
Public Perception of the Value & Impact of Trees During the COVID-19 Pandemic

Listed in Order of Presentation:

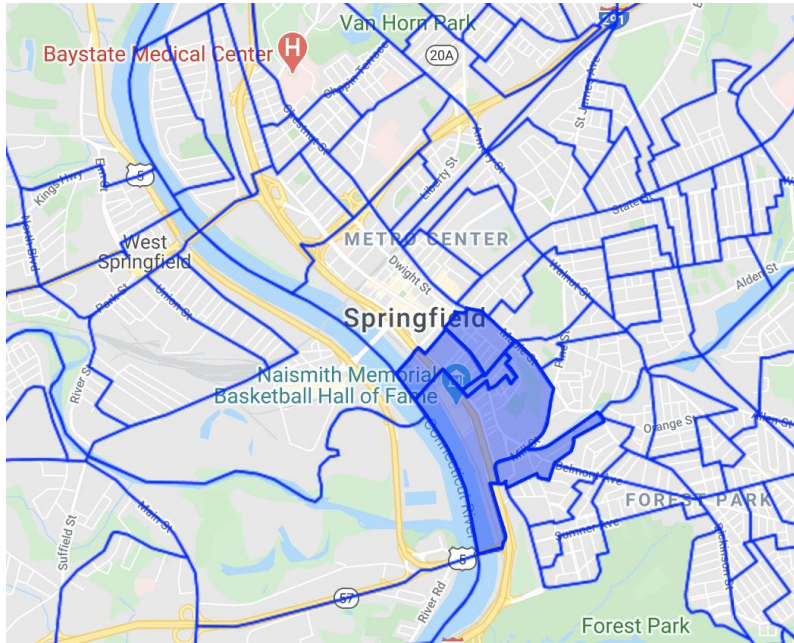
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Pasang Lama, Dominic DeFilipi



**Baystate
Health**

ADVANCING CARE.
ENHANCING LIVES.

Population of Focus:

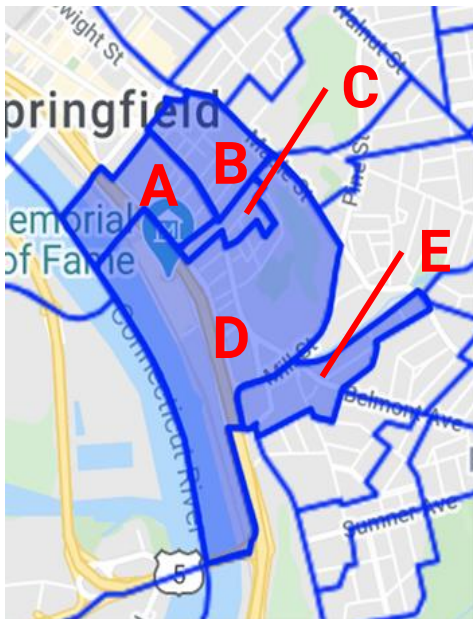


- **South End, Springfield MA**
- Why we chose the South End:
 - Regreen Springfield is working to promote reforestation
 - We wanted to tailor an outreach program to the South End based on prior research
- **442 Acres**
 - Canopy: 11.9%
 - Impervious: 63.16%
 - Plantable Space: 24.90%

Key Demographics

Population: 5,649 individuals

56.75% minority



- **Median Income & Poverty %**

- A: \$12,877, 31.0%
- B: \$31,780, 31.0%
- C: \$11,448, 63.1%
- D: \$16,575, 63.1%
- E: \$9,220, 44.8%

*MA Median Income: \$41,794

- **Median Age**

- Ranges from 25.4 (C) to 39.0 (A)

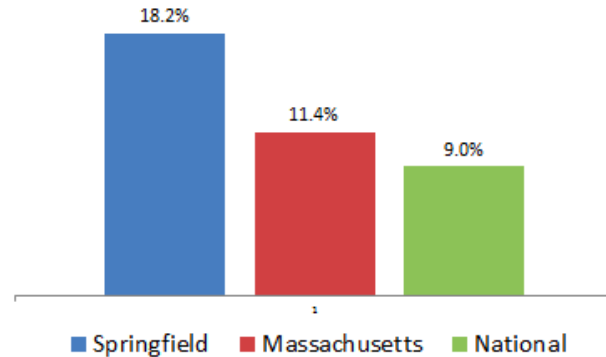
- **Educational Attainment**

- No School: 4.3%
- High School or GED: 31.3%
- Undergraduate Degree: 8.7%
- Graduate Degree: 9.4%

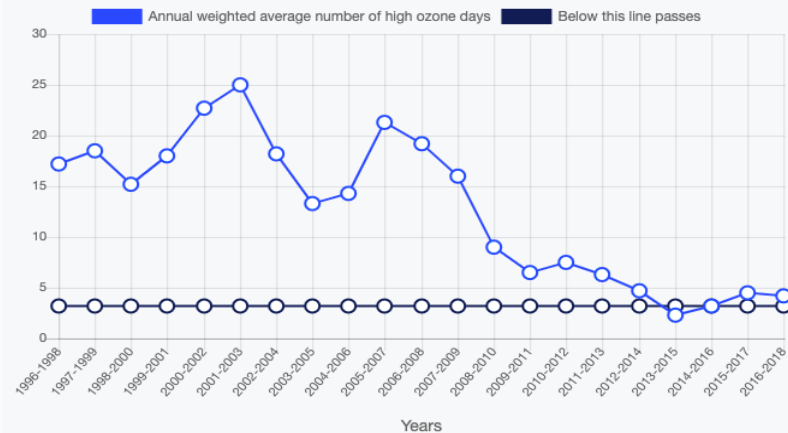
Common Health Exposures

- In a 2018 Report, the AAFA ranked Springfield as the **#1 Asthma Capital**
 - Based on high asthma prevalence and high number of asthma related emergency room visits
- PVAC stated that **people of color and low income** are more impacted by asthma
 - Latinx people are 5x more likely to end up hospitalized overnight due to asthma
 - African Americans are 1.5x more likely to end up hospitalized overnight due to asthma
 - Associated with **poor air quality and pollution**

Asthma Prevalence Adults 18+



Hampden



Counter Criminal Continuum (C3) Policing



- In 2011 Springfield was named the **12th most violent city** in the US according to the FBI
- **38 gangs** in Springfield with **2800 residents** with affiliation

- **21% decrease** in crime in the North End of Springfield from 2008-2014
- **38% decrease** in aggravated assault from 2008-2014
- **68% reduction** in graffiti

C3 South End Community Meetings



C3 Metro Center and South End Community Meetings: An Example of Interprofessional Community-Based Work

Strengths

- Transparency
- Collaborative
- Promote partnerships
- Safe space

Weaknesses

- Not all groups represented at all times
- Temporarily conducted over zoom
 - Technical Literacy Required



Environmental Organizations Serving Springfield



ReGreenSpringfield



Springfield's Climate Action & Resilience Plan

GOALS

REDUCE GREENHOUSE GAS (GHG) EMISSIONS

Enact programs, policies and local, state, federal legislation (regulations) to reduce GHG emissions generated by transportation, heating/cooling/electrifying buildings, processing waste, and water by 80% from 2015 baselines by 2050.

INCREASE COMMUNITY RESILIENCE

Increase community resilience through adaptation to and mitigation of climate change impacts with a focus on the city's vulnerable populations where they live and work maintaining an ongoing commitment to and emphasis on climate justice throughout all current and planned work.

Benefits of Trees Currently in the South-End

Climate Benefits

- Carbon Storage
 - Cost Savings: \$277,524 per year
 - Removal: 1,627.2 Short Tons/year
- Carbon Sequestration
 - Cost Savings: \$8,229 per year
 - Removal: 48.3 tons/year
- Pollution Removal
 - Cost Savings: \$10,851 per year
 - Removal: 2,689.2 lb/year
- Avoided Water Runoff
 - Cost Savings: \$5,038 per year

Health Benefits - Avoided Cases

- Acute Respiratory Symptoms
 - 1.34 cases/year
- Asthma Exacerbation
 - 0.45 cases/year
- School Loss Days
 - 0.22 cases/year
- Work Loss Days
 - 0.04 cases/year

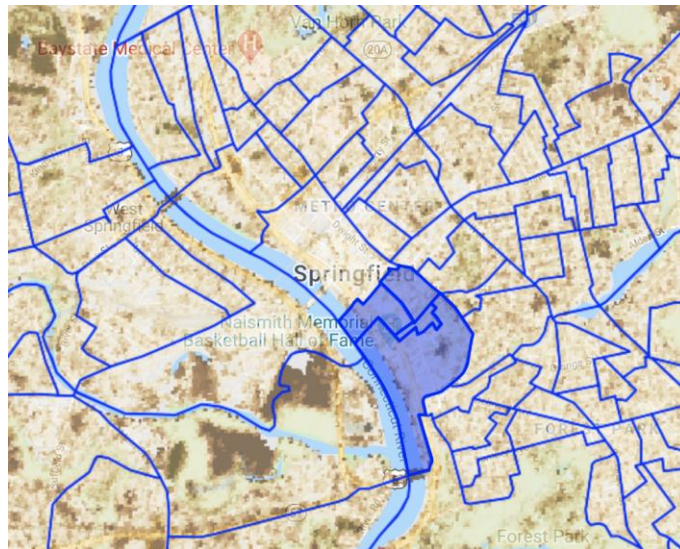


i-Tree Analysis of the South End

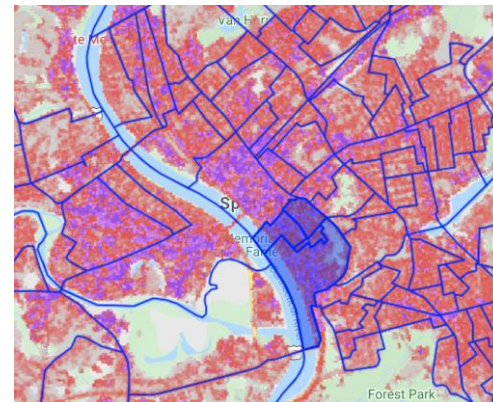
Tree Canopy Map



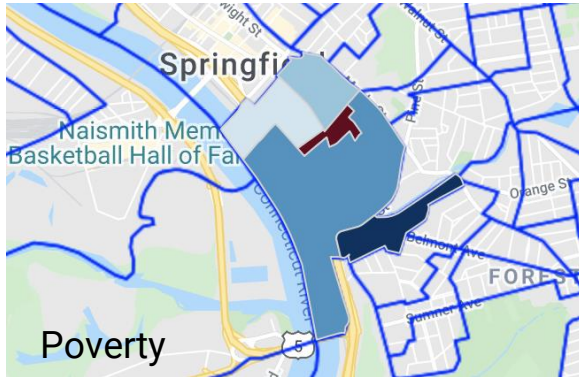
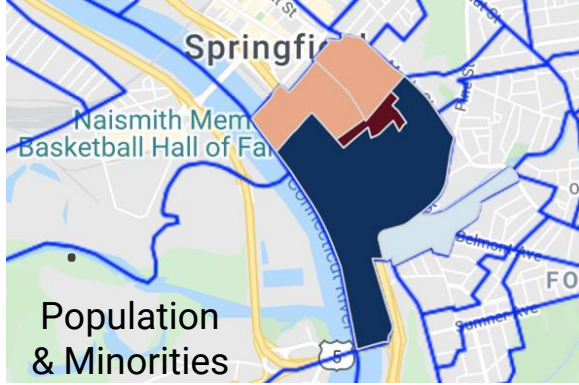
Plantable Space



Impervious Space



i-Tree Analysis: Prioritization of Tree Planting



Loring Street



Adam Street



Fremont street

Learning Through Community Service

- Car Tour Through South End Neighborhood
- Attended C3 Meetings
 - Metro Center & South End
- Developed a 5 Question Survey
 - Perception of the value of trees and greenspace in the community
 - Available in both English & Spanish
- Distributed Survey
 - Email List
 - In-Person
 - Digital Surveying & Postcard Handout



Wendell Pl



Broad street

Community Engagement



¿SABÍA USTED?

- Los árboles limpian al aire por la filtración de los contaminantes y los particulados;
- Los árboles refrescan al aire en las áreas urbanas y bajan la necesidad para los acondicionadores;
- Los árboles reducen la inundación, mejoran el valor de su casa, y reducen el estrés.

Queremos escuchar cómo los árboles hacen un papel en su barrio.

¡Escanee el código QR para completar una encuesta educativa y contarnos más!



ESCANEE EL
CÓDIGO QR

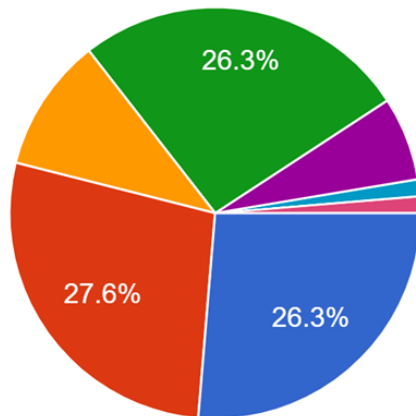


The Population-based Urban and Rural Community Health (PURCH) Track is patient-centered and integrated within the community. It focuses on population health, healthcare disparities and health issues specific to urban and rural communities

Survey Results: Question 1

I am satisfied with the number of trees in my community. (Estoy contento/a con la cantidad de árboles en su comunidad)

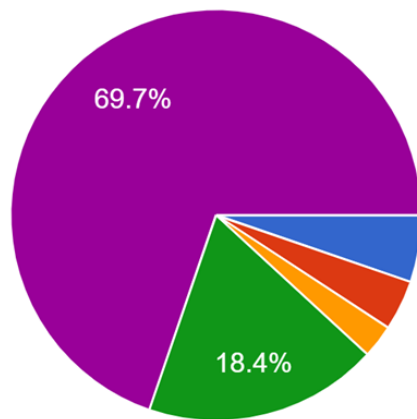
76 responses



- Strongly disagree (completamente en desacuerdo)
- Disagree (en desacuerdo)
- Neutral (neutral, ni acuerdo ni desacuerdo)
- Agree (de acuerdo)
- Strongly agree (completamente de acuerdo)
- My home community (Forest Park) ha...
- There are many beautiful trees but pe...

Survey Results: Question 2

Trees positively impact my health (this can be mental, physical, and/or emotional health).
(Impactan los árboles fuertemente mi salud (la salud mental, salud físico, o salud emocional))
76 responses

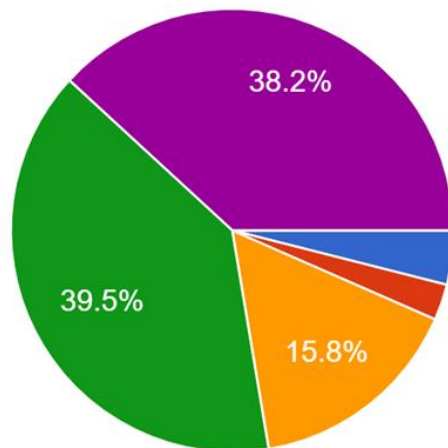


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- Agree (de acuerdo)
- Strongly agree (completamente de acuerdo)

Survey Results: Question 3

Trees make my community safer. (Mejoran los árboles la seguridad de mi comunidad.)

76 responses

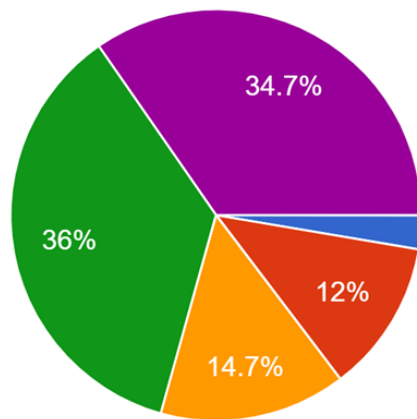


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- Neutral (neutral, ni de acuerdo ni en desacuerdo)
- Agree (de acuerdo)
- Strongly agree (completamente de acuerdo)

Survey Results: Question 4

Since the COVID-19 Pandemic, I have been going to parks, walking trails, or public open spaces more frequently. (Desde el comienzo de la Pandemia...acios públicos al aire libre con más frecuencia.)

75 responses

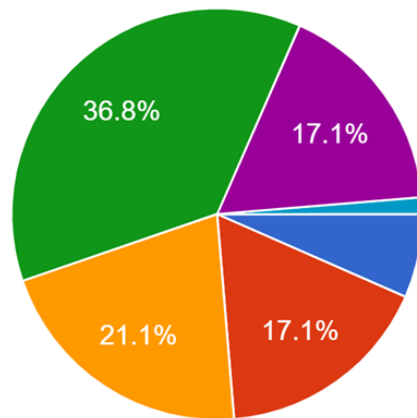


- Strongly disagree (completamente en desacuerdo)
- Disagree (en desacuerdo)
- Neutral (neutral, ni de acuerdo ni en desacuerdo)
- Agree (de acuerdo)
- Strongly agree (completamente de acuerdo)

Survey Results: Question 5

Since the COVID-19 Pandemic, I have been satisfied with the quality and quantity of parks, walking trails, and public open spaces in my community. (De...cios públicos al aire libre, etc. de mi comunidad)

76 responses



- Strongly disagree (completamente en desacuerdo)
- Disagree (en desacuerdo)
- Neutral (neutral, ni de acuerdo ni en desacuerdo)
- Agree (de acuerdo)
- Strongly agree (completamente de acuerdo)
- There are some very nice places, but would always love to see more. I live n...

Voices from the Community

- Trees to improve **safety**

“It would be nice to see more trees in the [tree belts] . . . this would cut down through traffic, and create more neighborhood play spaces for teens and tweens.”

- Tree **maintenance** is lacking

“Keep them well trimmed.” & “Keep away from power lines.”

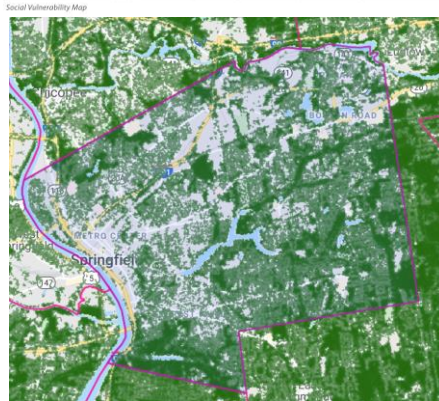
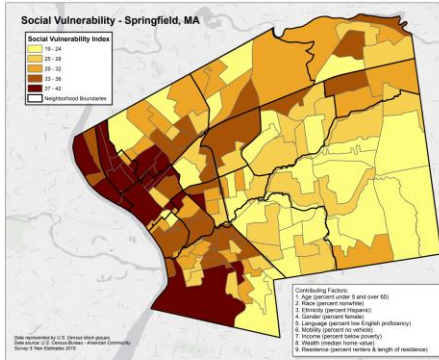
“I need to learn how to care for a pair of birch trees in my backyard.”

“We have many trees that are very old and almost at the end of their life cycles, and we need an infusion of new trees.”

“Make sure unhealthy trees are removed and replaced with strong, healthy trees.”

“Ongoing maintenance of existing trees needs to be beefed up.”

Environmental Justice Advocacy



- Based on multiple criteria
 - Income
 - Minority population
 - English isolation
- Many neighborhoods in Springfield, including the South End, **exhibit all three barriers to environmental justice**
- Pollution and heat exposure, food insecurity, and access to healthcare, are all factors related to environmental justice
- Steps to reduce pollution, combat climate change, and increase tree coverage/greenplace all help promote environmental and social equity

How do we take action?

- Residents of the South End overwhelmingly agree that they are using parks and green spaces in Springfield **more frequently since the start of the pandemic**
 - Open Armoury Commons and Pynchon Park
- Increase tree maintenance education and community tree plantings when able
 - When neighbors plant and maintain a tree themselves, they take ownership and pride in their accomplishment - ReGreening their neighborhood
- If other neighborhoods in Springfield can develop their greenspace, why can't the South End?



Long Term Goals

- Thinking about asthma rates in Springfield - speaks to our experiences as healthcare providers
- Working to ameliorate air quality
- Working to combat the over-consumption of energy
- Fighting against climate change
- Foster an appreciation for nature
 - Outdoors Rx
- The Bottom Line
 - People understand the importance of environmental justice in our community
 - Change is possible



Summary

- The South End is a culturally diverse, youthful neighborhood at risk for environmental injustice due to minimal tree canopy, low median income, and high poverty rates.
- Surveying provided an insight to the importance of green space on the mental, physical, and emotional health of the community, especially in light of the COVID-19 pandemic.
- The high prevalence of asthma in Springfield disproportionately affects people of color and can be associated with poor air quality
- Let's give the people of Springfield the Environmental Justice they want and deserve.

Acknowledgements

- Matthew Sadof, MD
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thanks!

Any questions?

