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September 22, 2022

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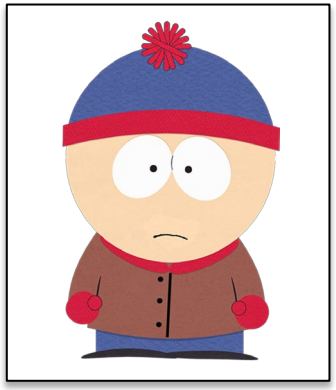

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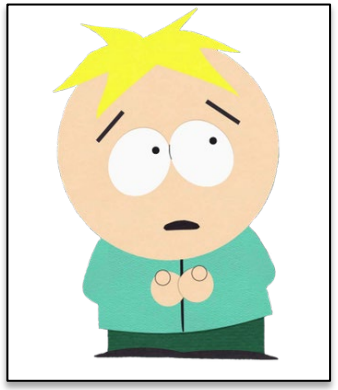

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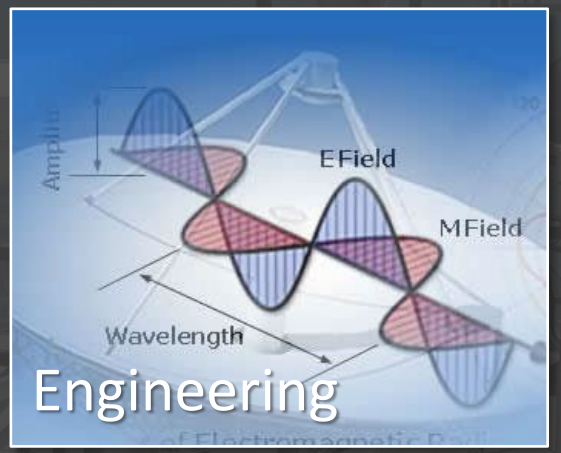
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LAKE CHAMPLAIN–LAKE GEORGE REGIONAL PLANNING

Telecommunications Broadband and Cellular Infrastructure Inventory

for Clinton, Essex, Franklin, and Hamilton Counties of New York State

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Prepared for:

Lake Champlain Lake George Regional Planning Board
Beth Gilles, Director
1 Lower Amherst Street
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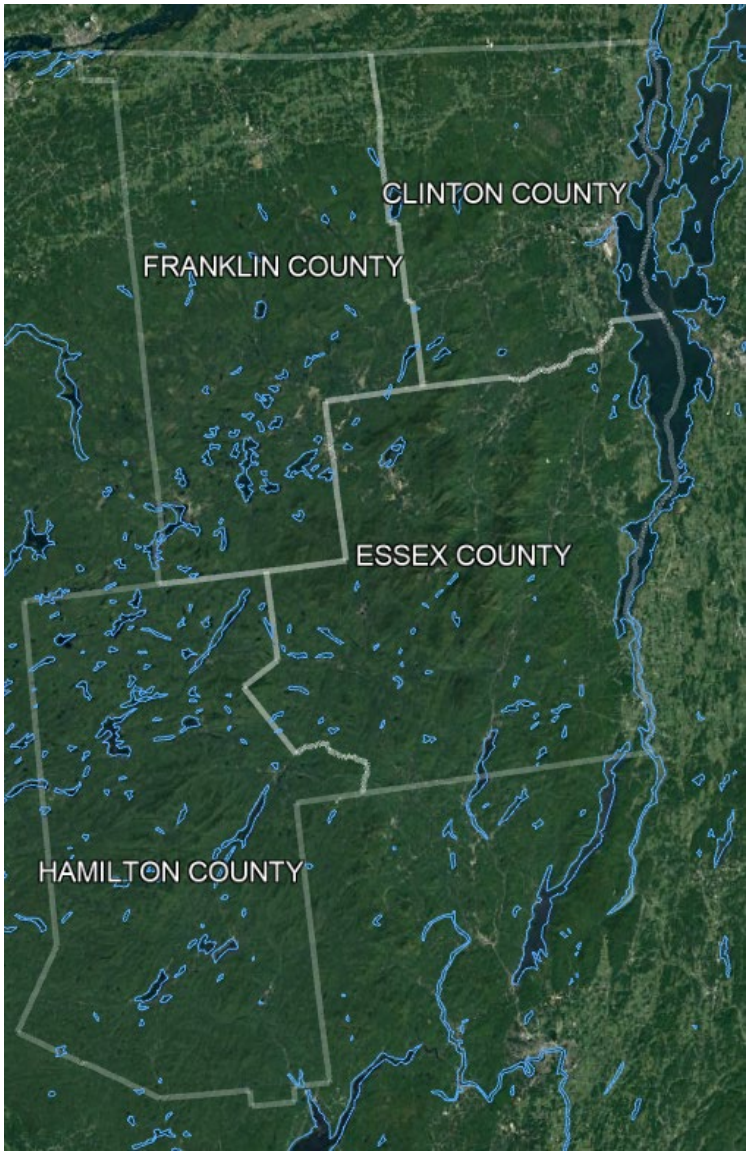
June 30, 2022

1 General Summary

Waterford Consultants has been contracted by the Lake Champlain Lake George Regional Planning Board (LCLGRPB) to perform an inventory of existing telecommunications infrastructure and service in Clinton, Essex, Hamilton and Franklin counties. This analysis includes the collection of wireless drive test data to determine the availability of 4G LTE/5GNR cellular coverage for all roads in the four counties. This information will support the LCLGRPB as they design and deploy plans that will improve access to quality broadband for its residents. As the project deliverables are ArcGIS data files, this report describes the data and collection process.



County Map

2 Wireless Service Inventory

Waterford uses the PCTel IBflex data collection platform to identify and record wireless service levels along the county roadways. The road miles associated with these counties are depicted in Table 1. Technologies provided by service providers are LTE and NR and the depicted signal levels are associated with service reliability levels. Strong coverage levels occur near the towers and decrease with distance from the sites and intervening terrain obstructions. Radiowave propagation conditions between these bands differ because of terrain and ground clutter (e.g. vegetation) effects at different frequencies. Generally, low band operations provide greater area coverage. Therefore, high band operations provide additional customer traffic capacity closer to the cellular site. Capacity availability depends on customer activity and assessment is not provided in this analysis.

Table 1: County Road Miles

County	State Touring Route	Town, Village or City	County	Total Local	NYSDOT Owned	Other	Total State & Local
Hamilton	**178.8**	188.1	94.5	**282.6**	178.8	13.1	**474.5**
Essex	**334.2**	671.8	356.7	**1028.5**	329	10.1	**1367.6**
Franklin	**269.7**	849.7	266.2	**1115.9**	266	38.4	**1420.2**
Clinton	**301.2**	905.6	353.1	**1258.7**	282.6	16.7	**1557.9**

Table 2: Wireless Service Licenses

		4G Bandwidth by Frequency (MHz)							5GNR Bandwidth by Frequency (MHz)	
County	**Provider**	**600**	**700**	**850**	**1900**	**2100**	**2500**	**3500**	**850**	**600**
Clinton	AT&T		25		10	20				
	KSW		10							
	T-Mobile	5			15		20			10
	Verizon		10	20	10	45				
Essex	AT&T		15	10						
	T-Mobile				20					10
	Verizon		10		25	45				
Franklin	AT&T		15		10	20				
	T-Mobile	5	20		30	20	20			10
	Verizon		10	20	10	25				
Hamilton	AT&T		5	5	30	25			5	
	T-Mobile	5	5		20		20			5
	Verizon		10	10	30	35		40		

3 Fiber Inventory

Waterford partners with GeoTel to provide the latest datasets depicting detailed fiber routes and Cable Operating areas.

GeoTel Data Sets
GeoTel Carrier Fiber Routes
GeoTel Fiber Lit Buildings
GeoTel Cable Operating Areas

The following is a description of the GeoTel datasets.

GeoTel Carrier Fiber Routes-The Dataset contains routes for metropolitan areas and long-haul fiber across the United States, and is layered on street files. Over 700 carriers in 900 CBSAs are included. Additional markets are added quarterly.

GeoTel Fiber Lit Buildings-The Fiber Lit Dataset consists of points representing lit buildings that have been wired with carrier fiber. This dataset also includes Central Offices, Data Centers, Colocation Facilities, and Wireless Carriers that have a fiber presence in a building.

GeoTel Cable Operating Areas - This data set represents the actual serving territory for all Cable franchises reflecting national coverages of 50 states and well over 800 MSO operating companies. These Cable Boundaries are designed and geospatially developed by cartographers and telecom professionals leveraging GeoTel's proprietary spatial processes and patents accumulating over 60 years of GIS professional experience. GeoTel's extensive research into the development of the Cable Operating Area data reflects two different views of "who" the dominant cable provider is along with a secondary franchise indicator giving the end-user a 360 view of markets with multiple serving cable providers.

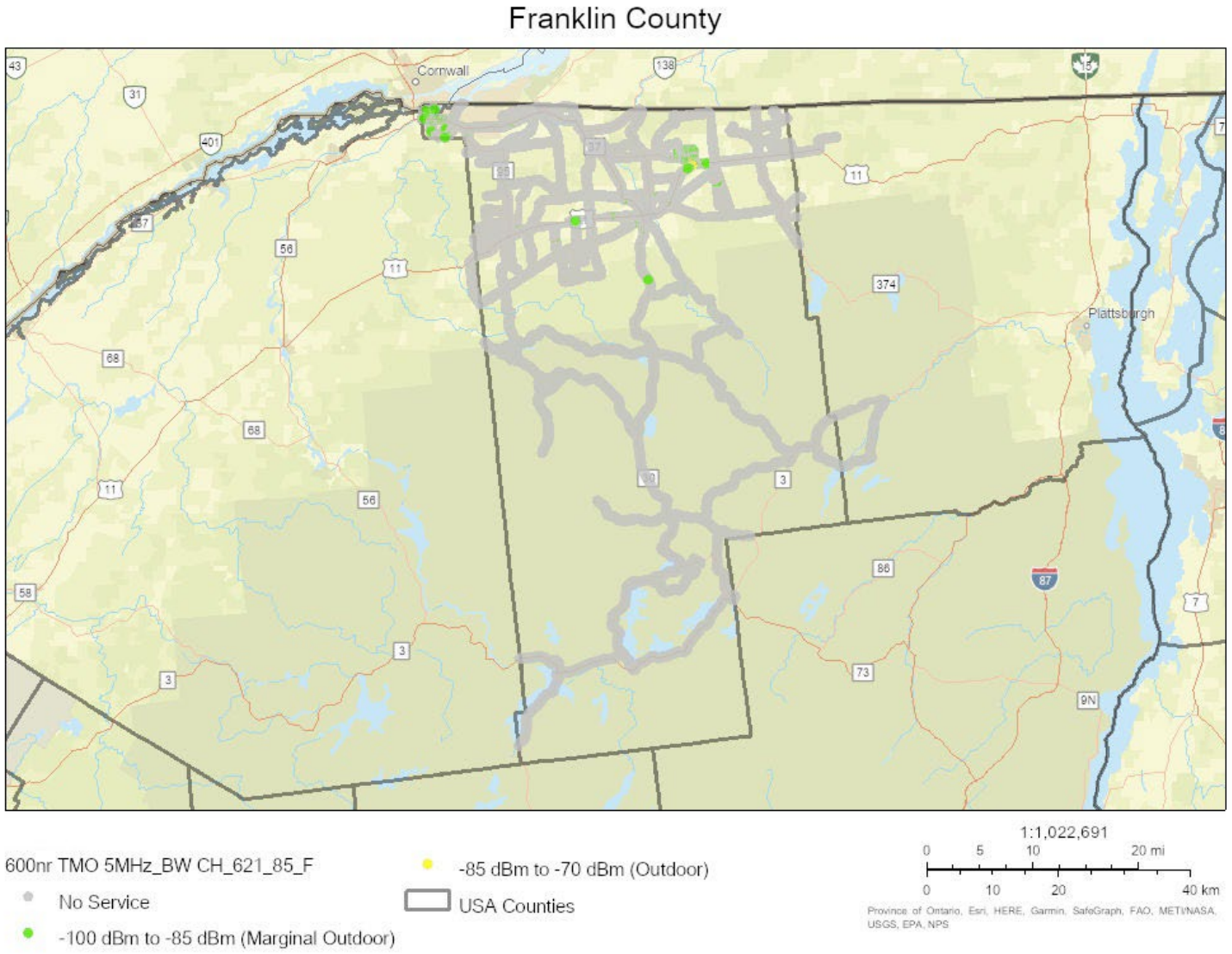


Figure 1: Example of T-Mobile 5GNR coverage in Franklin County

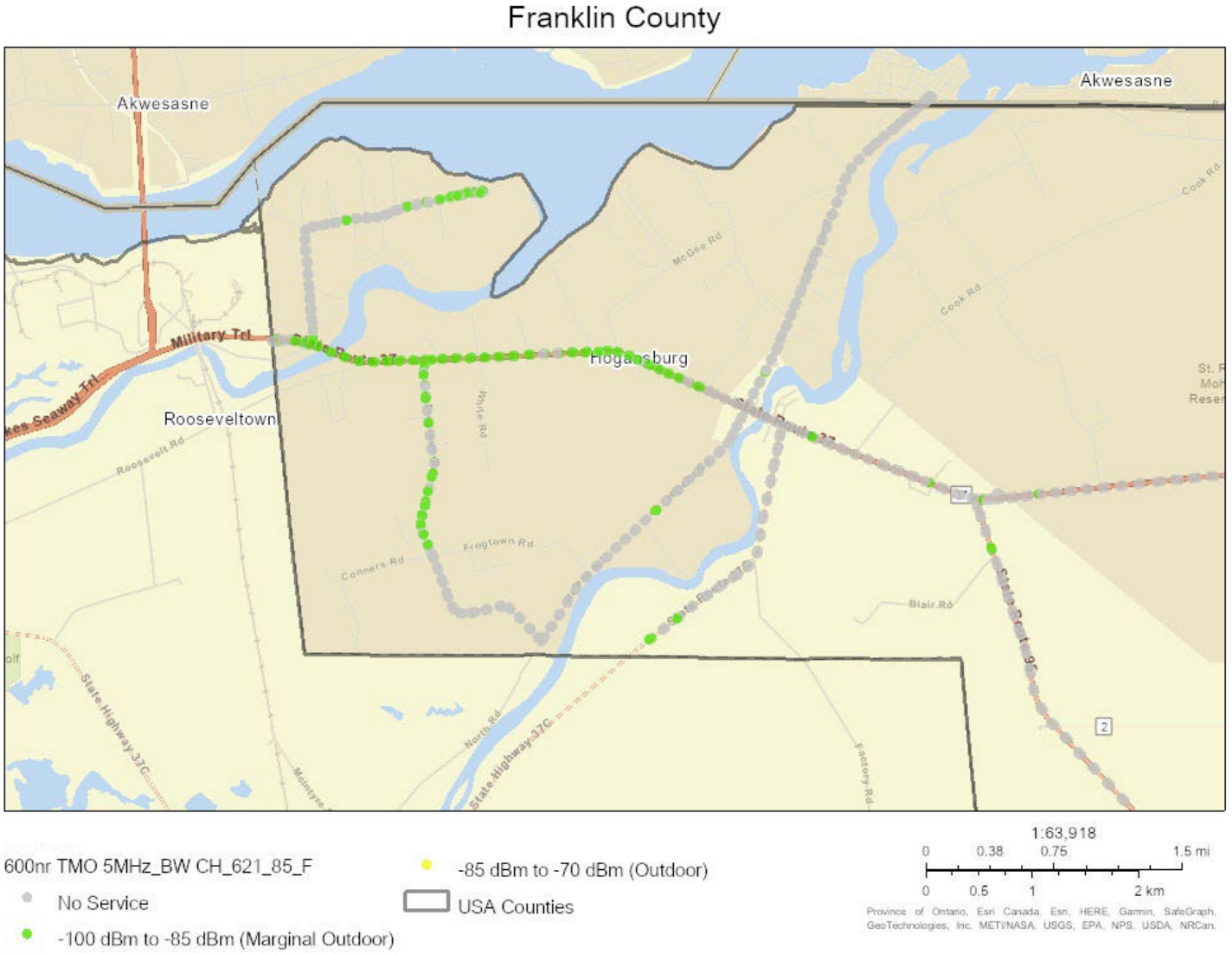


Figure 2: Example of T-Mobile 5GNR coverage in Hogansburg, Franklin County

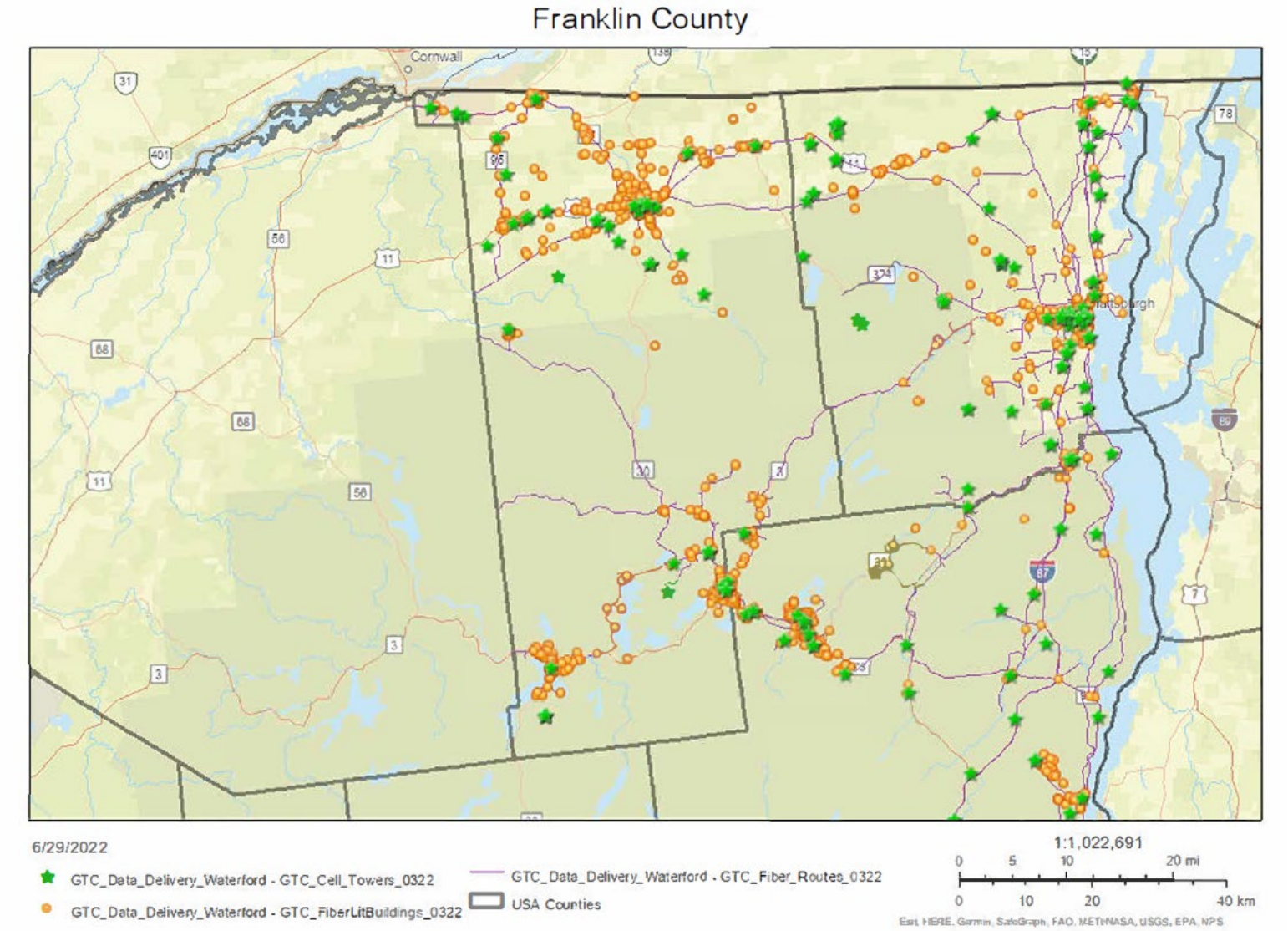


Figure 3: Example of Telecomm Towers, Fiber Routes and Buildings in Franklin County

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