



COVID Pull Factor Analysis

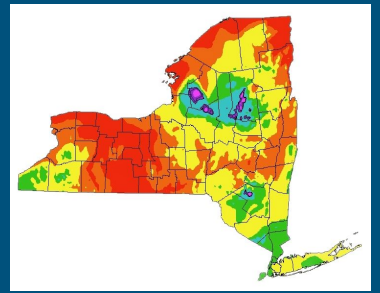


The Impacts on Climate Migration



Isaac Gendler and Ross Plattel

Project Background



People in New York State will have to move with the advent of climate change.

Where will they go?

How will the receiving communities be selected?

How will they have to change to accommodate the new climate migrants?

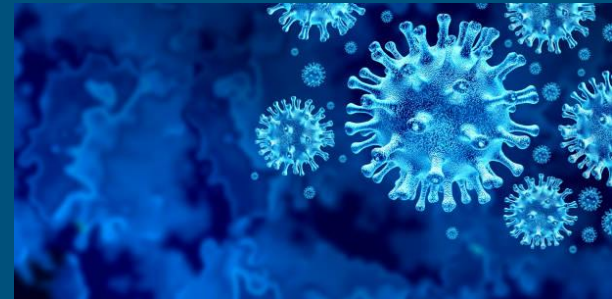
COVID Impacts On Climate Migration



- COVID has acted as a shock to human migration flows
- Changing where people look to move and the decisions they make

Project aims to:

- Takes lessons from COVID
- Analyse the shocks in migration patterns
- Map the significant migration flows to cities/towns
- Analyse trends toward increasing population
- Focus on towns and urban regions that are low climate risk
- Analyze social and economic factors
- Showcase receiver regions for migration



Methodology



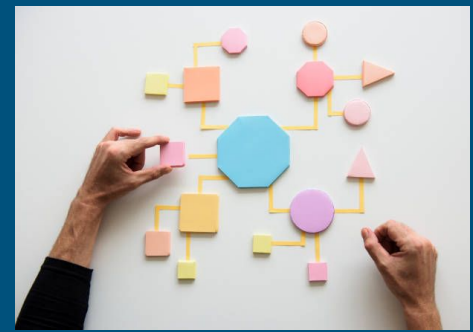
- Methodology inspired by the work of Kelly Leilani Main and Anna Marandi
 - Research Paper: “Vulnerable City, Recipient City, or Climate Destination? Towards a Typology of Domestic Climate Migration Impacts in US Cities”
- Goal: Analyse and anticipate regions becoming receiving communities through data driven analysis
 - Utilizing ZIP Code Data from USPS
 - Analyze their current socio-economic conditions and climate risks
 - Illustrate what appears to be working for them
 - Consider how they can further adapt and become welcoming for migrants

Climate Destination Factors



- Each town has been analyzed for its ready access to:
 - Freshwater
 - High vacancy rates or abundance of affordable housing
 - Amount of infrastructure to support more residents
 - Expressed desire to grow and be welcoming
 - History of, or interest in, improving adaptive capacity through sustainability and/or resilience efforts

Method



Method

- Assessed ZIP Code changes over the past 3 years as an analogue for population movement
 - (USPS Data Downloaded on Aug 8th 2021)
- Processed differences between 2020 and 2019, and Aug 8th 2021 and 2020
- Ranked cities for for largest positive changes in migration due to the advent of COVID in 2020
- Analyzed differences to map major cities/towns with significant patterns
- Quantified climate vulnerability using climatecheck.com
 - Flood
 - Storm
 - Heat
 - Drought
 - Fire
- Analyzed climate destination factors for chosen urban centers
- Compared chosen cities to look for commonalities with pull factors for migration

Climate Safe Receiving Towns and Their Regions

New York & Hudson Valley Region:

Carmel

Scarsdale

Hartsdale

Woodstock

New City

Rhinebeck

Hudson

Buffalo Region:

Hamburg

East Aurora

West Seneca

Others

Albany Region:

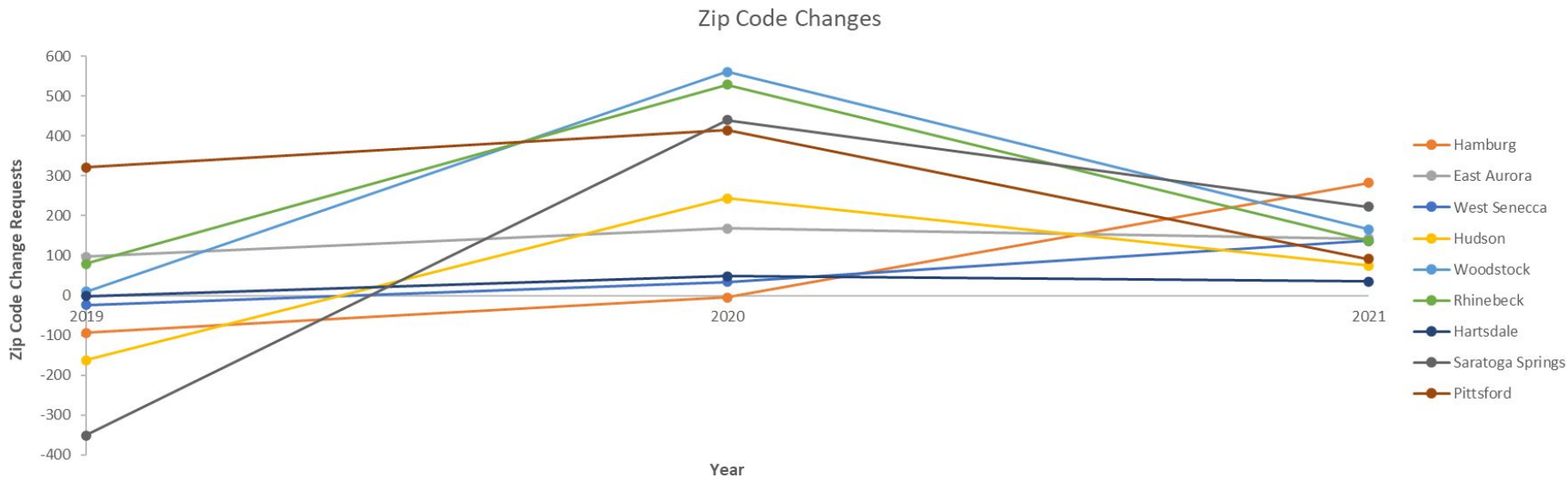
Saratoga Springs

Rochester Region:

Pittsford

Climate Safe Receiving Towns

Towns with stable or increasing population:



Types of Cities

Type I: **Vulnerable Cities**

- Cities/Towns at risk for climate disasters

Type II: **Recipient Cities**

- Cities/Towns receiving migrants and under pressures due to the migration
 - For the case of our study we also classified cities with a higher future climate risk in this category

Type III: **Climate Destinations**

- Cities/Towns with potential to accept more migrants and adapt

Types of Cities

Type I: **Vulnerable Cities**

New York

Buffalo

Rochester

Type II: **Recipient Cities**

Scarsdale

West Seneca

Woodstock

Rhinebeck

Type III: **Climate Destinations**

Hudson

Hamburg

Heartsdale

East Aurora

Carmel

Saratoga Springs

Pittsford

New City

New York State | Map

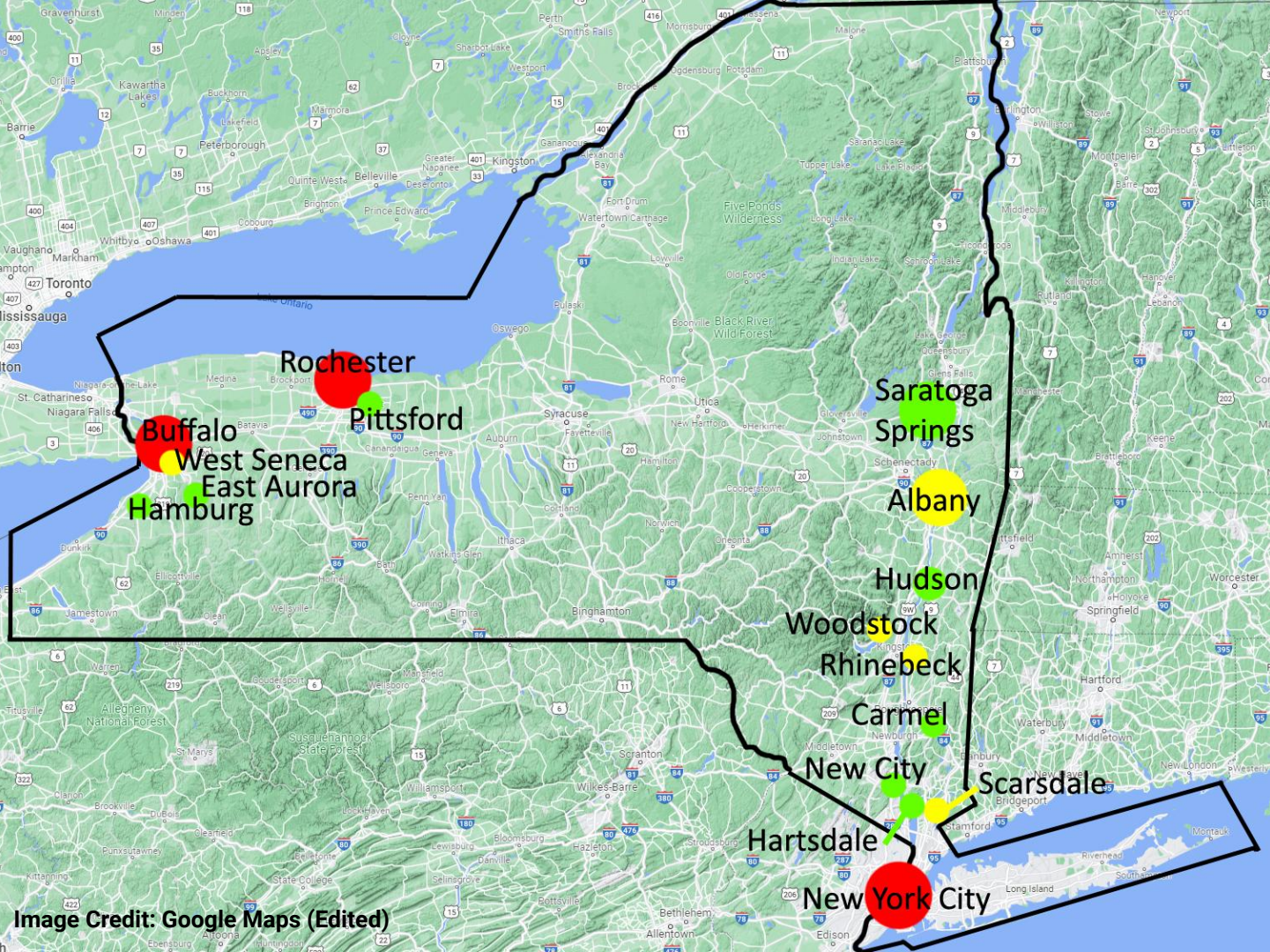


Image Credit: Google Maps (Edited)

Buffalo Region



- All selected towns have focus on digital services
 - Town apps/websites
 - Easy access to town services through a central town website
- West Seneca
 - Gaining population
 - Close proximity to Buffalo related amenities and easier transit access
 - Lacks elements of walkability as well as diversity in the population
- Hamburg and East Aurora
 - Increasing population
 - Some of the highest walkability and bikeability scores
 - Sidewalks along quiet streets

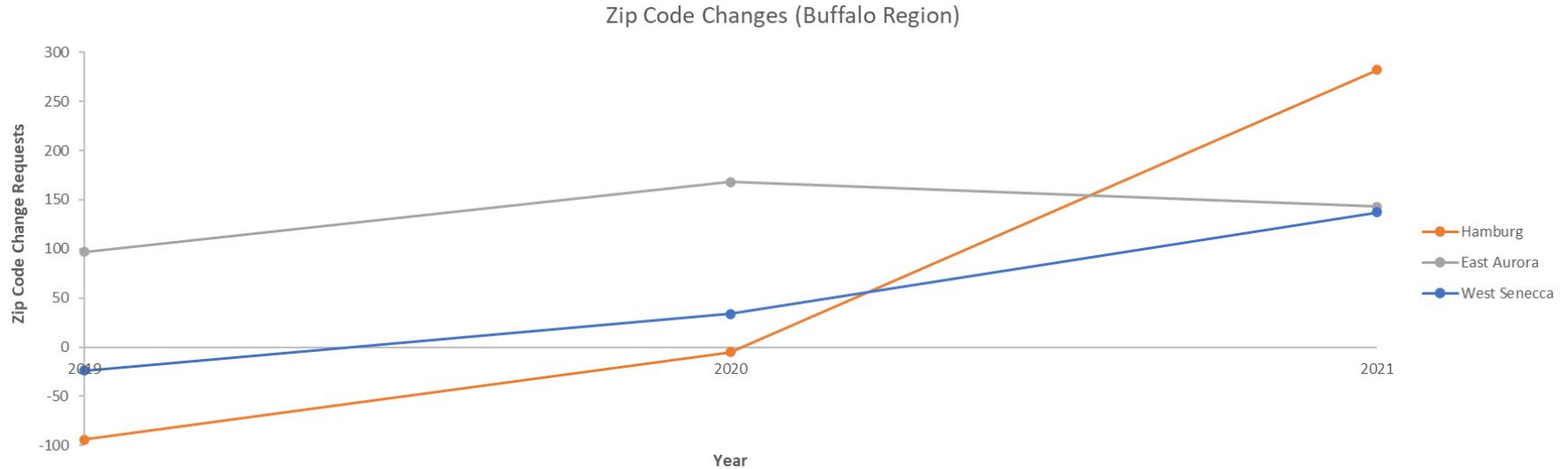
Buffalo Region Climate Stats

City/Town	Flood	Storm	Heat	Drought	Fire
Buffalo	88	71	19	1	1
Hamburg	1	90	50	27	20
East Aurora	1	92	45	27	22
West Seneca	25	82	51	27	1

Vulnerable Cities, Recipient Cities, Climate Destinations

Buffalo Region Changes

Towns with stable or increasing population:



New York & Hudson Valley Region



- People locating near the rail access
- Existing resources and services
 - High end shopping and amenities
 - Arts and culture interests
- Surrounding towns and cities around major centers seeing increased migration overflow, such as Hudson
- Variety in the design and makeup of receiving towns
 - Catering to specific demographics, industries, and lifestyles
- Towns with historically preserved look and feel

New York & Hudson Valley Region Climate Sats

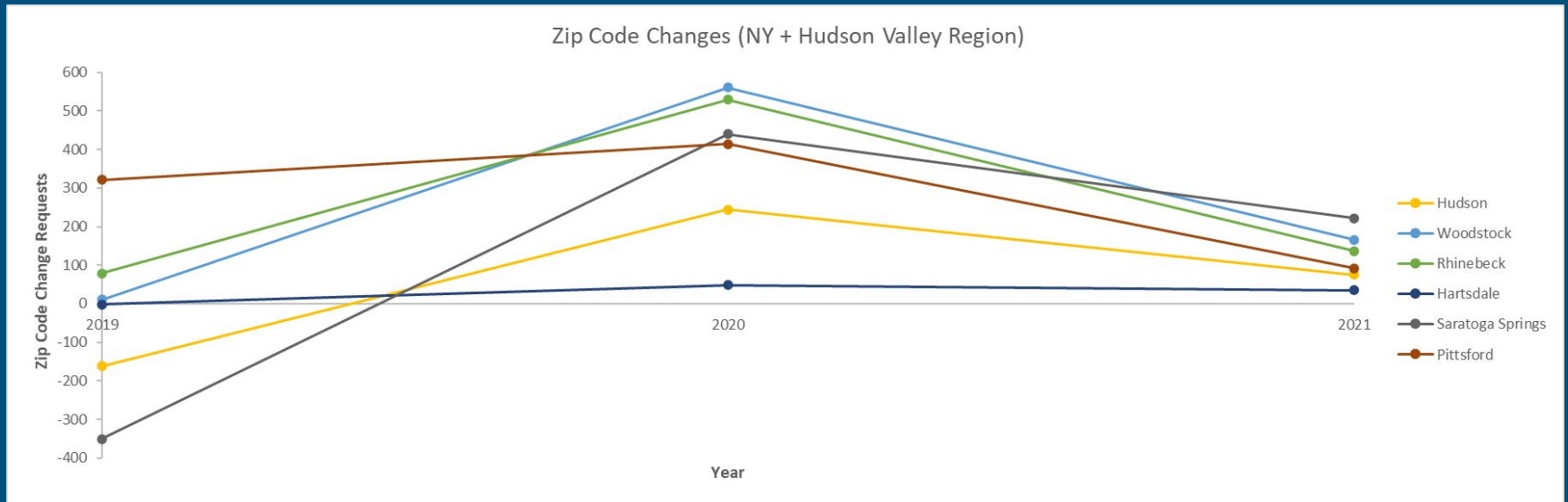
City/Town	Flood	Storm	Heat	Drought	Fire
New York*	1	70	31	17	1
Carmel	1	76	72	42	7
Scarsdale	39	77	30	49	1
Hartsdale	1	66	60	40	1
Woodstock	57	71	34	49	1
New City	1	72	28	17	1
Rhinebeck	43	87	43	16	1
Hudson	1	82	64	23	1

Vulnerable Cities, Recipient Cities, Climate Destinations

* NYC is vulnerable because of dense regions on coastline

New York & Hudson Valley Region Changes

Towns with stable or increasing population:



Other Regions

- Saratoga Springs in the Albany Region
- Pittsford in the Rochester Region
- Both towns similarly have seen a spike in population after COVID
- All other surrounding cities and towns are losing population
- Both have had projects in recent years that have focused on projects that have been enhancing public spaces and amenities
 - Urban Renewal
 - Walkability
 - Downtown mainstreet investment
 - Local community initiatives
 - Ecological and sustainable investments

Pittsford



- Close proximity to Rochester for more amenities within driving distance
- In recent years a focus on walkability, bikeability
 - Historically predominantly car oriented
- Nature parks and paths, connected to amenities and the communities
 - Longer walks to amenities from outlying areas because of previous designs
- Potential for densification due to traffic claiming and walkability combined with seating in the town core and along paths
- Home builders tend to focus on in home amenities and larger homes
 - Designing for long periods living at home
 - Appealing to remote working employees

Pittsford Climate Stats

City/Town	Flood	Storm	Heat	Drought	Fire
Rochester	88	71	19	1	1
Pittsford	1	77	45	29	20

- Being farther inland, Pittsford has a much lower climate risk than Rochester
- It does have a higher fire risk than most cities/towns researched
 - Possible need for improvement in fire safety design and services
 - The outlying communities and sprawl have winding roads that can harm emergency access
- Focusing on densification with more varied living options could have an impact in attracting more migrants

Saratoga Springs



North of Albany, Saratoga Springs is the outlier in the region gaining population during the COVID period, losing population in years prior

Their focus on renewable energy and resilience strategies appear to be influencing the decisions for people to locate there

Showing the positive impacts impacts from “Solar for All”, and other related initiatives by NYSERDA and the city

This combined with the focus on digital services, the existing walkable core, urban forestry, and efforts toward zero waste, are making compounded impacts in attracting migrants

Saratoga Springs Climate Stats

City/Town	Flood	Storm	Heat	Drought	Fire
Albany	1	78	53	20	1
Saratoga Springs	1	87	54	11	7

Unlike other regions, Saratoga Springs does not have a significantly lower climate risk than it's largest neighbour in the region

Shows the potential for similar policy implementation and practices in the Albany region to continue the trends from Saratoga Springs

What We Learned



- With climate migration a myriad of factors influence people's decision to move
 - Few individuals consider the long term environmental impacts
- People's decisions to move are not based significantly on climate risk
 - We specifically looked at the climate vulnerability of each city to determine possible climate heavens as some of the largest receiver regions were of extremely high risk
- Access to datasets of high detail have been delayed or inaccessible
 - Had to work with datasets that were available
 - Adapted our methodology and methods to working with limited data
 - Planning for the possibilities of future data, regardless of us being able to get it or not

Future Work



- Construction and development stats over recent years
- Assessing openness to BIPOC communities
- More detailed transit use (especially in the Hudson Valley)
- Impacts of:
 - Public policy
 - Zoning
 - Focused redevelopment
- Detailed discussions with leaders in the cities and towns
 - Understand their policy decisions
 - Scope of their understanding of climate impacts, both direct and migration

Future Datasets to Incorporate

- Census bureau stats available over coming years (Lags behind by 2 years)
- Census racial breakdowns to understand the diversity of each town
- Migration from the IRS to understand more nuances in patterns
- Birth and Death rates in various regions to understand changes
- Data on business and modes of work, focusing on long term trends and impacts of remote working on communities and resulting migration impacts
- More detailed adaptive capacity indicators
- Environmental/Socio-Cultural/Technological overviews of towns using detailed data from the specific towns and cities where available



Planning For Future Migrations



- Integrate demographic modeling methods
- Focus on the potential to create community partnerships along with realising the potential migration channels that exist
- Looking at more welcoming and affordable towns with potential for receiving migrants that are more at risk and/or low income
- Do interviews on why people move to specific regions and match the demographics to help anticipate and facilitate movement of migrants
- Assess effectiveness of Zoning and development

Thank You!

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