 5		<u></u>	Sedicit	Show Help			03		
Garmin 6			abc MUN	AI			03		
· ····· 7			1.2 GIS_	ACREAG			02		
Layers			1.2 ASM	IT_ACREA			05	illimeters 💌 🔺	
			abc DEEL	ATION -			03	100.0 % 🗘	
✓ Residentia 9			abc LUC				03	•	
✓ Commerct			ALL TOTA	Ð			03	-	
V Public_Qu			1.2 IOIA 1.2 BLDO	G VALUE			Þ		
✓ Industrial_			1.2 LAN	D_VALUE				Wrase T	
✓ Warehouse_	= + - / * ^	() '\n'	1.2 TOTA	AL_ASSE			b lave	r Dendering	
V Joined_Parce	Feature ALLEN		1.2 BUIL	DING_A D ASSES					
Tune to legate (Ctule to)	Preview:		1.2 SALF	PRICE					
☐ Ype to locate (Ctrl+K)	Help			[Select Features	 Close 	▼ Rotation 0.0 °	Kender WEPSG:22/2	
	42 100113	nem selected a	22.0 KU						

This time, **scroll down** until you find the option called '**LUC**'. **Double click** it and green text will appear in the box on the left.

Saving New Layer Features





Type '=' after the green text. Now, go over to the box in the bottom right and select 'All Unique'. A list of numbers will appear. Each of these numbers correspond with an explanation available in the Data Dictionary. Double click the number that you're interested in and it will appear in the box on the left. Hit the 'select features' button at the bottom right of the screen.

) 📁 🗟 🔂 😭 🖆	🖑 🍫 🗩 🗩	MQ Q I	A A L 4 L	000	λ 🗐 🛗 🌞 Σ		T · C		
R 🎕 Vi 🌈 🖷 Q	Residential — Featu	ıres Total: 3030, Fil	tered: 3030, Selecte	d: 2312		-		2	
8 • • • • • / •		8 8 8 8 9	T 🔳 🗞 👂 % T		9,				
wser	fid	PARCEL_ID	CAMA_ID	MAP	BLOCK	LOT	SCHD -	0 8	
CT 1 0 1	2548	L9SW2C 14 1	L9SW2C 14 1	L9SW2C	14	1	03	· · · · · ·	TIT
Favorites 2	2549	L9SW2C 14 6	L9SW2C 14 6	L9SW2C	14		03	e Symbol 👻	
Project Home 3	2550	L9SE1C 6 5	L9SE1C 6 5	L9SE1C			03	Fill Simple Fill	
C:\ 4	2551	L9SE2D 2 27	L9SE2D 2 27	L9SE2D	2	27	03		Video
Admin Tor Arand	2552	L9SE1D 10 12	L9SE1D 10 12	L9SE1D		12	03		
Garmin 6	2553	L9SE1D 10 18	L9SE1D 10 18	L9SE1D	10	18	03		
ers 7	2554	L9SE1D 14 1C	L9SE1D 14 1C	L9SE1D	14	1C	03		
值 😻 🍸 🖏 🔻 👪 8	2507	L9SE1D 10 15	L9SE1D 10 15	L9SE1D	10	15	03	illimeters	
✓ Agro_Vaca ✓ Residentia ⁹	2508	L9SE1D 15 15	L9SE1D 15 15	L9SE1D	15	15	03	▼	
✓ Commerct ✓ Public_Qu	2509	L9SE2D 10 1 PKB	L9SE2D 10 1 PK	L9SE2D	10	1 PKB	03		
V Parks_Gre	how All Features						3		
Warehouse_Trans Joined_Parcels_	nsportz LUC	HE			Rairoad Brdge	ch thet	Layer	rcase 🛛 👻 🖌 🔻	

After the expressions windows closes, you'll be left with the attribute table behind it. **Close this out**.



To save these new extracted layers within the residential layer, **right click** on the residential layer in the layers menu, **select export**, and then select **'save selected features as'**.



Find the box titled 'file name' and enter the desired name. Ensure that the checkbox next to 'save only selected features' is enabled and do the same for the checkbox at the bottom labelled 'Add saved file to map'. Then click on the icon with three dots.



Use the menu on the left to locate your master map data folder. Save the file into this folder by hitting save at the bottom of this window.



You'll be returned to this screen. **Hit OK**. The sublayers (land use codes) are now saved within the larger category of residential data (Code_che_1).



Select which layer you'd like to insert data into. Find the title of that layer in the layers menu. **Right click the title** and select the **'open attribute table'** option.

oject <u>E</u> dit ⊻iew	Layer	Settings Plugins	s Vector Barry	A A C A C	esing eteler	ks Φ. 🏢 🚟 🌞 Σ		T - X		(114)
	/ 12			lefed. 5050, Selected	1. 23 12 15 🗶 📖 🖷 1	5 Q.			-	
Dwser	-	fid	PARCH ID	CAMA_ID	MAP	BLOCK	LOT	SCHD *	<u>ه</u> ۵	TTT
OTTO	1	2548	L9SW2C 14 1	L9SW2C 14 1	L9SW2C	14	1	03	· ·	
☆ Favorites 🏴 Spatial Bookn	2	2549	L9SW2C 14 6	L9SW2C 14 6	L9SW2C	14		03	e Symbol 👻	
Project Home	3	2550	L9SE1C 6 5	L9SE1C 6 5	L9SE1C	6	5	03	Fill Fill	<u>Video 9</u>
▲ Home C:\	4	2551	L9SE2D 2 27	L9SE2D 2 27	L9SE2D	2	27	03		
 Admin Toe Arand 	5	2552	L9SE1D 10 12	L9SE1D 10 12	L9SE1D	10	12	03		
Garmin	6	2553	L9SE1D 10 18	L9SE1D 10 18	L9SE1D	10	18	03		
ers	7	2554	L9SE1D 14 1C	L9SE1D 14 1C	L9SE1D	14	1C	03		
	8	2507	L9SE1D 10 15	L9SE1D 10 15	L9SE1D	10	15	03	Illimeters	
✓ Agro_vaca ✓ Single_Far	9	2508	L9SE1D 15 15	L9SE1D 15 15	L9SE1D	15	15	03		
✓ Residentia ✓ Commerce	10	2509	L9SE2D 10 1 PKB	L9SE2D 10 1 PK	L9SE2D	10	1 PKB	03	-	
✓ Public_Qu ✓ Parks_Gre ✓ Industrial ✓ Warehous	Manuf Manuf	w All Features						E Laye	wcase 🛛 🕶 😭 🔻	

Identify and select the option to open the expressions window.





Scroll down the central column until you find the 'Field and Values' option. Click on the small black arrow to the left of the text. From the menu that drops down, scroll until you find 'LUC' and double click it. Once doubled clicked, green text will appear in the box indicated on the left. Type a '=' symbol after the green text and hit the 'All Unique' button on the right. Select the appropriate number that corresponds to the data you wish to highlight.

Exporting Multiple Features



After you double click on the appropriate number in the All Unique box, that value will appear along with the text on the left. After the end of the existing text in the window on the left, **type the word 'or'**, preceded and followed by a space.

Exporting Multiple Features



Now, repeat that same process of selecting LUC from the central column, hitting All Unique, and picking a different number that corresponds to data you want to store in the same layer as the data contained under the first code.



This process can be repeated as many times as you like, providing that expressions are separated using the 'or' phrase. **Click 'select features'** when you're done to return to the map.



To save this new layer that you've created, **right click the broader label** within which this layer is contained. Select the **export** option followed by the **'save selected features as'.**



Title the layer as desired. Ensure that the indicated boxes are checked. Click on the icons with the three dots.



Ensure that the layer is being saved into the correct desktop folder. Enter the title and **hit save**.

Weitsterd (200 - 0.05	0		
Project Home Version	🔇 *Westward_2020 — QGIS	- L X	
Image: Single Symbol	Project Edit View Layer Settings	Plugins Vector Rasier (124b) Mesh Brockship (120)	
Image: Section of the sectin of the section of the) 🗁 🗟 🔂 🕄 🚺 🖗 🖉	● 🔎 🖓 🖓 🖗 🖓 🖓 💭 🖉 🖓 🛄 🕼 🕲 🕄 😂 📲 🤻 🗵 🛲 マ 🖓 🔍 🔍 🔍 🔍	
Conserving Sare only selected features Select fields to export and their export options Conserving	🤹 🎕 Vi 💪 🖷 🔯 🛛 🙏 /	· 🖶 🛠 次 - 刻 青 米 函 函 ち よ · 🛥 🍕 👒 🛥 I ጫ 🧠 🧠 号 🦃 I 😤 I 🔮 I 🔡	
Browser	R • 🖥 • 🔓 • 🗣	Q Save Vector Layer as	
Format ESRI Shapedile Format Esrie Format Esrie Format Esrie Es	Browser 🛛 🕅 🖉	Layer Styling @ ®	T
File name file name Project Home CRS EpsG:2272 · NAD83 / Pennsylvania South (ftUS) Admin Tools Arand Carrin Sarrin Select fields to export and their export options Geometry Geometry Geometry Geometry Geometry Force multi-type Industrial Manufacturi Yest Commerctial Yest Commerctial Yest Commerctial Yest Yest Commerctial Yest Commerctial Yest <		Format ESRI Shapefile	
Spatial Bookmarks Project Home CRS EPSG:2272 - NAD83 / Pennsylvania South (ftUS) Admin Tools Arand Garmin Garmin Select fields to export and their export options Select fields to export and their export options Geometry Geometry type Automatic Findularities Findularities Findularities Addravia Color District Citrek Type to locate (Ctrl+K) Type to locate (Ct	Favorites	File name ctor Data\GEDP_WWCP_Data\Other_Residential.shp a	
Project Home \hline \hline \hline \hline \hline \hline \hline \hline \hline \hline \hline \hline \hline \hline \hline \hline \hline \hline \hline \hline \hline	Spatial Bookmarks	Layer name	
Control of the c	Project Home	CRS EPSG:2272 - NAD83 / Pennsylvania South (ftUS) - 🛞	Video
Admin Tools Arand Carmin Arand Seconding UTF-8 Select fields to export and their export options Geometry Geometry type Automatic Force multi-type Include z-dimension Estizet (current: none) Agro Vacant Commerctial Public QuasiPublic V Marehouse Transport V Marehouse Transport V Type to locate (Ctrl+K) 72 feature(s) select Coordinate 2666680,503957 Cootel 1:11400 Cootel 1:00% Rotation 0.0° Core methods the personal definition of th			
Arand Garmin Save only selected features Select fields to export and their export options Geometry Geometry Geometry type Automatic Geometry Geometry type Automatic Force multi-type Inducte z-dimension Extent (current: none) Layer Options EstZE No Caret Help Type to locate (Ctrl+K) 72 feature(s) select Coordinate 2666680,503955-10 ocale 1:11400 • Magnifier 100% © Rotation 0.0 ° ♥ Render @ EPS6:2272 @	Admin Tools	Encoding	
Sarmin Select fields to export and their export options Select fields to export and their export options Geometry type Automatic States Greenspace Vindustrial Manufactur Vindustrial Manufactur Vindustrial Davade Add saved file tomap Office Carlet Help Help Help Wagnifier 100% Rotation 0.0 ° Vine update Apply Type to locate (Ctrl+K) 72 feature(s) selects 02:8 KB	Arand	Save only selected features	
Select fields to Explort and their explort options Select fields to Explort and their explort options Geometry Geometr	🕨 🗋 Garmin 🔷 🚽	Select fields to expect and their expect entions	
avers avers Image: Single Family Resident Image: Single Family Resident </td <td></td> <td></td> <td></td>			
Geometry type Agro_Vacant Single_Family_Residential Commerctial Public_QuasiPublic Extent (current: none) Layer Options Layer Options RESIZE NO Varehouse_Transport Varehouse_Transport<	Layers Ø8	V Geometry	
✓ Agro_Vacant ✓ Single_Family_Resident ✓ Residential ✓ Commerctial ✓ Public_QuasiPublic ✓ Parks_Greenspace ✓ Industrial_Manufactur ✓ Warehouse_Transporta ✓ Add saved file to map ✓ Yet to locate (CtrI+K) 72 feature(s) selected Coordinate 2666680,503957 Canel ✓ Help ✓ Magnifier 100% Ø Type to locate (CtrI+K) 72 feature(s) selected 22.8 K8		Geometry type Automatic Geometry type Automatic Intervention Intervention Inter	
V Single_ramiy_residen ✓ Residential ✓ Commerctial ✓ Public_QuasiPublic ✓ Parks_Greenspace ✓ Industrial_Manufactur ✓ Warehouse_Transporta ✓ Varehouse_Transporta ✓ Varehouse_Transporta ✓ Varehouse_Transporta ✓ Varehouse_Transporta ✓ Add saved file to map ✓ No ✓ No ✓ No ✓ No ✓ Add saved file to map ✓ Magnifier 100% ✓ Residential ✓ Nownloads ✓ Downloads ✓ I tem selected 22.8 K8	✓ Agro_Vacant	Force multi-type	
A Type to locate (Ctr1+K)		Include z-dimension	
✓ Public_QuasiPublic ✓ Parks_Greenspace ✓ Industrial_Manufactur ✓ Industrial_Manufactur ✓ Warehouse_Transporta ✓ Add saved file to map ✓ Cancel Help ✓ ✓ Live update ✓ Add saved file to map ✓ Magnifier 100% ✓ Resize ✓ Downloads ✓ Titems ✓ 1 item selected 22.8 KB	✓ Commerctial		
V Parks_Greenspace V Industrial_Manufactur V Warehouse_Transport V Add saved file to map Q Type to locate (Ctrl+K) 72 feature(s) selects Coordinate 2666680,503997 % scale 1:11400 * @ Magnifier 100% \$ Rotation 0.0 ° \$ V Render @ EPSG:2272 @ 47 items 1 item selected 22.8 KB	✓ Public_QuasiPublic	Extent (current: none)	
✓ Industrial_Manufactur RESIZE NO ► Layer Rendering ✓ Warehouse_Transporta ✓ Add saved file to map QIII Cancel Help ✓ Live update Apply Q. Type to locate (Ctrl+K) 72 feature(s) selects 2666680,503997 % 5cale 1:11400 Magnifier 100% Rotation 0.0° ✓ Render EPSG:2272 Q 47 items 1 item selected 22.8 KB E E E E	✓ Parks_Greenspace	▼ Layer Options	
✓ Warehouse_Transporta ✓ Lower Render Transporta ✓ Lower Render Transporta ✓ Live update Apply ✓ Add saved file to map ① Canel Help ✓ Live update Apply 72 feature(s) selecte Coordinate 2666680,503997 Scale 1:11400 Magnifier 100% Rotation 0.0 ° ✓ Render EPSG:2272 @ 47 items 1 item selected 22.8 KB Item selected 22.8 KB Item selected 22.8 KB Item selected Item selected Item selected Item selected 22.8 KB Item selected	✓ Industrial_Manufactur	RESIZE NO	
Aud saved the tornap Quill Canel Help	V Warehouse_Transportz		
Q Type to locate (Ctrl+K) 72 feature(s) selecte Coordinate 2666680,503997 Scale 1:11400		V Adu saved the company Camer Help Vice Apply	
47 items 1 item selected 22.8 KB	۹ Type to locate (Ctrl+K) 72	2 feature(s) selecte Coordinate 2666680,503997 🐮 ocale 1:11400 🔹 🕋 Magnifier 100% 💠 Rotation 0.0 ° 💠 🗸 Render 🛞 EPSG:2272 🤤	
	47 ite	ems 1 item selected 22.8 KB	

Hit OK. The new layer has now been saved.

eo 9

Performing a Partial Map Update

Toggle Editing via the Map





To begin toggle editing the map, ensure that the Joined_Parcel layer is selected in the Layer menu. Then, select the **'New Shapefile Layer'** from the top toolbar.

Performing a Partial Map Update

Toggle Editing via the Map

🔇 *Westward_2020 — QGIS				×	\sim
Project Edit View Layer Settings Pl	lugins Vect <u>o</u> r <u>R</u> aster	Mesh Processing Help			
🗋 🗅 🖿 🖥 🕼 🗟 💕 👘 🐣 🦰			N N - T - N		
🤹 🎕 Vi 🔏 🖏 🔯 🛝 🌽	New Shapefile Layer			NN	(124)
	ile name	Cantons2020_Westward		-13	
Browser © ®	ile encoding	UTF-8	~	- June	
G C T 1 0 G	eometry type		•	· Carrier	
A Favorites	dditional dimensions	None Z (+ M values)	O M values		
Spatial Bookmark:		EPSG:4326 - WGS 84	•	ELenigh Valies	
Mome Name	lew Field			Har The	—)
→ C:\	Name			are Spiner Q. Gan de	
Admin Tools	Type abc Text Data		*		
Garmin	Length 80	Precision		- Ind	<u>Video 23</u>
GeoMapApp		Add to Fields List		Northamptor	
Geophysics	ields List				
M28	Name Type	Length Precision		in Second	
Layers @ E + Sector	id Integ	ger 10		-	
				1ª	
V Westward_Cal				PA 611	
✓ ✓ ✓ OpenStreetM				Sector	
👻 🗸 💽 Esri Gray (ligh				1/2	
Agro_Vacant				3ª	
V Single_Family				-	
Residential				- tax landson in	
✓ Commerctial				+124 54	
V Public_QuasiP				1 10	
J Industrial Ma			Remove Field	ford barrier	
S. Type to locate (Ctrl+K)			OK Cancel Help		

Design a title for the cantons you are about to create. Enter this title into the 'File name' section. Then, click the icon with the three dots next to the title you just entered.

Using the Asset Map

Toggle Editing via the Map





A secondary save menu will appear. Ensure, using the menu on the left hand side, that this file is being saved into your GQIS map folder on your desktop. When you are sure all the information is correct, **hit save**.



You'll be returned to the window you were just working in. Locate the **geography type section** of the window and **open the drop down menu.** From the menu, choose the **polygon option**.



Then, under the new field section, **insert a title**. We called this field 'cantons'. Once the title has been entered, **click the 'add to fields list'** option.





Once you've completed these steps, your window should look like this.





To make the newly-created cantons layer visible, **drag and drop the cantons layers**, using the layers menu, up to the top.





Once the canton layer is at the top of the layers menu list, **select the toggle editing option** from the top toolbar.




Then, click the add polygon option, also available on the toolbar.





A polygon-drawing tool will appear. Use this tool to **select and mark the external points of your desired polygon** on the map.





Once you've finished drawing the desired polygon, **right click using the mouse to release the drawing tool**. This window will appear. **Enter the label** you'd like to assign to this new canton. Then, **click OK**.





When this window appears, click save.





Once all of your cantons are drawn in as desired, use the style menu to tailor their appearances. Click the layer styling drop down menu and select 'categorised'.



From the value menu, select the Canton option.





From the color ramp menu, **select the palette you'd like**. For this example, we chose spectral.





Select the 'clarify' option.





Select the 'edit color ramp' option.

Performing a Partial Map Update

Toggle Editing via the Map





Click on the small notch under the red portion of the color scale. Then, once it is selected, locate the transparency setting towards the bottom of this window. Reduce the transparency to ensure that details of the map can be seen through the canton layers.



Continue to repeat this process for all the colored notches along the color ramp spectrum, reducing the transparency for each one. You can also adjust the brightness of the colors using the color wheel.





This is what your map should eventually look like. The canton layer can be adjusted using the layers menu to make it more or less visible.



Select the Joined Parcel layer in the layers menu and open the attribute table by right clicking 'open attribute table'.

Q *Westward_2020	— QC	ilS	Faral	IS Dock	14 averages			2	- 🗆 X
Project <u>E</u> dit ⊻iew	Layer	Settings Plugins	Vector Raster	Mesh Processing	A Belp ASD				
	1			3 / 6 / 6		λ 🖩 🚟 🌞 Σ	····· • • • • • •	T	
🥵 📽 Vo 🎤 🖷	8	14/69	医尿・副療・	6 🛙 🖞 🔶 🔿	abc 🐴 🚳	ale ale ale ale	abc abc 👌	2 NN Join	
R • D • G •	0	Joined_Parcels_LUC	— Features Total:	3735, Filtered: 3735	5, Selected: 0				
rowser	R	200 00 00 00	8 8 8 8 8 9	T 🔳 🗞 👂 脂	R 🗶 🗮 🗃 👼	Q.			Juniper Street
Favorites	To	ggle editing mode (Ctrl+E) RCEL_ID	CAMA_ID	MAP	BLOCK	LOT	SCHD *	
Spatial Bookm	1	3308	L9SW2B 23 1	L9SW2B 23 1	L9SW2B	23	1	03	
 Project Home A Home 	2	3372	L9SW3C 5 5	L9SW3C 5 5	L9SW3C	5	5	03	П
 C:\ Admin Too 	3	3373	L9SE1D 14 1H	L9SE1D 14 1H	L9SE1D	14	1H	03	
Arand	4	3374	L9SE1D 14 1D	L9SE1D 14 1D	L9SE1D	14	1D	03	
Garmin	5	3375	L9SE1D 14 1	L9SE1D 14 1	L9SE1D	14	1	03	
ayers 🖌 🕼 👁 🍸 🗞 🕶 💷	6	3368	L9SW3B 13 1	L9SW3B 13 1	L9SW3B	13	1	03	
Westward	7	3369	L9SW2C 2 1	L9SW2C 2 1	L9SW2C	2	1	03	
✓ A Porch_Light ✓ Joined Part	8	3370	L9SE1C 29 1	L9SE1C 29 1	L9SE1C	29	1	03	
✓ Agricultur	9	3371	L9SE1C 29 1	L9SE1C 29 1	L9SE1C	29	1	03	
V Other_Res	10	3364	L9SE2D 20 2 PKB	L9SE2D 20 2 PK	L9SE2D	20	2 PKB	03 -	SUE
V Residentia		how All Fosturos							Hone
V Commerce	aciDuk	Nice Place		Spring Garden Street					
Q Type to locate (Ctrl-	+K)	Togg Coord	dinate 2667461.505	869 8 Scale 1:30	52 💌 🚔 4a	gnifier 100%	Rotation 0.0 °		EPSG:2272



Once the attribute table is open, **select the 'toggle editing mode'** option from the toolbar.

Image: Spatial Bookm Image: Spatia Bookm	♀ *Westward_2020 - Project Edit ⊻iew	– QGIS Layer Settings	<u>P</u> lugins Vector Rasta ⊕ ⊖ 🛄 😰 😰 🕅	Mesh Hocessing	Marino Poc							
Image: Second	🤹 🗞 Võ 🖍 🖷] 🖯 📸 🎉 🕶 🔟 🕤	~ 8 8 6 6	aac 🐴 🗠		× ·	NN Join				
Favorites Favorites Spatial Bookm Project Home Admin Too Admin Too Adm	rowser	Q Joined_Parce	els_LUC — Features Tota	l: 3735, Filtered: 3735	, Selected: 0		-		STORE STORE			
Image: Spatial Bookm fid PARCELID CAMA_ID MAP BLOCK LOT SCHD Project Home 1 3308 L9SW2B 23 1 L9SW2B 23 1 L9SW2B 23 1 L9SW2B 23 1 03 Project Home 1 3308 L9SW2B 23 1 L9SW2B 23 1 L9SW2B 23 1 03 C:\ 2 3371 J9SW3C 5 5 L9SW3C 5 5 L9SW3C 5 5 L9SW3C 5 5 03 03 Admin Too 3 3373 L9SE1D 14 1H L9SE1D 14 1H L9SE1D 14 03 Arand 4 3374 L9SE1D 14 1D L9SE1D 14 1D L9SE1D 14 1D 03 ayers 5 3375 L9SE1D 14 1D L9SE1D 14 1D L9SE1D 14 03 03 Westward 6 3368 L9SW3B 13 1 L9SW3B 13 1 L9SW3C 2 1 03 Westward 7 3369 L9SW2C 2 1 L9SW2C 2 1 L9SW2C 2 2 1 03 Joined Par 8 3370 L9SE1C 29 1 L9SE1C 29 1 L	□ C T I 0	Image: Non-State Image: Non-Stat										
Project Home 1 3308 L9SW2B 23 1 L9SW3C 5 5 L9SW3C 5 L9SW3C 5 L9SW3C 5 5 L9SW2C 5 L9SW2C 1 L9SE1D 14 1D L9SE1D 14 1D L9SW3C 5 L	Spatial Bookm	fid	PARCEL_ID	CAMA_ID	MAP	BLOCK	LOT	SCHD *				
2 337 95W3C 5 5 L9SW3C 5 5 L9SW3C 5 5 L9SW3C 5 5 S S S O3 Admin Too 3 3373 L9SE1D 14 1H L9SE1D 14 1H L9SE1D 14 1H O3 Arand 3 3374 L9SE1D 14 1H L9SE1D 14 1H L9SE1D 14 1H O3 ayers 5 3375 L9SE1D 14 1D L9SE1D 14 1D L9SE1D 14 1D O3 Westward 6 3368 L9SW3B 13 1 L9SW3B 13 1 L9SW3B 13 1 O3 V Porch_Ligh 7 3369 L9SW2C 2 1 L9SW2C 2 1 L9SW2C 2 1 O3 V Joined_Par 8 3370 L9SE1C 29 1 L9SE1C 29 1 L9SE1C 29 1 L9SE1C 29 1 O3	Project Home Anne	1	3308 L9SW2B 23 1	L9SW2B 23 1	L9SW2B	23	1	03	1			
Admin Too 3 3373 L9SETD 14 1H L9SE1D 14 1H L9SE1D 14 1H 03 Arand 3 3374 L9SETD 14 1H L9SE1D 14 1H L9SE1D 14 1H 03 Garmin 4 3374 L9SE1D 14 1D L9SE1D 14 1D L9SE1D 14 1D 03 ayers 5 3375 L9SE1D 14 1 L9SE1D 14 1 L9SE1D 14 1 03 Westward 6 3368 L9SW3B 13 1 L9SW3B 13 1 L9SW3B 13 1 03 V Porch_Ligh 7 3369 L9SW2C 2 1 L9SW2C 2 1 L9SW2C 2 1 03 V Agriculture 8 3370 L9SE1C 29 1 L9SE1C 29 1 L9SE1C 29 1 03		2	3372 9SW3C 5 5	L9SW355 5	L9SW3C	5	5	03				
Garmin 4 3374 L9SE1D 14 1D L9SE1D 14 1D L9SE1D 14 1D 03 ayers 5 3375 L9SE1D 14 1 L9SE1D 14 1 L9SE1D 14 1 03 * * * * * S 3375 L9SE1D 14 1 L9SE1D 14 1 03 * * * * S 3368 L9SW3B 13 1 L9SW3B 13 1 L9SW3B 13 1 03 * * * * S 3369 L9SW2C 2 1 L9SW2C 2 1 L9SW2C 2 1 03 * Joined Par 8 3370 L9SE1C 29 1 L9SE1C 29 1 L9SE1C 29 1 L9SE1C 29 1 03	 Admin Too Arand 	3	3373 L9SETD 14 1H	L9SE1D 14 1H	L9SE1D	14	1H	03				
avers 5 3375 L9SE1D 14 1 L9SE1D 14 1 L9SE1D 14 1 03 Mestward 6 3368 L9SW3B 13 1 L9SW3B 13 1 L9SW3B 13 1 03 Mestward 7 3369 L9SW2C 2 1 L9SW2C 2 1 L9SW2C 2 1 03 Joined Par 8 3370 L9SE1C 29 1 L9SE1C 29 1 L9SE1C 29 1 L9SE1C 29 1 03	Garmin	4	3374 L9SE1D 14 1D	L9SE1D 14 1D	L9SE1D	14	1D	03				
Image: Westward 6 3368 L9SW3B 13 1 L9SW3B 13 1 L9SW3B 13 1 03 Image: Westward 7 3369 L9SW2C 2 1 L9SW2C 2 1 L9SW2C 2 1 L9SW2C 2 1 03 Image: Westward 7 3369 L9SW2C 2 1 L9SW2C 2 1 L9SW2C 2 1 03 Image: Westward 7 3369 L9SW2C 2 1 L9SW2C 2 1 L9SW2C 2 1 03 Image: Westward 8 3370 L9SE1C 29 1 L9SE1C 29 1 L9SE1C 29 1 03	ayers	5	3375 L9SE1D 14 1	L9SE1D 14 1	L9SE1D	14	1	03				
V Porch_Ligh 7 3369 L9SW2C 2 1 L9SW2C 2 1 L9SW2C 2 1 03 V Joined Par 3370 L9SE1C 29 1 L9SE1C 29 1 L9SE1C 29 1 03	✓ A · · · · · · · · · · · · · · · · · ·	6	3368 L9SW3B 13 1	L9SW3B 13 1	L9SW3B	13	1	03				
V Joined Par V Agriculture ⁸ 3370 L9SE1C 29 1 L9SE1C 29 1 03	V 📥 Porch_Ligh	7	3369 L9SW2C 2 1	L9SW2C 2 1	L9SW2C	2	1	03				
	V Joined_Par	8	3370 L9SE1C 29 1	L9SE1C 29 1	L9SE1C	29	1	03				
✓ Single_Fam 9 3371 L9SE1C 29 1 L9SE1C 29 1 L9SE1C 29 1 03 ✓ Other_Resi 03 ✓ 1 03 ✓ 1 03 ✓	 ✓ Single_Fam ✓ Other_Resi 	9	3371 L9SE1C 29 1	L9SE1C 29 1	L9SE1C	29	1	03				
V Residentia V Commercti T Show All Features	✓ Residential ✓ Commercti	Show All Featu	ires,									



Now, you can edit the information contained within any cell of the attribute table.

							L
					123 fid	abc FLAG_1_319	
🔇 *Westward_2020	— QG	IS		(Record)	abc PARCEL_ID	abc FLAG_2_LER	- 🗆 X
Project <u>E</u> dit <u>V</u> iew	Layer	Settin	gs <u>P</u> lugins Veo	tor Raster Me	abe CAMA_ID	abc FLAG_3_HMS	
	∎a	m 🖗	🖌 🗩 🗩 📜 🖌	D 🗩 🖻 👧 🖉	abc MAP	abc FLAG_4_FMS	• T •
	∇		//		abc BLOCK	abc FLAG_5_ACT	a : 🔽 : NN
		-	/%		abc LOT	abc FLAG_6_ACT	
R • P • P •	Q	Joined_	Parcels_LUC — Fe	atures Total: 3735	abc SCHDIST	abc FLAG_7_ACT	
Browser			📪 🖷 🖂 🖉 🖪	8 = N - Y	abc MUNI	abc FLAG_9_BIL	Jariiper Street
	123 fi	d	3 = *		abc FLAG	abc FLAG_10_KO	All Update Selected
Favorites		AG	ASMT ACREA	DEED	1.2 GIS_ACREAG	123 NUMBER_OF_	
Spatial Bookin Project Home	-	AG	ASIVIT_ACKEA	DEED	1.2 ASMT_ACREA	1.2 NUMBER_OF1	
► Home	1	0.31	0.3114	2008-1 247433	abc DEED	abc EXTERIOR	68700
▼ 🛅 C:\	2	0.08	0.082	2010-1 063827	abc LOCATION	abc BASEMENT	1100
Admin Too	3	0	0	2020-1 193433	abc LUC	123 YEAR_BUILT	63400
Arand Arand	-	Ű		2020 1 155455	abc NBHD	abc BUILDING_S	
(4	0	C	2005-1 143418	1.2 TOTAL_VALU	123 NUMBER_O_1	89800
Layers	-			2002 1 202121	1.2 BLDG_VALUE	123 NUMBER_O_2	3400
🍕 🕼 🛸 👗 👘 🐌		Show Al	l Features		1.2 LAND_VALUE	123 NUMBER_HAL	14700
Westward		Show Se	lected Features		1.2 TOTAL_ASSE	123 TOTAL_ROOM	
✓ A Porch_Ligh		Show Fe	atures Visible On	Мар	1.2 BUILDING_A	1794000	
V Joined_Par		Show Le	ited and New Fe	atures	1.2 LAND_ASSES	123 COMM_CARDS	55000
✓ Single_Fam		Field Filt	er		1.2 SALE_PRICE	abc COMMERCIAL	
✓ Other_Resi		dvance	e Filter (Expressio	on)	SALE_DATE	abc IMPROVEMEN	14200
✓ Residentia		toreu r	Itter Expressions	4	abc SALE_VALID	1.2 Shape_STAr	
Commercti	ci Dur	now All	reatures		abc SALE_TYPE	1.2 Shape_STLe	
•				S	123 SQFT_LIVIN	123 Code_Cheat	
	-K)		Togg Coordinate	2667461,505869	abc OWNERS_NAM	abc Code_Che_1	Render 😁 EPSG:2272 🔍
			0.4 :1-0	Downloads	DC OWNERS_N_1	123 MUNICODE	
			o4 ite	ins Titem se		abc NAME	
					abc WAIL_ADD_1	1.2 GISACRES	
					abc MAIL_ADD_2		



Select the show all features option. Open the field filter menu. Select MAIL-ADDRS.

Performing a Partial Map Update

Toggle Editing the Attribute Table

Project Edit View Layer Settings Plugins Vector Raster Mesh Processing Help	
- D 🖿 🖥 🔀 🐒 👘 👘 🕫 🕫 🎵 💬 💬 🗛 🖓 🖓 🖓 🖏 🖏 🖏 🖏 🖿 💭 🖘 🖓 🗸 💭 🗸	14/
- 🧔 🏟 V ₀ 🔏 🖏 🔯 🦧 🕖 🖶 🥦 🎘 🔻 🚿 🛅 😒 🖄 🖺 🐆 🛷 📟 🍕 🧠 🧠 🧠 🦉 🔫 🤫 🤫 🤫 👘 💌 👘 🔛	
🔣 🔻 🗎 👻 🧟 🖌 😡 Joined_Parcels_LUC — Features Total: 3735, Filtered: 1 Selected: 🔪 — 🗆 🗙	
Browser	Jumper Street
Eavorites 123 fid ▼ = E Vew field (Ctu+W) ▼ Update Filtered Update Selected	
Spatial Bookm CAMA_ID MAP BLOCK LOT SCHDIST MUNI FLAG	
▶ March Project Home 1 L9NE4D 14 6 L9NE4D 14 6 03 10 NULL	Video 28
✓ C:\	
Admin Too	
Arand Garmin	
Layers	
V Westward	
V Joined Par	
V Single_Fam	
Residentia	
Commercti abc MAIL_ADDRE 1205 bushkill st	
Serie Guisei Rublice	
Cordinate (Ctrl+K) Togg Coordinate 2667616,505064 So Scale 1:3052 ▼ agnifie 100% Autation 0.0 ° Condition 0.0 ° Conditina 0.0 ° Condition 0.0 ° Condition 0.0 ° Condition	SG:2272 🥰

From here, click the New field option from the toolbar.

Image: Section of the sector of the sect	Q *Westward_2020 · Project Edit View □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	– QGIS Layer Settings E	21ugins Vector) () () () () () () () () () () () () () () () () () () (star_waah Prata 9 A A G 40 8 ≈ 8 8 ≈) Q II II + 4 = 4 = 4	∑ == ®	- • T •	
Spatial Bookm CAMA_ID MAP BLOCK LOT SCHDIST MUNI FLAG Project Home 1 IPNE4D 14 6 IPNE4D 14 6 03 10 NULL Mare Home CAMA_ID Add Field X Admin Too Admin Too Arand Garmin Mare Porch_Lights Westward Westward Westward V Joined Par V Agriculture Joined Par V Agriculture Joined Par V Other Resi	R + □ + k + k Browser C ⊂ T I 0 ★ Favorites	Q Joined_Parcel	s_LUC — Features	Total: 3735, Filtered:	1, Selected: 0	₩ .	Update Filter	red Update Selected	
 Admin Too Arand Garmin Garmin Garmin Type Whole number (integer) Provider type Whole number (integer 64 bit) Decimal number (real) Text (sking) Joined Parr Joined Parr Joined Parr Agricultura Single_Fam Other Resi 	 III Spatial Bookm Project Home Home C:\ 	CAMA_ID	MAP L9NE4D	BLOCK 14 Q Add Field	LOT 6	03 X	MUNI 10	FLAG NULL	
Layers Provider type Whole number (integer 64 bit) Decimal number (real) Text (string) JSON (string) JSON (string) Date	Admin Too Arand Garmin			N <u>a</u> me Comment Type	Porch_Lights Whole number (int	eger)			North LOD Str
✓ Joined Par Date ✓ Agricultura Date & Time ✓ Single_Fam Binary object (BLOB) ✓ Other Resi Boolean	Layers ▲ ➡ ▼ E₀ ■ ■ ○ Westward ✓ ▲ Porch_Ligh 			Provider type	Whole number (int Decimal number (r Text (string) JSON (string)	eger 64 bit) eal)		ret.	
	 ✓ ✓ Joined Par ✓ Agricultura ✓ Single_Fam ✓ Other Resi 				Date Date & Time Binary object (BLOI Boolean	3)		F	

Fill in the information into the window that appears. Open the 'type' drop down menu and select the text (string) option.

	Layer Settings Pl	p 🖬 p p	aster <u>M</u> esh Pro		Q 🗐 🚟 🔆	Σ 🖮 - 🖓 🍭	• [T] •	- u x
Image: Weight of the second secon	Q Joined_Parcels	ed Update Selected	10 10 11 10 10 10 10 10 10 10 10 10 10 1					
 Spatial Bookm Project Home 		MAP	BLOCK	LOT	SCHDIST	MUNI	FLAG	per
 C:\ Admin Too Arand Garmin Layers A a a a a a a a a a a a a a a a a a a a	4		Q Add Fie Name Comment Type Provider typ Length	Porch_Lights Text (string) e string 0	X		•	
Commercti	abc MAIL_ADDRE	1205 bushkill st	Spring Garden S	tret			ase sensitive 🕄 🛅	



Hit OK.

Performing a Partial Map Update

Toggle Editing the Attribute Table

♀ *Westward_2020 — QGIS	
Project Edit View Layer Settings Plugins Vector Raster Mesh Processing Ber	
- C 🖿 🖥 🔀 🔛 🕐 🖗 🖉 💭 🖗 🖉 🖓 🖓 🖓 🖓 🖓 🖓 🖓 🖓 🖓 🖓 🖓 🖉 🖉 🖉 🖉 👘 🖓 👘 🖉	(150)
🧶 🎕 Vi 🔏 🖏 Vi I 🦧 🥖 📑 🤭 😿 🖷 😒 🖄 🖆 🤣 🔍 🔍 🔍 🖏 🧠 🧠 🦉	
🔣 🔻 🗐 👻 🧔 👻 😡 Joined_Parcels_LUC — Features Total: 3735, Filtered: 1, Selected: 0 — 🗆	
Browser	Juniper Street.
Update Filtered Upd	date Selected
Tavones State State State Code_Cheat Code_Che_1 MUNICODE NAME GISACRES Por	ch_Lights
Project Home 1 250.346313714 1 Residential 15 EASTON 861.81676138 Yes	
In Home In C()	Video 28
Admin Too	
► Arand	
Garmin	
Layers	
Westward	
✓ W Joined Par	
Agricultura	
Single_Fam	
✓ Residentia ⁴	
Commercti abc MAIL_ADDRE 1205 bushkill st	tive 🗟 🛅 🗧 🗾 👘 👘
Dublic OusciDublic Sorreg Garden Street	
Q. Type to locate (Ctrl+K) Togg Coordinate 2667616,505064 Scale 1:3052 ▼ and Agnifie 100% ↓ Sotation 0.0 ° ↓	🖌 Render 💮 EPSG:2272 🔍

You'll be returned to the attribute table for the porch lights layers. You'll notice that a new column has been added. This column can be used to indicate whether a property is participating in the porch light initiative or not.

Performing a Partial Map Update

Toggle Editing the Attribute Table

Q *Westward_2020 — QGIS − □ ×	
Project Edit View Layer Settings Plugins Vector Raster Mesh Processing Belp	
[] 🖿 🖶 🔀 🐒 [] 🖓 🛠 🖉 💯 🖓 📜 💭 🖓 🗛 🗛 🖫 🖉 🕙 🔕 [] [] [] [] [] [] [] [] [] [] [] [] []	(151)
🤻 🎕 Vi 🔏 🖏 Mi 🌾 🎢 🖶 🏗 🌾 🛛 🖄 👘 🛰 🖻 🗄 🥠 🛷 🛛 🛥 🐐 🗠 🦉 🧠 🧠 🦉 🖏 🖏 🖏 🖏 🐇	
🖳 🕶 📮 🗣 🤹 😡 Joined Parcel LUC — Features Total: 3735, Filtered: 1, Selected: 0 — 🗆 X	
	T
L₀ S Υ H O ▼ Update Filtered Update Selected Update Selecte	
Favorites Favorites Spatial Bookm Shape STLe Code Cheat Code Che 1 MUNICODE NAME GISACRES Porch Lights	
Project Home 1 250.346313714 1 Residential 15 EASTON 861.816761383 Yes	Video 28
Mome C\	<u></u>
Admin Too	
Do you want to save the changes to layer	
Joined_Parcels_LUC?	
Layers Saye Discard Cancel	
Westward	
V V Joined Par	
✓ Agricultura	
Single_Fam	
V Other_Resi	
Case sensitive 🗉 🛅 🔤	
Dublic QuaciDublic Sorrig Garden Street	
Q Type to locate (Ctrl+K) Togg Coordinate 2667616,505064 Sizele 1:3052 A Type to locate (Ctrl+K) Togg Coordinate 2667616,505064 Sizele 1:3052 A Type to locate (Ctrl+K) Coordinate 2667616,505064 Sizele 1:3052 A Type to locate (Ctrl+K)	

To exit the editing settings for the attribute table, **click the toggle editing button** and this window will appear. **Click save**.

	123 fid	abc FLAG_1_319	
	abc PARCEL_ID	abc FLAG_2_LER	X
Project Edit View Layer Settings Plugins Vector Raster Me	abe CAMA_ID	abc FLAG_3_HMS	
R R 🔍 Q Q 👯 R 🔶 🖉 🐘 😰 🔝 🗄 🗀 🗋	abc MAP	abc FLAG_4_FMS	- <u>T</u> -
🔍 伦 V. 🖉 📖 🕅 🛛 🥢 🖉 🖶 🤧 🗁 🖬 🔫 🕯	abc BLOCK	abc FLAG_5_ACT	a 😰 🙌
	abc LOT	abc FLAG_6_ACT	
Joined_Parcels_LUC — Features Total: 3735	abc SCHDIST	abc FLAG_7_ACT	
Browser	abc MUNI	abc FLAG_9_BIL	Damper Street
Shape_STLe Code_Cheat Code_	abc FLAG	abc FLAG_10_KO	Porch_Lights
Spatial Bookm 1 250 346313714 1 Residenti	1.2 GIS_ACREAG	123 NUMBER_OF_	3 Ves
Project Home	1.2 ASMT_ACREA	1.2 NUMBER_OF1	
• 🙆 Home	abc DEED	abc EXTERIOR	
▼ C\	abc LOCATION	abc BASEMENT	
Admin Too	abc LUC	123 YEAR_BUILT	
Garmin	abc NBHD	abc BUILDING_S	
4	1.2 TOTAL_VALU	123 NUMBER_O_1	
Layers	1.2 BLDG_VALUE	123 NUMBER_O_2	
 ✓ A = T € = T Show All Features 	1.2 LAND_VALUE	123 NUMBER_HAL	
Westward Show Selected Features	1.2 TOTAL_ASSE	123 TOTAL_ROOM	
✓ A Porch_Ligh Y Show Features Visible On Map	1.2 BUILDING_A	abc SWIMMING_P	
Joineg Par Show Edited and New Features	1.2 LAND_ASSES	123 COMM_CARDS	HITTI
V Single_Fam	1.2 SALE_PRICE	abc COMMERCIAL	
✓ Other_Resi	SALE_DATE	abc IMPROVEMEN	
Residentia	abc SALE_VALID	1.2 Shape_STAr	
Commerct abc MAIL_ADDRE	abc SALE_TYPE	1.2 Shape_STLe	Lase sensitive 🖂 🔝 🗧 🔲
8	123 SQFT_LIVIN	123 Code_Cheat	
Correction Togg Coordinate 2667634,505036	abc OWNERS NAM	abc Code Che 1	Render 🛞 EPSG:2272 🔍
L Downloads	abc OWNERS N 1	123 MUNICODE	
84 items 1 item sele	abc MAIL ADDRE	abc NAME	
	abc MAIL ADD 1	1.2 CICACRES	
	abc MAIL ADD 2	Porch Lights	



In the porch lights attribute table, **click show all features**. In the field filters menu, **select the porch lights option**.

	Q *Westward_2020 — 0	QGIS	~	000.0						×		
	Project Edit View Lay	yer <u>S</u> ettings <u>P</u>	lugins Vector R	aster <u>Mesh</u> Proc	essing Help	5					/	
	🗋 🗁 🗟 🔂 😫	á 🛛 🕐 🔅 🏓		P 🔏 A 🗔 🧠	6 🖪 🕲 🔁	Q 📰 🗮 🕯	έΣ 🛲 🕶 🌄 🔍	T		_		153
	🤹 🗞 Vi 🔏 🖏 🚺		6 73 k - 2				abc abc abc					
	🖳 + 🖻 + 😼 🖣 🤅	Joined_Parcels	s_LUC — Features T	lotal: 3735, Filtered	1, Selected: 0							
	Browser) × 0 0 & 📕	🔍 🔩 🍸 🔳 🏘 🔎	16.15 🛛 🖬 1 🖻	■ Q.			Janiper Stree			
	Favorites	Shape_STLe	Code_Cheat	Code_Che_1	MUNICODE	NAME	GISACRES	Porch_Lights		7		THE REAL
	Spatial Bookm 1	250.346313714	1	Residential	15	5 EASTON	861.816761383	Yes				
I				L'S								Video 29
	✓ Agriculture ✓ Single Far ✓ Other Rej ✓ Residentia 4 ✓ Commercti ab	e Porch_Lights	Yes					se sensitive 🖃 🗄				
		Togg	j Loordinate 266767	3,505064 Scale	1:3052	Magnifier 100%	₹ totation 0.0 °	Render	EPSG:2272	w.		

In the bottom-most search bar, **enter the word 'yes'. Hit enter.** You'll now be shown every property in the map that is listed as being involved in the porch light initiative.

с	D	E	F	G	н
	Address	Street	City	State	Zip
	?	?	Easton	PA	18042
N	1205	Bushkill St.	Easton	PA	18042
	915	Bushkill St.	Easton	PA	18042
	1011	Bushkill St.	Easton	PA	18042
N	905	Bushkill St.	Easton	PA	18042
	1008	Bushkill St.	Easton	PA	18042
	1146	Bushkill St.	Easton	PA	18042
N	1360	Butler St.	Easton	PA	18042
	949	Butler St.	Easton	PA	18042
	949	Butler St.	Easton	PA	18042
N	902	Butler St.	Easton	PA	18042
	1236	Elm St.	Easton	PA	18042
	1028 B	Elm St.	Easton	PA	18042
	1044	Ferry St.	Easton	PA	18042



To start creating a layering system for identifying/mapping the extent of a particular scheme, for example the porch light initiative, the first step is open all documents which contain relevant information. In this example, we've opened the porch light initiative data document.



Next, ensure that the Joined_Parcel layer is selected from the layers menu and **right** click it to locate the open attribute table option.

Performing a Partial Map Update

Scheme Data: Porch Lights Example

Q *\	Nes	ward_2020 — Q0	SIS				abc	PARCEL_ID	abc FLAG_2_LER		
Proje	ct	Edit <u>V</u> iew Laye	r <u>S</u> ett	ings <u>P</u>	lugins	Vector	abe	CAMA_ID CAMA_ID	abc FLAG_3_HMS		
D			(m)	🐉 🗩	9	pg	abc	MAP	abc FLAG_4_FMS		- [T]
		Q Joined_Parce	ls_LUC	— Featu	ires Tota	al: 3735	abc	BLOCK	abc FLAG_5_ACT		X
			10 -c			-	abc	LOT	abc FLAG_6_ACT		
	*	fid		PAR	CEL ID		abc	SCHDIST	abc FLAG_7_ACT		SCHD *
Brows	er		2209	105/0/20	2 22 1	1.05	abc	MUNI	abc FLAG_9_BIL	02	
			5506	1930020	0 2 3 1	193	abc	FLAG	abc FLAG_10_KO	05	
	P	2	3376	L9SE1D	14 1F	L95	1.2	GIS_ACREAG	123 NUMBER_OF_	03	
• 6) H :	3	3377	L9SE1D	14 1J	L95	1.2	ASMT_ACREA	1.2 NUMBER_OF1	03	
- 🖻	jC		2270		14.10	1.05	abc	DEED	abc EXTERIOR	02	
	4	*	55/6	LISEID	14 10	193	abc	LOCATION	abc BASEMENT	03	
	4	5	3379	L9SE1D	14 1E	L95	abc	LUC	123 YEAR_BUILT	03	
	d	5	3380	L9SE1D	14 1G	L9S	abc	NBHD	abc BUILDING_S	03	
•							1.2	TOTAL_VALU	123 NUMBER_O_1		
Layers		0)	3381	L9SW30	_ 5 6	195	1.2	BLDG_VALUE	123 NUMBER_O_2	80	
		3	3382	L9SW30	C 11 2	L95	1.2	LAND_VALUE	123 NUMBER_HAL	80	
V)	3383	L9SE2D	263	195	1.2	TOTAL_ASSE	123 TOTAL_ROOM	03	
\checkmark							1.2	BUILDING_A	abc SWIMMING_P		
V		10	3384	L9SW30	C 5 4B-	1 L95	1.2	LAND_ASSES	123 COMM_CARDS	03	
V		Show All Featur					1.2	SALE_PRICE	abc COMMERCIAL		PPPPPPPPPPPPP
v	H	Show All Feat	LIFOS					SALE_DATE	abc IMPROVEMEN	H - Favorite	5
		Show Selecte	d East	iroc			abc	SALE_VALID	1.2 Shape_STAr	▶ Layer R	endering
- 1	8	Show Easture	u reau	le On M	20		abc	SALE_TYPE	1.2 Shape_STLe		
•	_	Show Edited	and N	E Chi W	ap		123	SQFT_LIVIN	123 Code_Cheat		
Q TY	pe t	Field Filter		ew realu	ires		abc	OWNERS_NAM	abc Code_Che_1	Rotation 0.0	
			or (Er	receie			abc	OWNERS_N_1	123 MUNICODE		
		Advanced Fill	er (Exp	iession)			6	MAIL_AL RE	abc NAME		
		Stored Filter I	xpress	ions			abc	MAIL_ADD_1	1.2 GISACRES		
							abc	MAIL_ADD_2			



From the attribute table, select the show all features option. Then, select field filters and then click MAIL_ADDRS.

endering

	oined_Parcels_LUC	i — Features Total:	D D D A A	, Selected: 8	🕓 🔁 🔍 🔳	<u>≋</u> * ∑ == ▼			
1 12		0 0 1 5 🖬 🚺	⊾ 〒 III 🕸 🗭 IIII I	. 🗶 🗮 1 🖷 1 着	9.			i join	
	fid	PARCEL_ID	CAMA_ID	MAP	BLOCK	LOT	SCHD		R
1	3308	L9SW2B 23 1	L9SW2B 23 1	L9SW2B	23	1	03		
2	3376	L9SE1D 14 1F	L9SE1D 14 1F	L9SE1D	14	1F	03	-	
3	3377	L9SE1D 14 1J	L9SE1D 14 1J	L9SE1D	14	1J	03	Fill 🕀 🔺	Vi
4	3378	L9SE1D 14 1B	L9SE1D 14 1B	L9SE1D	14	1B	03	Simple Fill	<u></u>
5	3379	L9SE1D 14 1E	L9SE1D 14 1E	L9SE1D	14	1E	03		
6	3380	L9SE1D 14 1G	L9SE1D 14 1G	L9SE1D	14	1G	03		
7	3381	L9SW3C 5 6	L9SW3C 5 6	L9SW3C	5	6	08		_
8	3382	L9SW3C 11 2	L9SW3C 11 2	L9SW3C	11	2	08		•
9	3383	L9SE2D 26 3	L9SE2D 26 3	L9SE2D	26	3	03	▼	
10	3384	L9SW3C 5 4B-1	L9SW3C 5 4B-1	L9SW3C	5	4B-1	03		
4									
East	on_WestWay 1205	5 Bushkill St					avorites	⊴ ▼ 🔐	-
LVPC	LU_Easton_ 120	S CHIDSEY ST				► La	ayer Rendering	g	

Using the data from the porch lights dataset, **begin typing in the address of a house** that you know is part of the initiative.

Q *Westward_2020 — QGIS	- 🗆 X	
Project Edit View Layer Settings Plugins Vector Raster Mesh Processing Leip	Annual Contraction of the second	
- D 늘 🗄 🕼 😫 🐒 🖉 🛠 🗩 🗩 🎵 🗭 🖉 🖓 🔚 🗛 🗛 🖳 🗛 🖏 🖑 🗳 👘 😴 🖉 🗮 🗮 🐥 🖸		
🧶 🎕 Vi 🔏 🖏 🔟 从 / 日 名 友 - 図 西 × 台 目 ち さ 🖷 💁 🧠 🤫 🤫 🤫 1 😤 🛛 🔛		
Browser Browser Image: Comparison of the second	© X •	
Spatial Bookmarke Sector Home Og Joined Parcels LUC — Features Total: 3735, Filtered: 1, Selected: 1	•	
C:\ Fid PARCEL_ID CAMA_ID MAP BLOCK LOT SCHDIST		Vide
Arand 1 577 L9NE4D 14 6 L9NE4D 14 6 L9NE4D 14 6 03		
Germin GeoMapApr		
Commercia	100.0 % 🜲	
V Industrial_M		
V Warehouse_		
Joined Parc	a 🗸 💒 👻	
V V POPenStreet	ive update Apply	
9. Type to locate (Ctrl+K	EPSG:2272	
abc MAIL ADDRE_ 1205 Bushkill St		

After hitting enter, a modified version of the attribute table will appear which only contains this singular address. **You can minimise this window, but don't close it**.



Next, drag the Joined Parcel layer up to the top of the layers menu to make these new changes visible.



As demonstrated in this image, your map will now highlight that single address that we identified as being a component of the porch light initiative.

Q *Westward_2020 — Q	GIS	
Project Edit View Lay	r Settings Plugins Vector Rastor Mosh Processing Dep	
	Q New Shapefile Layer	
🧏 📽 Vi 🔏 🖏 🛛	File name Porch_Lights	
🔣 • 📑 • 🔂 • 🗣	File encoding	
Browser	Geometry type	
	Additional dimensions None Z (+ M values) M values	
Image: Spatial Bookmarks	EPSG:4326 - WGS 84	
Project Home	New Field	T Fill
▼ C:\	Name	Simple Fill
Admin Tools	Type abc Text Data	
Arand Garmin	Length 80 Precision	Video 26
GeoMapApp	Add to Fields List	
4	Fields List	
Layers		
	Name Type Length Precision	100.0 %
Joined Parcels	in integer iv	·
✓ Agricultural_Va		
✓ Single_Family_I		
V Other_Resident		
✓ Commerctial		
V Public_QuasiPu		ering
4 Darks Greenen		✓ Live update Apply
Q Type to locate (Ctrl+K)		Render (EPSG:2272)
ab		ise sensitive 🔄 🏢
	Remove Field	
	OK Cancel Help	

From the toolbar at the top of the window, **select the New Shapefile Layer option**. This window will appear. **Title this new layer**. We called it Porch Lights in this example. Then **click the icon with the three dots**.

🔇 Save Layer As					×
$\leftarrow \rightarrow \cdot \uparrow$. «	Vect	→ GEDP_WWCP > ✓	U		
Organize • New f	folder				?
Network Pictures 🖈	^	Name		Date modified	^
📒 EaseUS RecExper	r	GEDP WWCP Data		10/21/2020 4:31 PM	
GEDP_WWCP_Date	ć	Agro_Vacant.shp		11/5/2020 6:43 PM	
📒 Guidebook_Vide	è.	Cantons_Westward.shp		11/15/2020 7:49 PM	
🎝 Music		Cantons2020_Westward.shp		11/16/2020 12:16 AM	
		Commerctial.shp		11/5/2020 7:20 PM	
OneDrive		Industrial_Manufacturing.shp		11/5/2020 7:24 PM	
🧢 This PC		Other_Residential.shp		11/5/2020 7:35 PM	
🧊 3D Objects		Parks_Greenspace.shp		11/5/2020 7:23 PM	
Desktop		Public_QuasiPublic.shp		11/5/2020 7:22 PM	~
A Documente	~ <				>
File name: P	orch_Li	ghts.shp			~
Save as type: ES	SRI Sha	pefile (*.shp *.SHP)			~
 Hide Folders 				Save Cancel	
The seconda	arv	save menu will apr	ear	. Ensure that the	dat



The secondary save menu will appear. Ensure that the data is saving to the right location and then **select save**.



In the new field option, **enter the text 'address'**. Then, **hit 'add to fields list'**. An address option will then appear in the field list box.

Q New Shapefile La	ayer				×			
File name	rge\Deskto	p\Tech Clinic GI	S\Vector Data\GEDP_WWC	P_Data\Porch_Lights.sh	p 🚳 🛄			
File encoding	UTF-8				•			
Geometry type					-			
Additional dimensions	None		C (+ M values)	O M values	_			
	EPSG:432	6 - WG <mark>S 8</mark> 4			-			
New Field								
Name Owner Name	e							
Type abc Text Dat	ta				-			
Length 80	Precision	-	< No. 100					
		Add to Fields	List					Video
Fields List		\sim						11000
News	Tune	Longth	Drasisian					
id	l ype	Length 10	Precision		_			
Address	String	80						
					_			
				Remov	e Field			

Repeat this process, this time entering the text 'Owners Name'. **Hit 'add to field list**. Then, **hit OK**.

Performing a Partial Map Update

Scheme Data: Porch Lights Example



Ensure that the porch lights layer is selected using the layers menu. Then, **hit the toggle editing option** on the toolbar. Immediately after, **click the 'add points' button**, also located on the toolbar.



Your cursor will turn into a pointing tool. Center this cursor tool directly in the middle of the address that has been highlighted.


A feature attributes table will open up. In this window, **use the porch light dataset to fill in the boxes.** Then, **hit OK.**



A marker will appear over the property you selected. Use the style menu on the left to customise the icon style.



Open up the porch lights attribute table by selecting the porch lights layer from the layers menu. Right click it and select open attribute table.



A special attribute table will open up. At this stage, there will only be one address in this table.

Performing a Partial Map Update

Styling the Map



The style menu allows you to change the color and style of your labels. To access the style menu, first, **single click on the relevant layer from the layer menu**. Then, click on the button labelled '**Open the Layer Styling panel**'. A menu will appear on the right-hand side of the screen. You can toggle this menu on or off at any time using the '**Open the Layer Styling panel**'.

Performing a Partial Map Update Styling the Map



To expand of shrink the style menu, hover the mouse over the left-hand border of the panel and the cursor will change to indicate that you can now drag the borders of the menu inwards or push it outwards.

Performing a Partial Map Update Styling the Map



Click on the simple fill option. Below, you'll now have access to edit both the shape fill and line style of different layers. To change the color of a component, flick on the color bar that you want to edit. (For example, click on the green bar next to the label 'fill color' in order to change it.)

Performing a Partial Map Update Styling the Map



Once you've clicked on which component you want to edit, a color menu will appear. You can explore this color menu to decide how best to coordinate the colors of that map. Once you've selected a color that you like for this layer, just toggle off the style menu using the button above the layers menu - your changes will save automatically.



To add labels to your map, first make sure that the joined layer is selected in the layer menu. Then, **open the style menu** and look for the label icon at the top of the menu on the left hand side of the style panel.



From the drop down menu currently labelled 'No Label', click and select the 'Single Label' option instead.



The values menu located below the 'Single Label' setting will, by default, be set to 'Name'. **Click on that option and select the 'Parcel ID' option** from the drop down menu that appears. When you do this, you'll notice that the labels on the map change.



Alternatively, you can select the 'LUC' option from the values drop down menu to display the land use code labels on the map instead.



Adding labels to the map can make it look very busy and somewhat unreadable. We recommend using the zoom feature to zoom in enough to be able to read the text.



One way to reduce the busyness of the map, in addition to zooming in, is to **reduce the font size** of labels. We recommend using a size 5 font.



Another way to enhance the clarity of labels is by using callouts. Callouts are small lines the indicate which piece of land a label is referring to. From the toolbar at the top of the style panel, select the option on the far most right. **Click the checkbox labelled 'Callouts'**. Callouts will now appear where necessary. This setting can be toggled on or off at any time using this panel.

Troubleshooting Identifying Topology Errors

Topology errors occur when lines or polygons do not accurately intersect. Topology errors can create obstacles for map users and editors.



Troubleshooting Fixing Linear Topology Errors



Database	We	eb	Proc	essing	Help	
1	Ĺ) (鐐	Toolbo	x	Ctrl+Alt+T
abc 🅎 🔤		4	æ	Graphi	cal Modeler	Ctrl+Alt+M
		3	History	/	Ctrl+Alt+H	
>00	ąp		X	Option	IS	Ctrl+Alt+C
	00	0 0	₽	Result	s Viewer	Ctrl+Alt+R
			≫	Comma	ander	Ctrl+Alt+D

v.clean is a tool built in to QGIS that is designed to resolve topology errors. To access v.clean for linear fix usage, go to the toolbar and **click 'processing'**. Then, select the **'Toolbox'** option.

Troubleshooting Fixing Linear Topology Errors

Pr	Processing Toolbox ×					
dea	an e	\boxtimes				
>	> Recently used algorithms					
~						
	 Vector (v.*) 					
	v.dean - Toolset for cleaning topology of vector map.					
	😵 v.clean.advanced - Toolset for cleaning topology of vector map (Advanced).					
~	GRASS GIS 7 commands [314 geoalgorithms]					
	Vector (v.*)					
	v.clean - Toolset for cleaning topology of vector map.					
	😵 v.clean.advanced - Toolset for cleaning topology of vector map (Advanced).					



From 'Toolbox', select the **'v.clean - Toolset for cleaning topology of vector map'** option.

Troubleshooting Fixing Linear Topology Errors

v.clean.advanced - Toolset for cleaning topology of vector map (Advanced).	? >
Parameters Log Help	Run as batch process.
Layer to dean	^
Road [EPSG:32646]	· 🦻
Cleaning tools (comma separated)	
break,snap,rmdangle	
Threshold (comma separated)	
0,5,5	
GRASS GIS 7 region extent (xmin, xmax, ymin, ymax)	
[Leave blank to use min covering extent]	
Advanced parameters	
v.in.ogr snap tolerance (-1 = no snap)	
1.000000	
v.in.ogr min area	
0.000100	÷
Cleaned	
[Save to temporary file]	
Open output file after running algorithm	
Errors	~
	0%
	Run Close



The v.clean.advanced window will open up. In the 'Layer to clean' box, select 'Road'. In the 'cleaning tools' box, enter the following three functions, each separated using a comma: break, snap, rmdangle. In the 'threshold' box, enter: 0, 5, 5. Then, push the 'Run' button.

Troubleshooting Fixing Polygon Topology Errors

 v.clean.advanced - Toolset for cleaning topology of vector map (Advanced). Parameters Log Help 	? ×	
Layer to dean building [EPSG:32646] Cleaning tools (comma separated)	• 🦻	(18
bpol,rmdupl,rmarea Threshold (comma separated) 0.0.3		
GRASS GIS 7 region extent (xmin, xmax, ymin, ymax) [Leave blank to use min covering extent]		
Advanced parameters v.in.ogr snap tolerance (-1 = no snap) -1.000000 v.in.ogr min area	÷	
0.000100 Cleaned	•	
[Save to temporary file] Open output file after running algorithm Errors		
[Save to temporary file]		
	0%	

To address polygon errors, repeat steps 182-184. In the **'Layer to clean' box, select 'building'**. In the **'cleaning tools'** box, enter the following three functions, each separated using a comma: **bpol, rmdupl, rmarea.** In the **'threshold' box, enter: 0, 3, 3**. Then, push the **'Run'** button.

Troubleshooting Restoring Unsaved Work

Sometimes, the QGIS program software may crash or close unexpectedly at a time where your current work hasn't yet been saved.

To avoid losing work, we recommend that you install that QGIS autoSaver extension. The extension is available for download here: https://plugins.qgis.org/plugins/autoSaver/

Essary, use this plugin to restore any unsaved work. We do, however, recommend that you take all actions to prevent needing to use the autoSaver function, just to be safe. It is available if necessary, though.