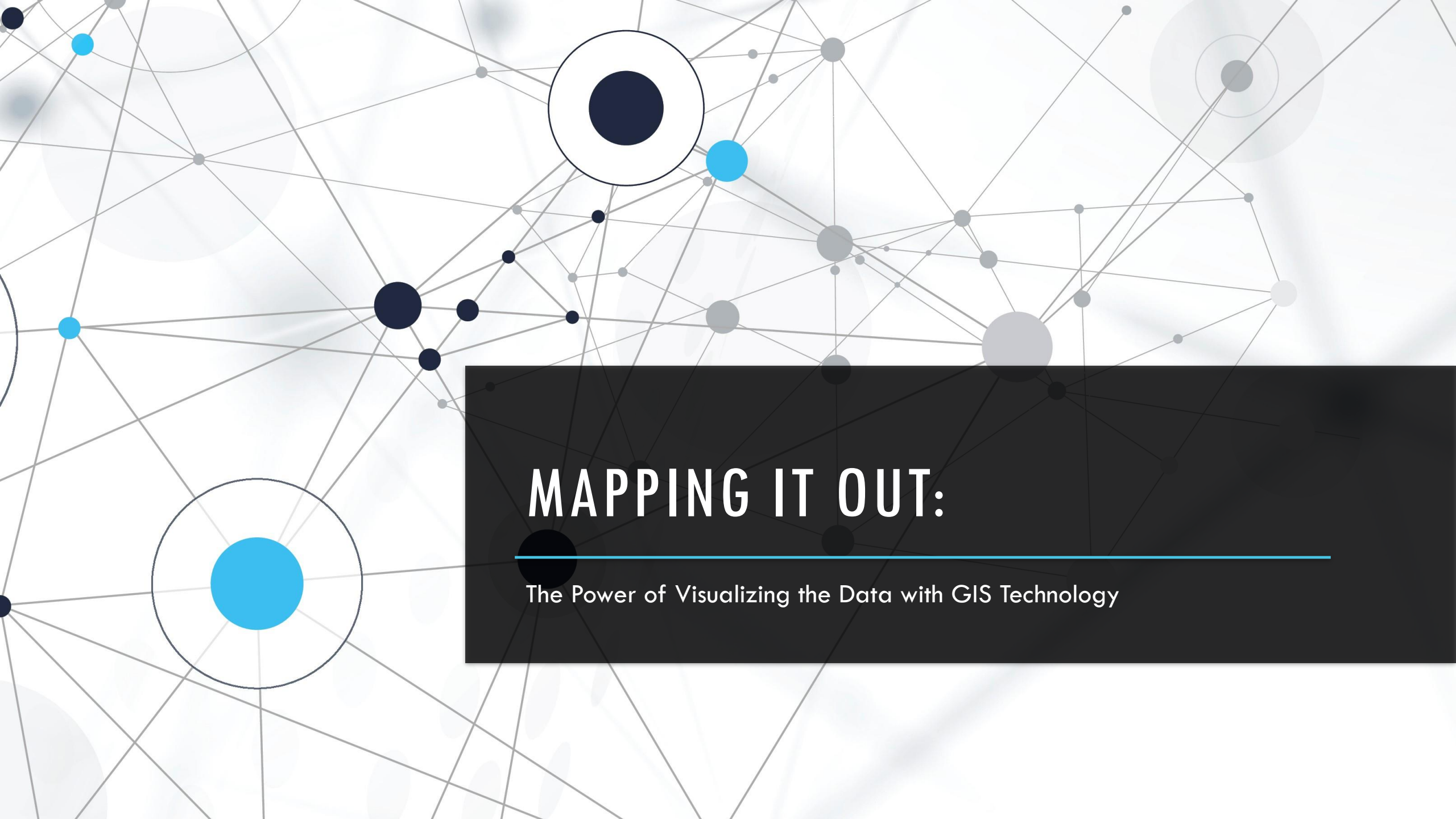
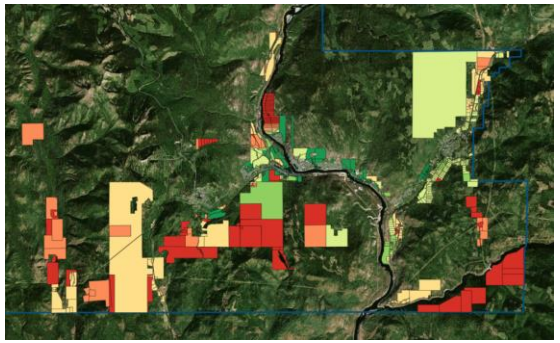


MAPPING IT OUT:

The Power of Visualizing the Data with GIS Technology

MAPPING VARIATIONS

Columbia Basin Food Supply Chain Map



Lower Columbia Land Inventory Map

RESEARCH VARIATIONS

Food Map

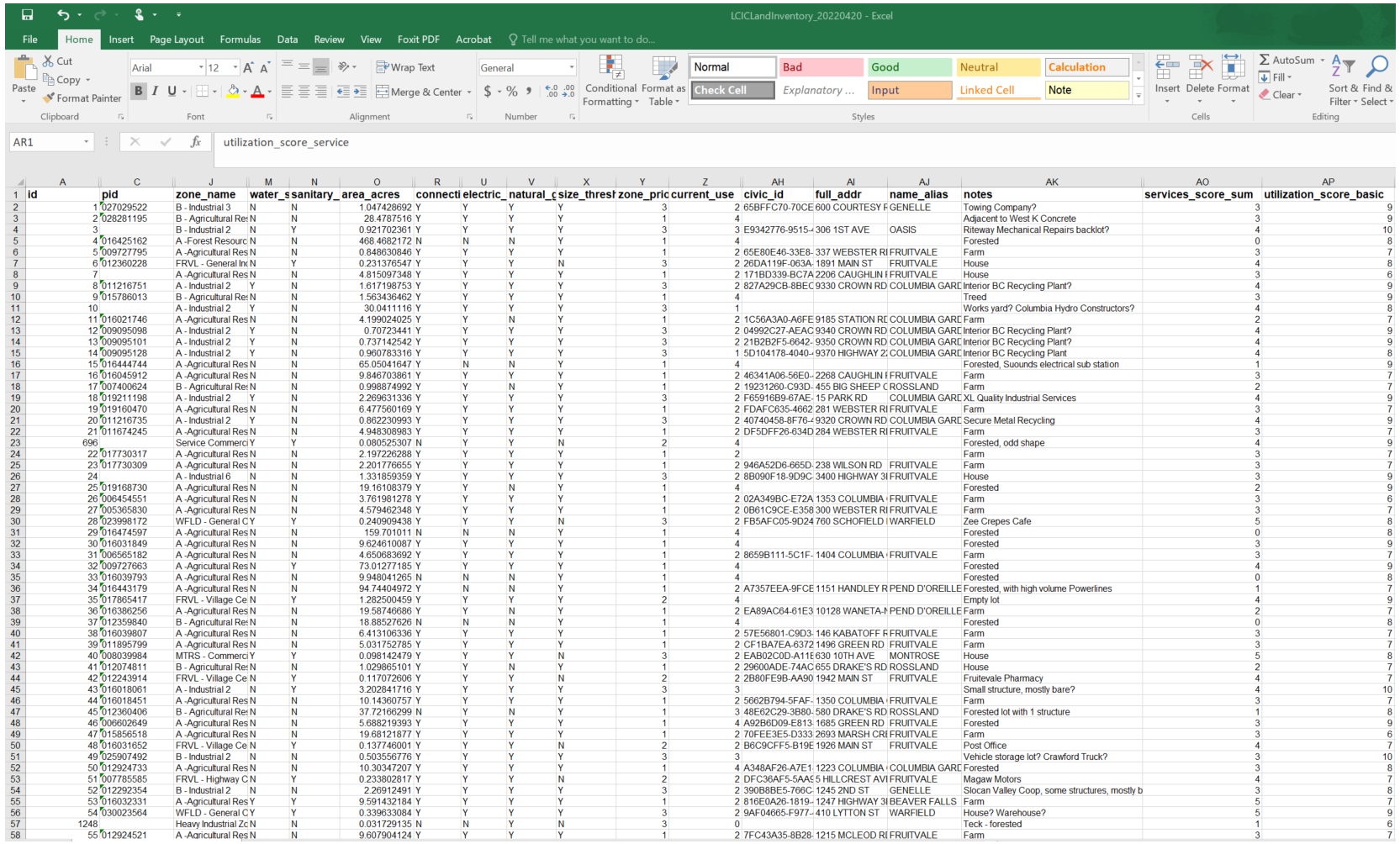
- In person interviews
- Self-declaration of data

Land Map

- Provincial and Local Government
- Accessible private company data

THE LAND INVENTORY – WHERE WE STARTED

WOW… I CAN SEE SO MUCH



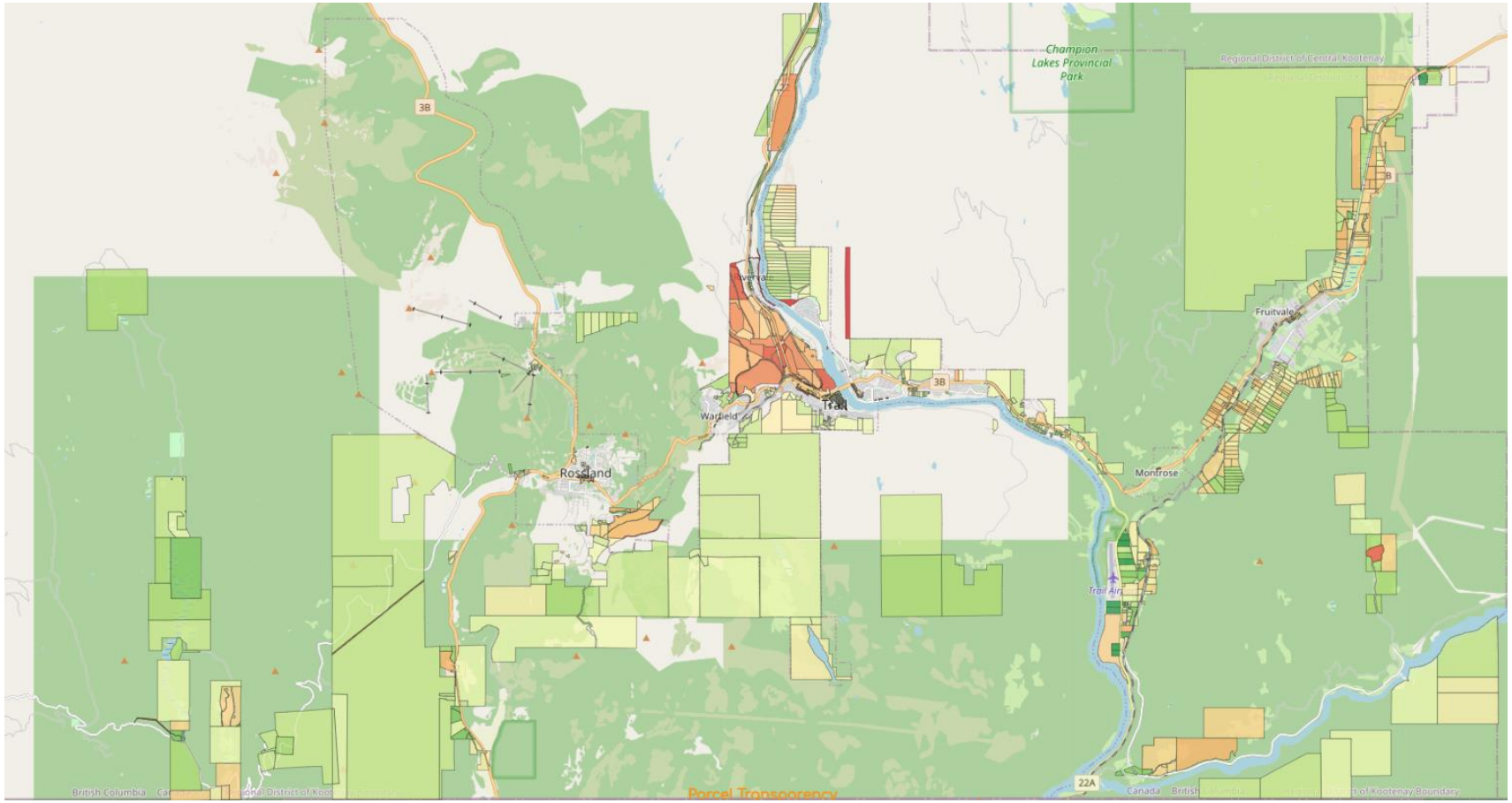
LCICLandInventory_20220420 - Excel

AR1 | utilization_score_service

id	pid	zone_name	water_s	sanitary_	area_acres	connecti	electric_	natural_g	size_thresh	zone_pric	current_use	civic_id	full_addr	name_alias	notes	services_score_sum	utilization_score_basic
1	027029522	B - Industrial 3	N	N	1.047428692	Y	Y	Y	Y	3	2	65BFFC70-70CE	600 COURTESY F	GENELLE	Towing Company?	3	9
2	028281195	B - Agricultural Res	N	N	28.4787516	Y	Y	Y	Y	1	4				Adjacent to West K Concrete	3	9
3		B - Industrial 2	N	Y	0.921702361	Y	Y	Y	Y	3	3	E9342776-9515-	306 1ST AVE	OASIS	Riteway Mechanical Repairs backlot?	4	10
4	016425162	A -Forest Resourc	N	N	468.4682172	N	N	N	Y	1	4				Forested	0	8
5	009727795	A -Agricultural Res	N	N	0.848630846	Y	Y	Y	Y	1	2	65E80E46-33E8-	337 WEBSTER RI	FRUITVALE	Farm	3	7
6	012360228	FRVL - General Ind	N	Y	0.23176547	Y	Y	Y	N	3	2	26DA119F-063A	1891 MAIN ST	FRUITVALE	House	4	8
7		A -Agricultural Res	N	N	4.815097348	Y	Y	Y	Y	1	2	171BD339-BC7A	2206 CAUGHLIN I	FRUITVALE	House	3	6
8	011216751	A - Industrial 2	Y	N	1.617198753	Y	Y	Y	Y	3	2	827A29CB-8BEC	9330 CROWN RD	COLUMBIA GARI	Interior BC Recycling Plant?	4	9
9	015786013	B - Agricultural Res	N	N	1.563436462	Y	Y	Y	Y	1	4				Treed	3	9
10		A - Industrial 2	Y	N	30.0411116	Y	Y	Y	Y	3	1				Works yard? Columbia Hydro Constructors?	4	8
11	016021746	A -Agricultural Res	N	N	4.199024025	Y	Y	N	Y	1	2	1C56A3A0-A6FE	9185 STATION RI	COLUMBIA GARI	Farm	2	7
12	009095098	A - Industrial 2	Y	N	0.70723441	Y	Y	Y	Y	3	2	04992C27-AEAC	9340 CROWN RD	COLUMBIA GARI	Interior BC Recycling Plant?	4	9
13	009095101	A - Industrial 2	Y	N	0.737142542	Y	Y	Y	Y	3	2	21B2B2F5-6642-	9350 CROWN RD	COLUMBIA GARI	Interior BC Recycling Plant?	4	9
14	009095128	A - Industrial 2	Y	N	0.960783316	Y	Y	Y	Y	3	1	5D104178-4040-	9370 HIGHWAY 2	COLUMBIA GARI	Interior BC Recycling Plant	4	8
15	016444744	A -Agricultural Res	N	N	65.05041647	Y	N	N	Y	1	4				Forested, Suounds electrical sub station	1	9
16	016045912	A -Agricultural Res	N	N	9.846703861	Y	Y	Y	Y	1	2	46341A06-56E0-	2268 CAUGHLIN I	FRUITVALE	Farm	3	7
17	007400624	B - Agricultural Res	N	N	0.998874992	Y	Y	N	Y	1	2	19231260-C93D-	455 BIG SHEEP C	ROSSLAND	Farm	2	7
18	019211198	A - Industrial 2	Y	N	2.269631336	Y	Y	Y	Y	3	2	F65916B9-67AE-	15 PARK RD	COLUMBIA GARI	XL Quality Industrial Services	4	9
19	019160470	A -Agricultural Res	N	N	6.477560169	Y	Y	Y	Y	1	2	FDAFC635-4662	281 WEBSTER RI	FRUITVALE	Farm	3	7
20	011216735	A - Industrial 2	Y	N	0.862230993	Y	Y	Y	Y	3	2	40740458-8F76-	9320 CROWN RD	COLUMBIA GARI	Secure Metal Recycling	4	9
21	011674245	A -Agricultural Res	N	N	4.948308983	Y	Y	Y	Y	1	2	DF5DFF26-634D	284 WEBSTER RI	FRUITVALE	Farm	3	7
696		Service Commerci	Y	Y	0.080525307	N	Y	Y	N	2	4				Forested, odd shape	4	9
22	017730317	A -Agricultural Res	N	N	2.197226288	Y	Y	Y	Y	1	2				Farm	3	7
23	017730309	A -Agricultural Res	N	N	2.201776655	Y	Y	Y	Y	1	2	946A52D6-665D-	238 WILSON RD	FRUITVALE	Farm	3	7
24		A - Industrial 6	N	N	1.331859359	Y	Y	Y	Y	3	2	8B090F18-9D9C	3400 HIGHWAY 3I	FRUITVALE	House	3	9
25	019168730	A -Agricultural Res	N	N	19.16108379	Y	Y	N	Y	1	4				Forested	2	9
26	006454551	A -Agricultural Res	N	N	3.76198127	Y	Y	Y	Y	1	2	02A349BC-E72A	1353 COLUMBIA	FRUITVALE	Farm	3	6
27	005365830	A -Agricultural Res	N	N	4.579462348	Y	Y	Y	Y	1	2	0B61C9CE-E358	300 WEBSTER RI	FRUITVALE	Farm	3	7
28	023998172	WFLD - General C	Y	Y	0.240909438	Y	Y	Y	N	3	2	FB5AFC05-9D24	760 SCHOFIELD I	WARFIELD	Zee Crepes Cafe	5	8
29	016474597	A -Agricultural Res	N	N	159.701011	N	N	N	Y	1	4				Forested	0	8
30	016031849	A -Agricultural Res	N	N	9.624610087	Y	Y	Y	Y	1	4				Forested	3	9
31	006565182	A -Agricultural Res	N	N	4.650683692	Y	Y	Y	Y	1	2	8659B111-5C1F-	1404 COLUMBIA	FRUITVALE	Farm	3	7
32	009727663	A -Agricultural Res	N	Y	73.01277185	Y	Y	Y	Y	1	4				Forested	4	9
33	016039793	A -Agricultural Res	N	N	9.948041265	N	N	N	Y	1	4				Forested	0	8
34	016443179	A -Agricultural Res	N	N	94.74404972	Y	N	N	Y	1	2	A7357EEA-9FCE	1151 HANDLEY R	PEND D'OREILLE	Forested, with high volume Powerlines	1	7
35	017865417	FRVL - Village Ce	N	Y	1.282500459	Y	Y	Y	Y	2	4				Empty lot	4	9
36	016386256	A -Agricultural Res	N	N	19.58746686	Y	Y	N	Y	1	2	EA89AC64-61E3	10128 WANETA-I	PEND D'OREILLE	Farm	2	7
37	012359840	B - Agricultural Res	N	N	18.88527626	N	N	N	Y	1	4				Forested	0	8
38	016039807	A -Agricultural Res	N	N	6.413106336	Y	Y	Y	Y	1	2	57E56801-C9D3	146 KABATOFF F	FRUITVALE	Farm	3	7
39	011895799	A -Agricultural Res	N	N	5.031752785	Y	Y	Y	Y	1	2	CF1BA7EA-6372	1496 GREEN RD	FRUITVALE	Farm	3	7
40	008039984	MTRS - Commerci	Y	Y	0.098142479	Y	Y	Y	N	3	2	EAB02C0D-A11E	630 10TH AVE	MONTROSE	House	5	8
41	012074811	B - Agricultural Res	N	N	1.029865101	Y	Y	N	Y	1	2	29600ADE-74AC	655 DRAKE'S RD	ROSSLAND	House	2	7
42	012243914	FRVL - Village Ce	N	Y	0.117072606	Y	Y	Y	N	2	2	2B80FE9B-AA90	1942 MAIN ST	FRUITVALE	Fruitevale Pharmacy	4	7
43	016018061	A - Industrial 2	N	Y	3.202841716	Y	Y	Y	Y	3	3				Small structure, mostly bare?	4	10
44	016018451	A -Agricultural Res	N	N	10.14360757	Y	Y	Y	Y	1	2	5662B794-5FAF-	1350 COLUMBIA	FRUITVALE	Farm	3	7
45	012360406	B - Agricultural Res	N	N	37.72166299	N	Y	N	Y	1	3	48E62C29-3B80-	580 DRAKE'S RD	ROSSLAND	Forested lot with 1 structure	1	8
46	006602649	A -Agricultural Res	N	N	5.688219393	Y	Y	Y	Y	1	4	A92B6D09-E813-	1685 GREEN RD	FRUITVALE	Forested	3	9
47	015856518	A -Agricultural Res	N	N	19.68121877	Y	Y	Y	Y	1	2	70FEE3E5-D333	2693 MARSH CR	FRUITVALE	Farm	3	6
48	016031652	FRVL - Village Ce	N	Y	0.13774001	Y	Y	Y	N	2	2	B6C9CFF5-B19E	1926 MAIN ST	FRUITVALE	Post Office	4	7
49	025907492	B - Industrial 2	N	N	0.503556776	Y	Y	Y	Y	3	3				Vehicle storage lot? Crawford Truck?	3	10
50	012924733	A -Agricultural Res	N	N	10.30347207	Y	Y	Y	Y	1	4	A348AF26-A7E1	1223 COLUMBIA	COLUMBIA GARI	Forested	3	8
51	007785585	FRVL - Highway C	N	Y	0.233802817	Y	Y	Y	N	2	2	DFC36AF5-5AA5	5 HILLCREST AVI	FRUITVALE	Magaw Motors	4	7
52	012292354	B - Industrial 2	N	N	2.26912491	Y	Y	Y	Y	3	2	390B8BE5-766C	1245 2ND ST	GENELLE	Slocan Valley Coop, some structures, mostly b	3	8
53	016032331	A -Agricultural Res	Y	Y	9.591432184	Y	Y	Y	Y	1	2	816E0A26-1819-	1247 HIGHWAY 3I	BEAVER FALLS	Farm	5	7
54	030023564	WFLD - General C	Y	Y	0.339633084	Y	Y	Y	Y	3	2	9AF04665-F977-	410 LYTTON ST	WARFIELD	House? Warehouse?	5	9
1248		Heavy Industrial Zc	N	N	0.031729135	N	N	N	N	3	0				Teck - forested	1	6
55	012924521	A -Agricultural Res	N	N	9.607904124	Y	Y	Y	Y	1	2	7FC43A35-8B28-	1215 MCLEOD RI	FRUITVALE	Farm	3	7

What does this even mean? Yes, Excel is powerful but how can you effectively manipulate data like this?!?

STATIC



Ah, yes… Very nice…
But where did all my data go??

😭

DYNAMIC!

map.metaltechalley.com

https://map-public.lcic.ca/

IT'S ALIVE!!!

Data comes alive when the participants can update data in real-time and they can interact with the outcome of the research!

WHAT DOES LIVING DATA LOOK LIKE?

https://circularinsights.ca/food-model.html

HAVE I CREATED A MONSTER?

Like monsters, living data tools need care and nurturing, otherwise they will languish and never reach their full potential.

Before bringing your data to life, consider what will be required to look after it properly and who will be able to do this.

IN SUM!

- Visualizing data can be done in a variety of ways but the key takeaway is that charts and graphs are only one way to visualize. Maps can give you so much more possibilities in how you look at data!
- Maps go beyond geography, they can be helpful to show patterns, relationships and networks.
- There are a variety of ways to collect your data but the most powerful means is to achieve living data (where applicable). This moves research from education for a small group towards directly benefitting many, including the participants!
- Your data tools need care. Plan from the beginning about what's needed and how to effectively look after your tool for the long-term. Don't let the monsters die!!!

SPECIAL THANK YOU

etsi BC
Economic Trust of the Southern Interior

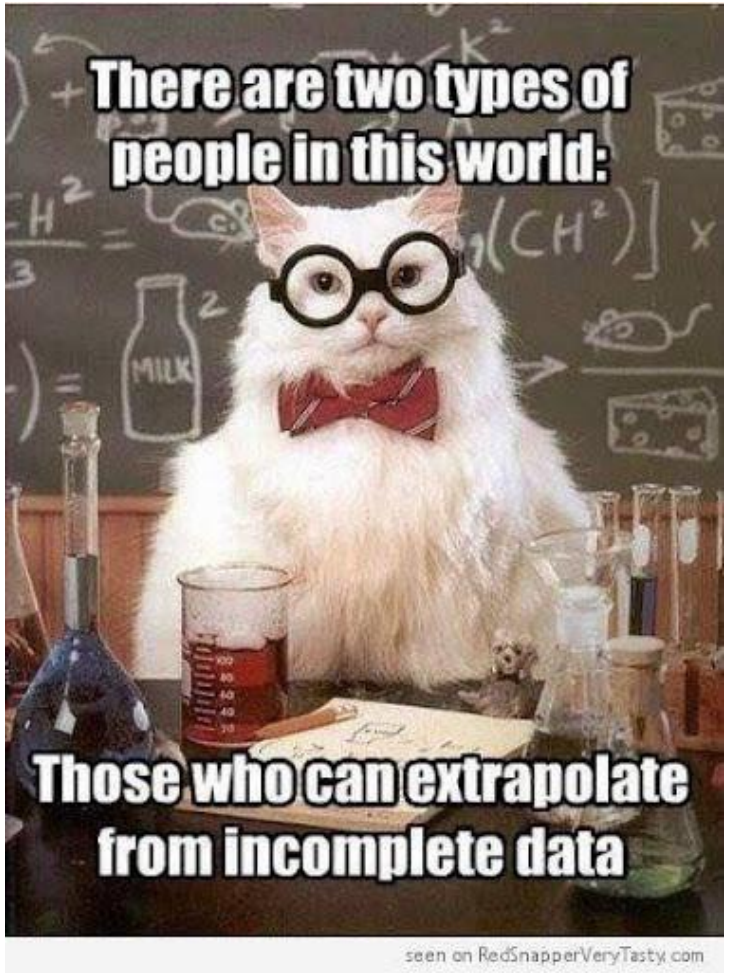
Selkirk College

Columbia Basin trust

Mitacs

THANKS FOR LISTENING!!

Here's to more effective economic development through data science!



Mapping It Out – Notes to Accompany Presentation – May 2023

- *The aim of your project. How did the project start or come about? What question(s) were you trying to answer?*
    - Food Map
        - Supply chain research led to knowledge of transportation barriers
        - Needed to help the agriculture/food sector to overcome these barriers to grow this sector – allow to reach new markets w/in Columbia Basin
        - Transportation imposes high costs and requires economies of scale to reduce, which could be achieved through collaboration on distribution
        - Initial research quite high-level
        - To understand how action can make the best impact specifically on improving distribution we needed very detailed information answering four basic questions:
            - What's being produced?
            - Where is it being distributed?
            - How often is distribution occurring?
            - How is it being transported?
        - All this information needed to be captured in one place in order to see patterns and start making decisions on how collaboration could be successful
    - Industrial & Commercial Land Map
        - The LCIC had an old commercial and industrial land inventory from 2012
        - This consisted of a fairly random excel sheet with bits of different types of data all over the places – almost unusable for dealing with land inquiries
        - It's essential for an economic development office to have a good understanding of the local industrial and commercially zoned land to facilitate investment
        - Started fresh with assistance from Selkirk to create a brand new land inventory with all the typical types of data that would be useful when fielding inquiries from interested developers
        - Key data elements include: size, services, zoning, current use, and slope
- *What data sources you used and where you got them from*
    - Food Map
        - Directly from the food producers and farmers!
    - Industrial & Commercial Land Map
        - Various sources including municipalities, the RDKB, Fortis, Telus & Shaw – this was all done by Selkirk
- *What the process for data collection and analysis was (and if possible, show some of the data sets and how you used them)*
    - Food Map (public demo forthcoming)
        - Online data entry form directly to map
        - No official analysis conducted so far – project is in transition at the moment
    - Industrial & Commercial Land Map (https://map-public.lcic.ca/ or map.metaltechalley.com)
        - Database created in Excel and Postgres
        - Development scores
            - Based on different variables
                - Services, utilization and slope
        - Utilization score
            - Based on satellite imagery and searching civic addresses, whether or not a parcel is in use was established and assessed for the likelihood of

new development (1 – Teck is on top of the parcel, 4 – empty parcel of land)

- *What barriers you had to overcome or what didn't work. Learning from failures is just as important as successes*
    - Food Map
        - Getting engagement from small businesses can be extremely challenging – most effective was speaking with them in person at the Food and Buyers Expo in Invermere
        - Email is very limited in effectiveness
        - This challenge is underpinning the need for next steps
    - Industrial & Commercial Land Map
        - 2 items were not possible due to privacy concerns
            - Land ownership
            - Land value
        - Some difficulties getting easily accessible/workable data – ex. City of Trail zoning maps are just a pdf – no online resources
        - Reliability of data in certain areas like connectivity is a potential issue, it's not exactly accurate
- *How did you challenge your own biases and assumptions about what you thought the data might tell you or what you wanted it to tell you?*
    - Food Map
        - Too early to say
    - Industrial & Commercial Land Map
        - Not really applicable
- *What was the budget for the project and what funding did you receive? People have noted that finding funding is one of the major challenges with regards to data projects, so if you can be open and transparent here, that would help with the learning for all.*
    - Food Map
        - Part of larger supply chain research project ($60,000) – I think that about $10,000 was spent on this map in total.
        - Funded by ETSI-BC and Columbia Basin Trust
    - Industrial & Commercial Land Map
        - Mitacs Funding via Selkirk College for initial land inventory – I think this might have cost $1500?
        - $10,000 of CERIP funds allocated for the GIS integration of data
- *What outcomes you found or are finding (i.e. how is it helping you answer your original questions). What is it helping you do now and what are the next step(s) and activities?*
    - Food Map
        - The map has been moved over to the Central Kootenay Food Policy Council
        - Next steps are to get more users and potentially run a pilot project to encourage businesses on the map to collaborate on shipping.
        - Selkirk is involved and using the map for research purposes
        - Boundary Community Ventures will be part of the map working group
        - Province via BC Food and Beverage have expressed initial interest in how the map could have applications province-wide
    - Industrial & Commercial Land Map
        - Just keeping it up to date!
            - Should be pretty straightforward

- Have not yet fielded too many inquiries
    - May need to make tweaks as it does get used to ensure that it is providing the information we need