

# Homeless Youth don't care about Borders, so why should our Model?

Brought to you by the **Constellation Team**





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# Mission Statement

The team's goal is to determine the optimal location for the new Star House to aid the most at-need community



# Process



**01**

**Identify relevant  
data**

**02**

**Area of Scope**

**03**

**Key Metrics and SQL  
Wrangling**

**04**

**K-Means model**

**05**

**Final Evaluation  
and Next Steps**

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# Datasets Used

Dataset	Overview of Data Given	Key Data
HIC Counts by CoC	Housing Inventory Count (HIC) provides the number of beds available and used in a CoC (Continuum of Care) organizational district	Within this data we focused on dedicated youth beds
PIT Counts by CoC	Point in Time (PIT) count of people experiencing homelessness	We are looking at youth and 18-24 factions
CoC County Mapping	Using the CoC code, we can group these into the county they are in	Based on this, we can find the location of each county and find which area has the most need



# Scope of Area

Since homeless youth typically are transient, it is beneficial to group the CoCs since the new facility would need to serve a wide geographic area.



# Ideal Outcome

In order to determine the best location for the next Star House facility, we need to get a cluster of CoCs that are the most in need. Therefore, we will be using K-means to return a map that provides us with an outline of these areas instead of relying on state barriers



# Grouping the CoC and Counties to find our scope

## CoC

Based on the CoC code, we can identify metrics to determine which area has the most need through the HIC and PIT datasets

## Counties

Leveraging the county data, we can find the geolocation and population of each CoC

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# Key Metrics

Resource Ratio

$$\frac{HYP}{R}$$

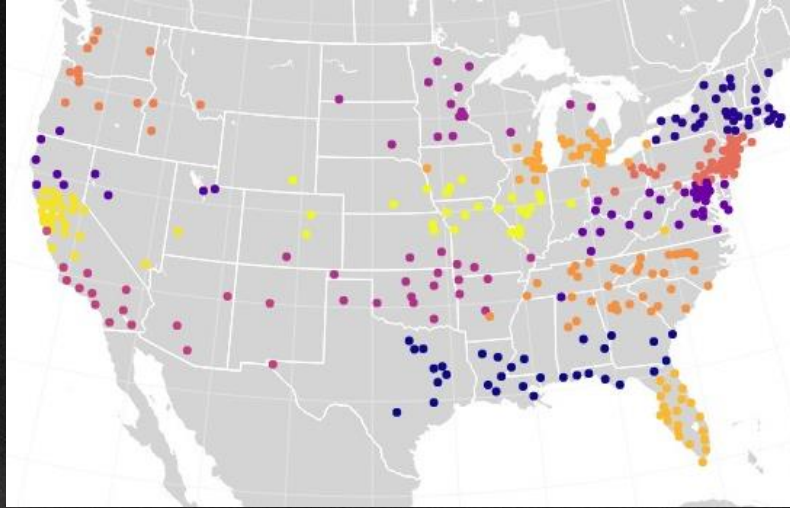
Determines how suitable a CoC code is to manage their homeless youth population (HYP) with the available beds for youth (R)

Relative Homeless Youth Growth Rate

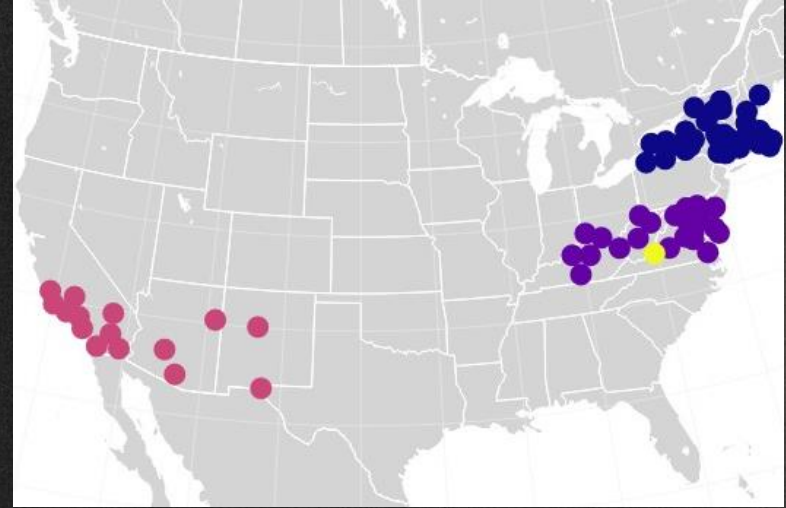
$$\frac{d(HYP)}{d(Population)}$$

Finds the growth of the homeless youth population in relation to population growth

# Result of K-means Algorithm



This is the result of producing 20 clusters

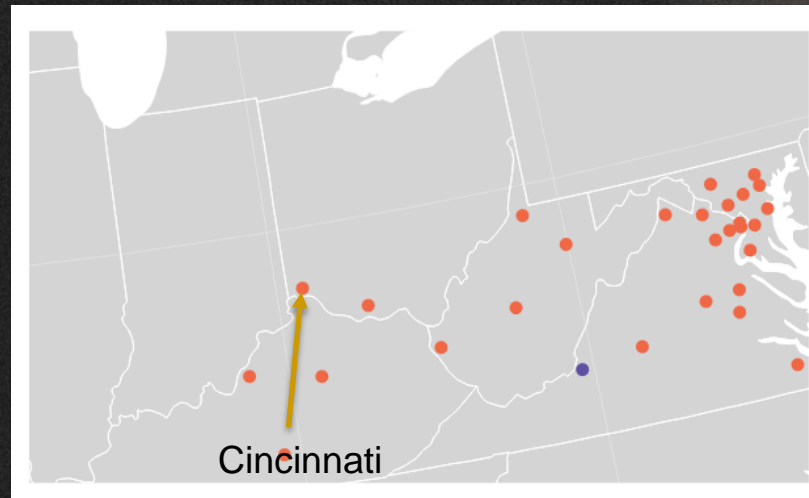
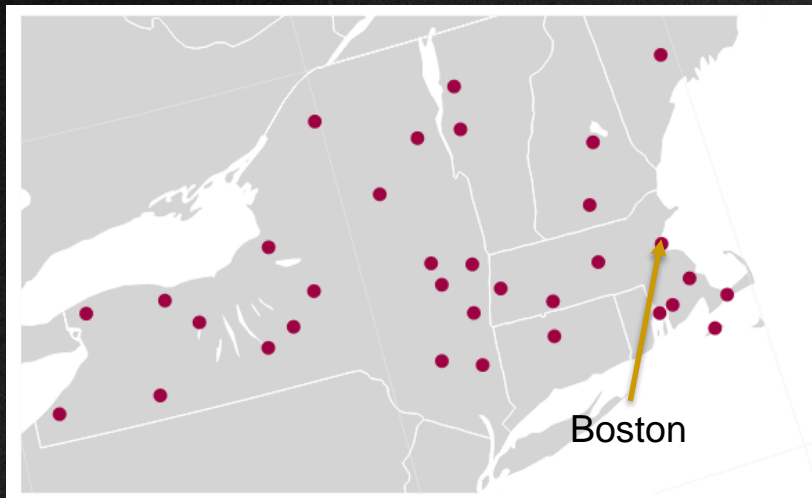


Youth homeless focus areas are in the Northeast, the Ohio/Virginia area, and the western Mexican border.

Poorer Resource Ratio/Homeless Growth Rate



# Potential Target Cities



# Comparisons

	Boston, MA	Cincinnati, OH
Rate of Youth Homelessness in the Area	1%	-5.11%
HYP/R in the Area	130.38	65.96
Job growth	21% growth in Education and Health & Services 20% growth Professional & Business Services	16% growth in Education and Health & Sciences 16% growth Professional & Business Services
Unemployment	7.2% in Sept. 2020 --> 6.1% in Sept. 2021	7.0% in 2020 --> 4.3% in 2021
Avg. Apartment rent	7% increase	8% increase



# Decision Matrix

		Distance from Home Headquarters	
Area with Greatest need	<- Area with Increasing Need	Increasing Distance ->	
		Cincinnati	<b>Boston</b>
		<b>Boston</b>	

# Next Steps

**Expand**

**Find additional  
metrics**

**Evaluate**

**Assess validity of  
our model using  
additional data  
sets**

**Explore**

**Identify new  
locations for  
further growth  
using newly  
validated model**