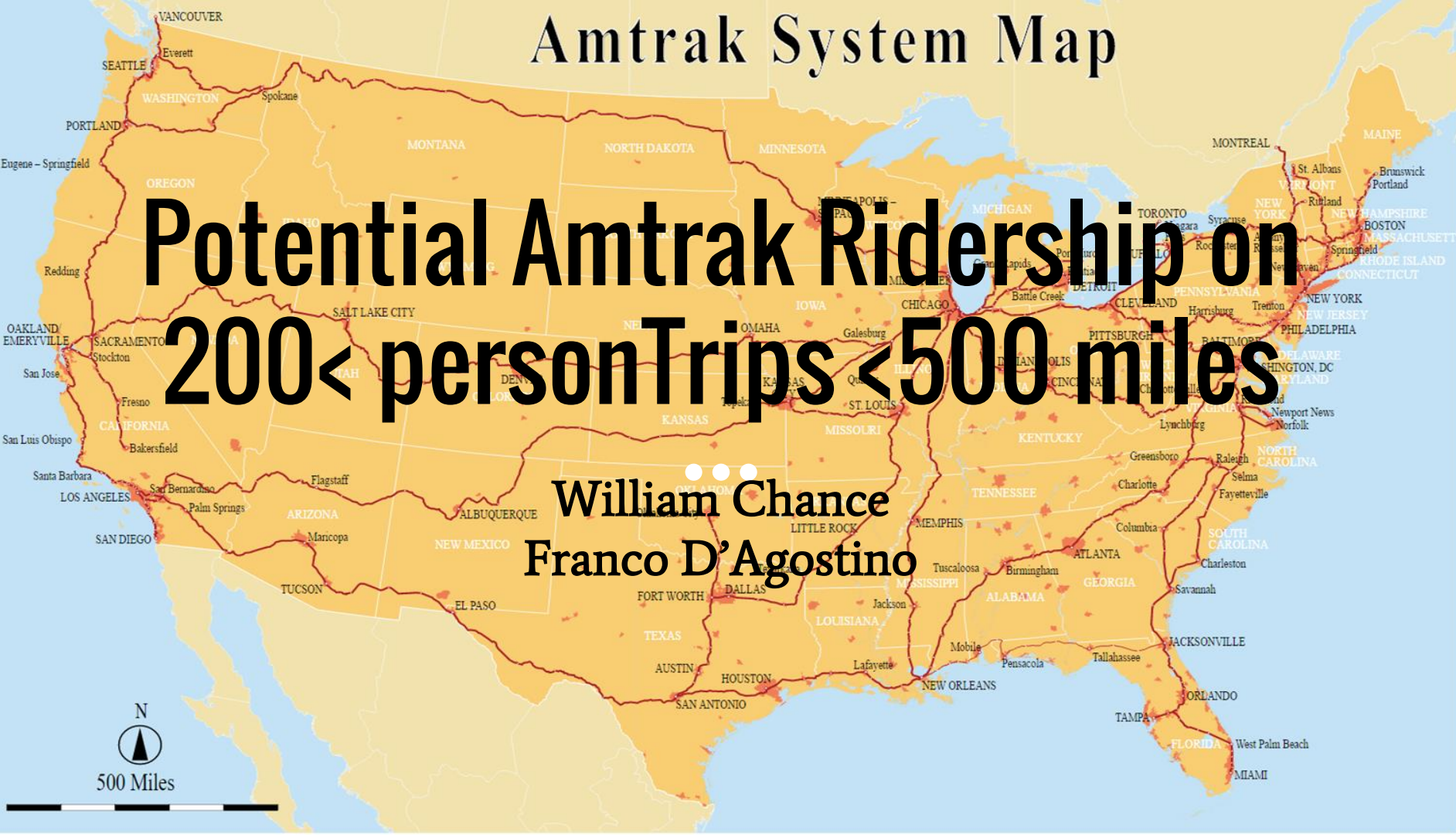


# Amtrak System Map

**Potential Amtrak Ridership on  
200 < person Trips < 500 miles**

**William Chance  
Franco D'Agostino**



# Project Overview

Aggregate all Nation Wide Person Trips greater than 200 miles but less than 500 miles

Do a Mode Split Model

Break up Long car-only trips into potential aTaxi and Amtrak Trips

Illustrate characteristics of these trips



# Algorithm for Computing Broken up Trips

1. Locate nearest train station to (oLon,oLat); record distance = A
2. Locate nearest train station to (dLon,dLat); record distance = B
3. Look up Train Trip Distance = C using a Train Times Database
4. Compute Total Trip Distance = A+B+C
5. Compare Total Trip Distance to GCDistance
  - a. If Total Trip Distance  $\leq 1.3 * \text{GCDistance}$ , then break up trip
  - b. Write data to output file

# Sample Data for Broken up Trips

Origin Lat	Origin Long	oStation	Dest Lat	Dest Long	dStation	Train Trip Distance	Total Trip Distance With Train Trip	Car Only Trip Distance
32.62861	-86.905032	725	39.567481	-86.101409	5	460.2208197	528.3974131	481.1935552
32.62861	-86.905032	725	39.619371	-86.114604	5	460.2208197	524.7494907	484.6922321
32.62861	-86.905032	725	39.405578	-86.035114	5	460.2208197	540.1019682	470.4358427
32.62861	-86.905032	725	39.613524	-86.173432	5	460.2208197	524.8821943	484.0036239
32.62861	-86.905032	725	39.35564	-85.953361	5	460.2208197	544.7490707	467.503878
32.62861	-86.905032	725	39.619703	-86.140102	5	460.2208197	524.490316	484.5881989
32.62861	-86.905032	725	39.500429	-86.064038	5	460.2208197	533.378533	476.7862349
32.62861	-86.905032	725	39.627702	-86.179007	5	460.2208197	523.9325868	484.952796
32.62861	-86.905032	725	39.542637	-86.203247	5	460.2208197	529.9239722	478.9898942
32.62861	-86.905032	725	39.350108	-85.956357	5	460.2208197	545.0478801	467.1056466
32.62861	-86.905032	725	39.59552	-86.112539	5	460.2208197	526.3783706	483.063374
32.62861	-86.905032	725	39.500411	-86.133199	5	460.2208197	532.7260324	476.4215894
32.62861	-86.905032	725	39.583714	-86.202723	5	460.2208197	527.1213188	481.8181961
32.62861	-86.905032	725	39.580725	-86.188086	5	460.2208197	527.2098837	481.6794596
32.62861	-86.905032	725	39.587746	-86.104968	5	460.2208197	526.9923569	482.5678188
32.62861	-86.905032	725	39.567481	-86.101409	5	460.2208197	528.3974131	481.1935552
32.62861	-86.905032	725	39.62925	-86.181615	5	460.2208197	523.8422531	485.047193
32.57661	-86.894234	725	43.328363	-83.740501	133	710.3305361	789.9123328	761.809935
32.57661	-86.894234	725	43.445114	-84.023514	133	710.3305361	802.8512872	766.376977
32.57661	-86.894234	725	43.480143	-83.986442	133	710.3305361	804.0296923	769.1454178
32.57661	-86.894234	725	43.251118	-83.779312	133	710.3305361	785.3134016	756.1631294

# Statistics for Nationwide Trips

## Total Miles Statistics

Origin -> Origin Station	359,902,939.27
Destination Station -> Destination	349,124,658.23
Train Trips	7,542,070,061.06

## Average Miles Statistics

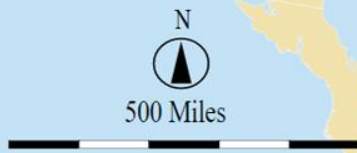
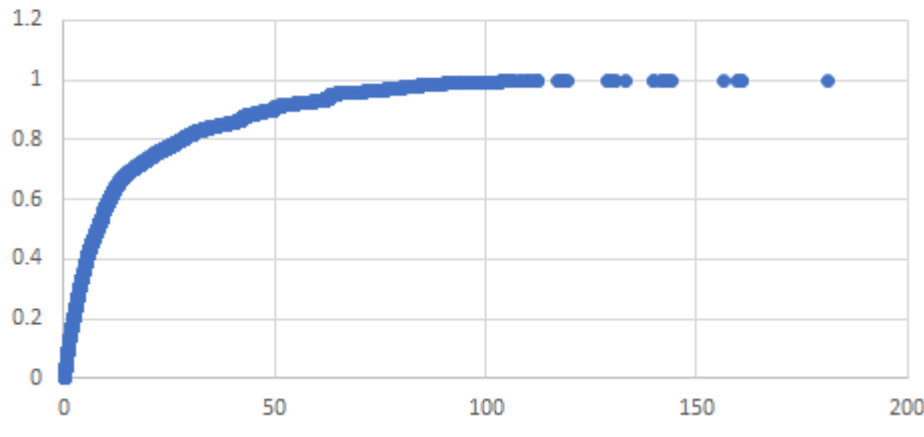
Origin -> Origin Station	16.89
Destination Station -> Destination	16.37
Train Trips	353.85

[Long Trip Origins Plot](#)

# Amtrak System Map

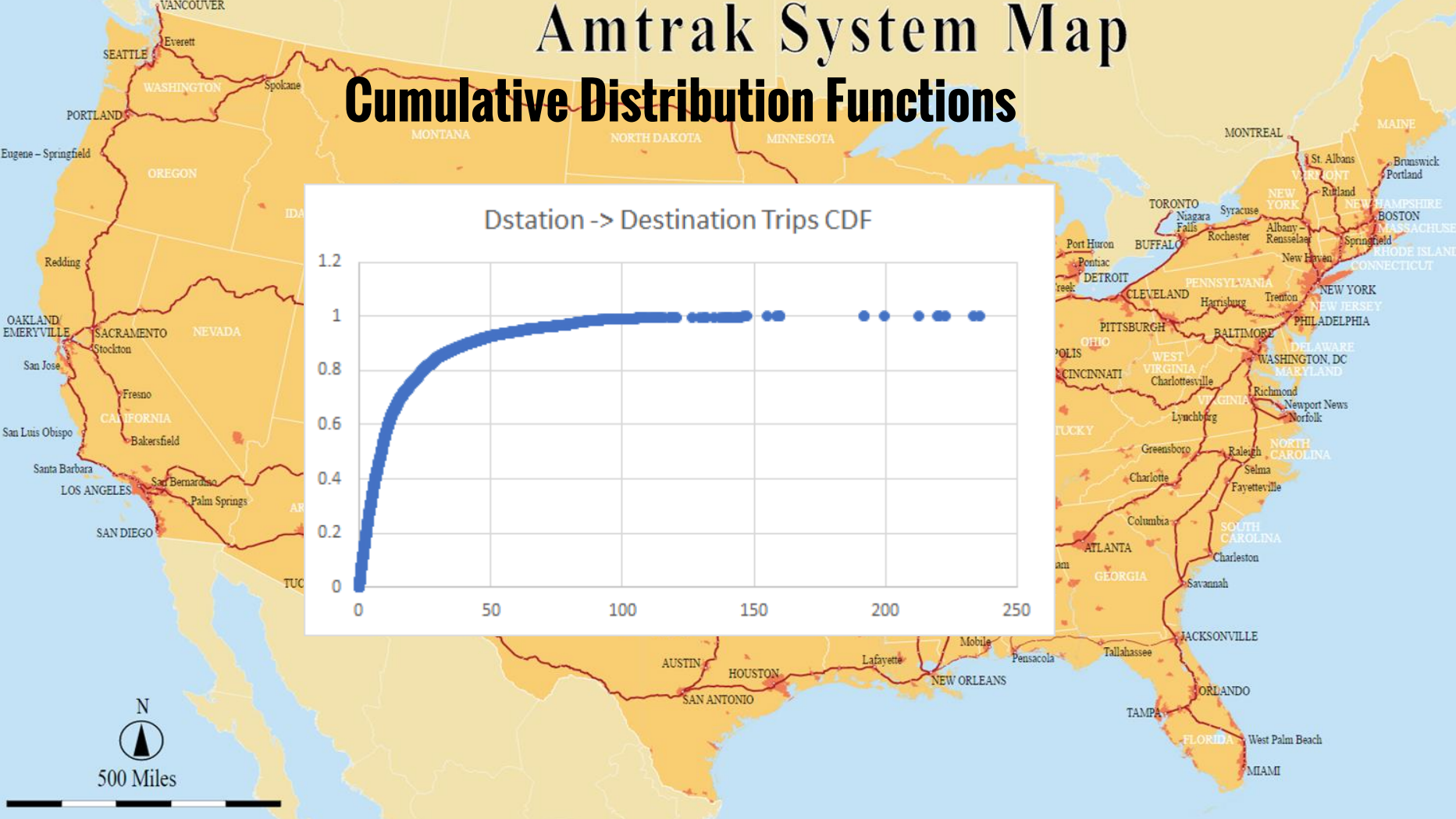
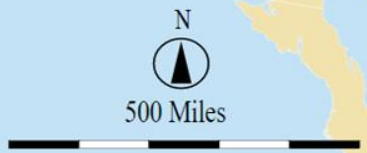
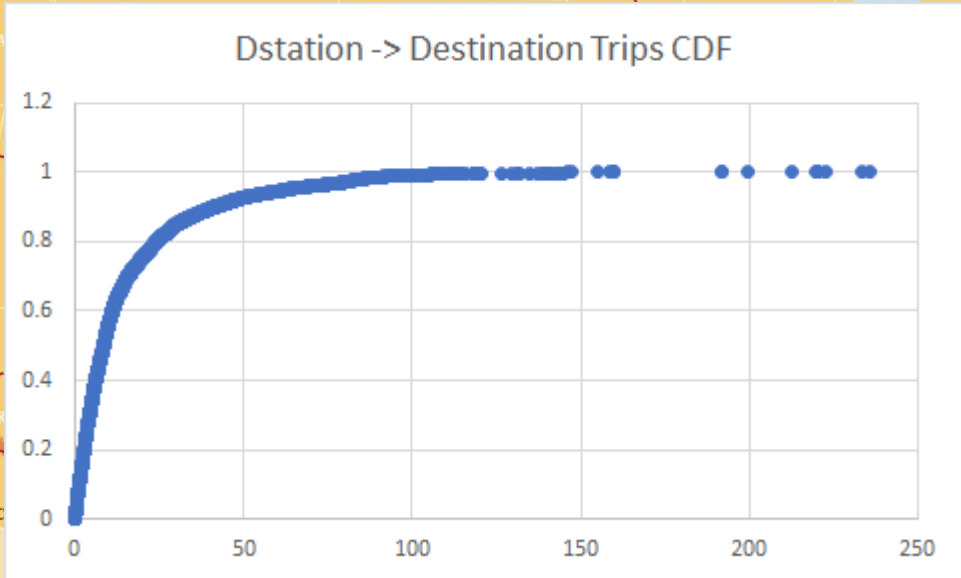
## Cumulative Distribution Functions

Origin -> oStation Trips CDF



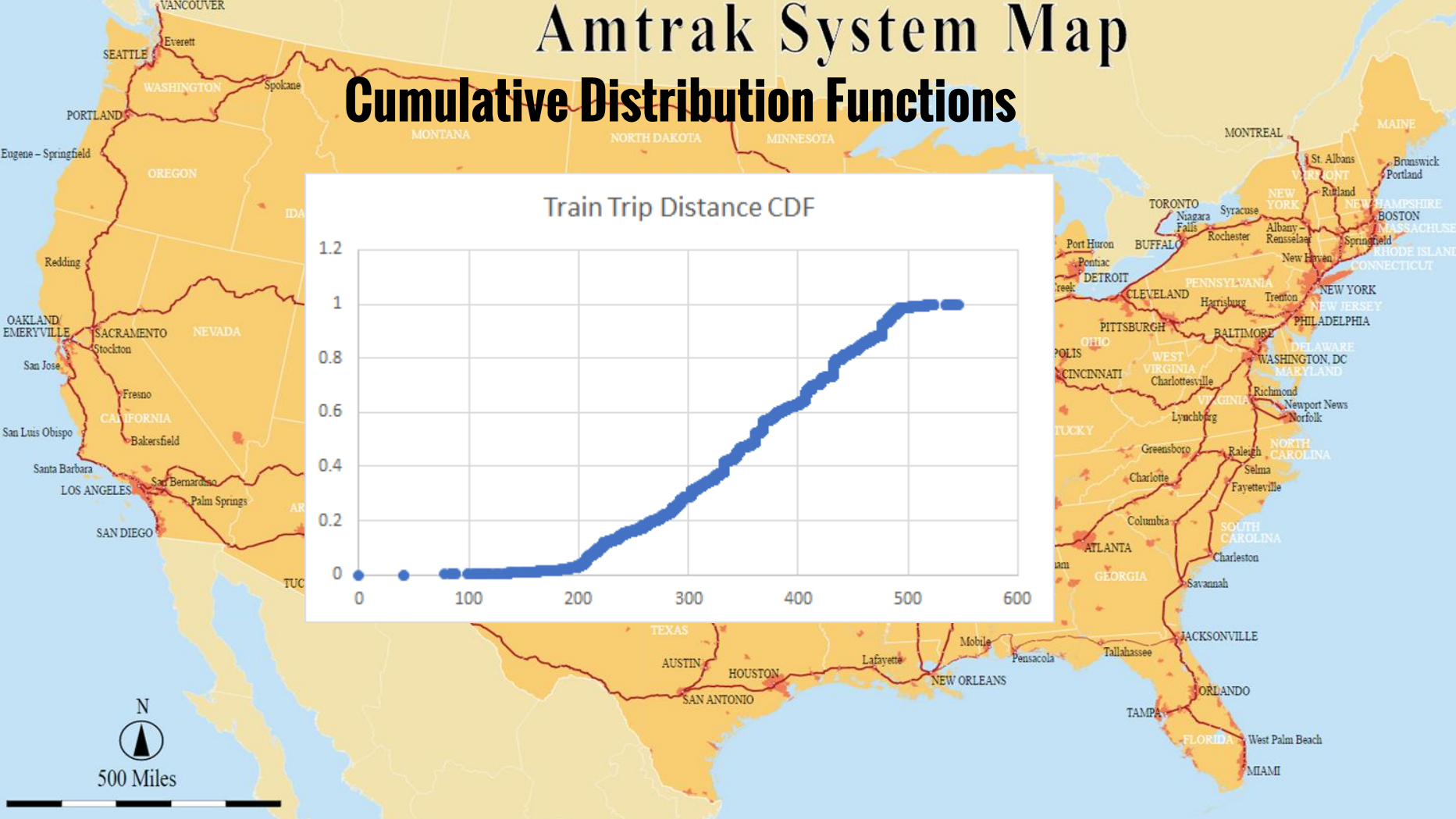
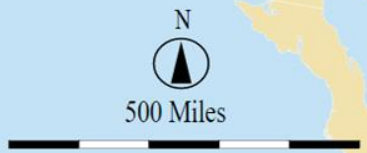
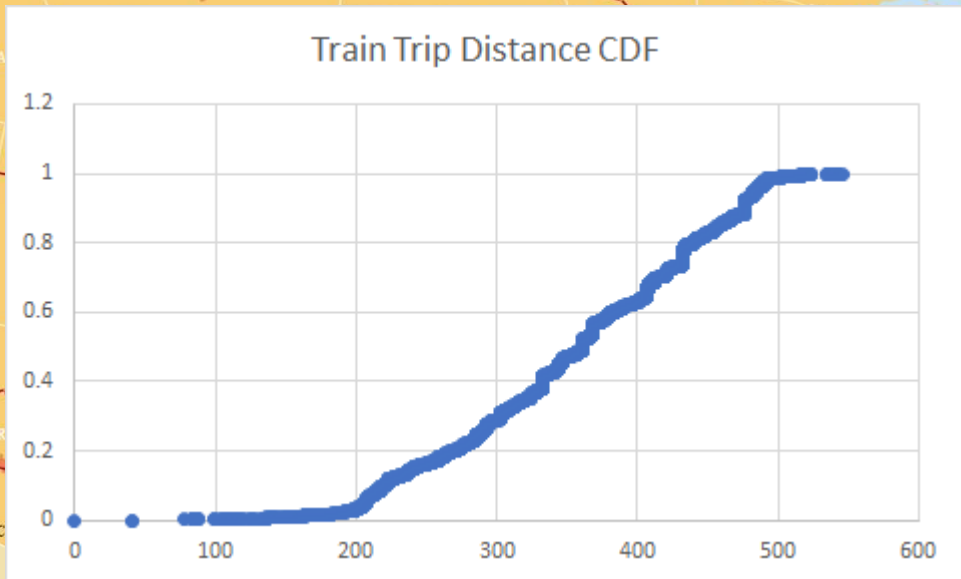
# Amtrak System Map

## Cumulative Distribution Functions



# Amtrak System Map

## Cumulative Distribution Functions





# Amtrak System Map

## Cumulative Distribution Functions

