

SBFD SBStat

Q4 2017

October 25, 2017



Agenda

- Strategic Plan Updates
- Baseline Survey
- Current Department Projects
- Analysis and Discussion
- Project/Next Steps
- Celebrating Our Values



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Strategic Plan

- 5 areas selected for improvement
- Completed in 2014
- Majority of objectives completed since inception
- EMS opportunities for improvement



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Agenda

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Current Projects

Recruitment

- Goal to build on successes of last recruitment period
- Using team/committee approach
- Job Fair
- Research on diverse recruitment practices



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COMMITTEE FOR DEVELOPMENT



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Water Rescue

- Continuation of support for IRRS
- IAWRP Conference
- Indiana Task Force 1 involvement/Center of Excellence in water rescue training



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COOPERATION



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Community Paramedicine Pilot

- Proactive program aimed at finding medical home for those in need
- Collaboration with community partners
- Mutual benefits impact stakeholders



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Baseline Survey Results

Summary of Results

STRENGTHS

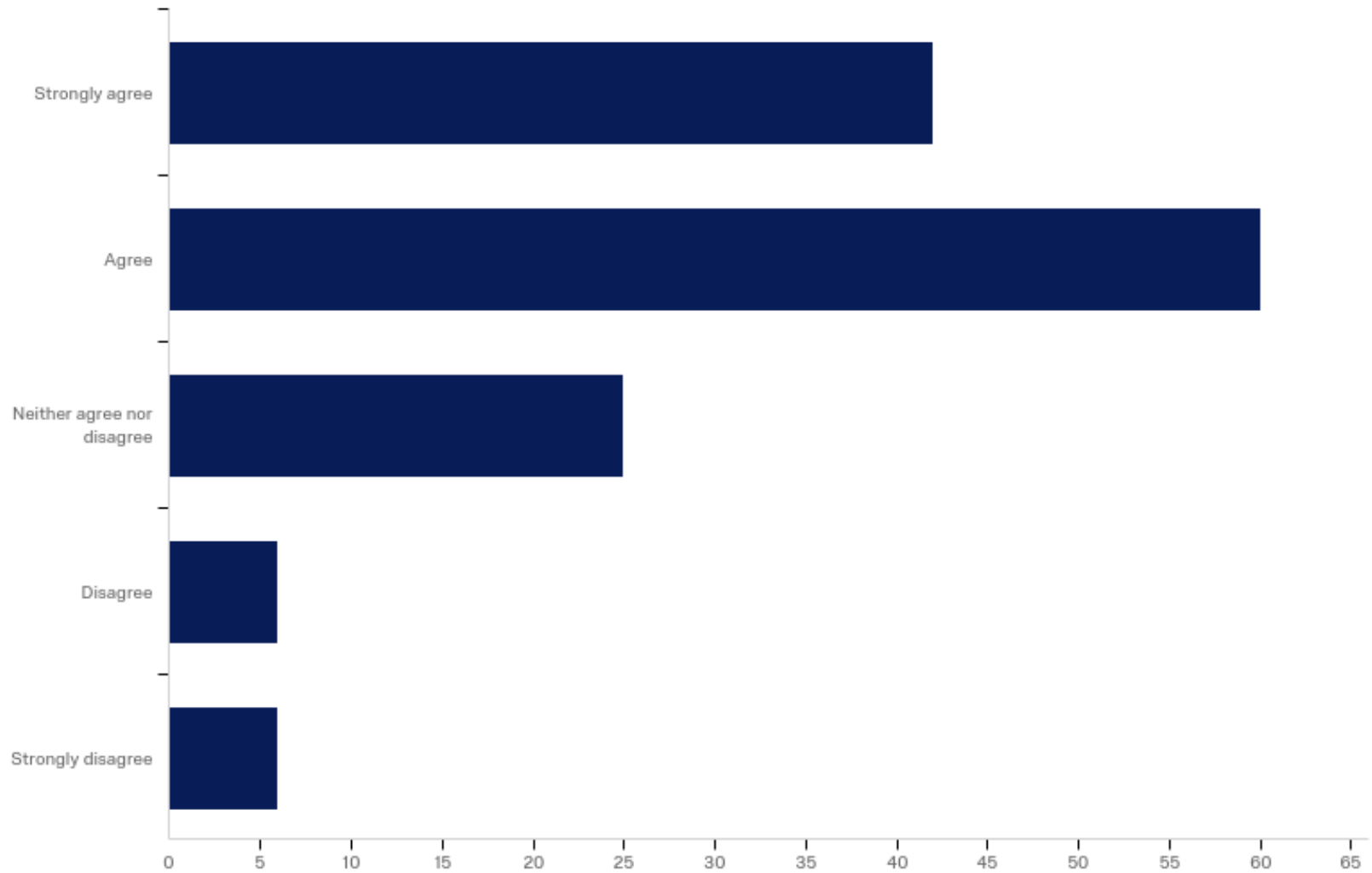
- Customer service orientation
- Clear understanding of metrics for success
- Strong commitment to the department
- Team atmosphere

OPPORTUNITIES

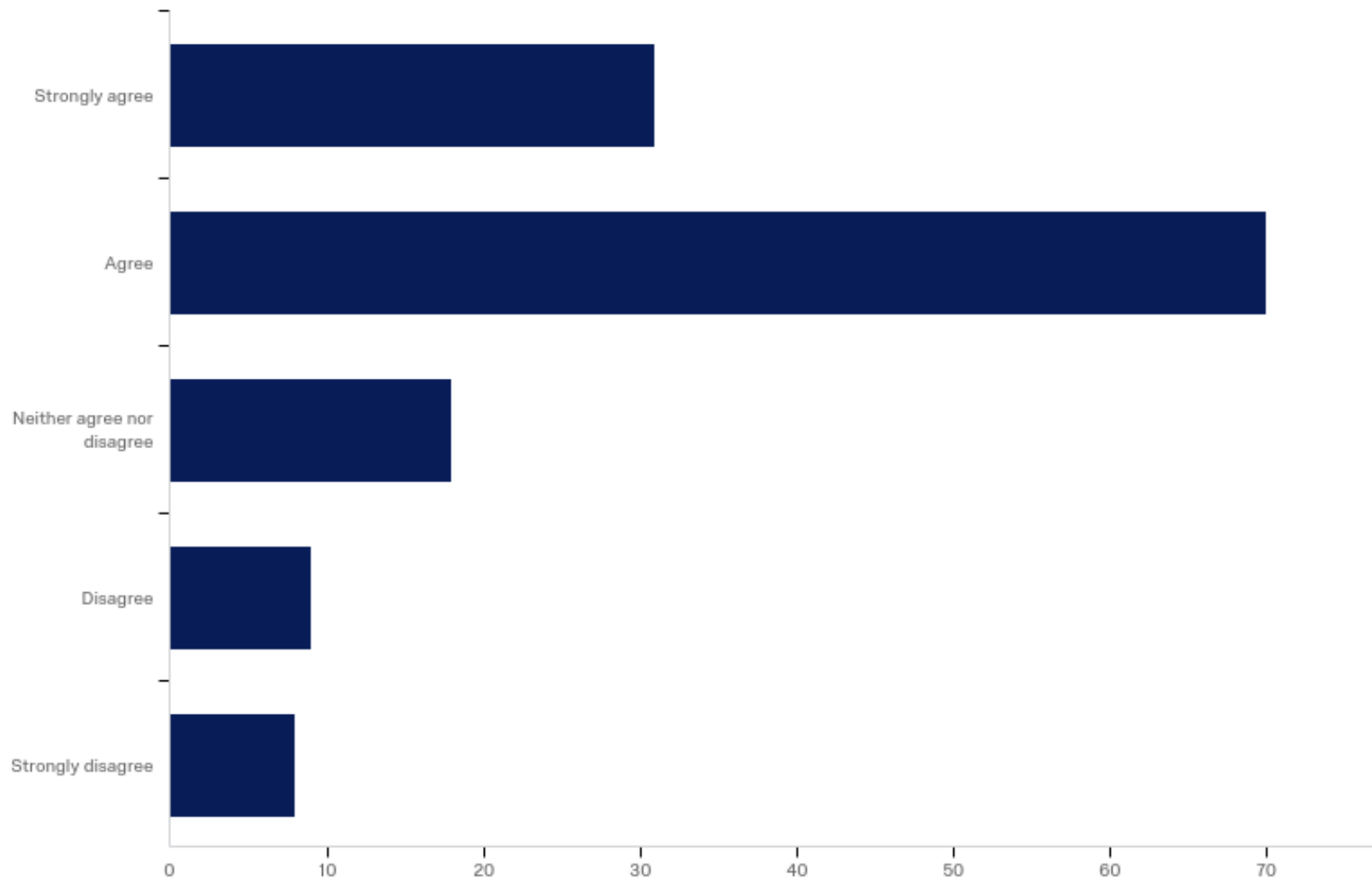
- Addressing obstacles to progress
- Flexibility
- Encouraging innovation



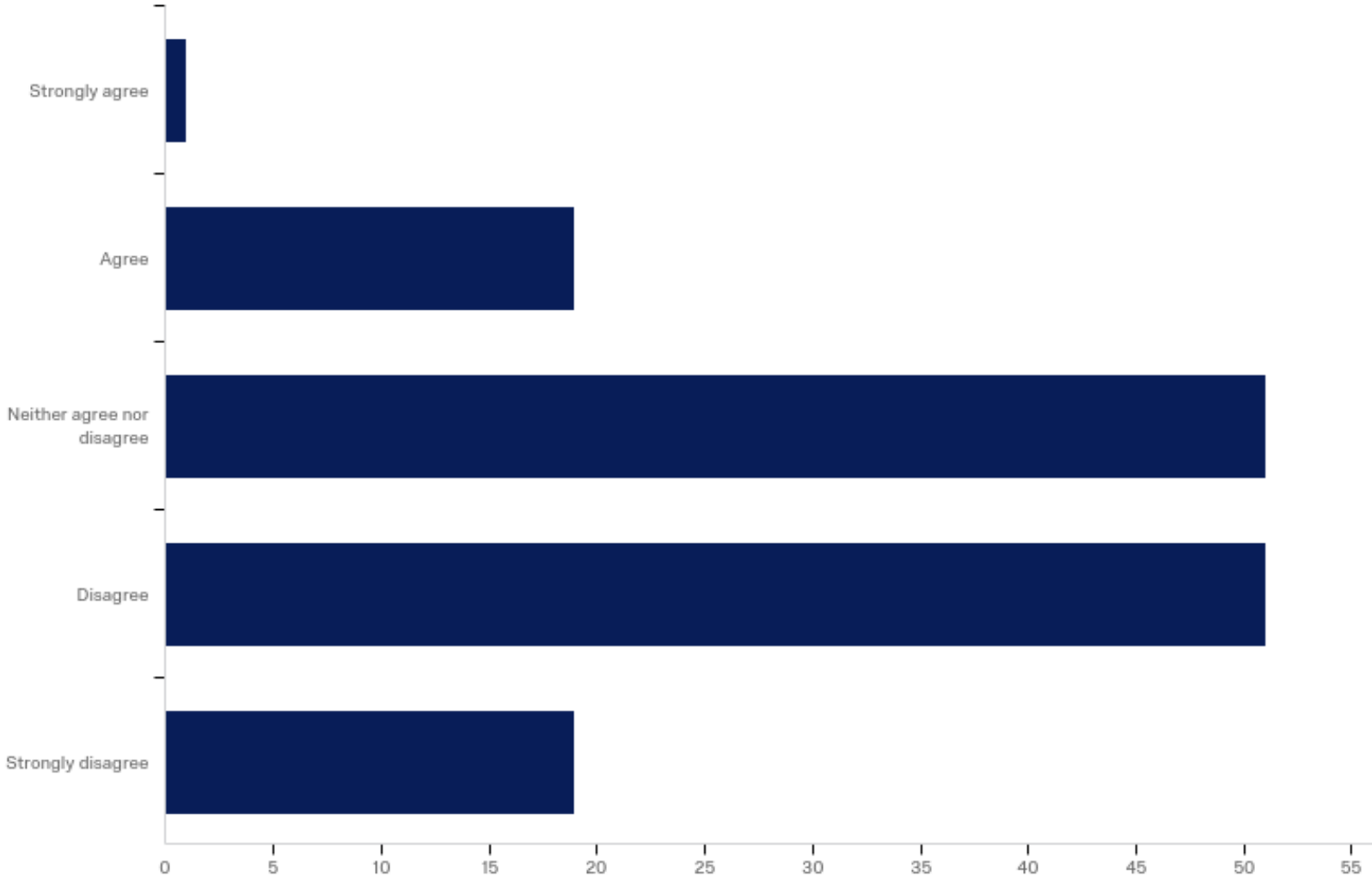
I know who my department's most important customers are.



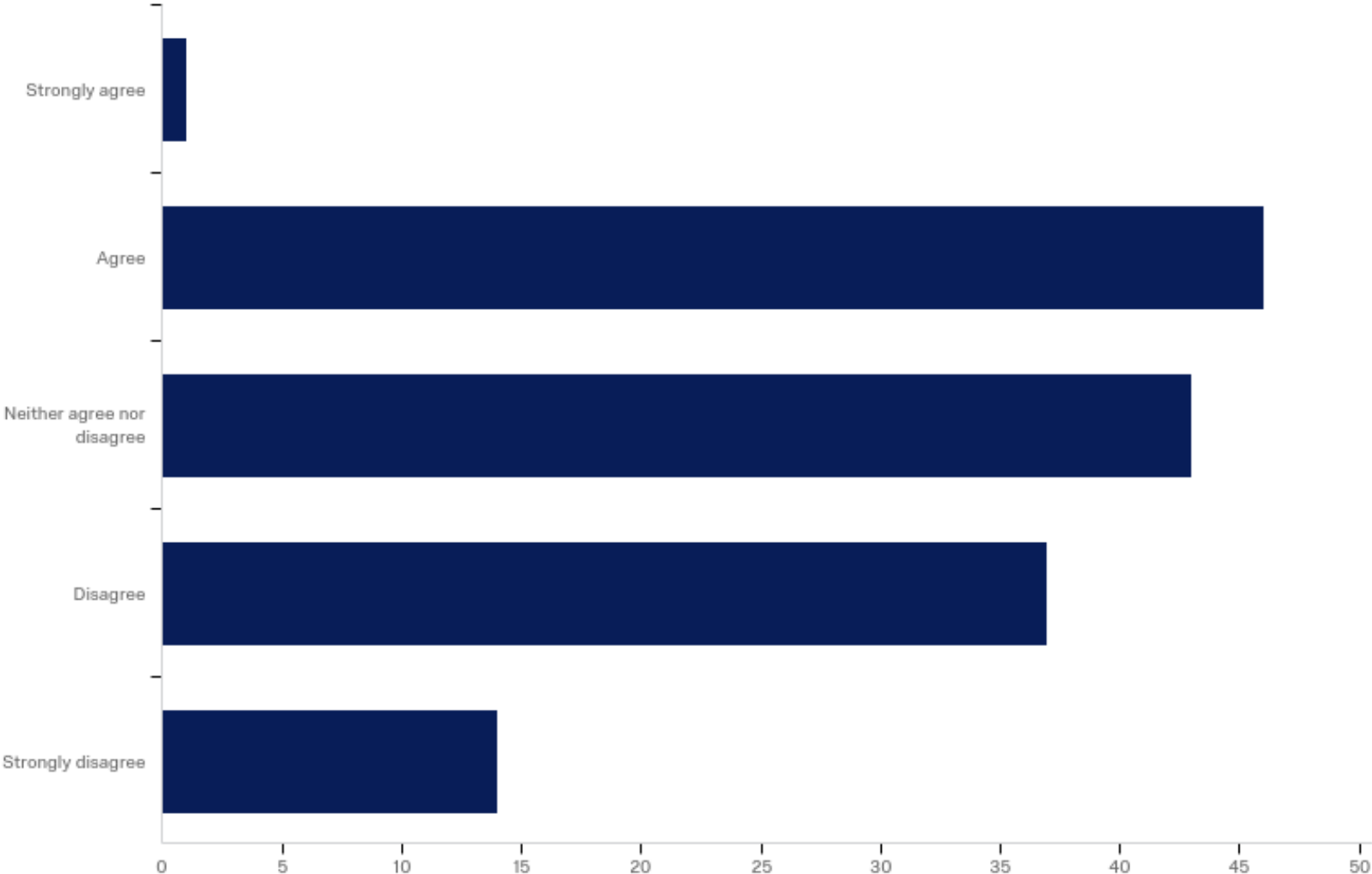
The people I work with cooperate and work as a team.



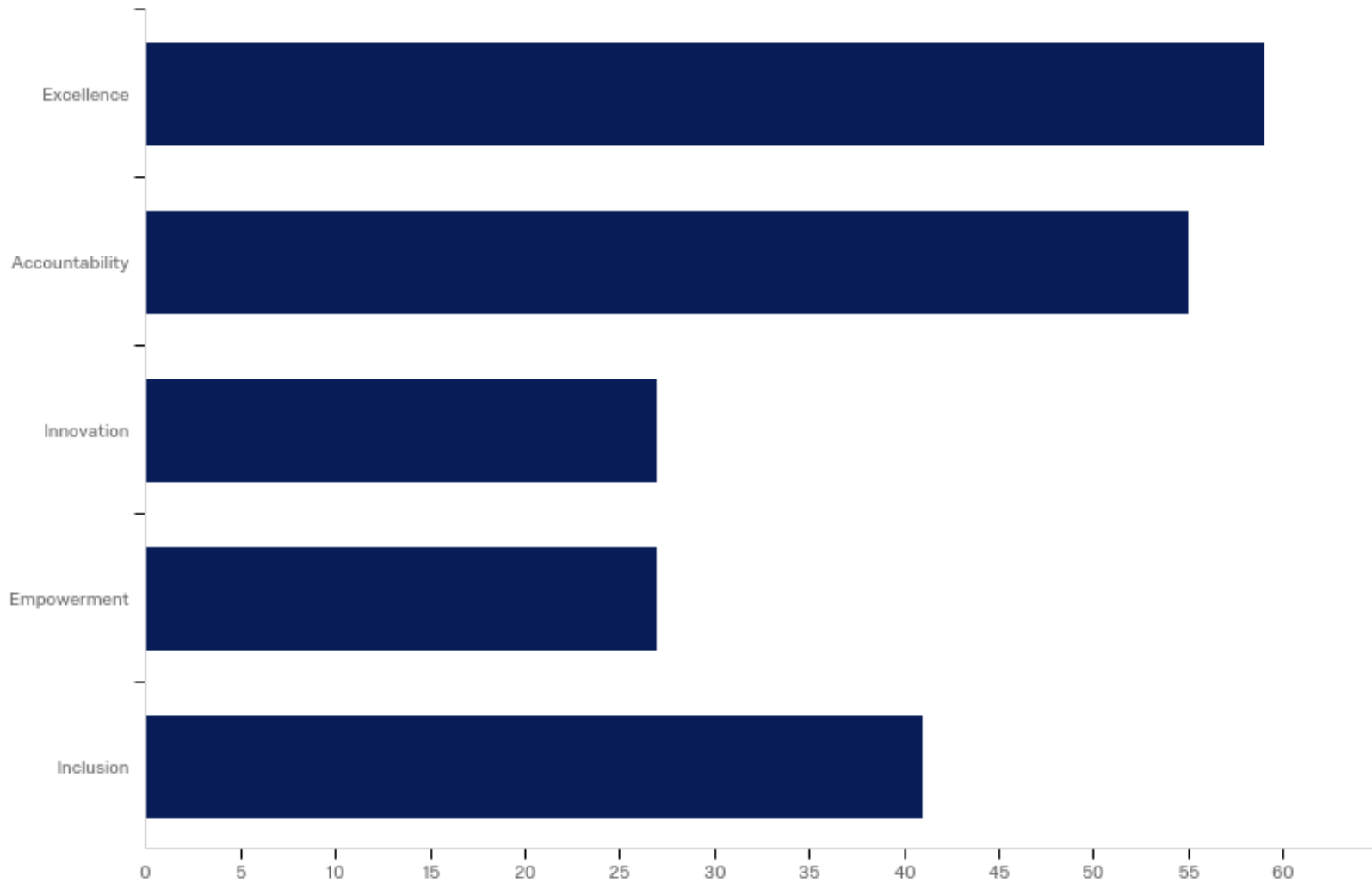
My department removes things that get in the way of progress.



My department is flexible and makes changes when needed.



Which value(s) from our City's Mission do you feel the department contributes to? Feel free to select more than one answer.





SB Stat Analysis

History of Outreach at SBFD

- Outreach program has been active for over 10 years

- Historical

- Based on word of mouth
- Alarms purchased by department

- Changes since 2014

- Red Cross and other collaborations
- Districts more involved in installs
- Targeted outreach based on fires/fatalities
- On demand installs based on resident requests
- Better alarms from grants

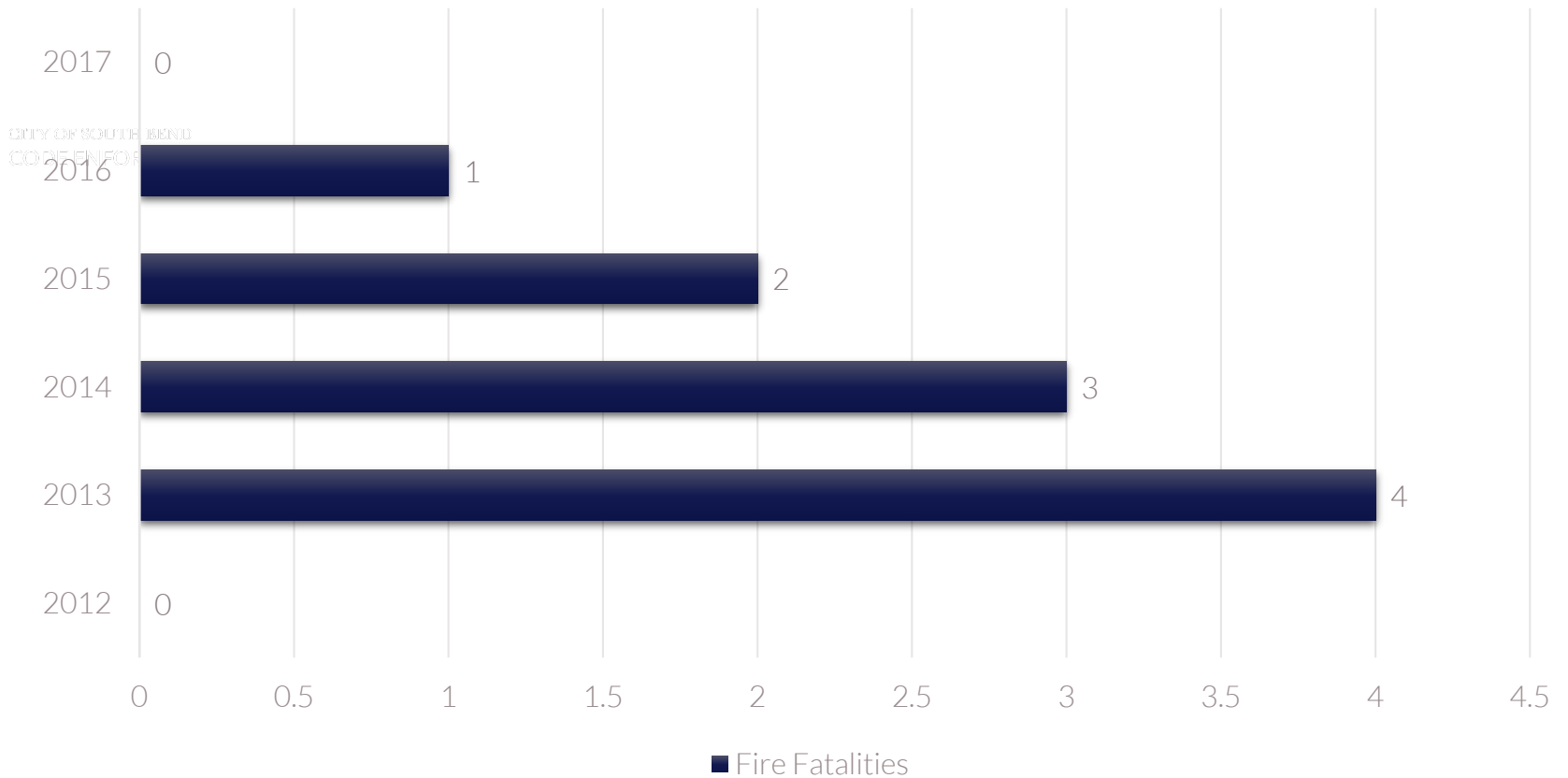


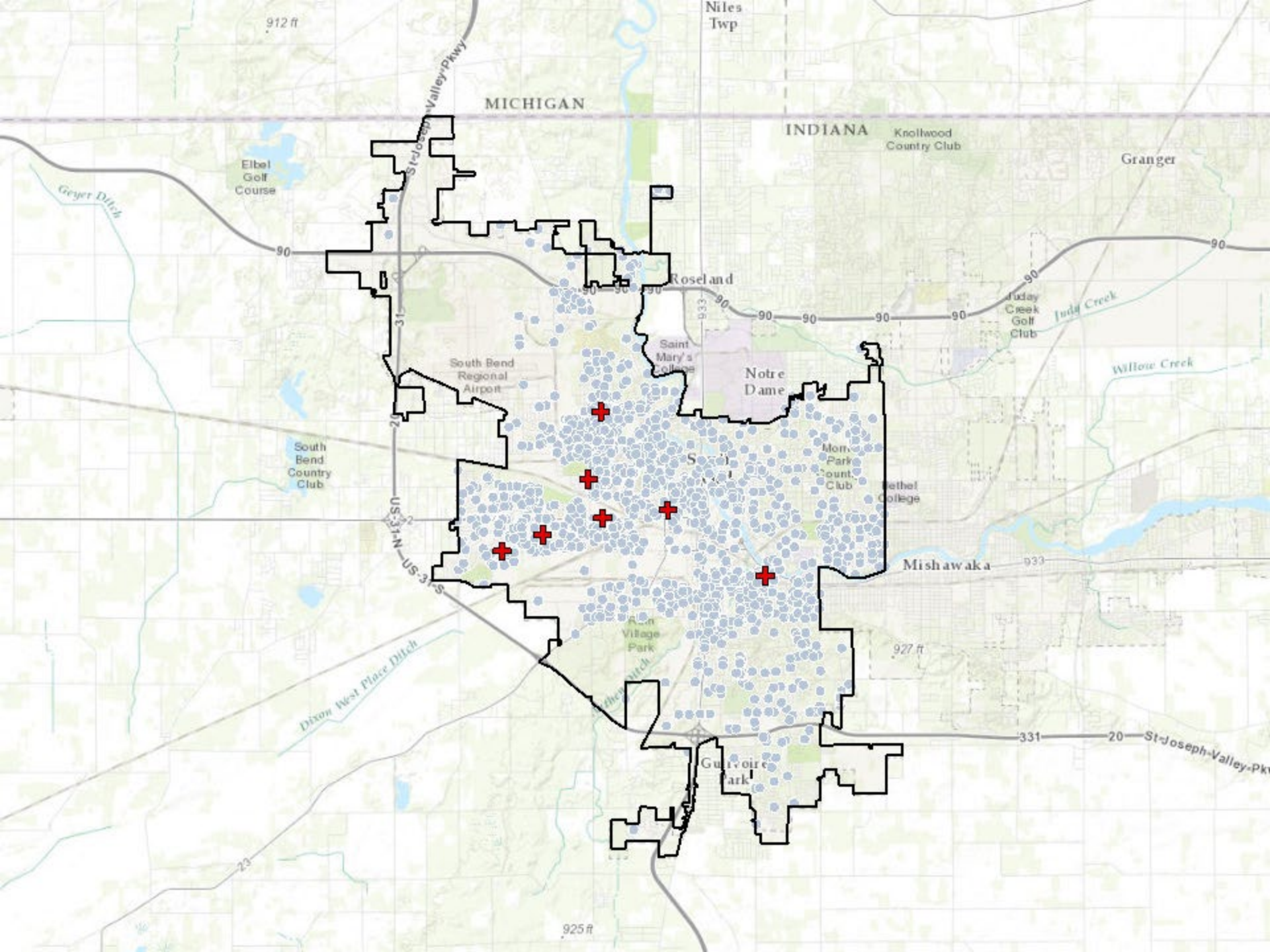
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Why we do it: Fire Fatalities





912 ft

Niles Twp

MICHIGAN

INDIANA

Knollwood Country Club

Granger

Geyer Ditch

Elbel Golf Course

90

Roseland

90

90

90

90

90

90

Judy Creek Golf Club

Willow Creek

South Bend Regional Airport

Saint Mary's College

Notre Dame

South Bend Country Club

Mon. Park Country Club

Methel College

US-31-N

US-31-S

Mishawaka

933

Dixon West Place Ditch

Green Village Park

927 ft

Gulivoir Park

331

St-Joseph-Valley-Pkwy

23

925 ft

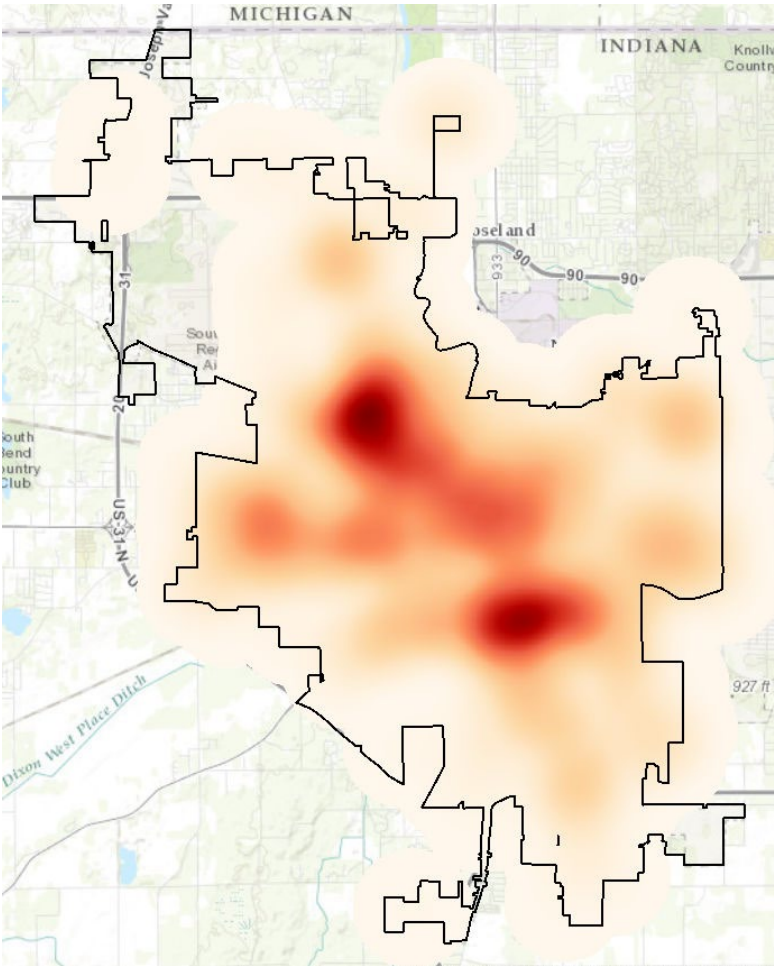
Outreach Events

Year	Install Events	Smoke Alarms*	CO Alarms*
2011	60	83	32
2012	40	68	40
2013	85	145	85
2014	227	382	223
2015	307	229	97
2016	420	523	131
2017	243	215	7
TOTAL	1382	1645	615

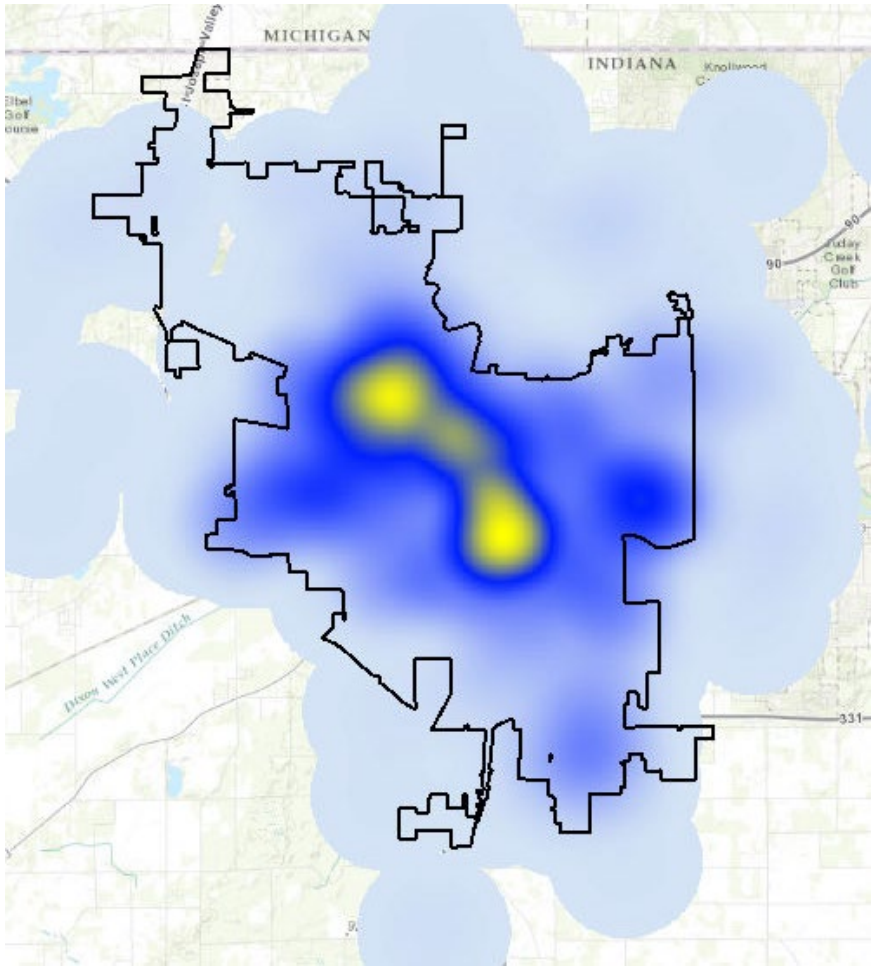
* These are underestimates, as the number of alarms provided was not recorded for all events



Fires



Outreach



Study Background

- NOLA Smoke Signals Study (2015)
 - <https://github.com/cno-opa/smoke-alarm-outreach>
- South Bend Replication Study: Objectives
 - Use data to reach those who most need a smoke alarm installed
 - Combine structure-specific and block-group level data to determine zones for targeted outreach



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Data

- American Housing Survey (AHS, 2011)
 - Structure-level data
 - Do you have a smoke alarm?
- American Community Survey (ACS, 2015)
 - Block-group level averages
- South Bend Fire Department
 - Structure fires



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Questions

Which houses are least likely to have a smoke alarm?



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- Age of structure
 - When resident moved in
 - Household income relative to poverty level

Which block groups are most likely to have a fire fatality?

- Age of residents
- History of structure fires in that block group





Question 1

Which houses are least likely to have a smoke alarm?

Results of Regression Analysis

Variable	Coefficient (Weight in Model)
Structure built before 1950	0.488
Resident moved before 2000	0.813
Household income < 2x poverty level	0.423

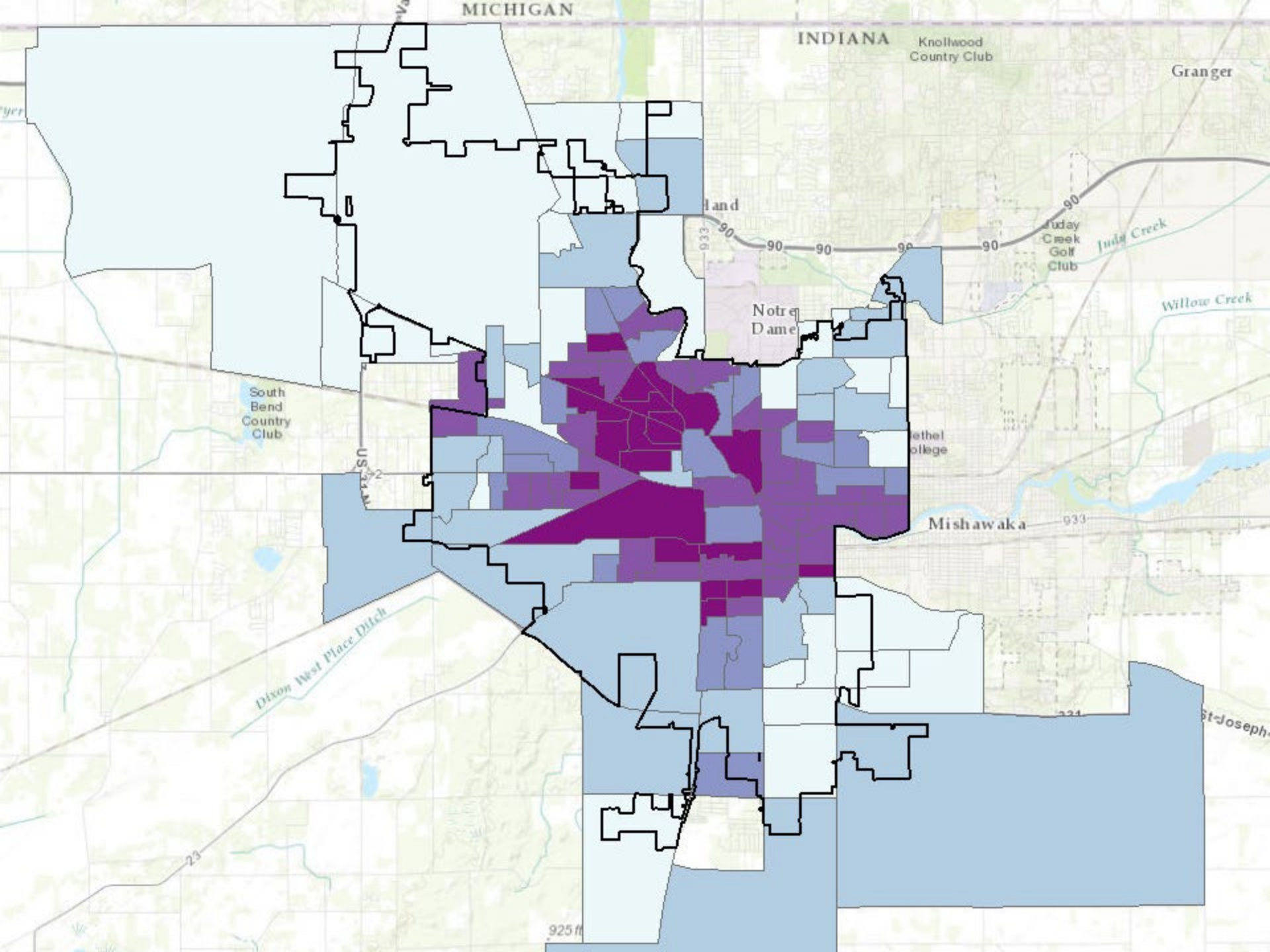
All variables included in the model were significant at the 99% level.

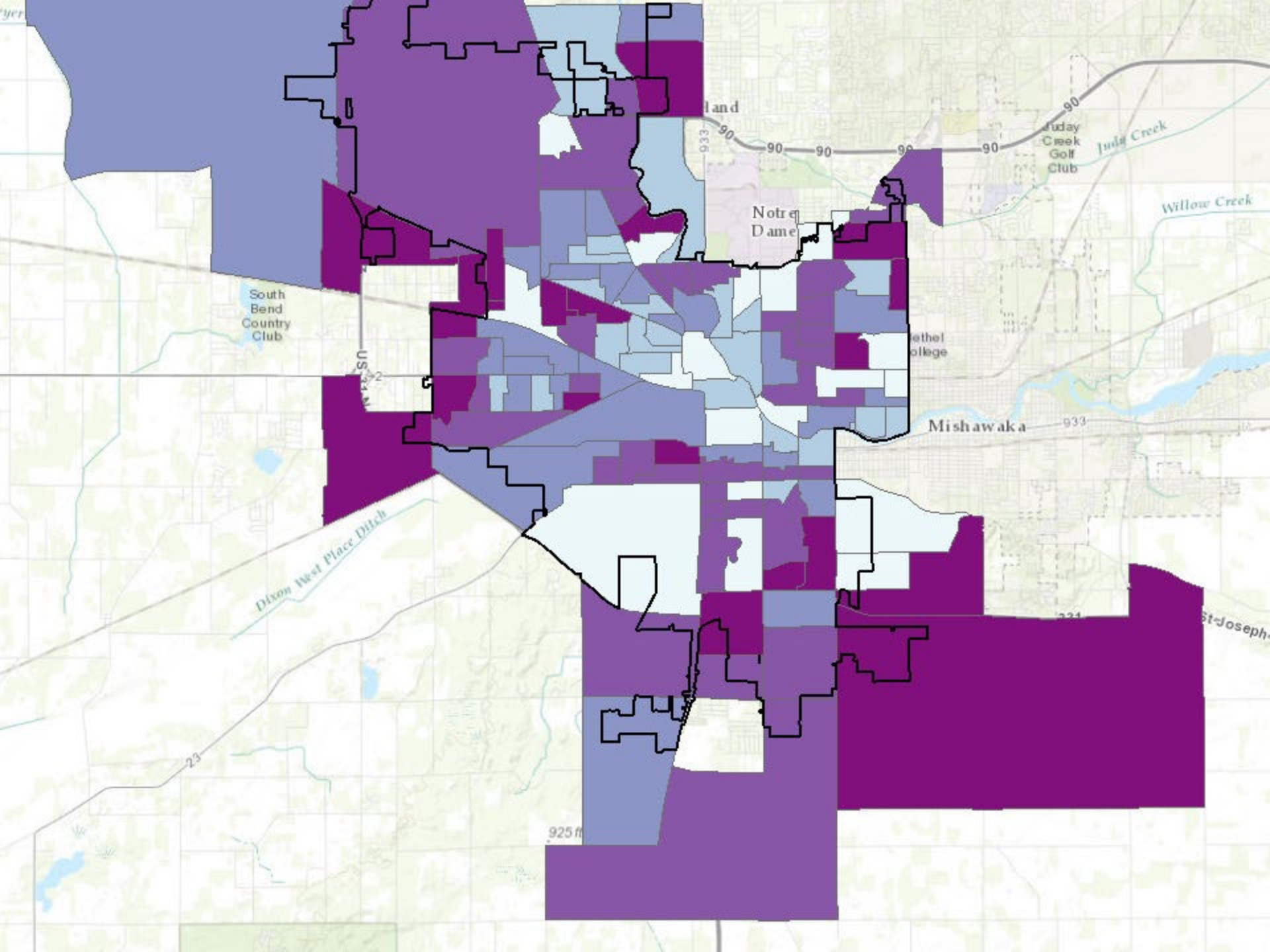
Based on our understanding of risk factors, we also explored including a variable on whether the house was rented or owned by the tenant, but this was not significant.

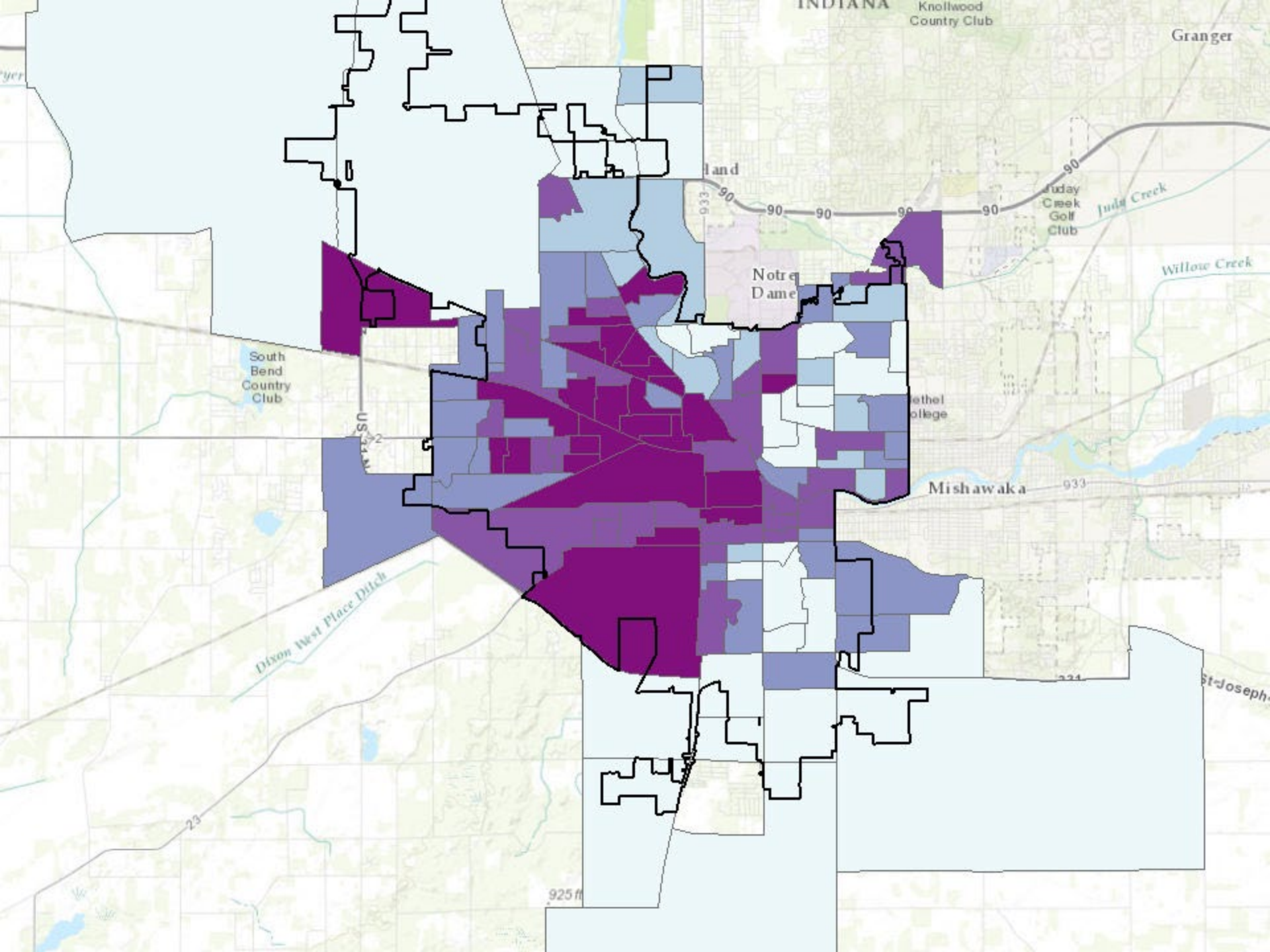


Structure Built Before 1950	Resident Moved In Before 2000	Household Income < 2x Poverty Level	% of AHS Respondents Missing Alarm
No	No	No	2.33%
No	No	Yes	5.28%
No	Yes	No	3.55%
No	Yes	Yes	8.26%
Yes	No	No	4.14%
Yes	No	Yes	8.35%
Yes	Yes	No	6.19%
Yes	Yes	Yes	10.62%
			4.43%

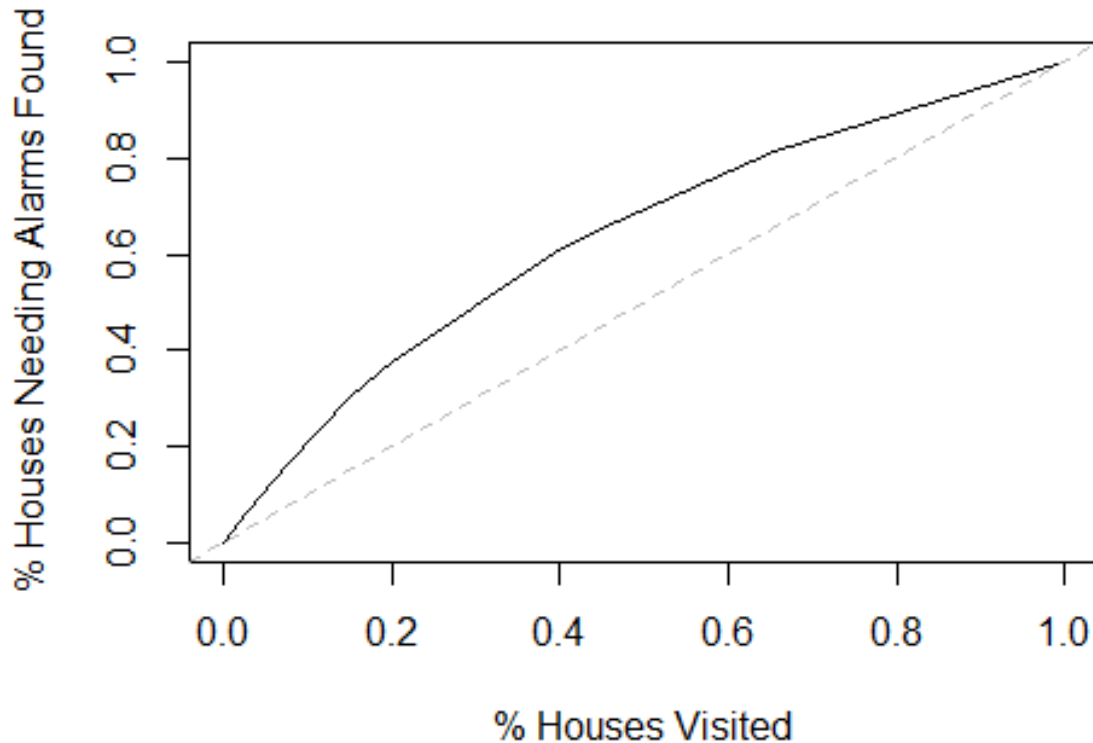








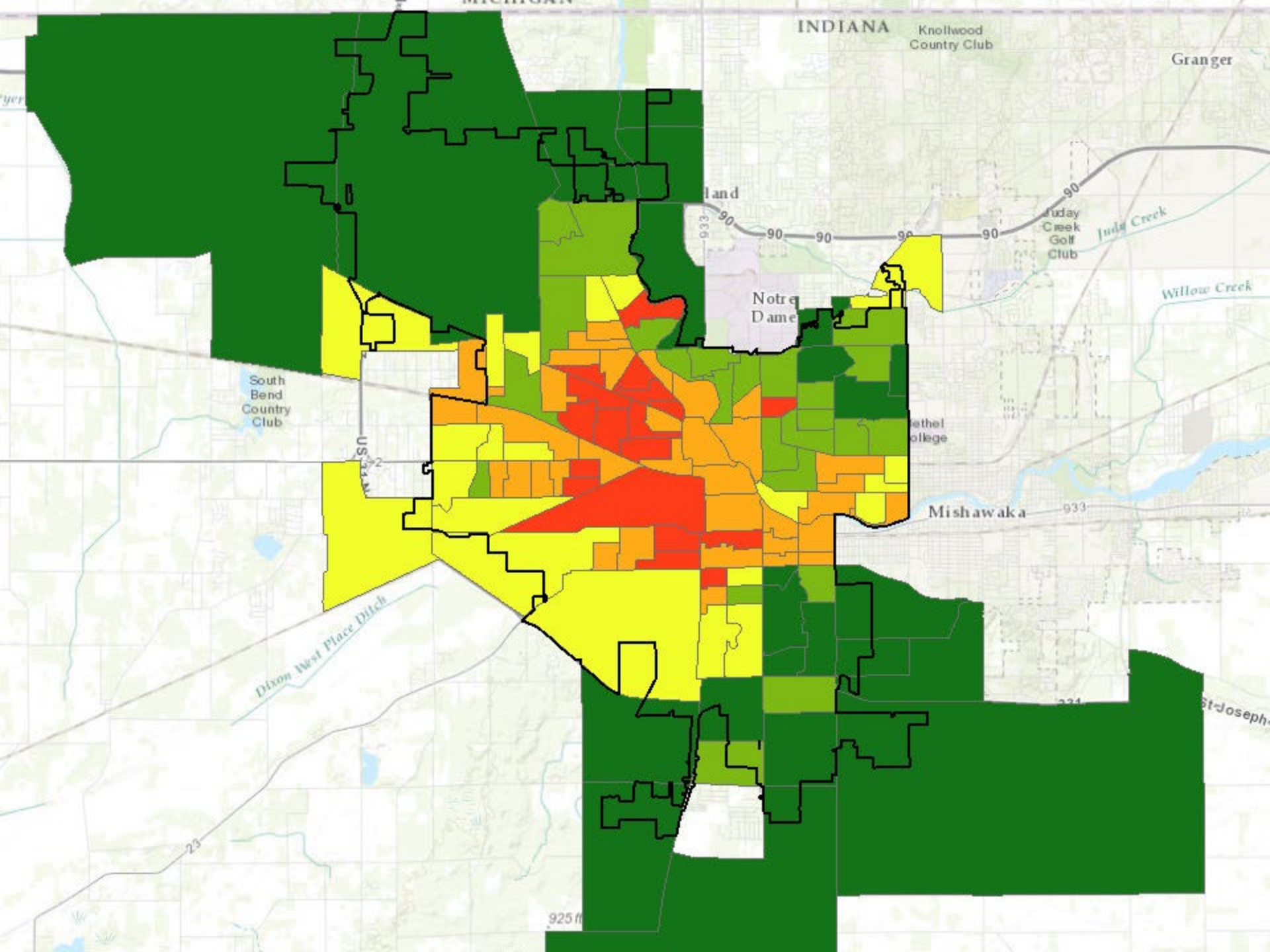
Estimated Distribution by Total Coverage



If we randomly visit 10% of houses, we will find 10% of houses needing a smoke alarm

With the model, visiting 10% of houses that have the highest risk allows us to find 20% of houses needing a smoke alarm. If we visit the top 40% of houses, we find 60% of those needing an alarm.







Question 2

Which block groups have the highest risk for fire fatalities?

Overview: Fire Frequency

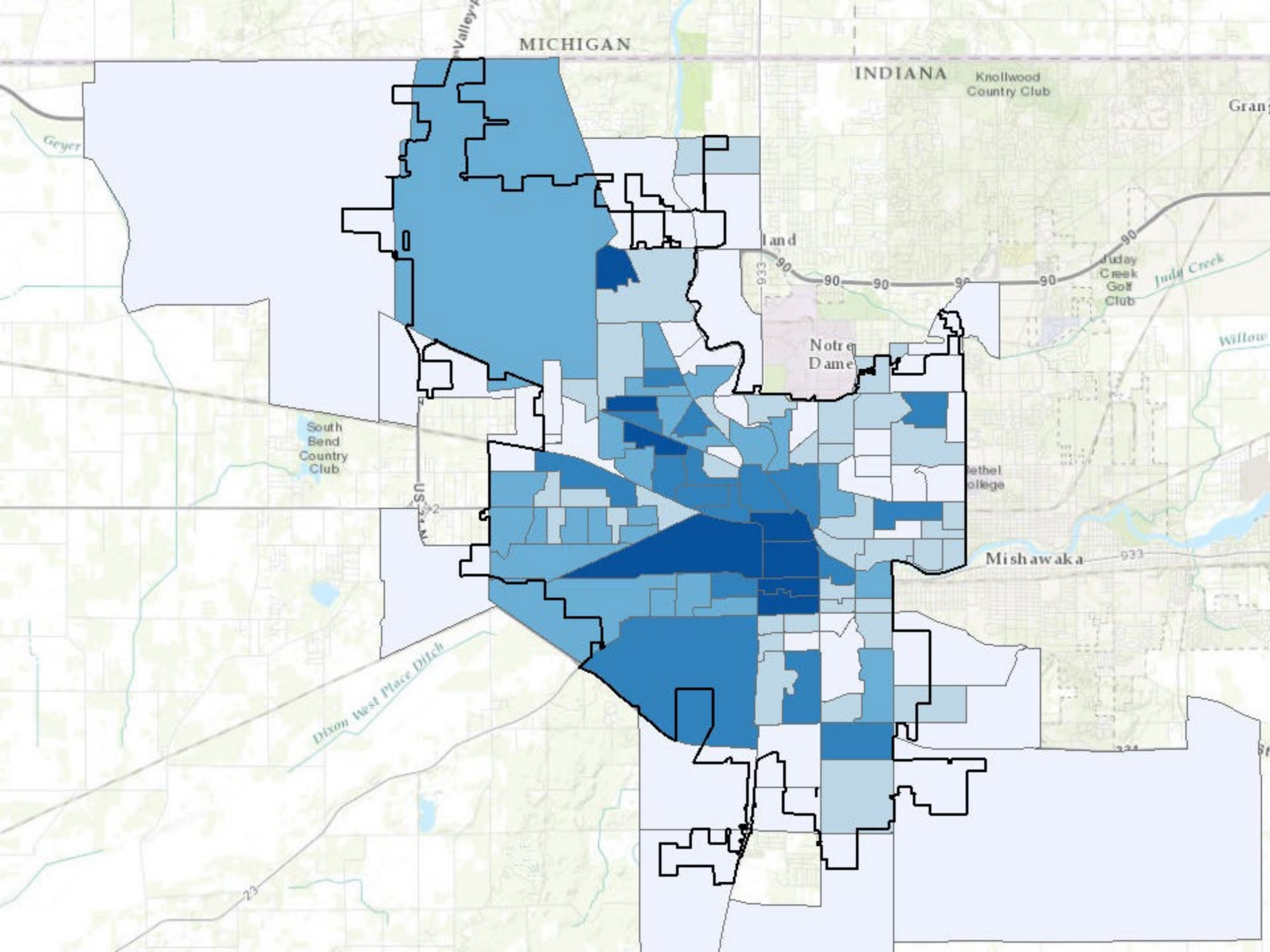
- Five years of data (2012-2017)
- Includes all structure fires
- Range from 0 to 50 fires per block group
 - Block groups vary in size and density
 - Counts are normalized by total housing units for analysis

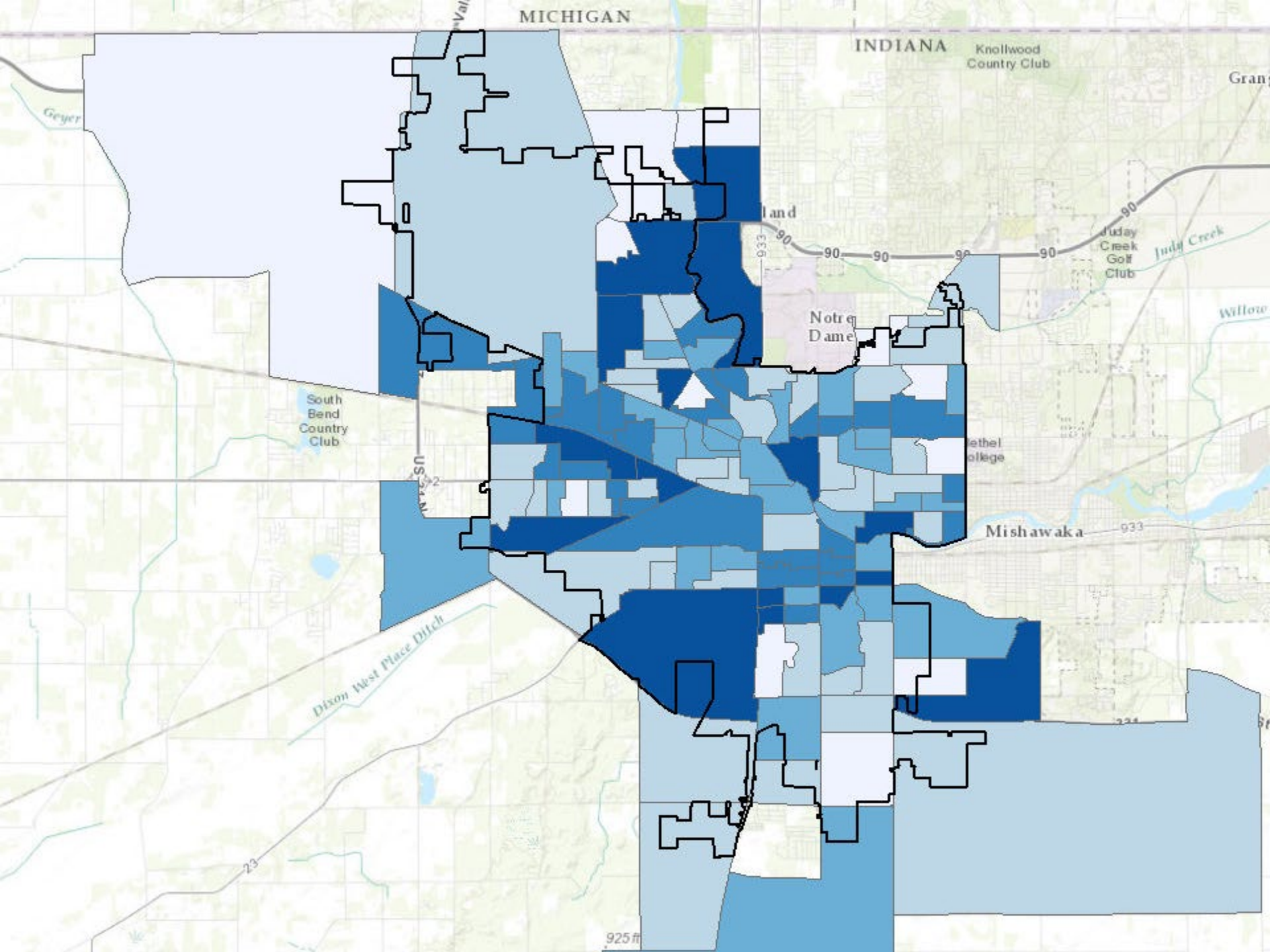


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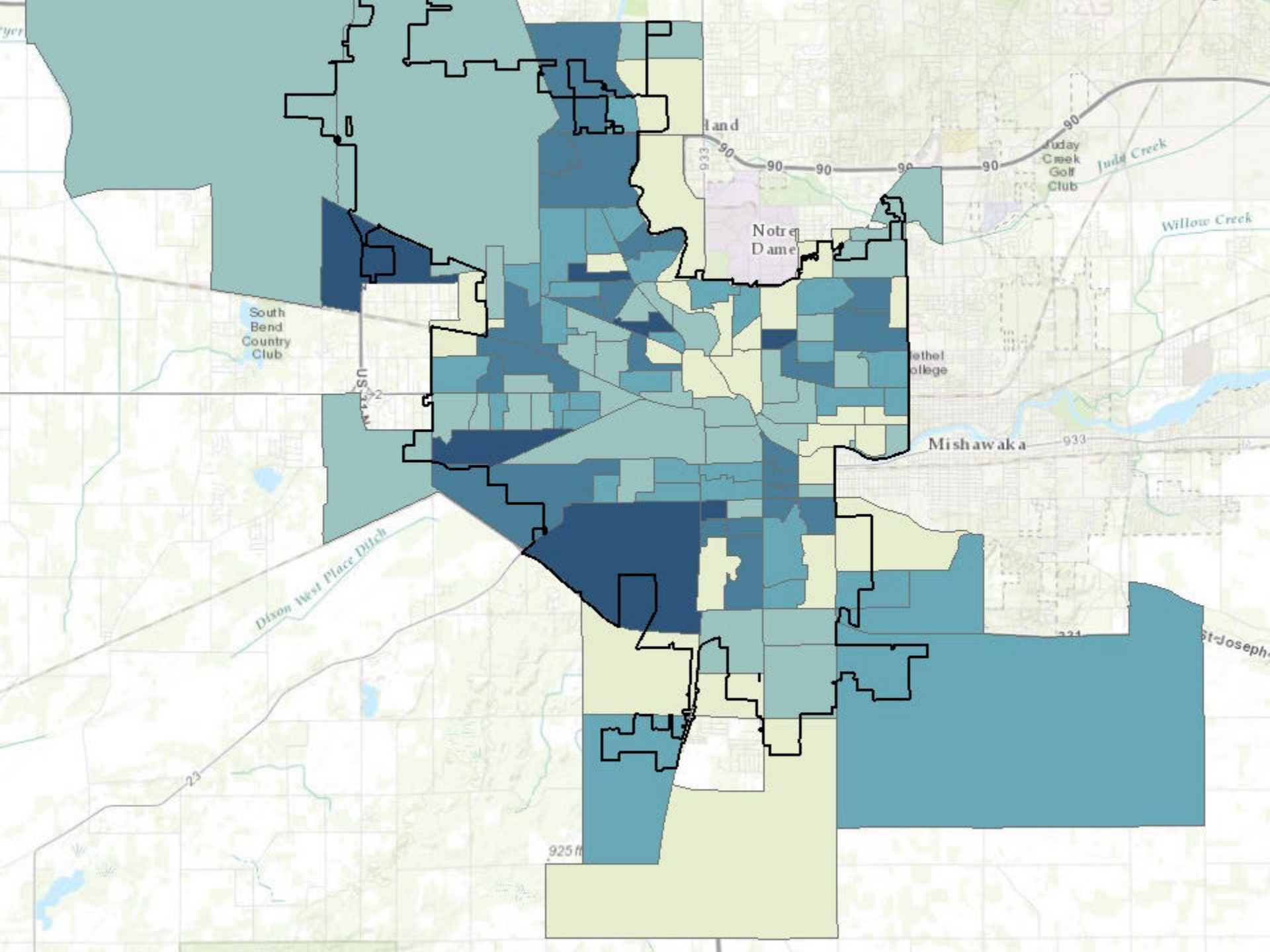
Overview: At-Risk Age Groups

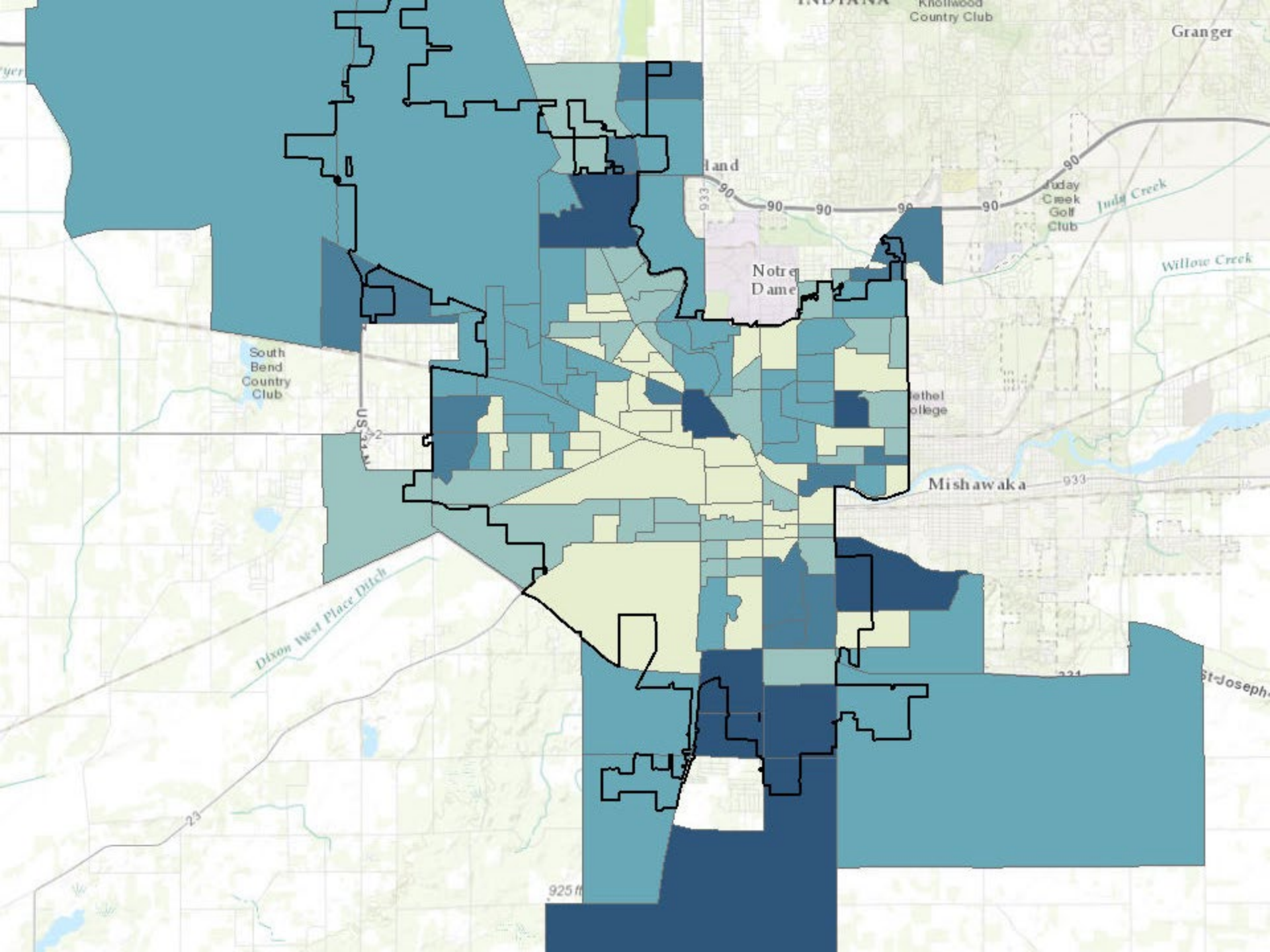
	% Under 5	% 65 and Over
Mean	7.59	12.92
Standard Deviation	4.74	7.61
Minimum	0.00	1.86
Maximum	20.64	36.18

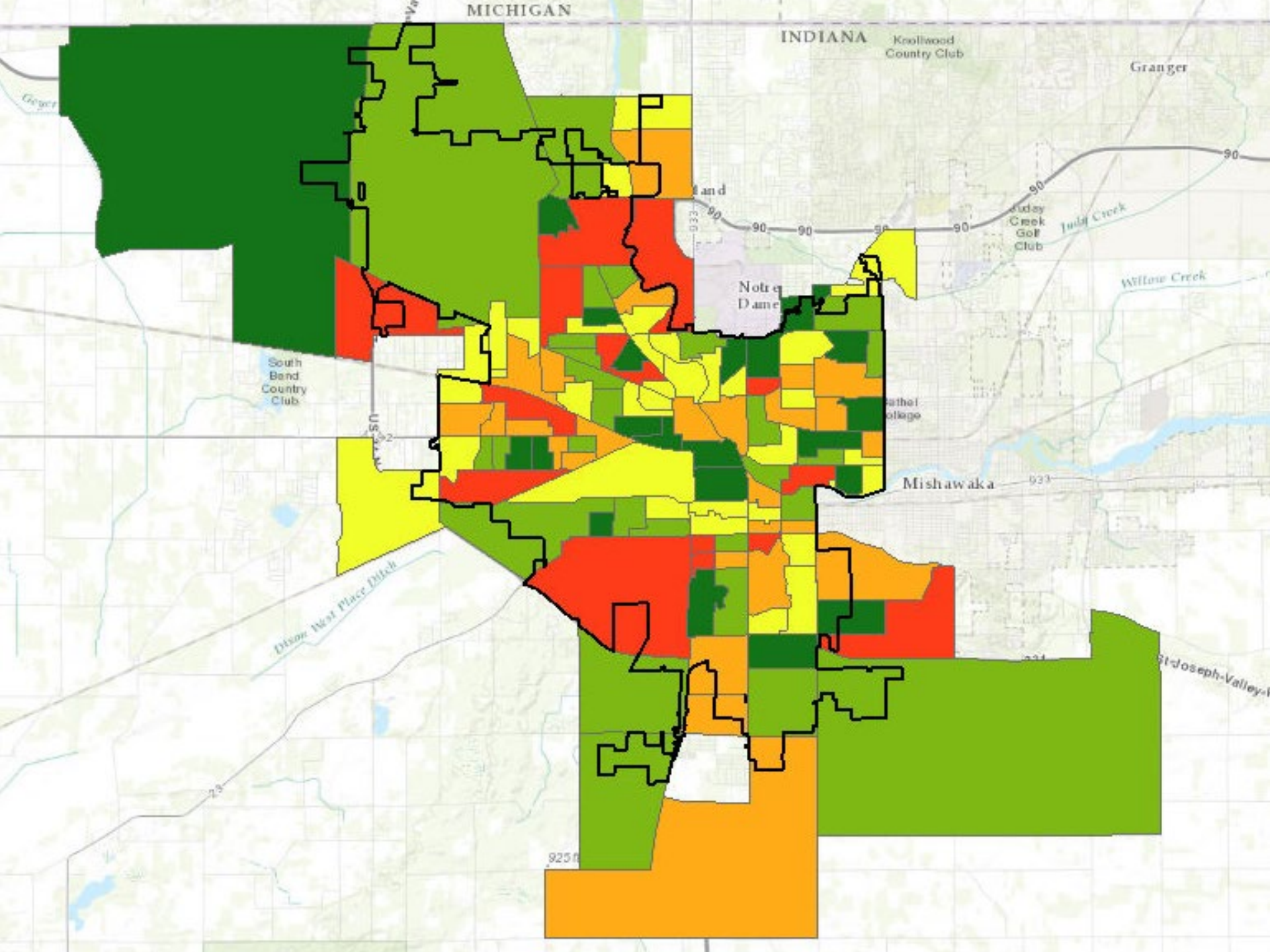


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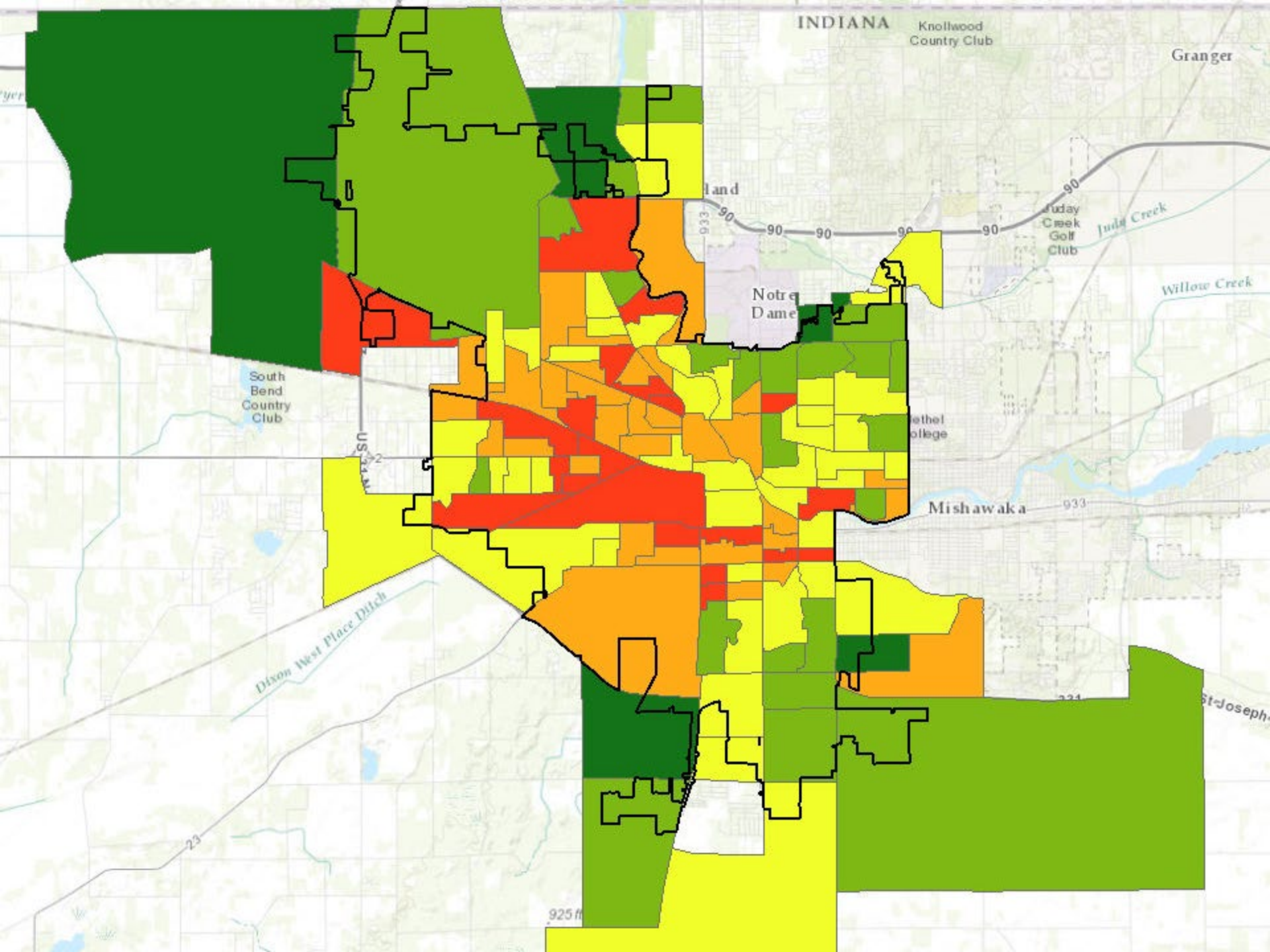




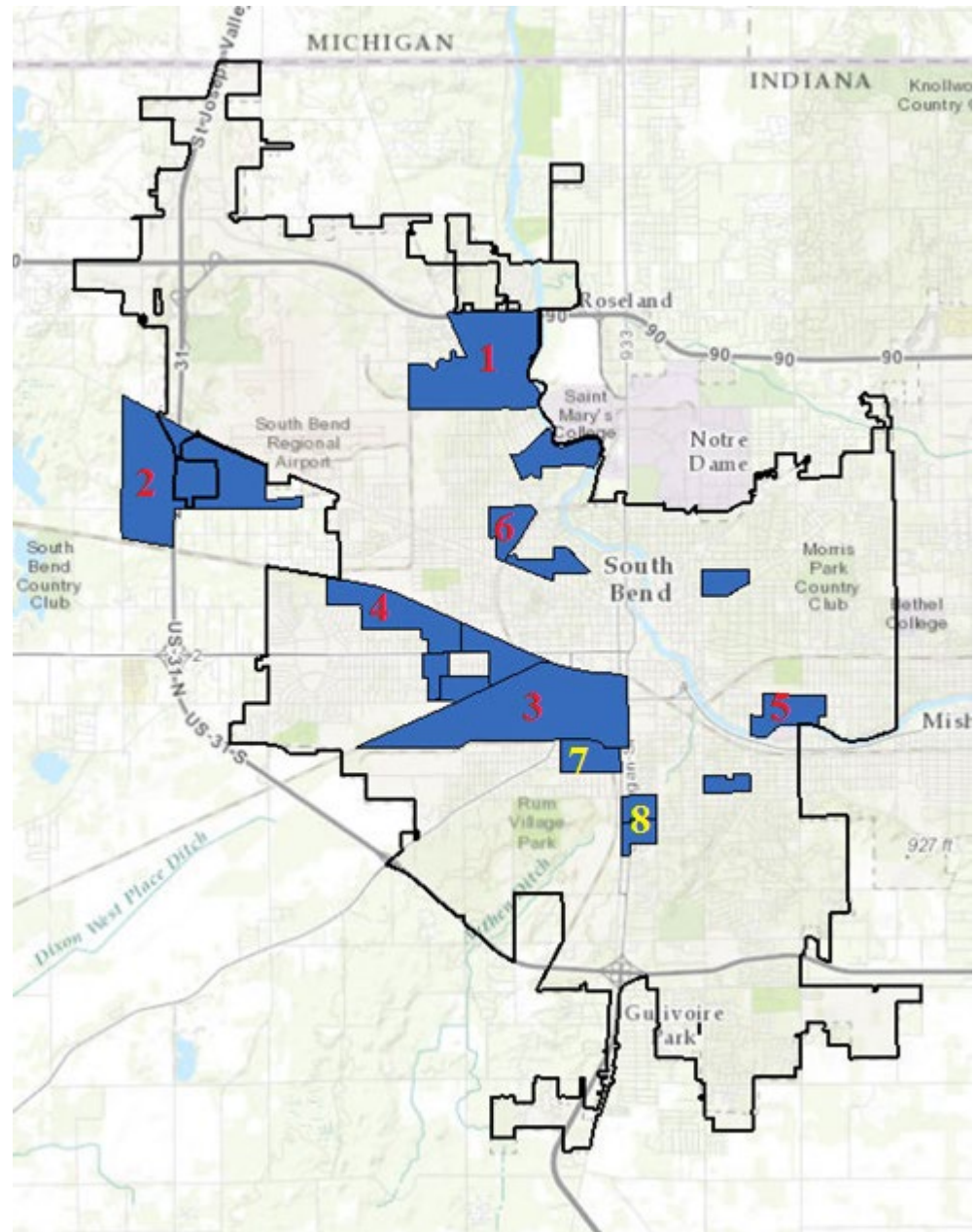


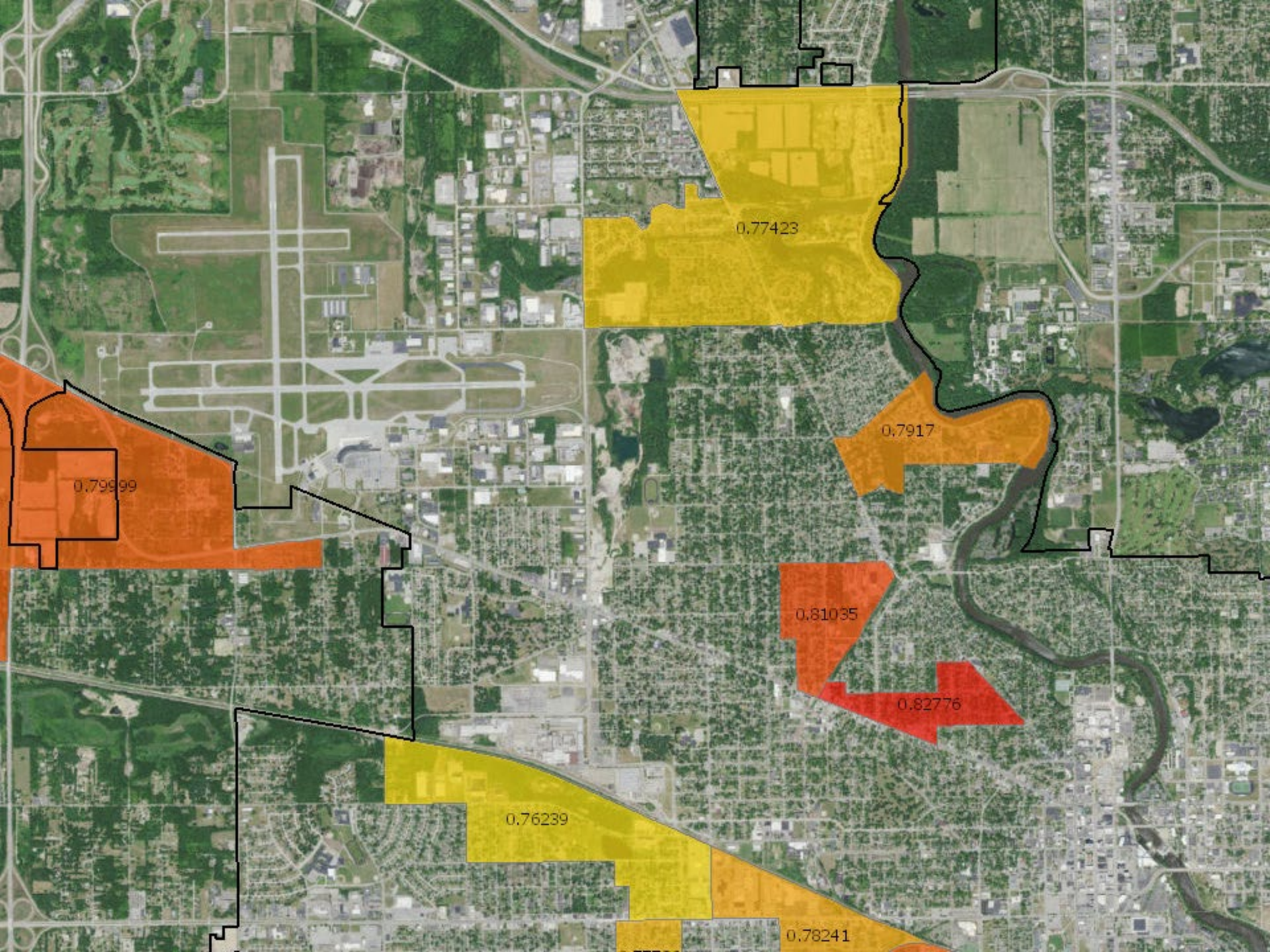


Final Results



Top Quartile: Highest Overall Risk Scores





0.77423

0.79999

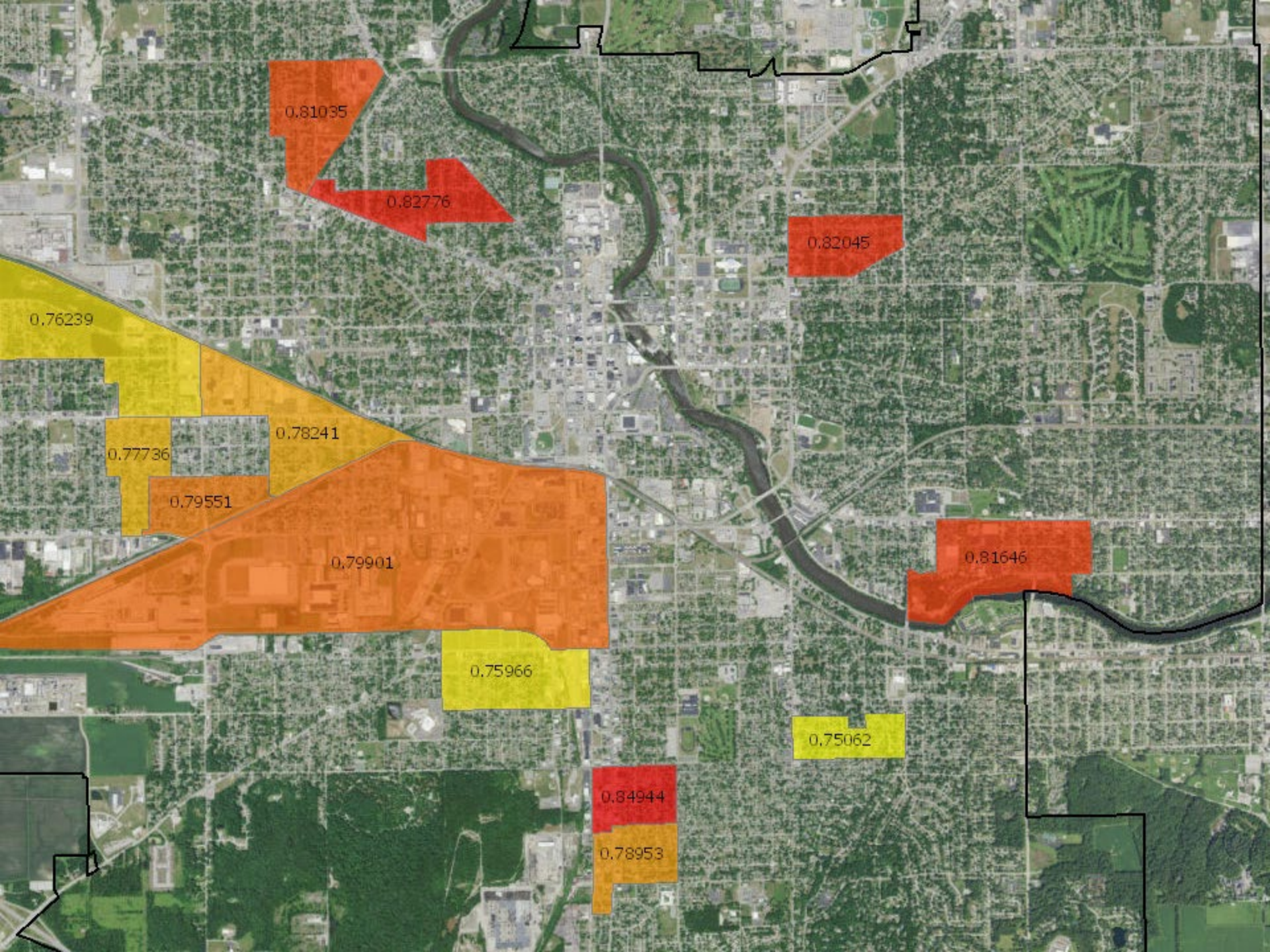
0.7917

0.81035

0.82776

0.76239

0.78241



0.81035

0.82776

0.82045

0.76239

0.77736

0.79551

0.78241

0.79901

0.81646

0.75966

0.75062

0.84944

0.78953



Taking Action

Next Steps

- Finalize priority zones
 - Places we have targeted recently
 - Contextualize the data
 - Cutoff based on resources and anticipated need
- Build timeline and project plan
- Pilot at least one district before next meeting



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Challenges and Considerations

- Education

- Alarm maintenance (ie, batteries)
- Landlord responsibility

- Limited Resources

- Staff availability (Public Ed. and Companies)
- Alarm availability
- Policy for handling other requests



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Home Fire Safety Checklist



Cooking Safety

- "Keep an eye on what you fry." Stay in the kitchen when frying, grilling or using an open flame.



Fireplaces, Space Heaters, Baseboards, etc.

- "3 feet from the heat." Furniture, curtains, dish towels and anything that could catch fire are at least 3 feet from any type of heat source.



Smoking Safety

- Never smoke in bed.



Electrical and Appliance Safety

- Large and small appliances are plugged directly into wall outlets.



Children Playing

- Matches and lighters are locked away.



Smoke Alarms

- Make sure you have working smoke alarms. Different types of smoke alarms, ionization and photoelectric, detect fire in different ways. Experts recommend having both types in your home.
- Change smoke alarm batteries every year unless it has a long-life battery.
- Replace smoke alarms every ten years.

Home Fire Escape Plan

At least twice a year, use your home fire escape plan to practice your 2-minute drill with all your family members. Practice makes perfect! After each fire drill, mark down your escape time.

Practice your 2-minute drill.

Make sure everyone can escape in 2 minutes or less.

Drill 1

Drill 2



Sources: Vision 20/20, NFPA, USFA

Data Collection

- Date and location
- Is anyone home?
- Is there a smoke alarm? CO alarm?
 - Does the alarm work properly?
 - If no, can we install one?
- # of alarms installed
- # of batteries installed
- Population served (Under 5/Over 65)



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Celebrating Our Values

Recruiting Successes!

- Over 450 people logged into the application so far
 - Open through March
 - Few resources spent on outreach
- 217 completed applications
 - 23 women
 - 52 minorities
 - 16 veterans
- Current recruit class includes:
 - 3 women
 - 3 minorities
 - 4 veterans
 - 10 recruits!!



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