

# Resilient Communities Project:

## Brooklyn Park: Foreclosure Recovery Program



**GEOG 5564 - Urban GIS**

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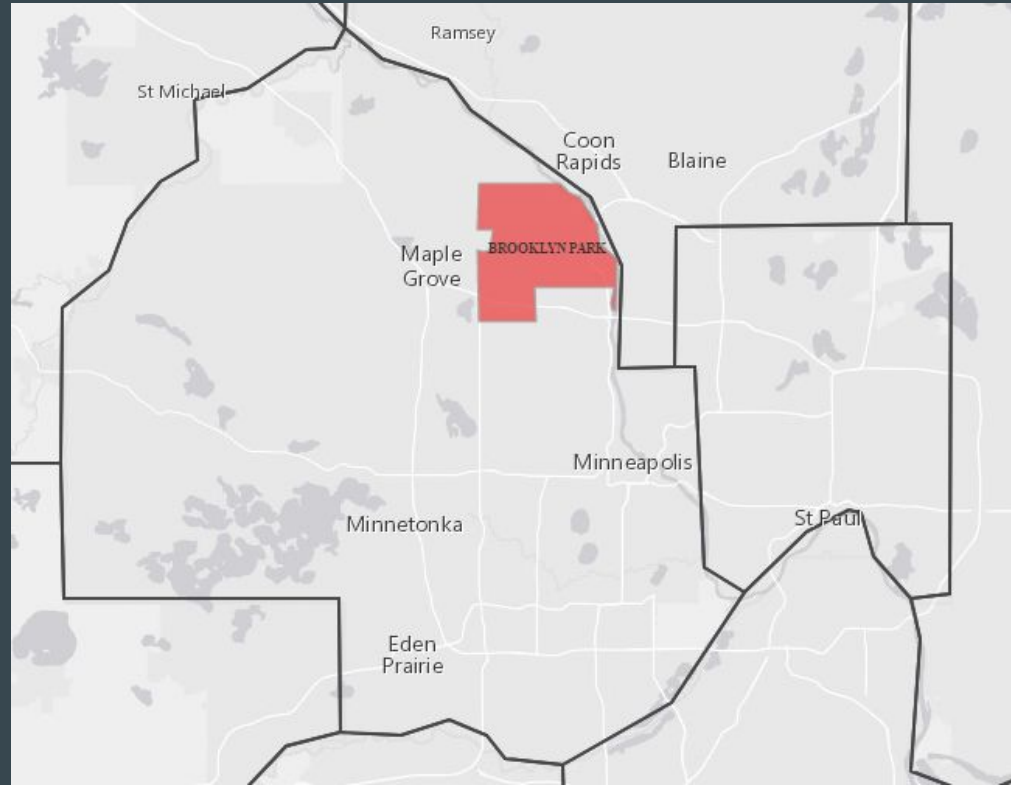
The project on which this presentation is based was completed in collaboration with the City of Brooklyn Park as part of the 2016—2017 Resilient Communities Project (RCP) partnership. RCP is a program at the University of Minnesota’s Center for Urban and Regional Affairs (CURA) that connects University faculty and students with Minnesota communities to address strategic projects that advance local resilience and sustainability.

The contents of this report represent the views of the authors, and do not reflect those of RCP, CURA, the Regents of the University of Minnesota, or the City of Brooklyn Park.



# Brooklyn Park:

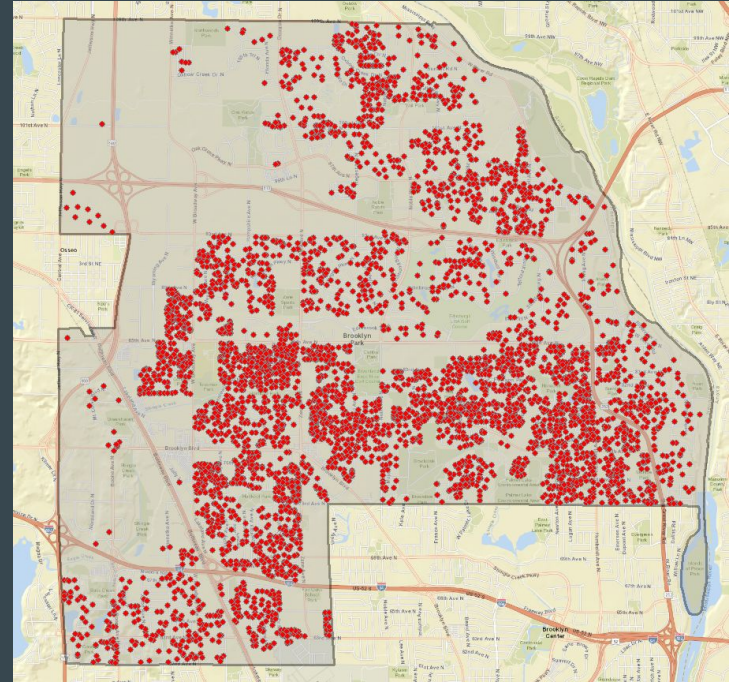
- Northern suburb of Minneapolis
- 6th largest city in Minnesota
- 80,000 residents
  - half identify as people of color
  - 20% are immigrants
- Projected to see growth in next two decades



Brooklyn Park

# The Problem: Foreclosure Crisis

- Between 2006 - 2013 approximately one-fifth of single family homes faced foreclosure.
- City response to crisis:
  - recovery program developed to buy, rehab and resell foreclosed homes.
  - 193 vacant homes rehabbed and returned to home ownership.



Brooklyn Park Foreclosures (2005 - 2016)

# Our Task: **Transit Accessibility**

## Objective #1:

- Visual exploration of possible association among transit accessibility and foreclosures.

## Objective #2:

- Examine the relationship between transit accessibility and rebound values.

# Data:

## Foreclosures:

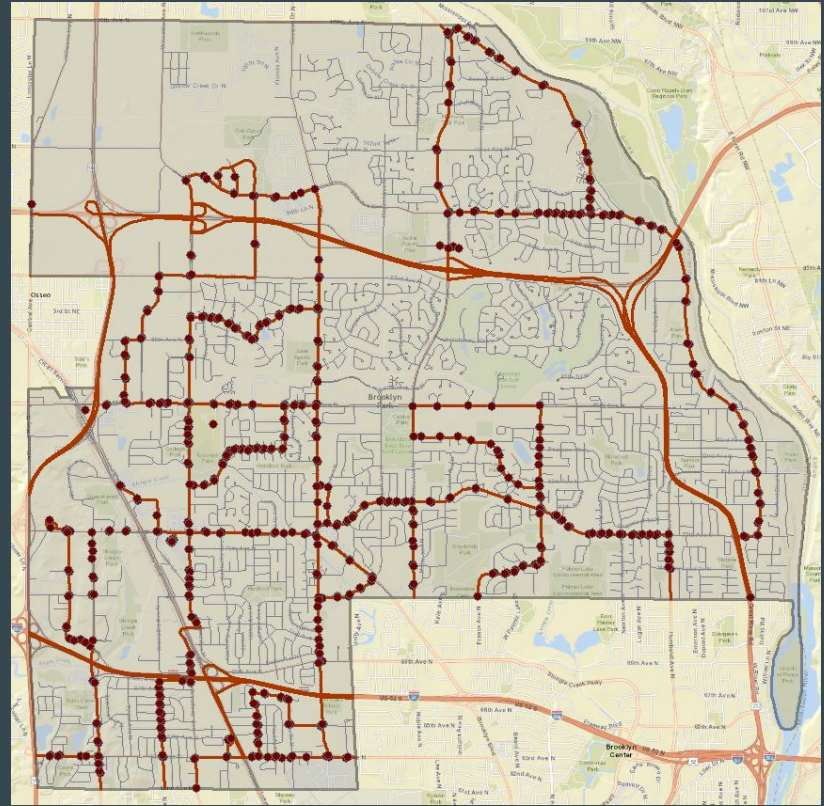
- Foreclosure point data (2005 - 2016)

## Other:

- Brooklyn Park boundary
- Road data

## Transit Accessibility:

- Bus routes
- Bus stops
- Planned Blue line extension stations



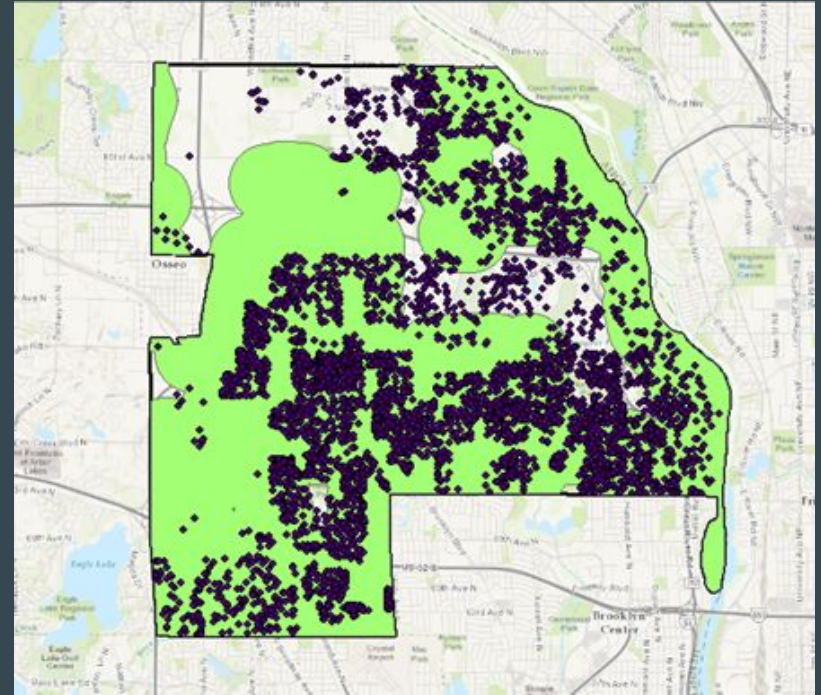
Bus routes and stops



# Methodology

## Buffer

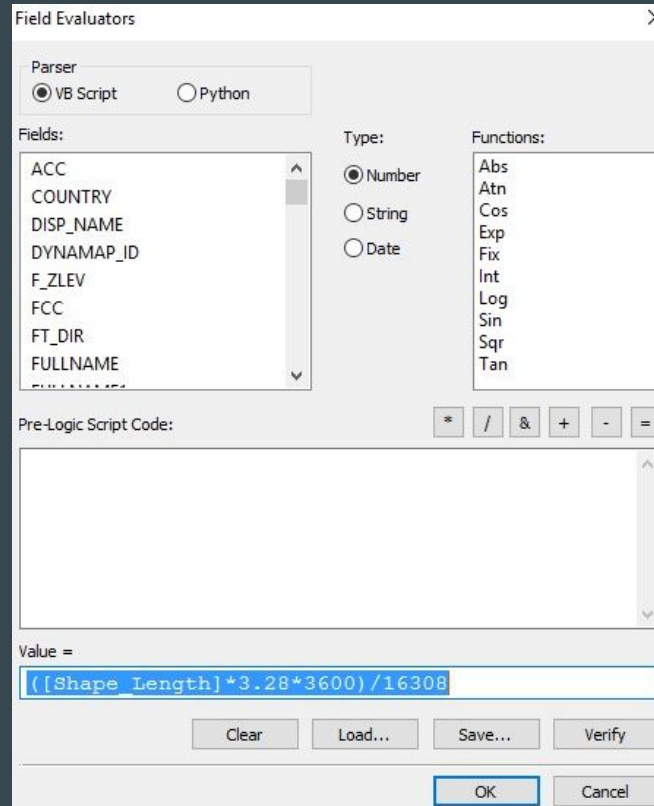
- Created a buffer around all transit stops in Brooklyn Park
- Based on the average walking speed of a human, 3mph (and our own walking speed)
- .5 mile was chosen as the buffer distance



# Methodology

## Network Analyst

- Needed to build our own Network Dataset
- Focused on 9 bus routes pass through Brooklyn park.
  - Each have several bus stops along route.
- 15-minute walking distance to bus stop.



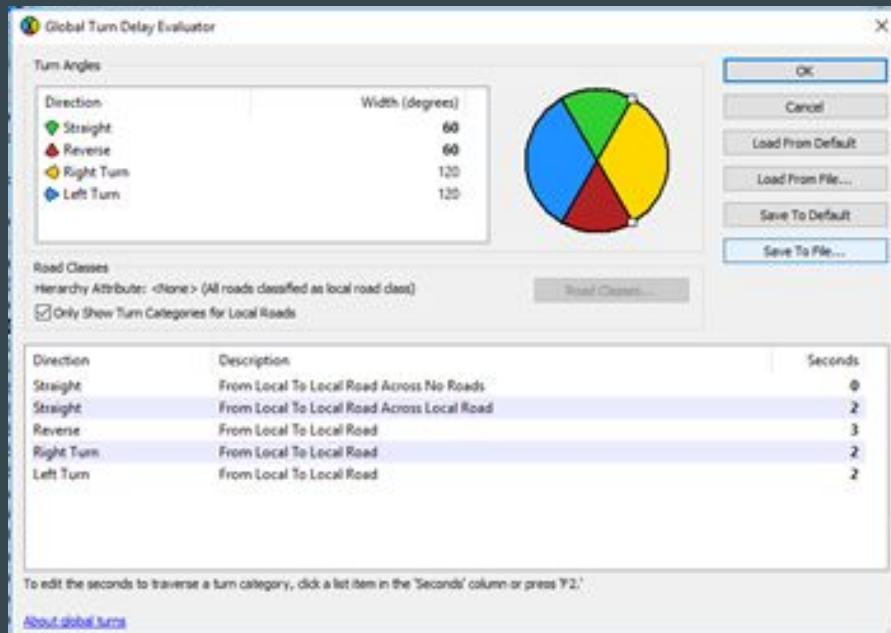
Network Analyst Field Evaluator



# Methodology

## Network Analyst

- Set parameters of the Network Dataset
- Impedance Time in seconds, and Global Turn Delays a critical part of the Dataset
- Once completed, the 9 groupings of transit stops (based on route) could be loaded individually



# Methodology

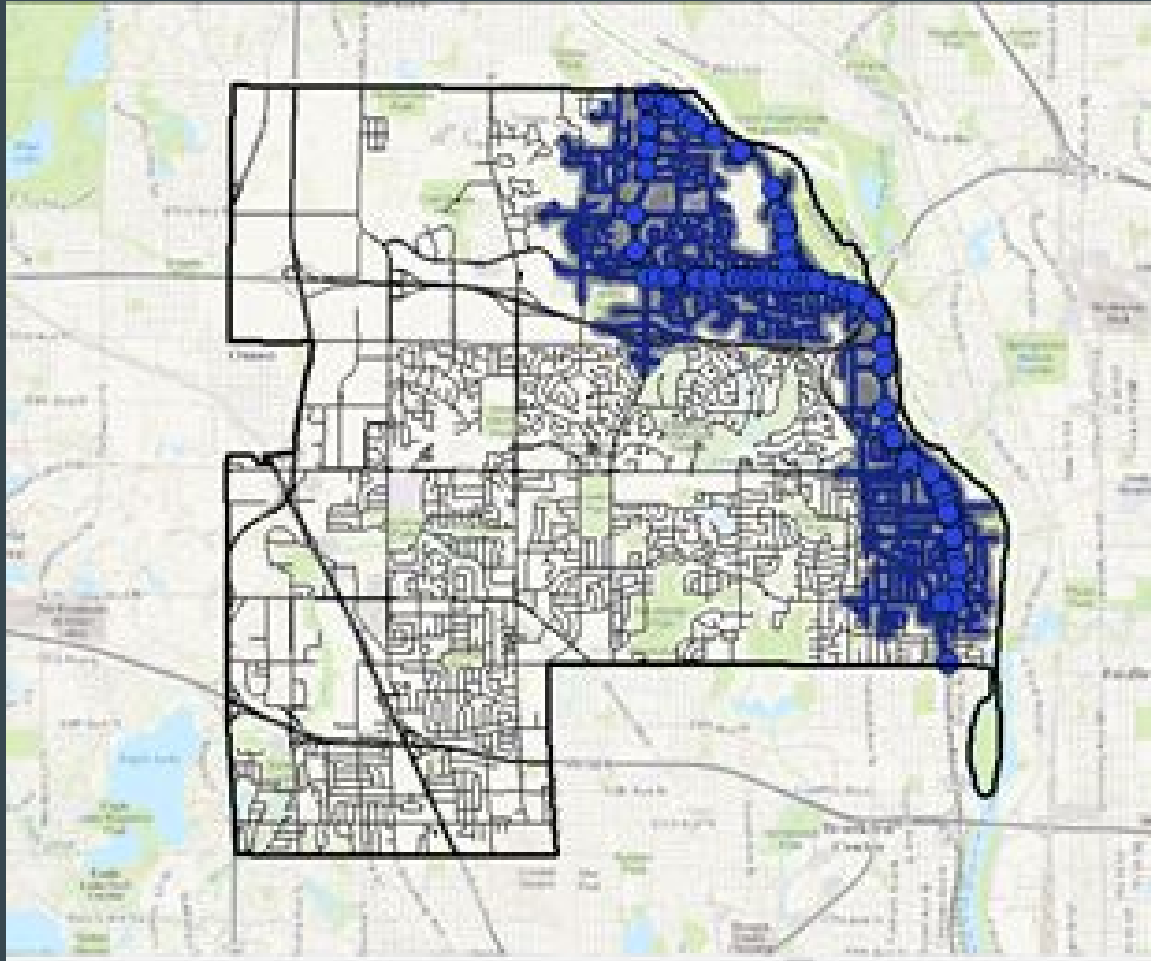
## Network Analyst

- Setting more parameters!!
- After all the parameters were set we could solve each service area to obtain a polygon based on our Analysis Settings
- We believed a 15 minute walk would be the maximum amount of time someone would reasonably want to spend

The screenshot shows the 'Layer Properties' dialog box for a service area analysis layer. The 'Analysis Settings' tab is selected. The 'Settings' section includes: 'Impedance' set to 'ImpededTime (Seconds)', 'Default Breaks' set to '900', 'Use Time' unchecked, 'Time of Day' set to '8 AM', 'Day of Week' set to 'Today', 'Specific Date' set to '4/29/2017', 'Direction' set to 'Towards Facility', 'U-Turns at Junctions' set to 'Allowed', 'Use Hierarchy' unchecked, and 'Ignore Invalid Locations' checked. The 'Restrictions' section is empty. At the bottom, there are 'OK', 'Cancel', and 'Apply' buttons. A link 'About the service area analysis layer' is visible at the bottom left of the dialog.

# Methodology

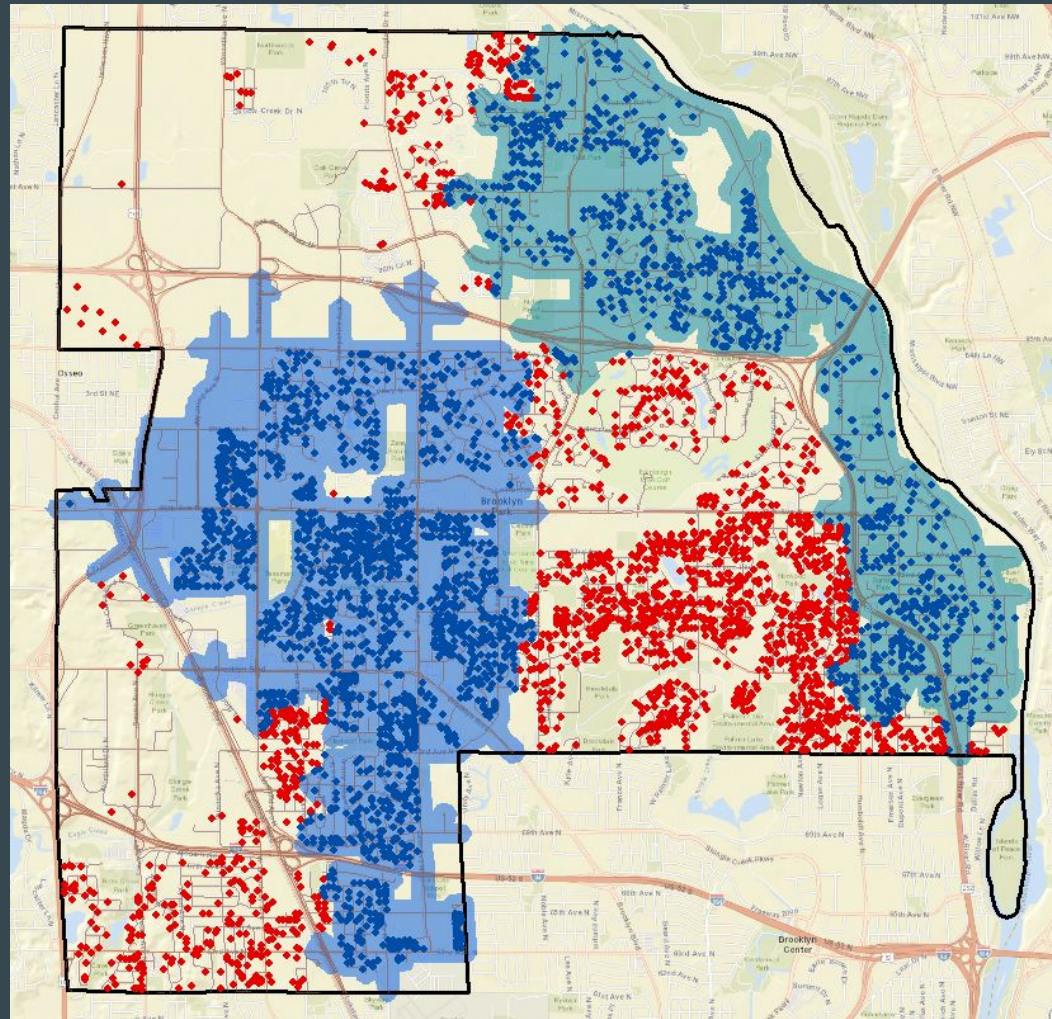
- Example output of Network Dataset, West River Road



# Results

Service Area for 2 popular routes  
with Foreclosure points

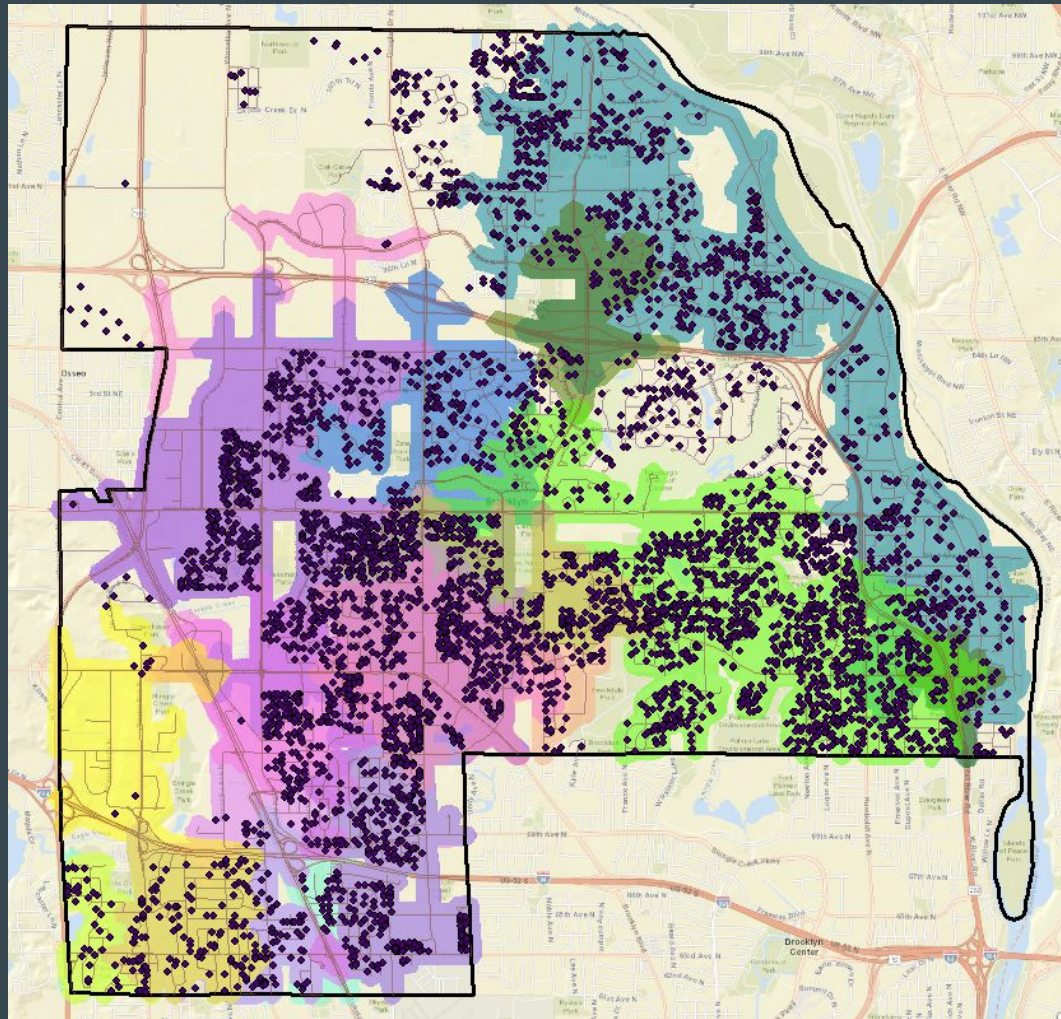
*(Express - West River Rd &  
Express - Zane Ave)*





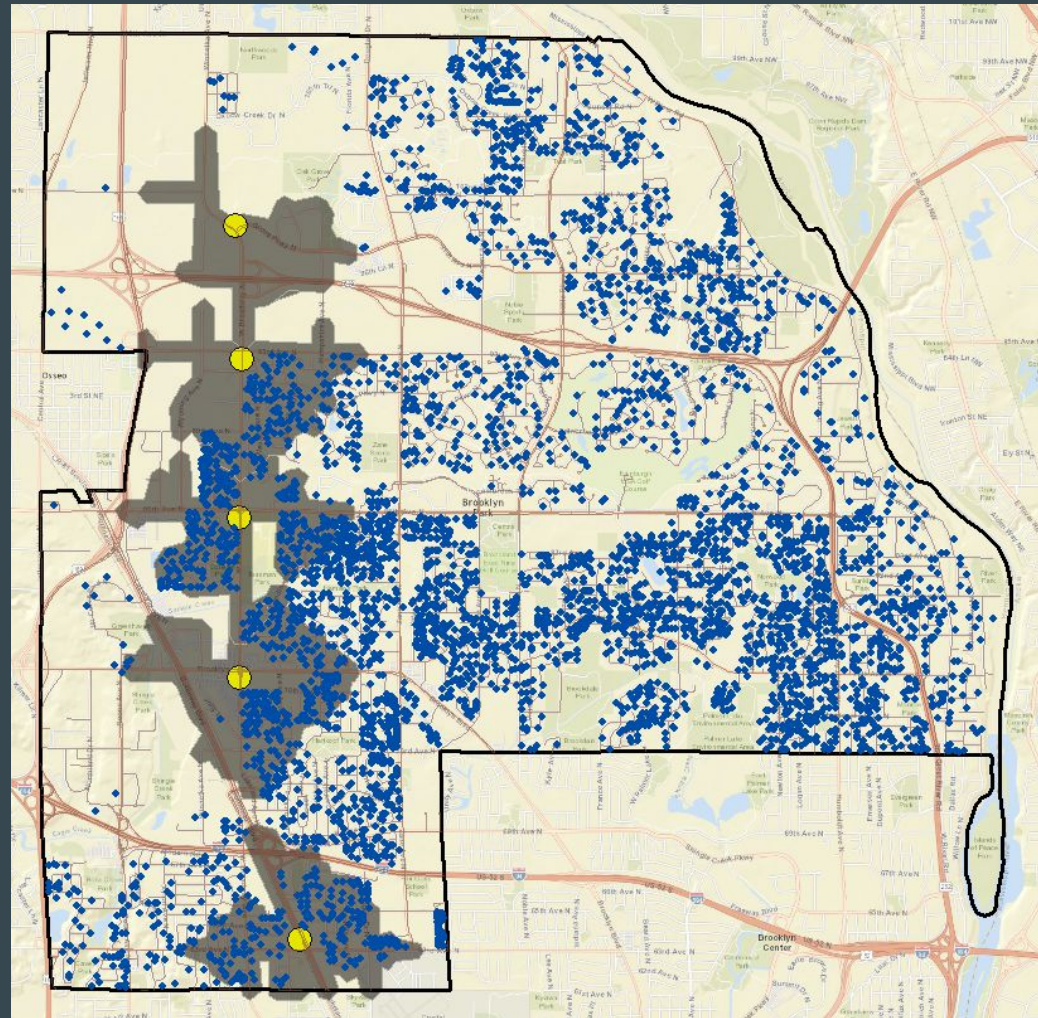
# Results

- Service Area for 9 Bus Routes with Foreclosure points
- In total 93% of the foreclosed homes are able to reach at least one of the bus routes going to downtown Minneapolis



# Results

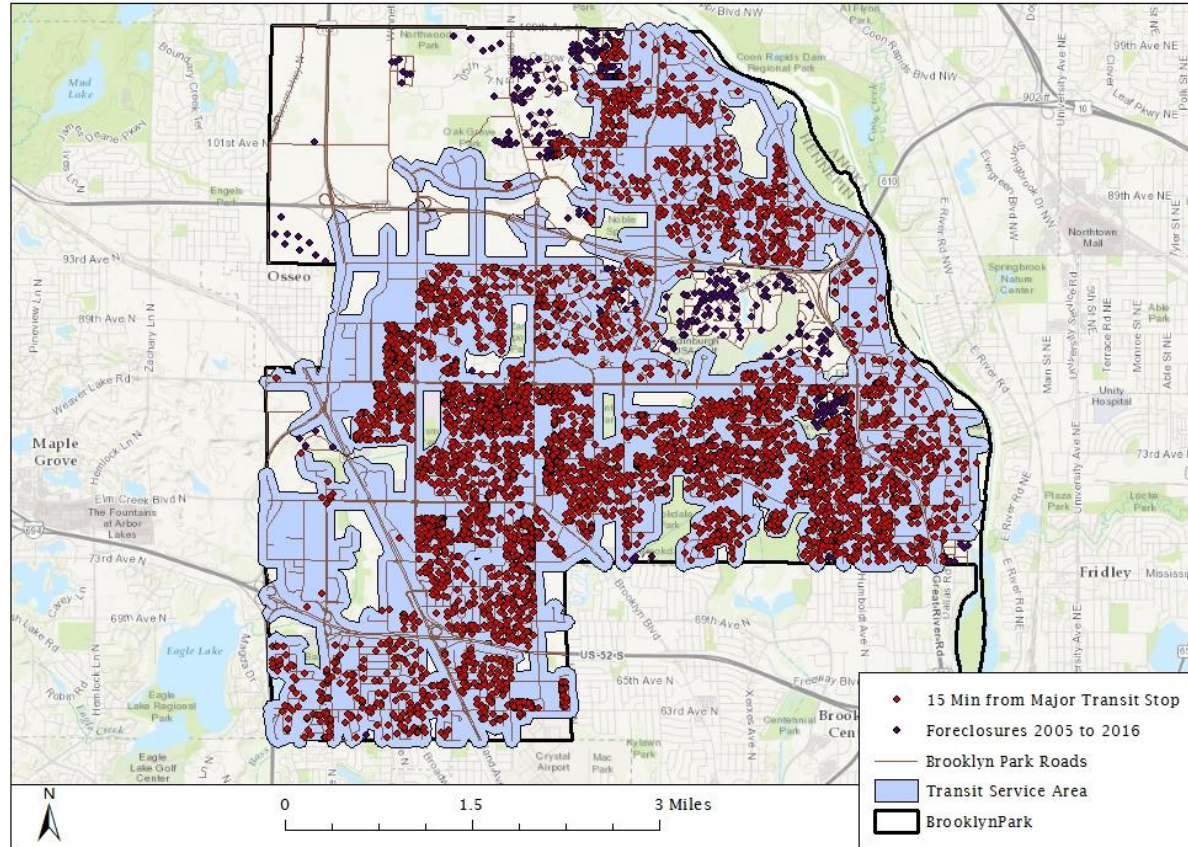
- Blue Line Extension Service Area with Foreclosure points
- Roughly 20% of the foreclosed homes fall in this area





# Foreclosures and Transit Service Areas in Brooklyn Park

By: Nicole Helgeson, Patrick Haney and Arie Peterson



# Results

- Studied the correlation of resale value of foreclosed homes and their proximity to transit stops
- The foreclosed homes were put into two categories:
  - within and outside our 15 minute walk zone
- Discovered homes outside the 15 minute walk area were resold on average \$100,000 more than their counterparts

1	OBJECTID	FIRSTBIDAM	Cnt_FIRSTBIDAM	1	OBJECTID	FIRSTBIDAM	Cnt_FIRSTBIDAM
4482	4481	610962.22	1	324	323	468448.31	1
4483	4482	618003.01	1	325	324	468898.47	1
4484	4483	621067.11	1	326	325	474365.48	1
4485	4484	629619.96	1	327	326	475155	1
4486	4485	635548.94	1	328	327	492312.63	1
4487	4486	654645.65	1	329	328	493685.13	1
4488	4487	677686.7	1	330	329	495312.32	1
4489	4488	700000	1	331	330	497205.23	1
4490	4489	715000	1	332	331	499000	1
4491	4490	739324.77	1	333	332	501582.73	1
4492	4491	828125.53	1	334	333	503966.29	1
4493	4492	869045.97	1	335	334	505134.43	1
4494	4493	936929.27	1	336	335	506205.41	1
4495	4494	974665.39	1	337	336	516629	1
4496	4495	1366410	1	338	337	518500	1
4497	4496	1524891.68	1	339	338	533513.07	1
4498	4497	1845891.46	1	340	339	589036.73	1
4499	4498	1881088.39	1	341	340	653328.32	1
4500	4499	4250000	1	342	341	657888.23	1
4501	4500	4606157.21	1	343	342	769245.24	1
4502	4501	6500000	1	344	343	1356000	1
4503	4502	21106483.79	1	345	344	4215370.78	1
4504	4503	21271111.11	1	346	345	5123331.07	8
4505		185218.218		347		289633.4941	

# Conclusion/Discussion

## Objective #1

- In general, there was good coverage (i.e. accessibility) of bus routes and stops within Brooklyn Park.
- Two popular routes cover large portion of city and foreclosed areas.
- Very few foreclosed homes were outside of “walkable area”.

## Objective #2

- Homes located outside the 15 minute walk area were resold for much higher (\$100,000 average) more than other homes.

# Future Work

- Look at Demographics (i.e. Race, poverty level, access to vehicle) and access to transit.
- Look at all houses in Brooklyn Park to determine if access to transit was correlated with a greater or less likelihood of a house going into foreclosure.
- Investigate patterns of housing density and foreclosures to see if there is a pattern related to locations of transit
- Setting different break times on the Network Analyst polygons, studying the value of foreclosed homes inside a 5 minute, 10 minute or 20 minute walk zone

Questions?