



SANDY SPRINGS

GEORGIA

CITY COUNCIL

Rusty Paul, Mayor

John Paulson – District 1

Melody Kelley – District 2

Melissa Mular – District 3

Jody Reichel – District 4

Tibby DeJulio – District 5

Andy Bauman – District 6

Tuesday, December 3, 2024

Work Session

6:00 PM

The City Council Work Session will be held in the Studio Theatre at Sandy Springs City Hall
(1 Galambos Way, Sandy Springs, GA 30328).

Live-stream: www.SandySpringsGA.gov/stream

I. Staff Discussion Items

- A. **2024-299** 2023 Tree Canopy Study Update
(Presented by Bridget Lawlor, GIS Manager)

II. City Council Discussion Items

Individuals with disabilities who require certain accommodations in order to allow them to observe and/or participate in a public meeting, or who have questions regarding the accessibility of the meeting or facilities should contact the City Clerk at 770-730-5600 promptly for assistance.

The City will make reasonable accommodations for those persons.
1 Galambos Way, Sandy Springs, Georgia 30328 • 770-730-5600 • SandySpringsGA.gov



SANDY SPRINGS

CITY CLERK'S OFFICE

TO: Eden Freeman, City Manager
FROM: Bridget Lawlor, GIS Manager
DATE: November 21, 2024 Submission for the December 3, 2024 City Council Work Session
ITEM: 2023 Tree Canopy Study Update

Recommendation:

No action is needed from Mayor and City Council at this time.

Discussion:

Every other year, GIS Staff conducts a Tree Canopy Study. This update uses AI data collected in 2017 and 2023.

Financial Impact:

The AI data cost was \$10,143 and was included in the approved budget.

Review:

Raquel Gonzalez, City Clerk
Kristin Byars Smith, Assistant City Manager
Dan Lee, City Attorney
Eden Freeman, City Manager

Created/Initiated - 11/27/2024
Approved - 11/27/2024
Approved - 11/27/2024
Final Approval - 11/27/2024

Attachments:

1. 2023 Tree Canopy Study Update_December 2024

2023 Tree Canopy Study Update

December 3, 2024



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Tree Canopy Study

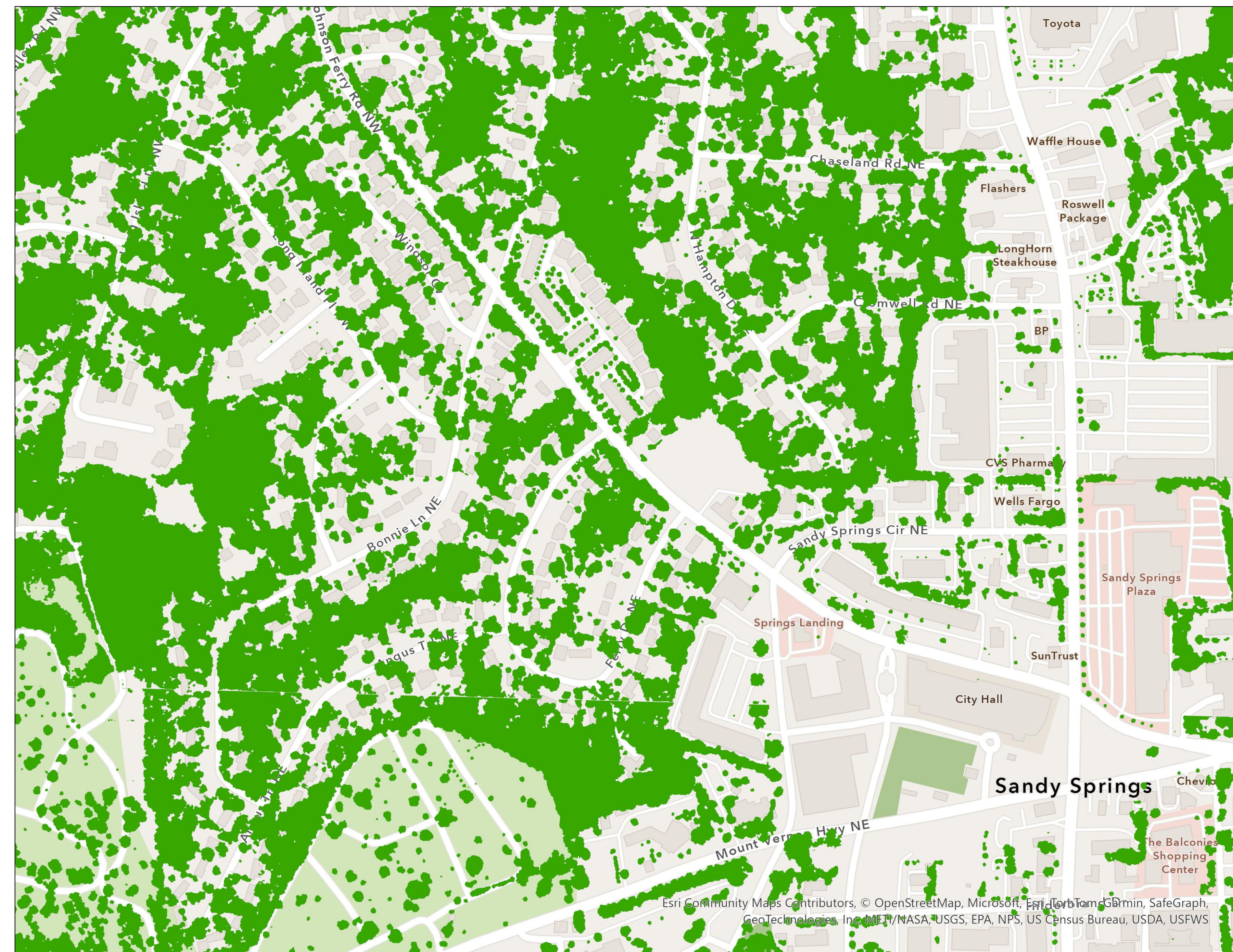
- Acquired Nearmap 2023 imagery and AI vegetation
 - Medium-High vegetation for Canopy (greater than 2 meters)
 - Percent canopy by Council District, Zoning, 285/400 project
 - Compared to 2021 Canopy by Council District, Zoning
- Acquired Nearmap 2017 imagery and AI vegetation
 - Medium-High vegetation for Canopy (greater than 2 meters)
 - Compared to ISO unsupervised classification from 2017 NAIP

Canopy Study

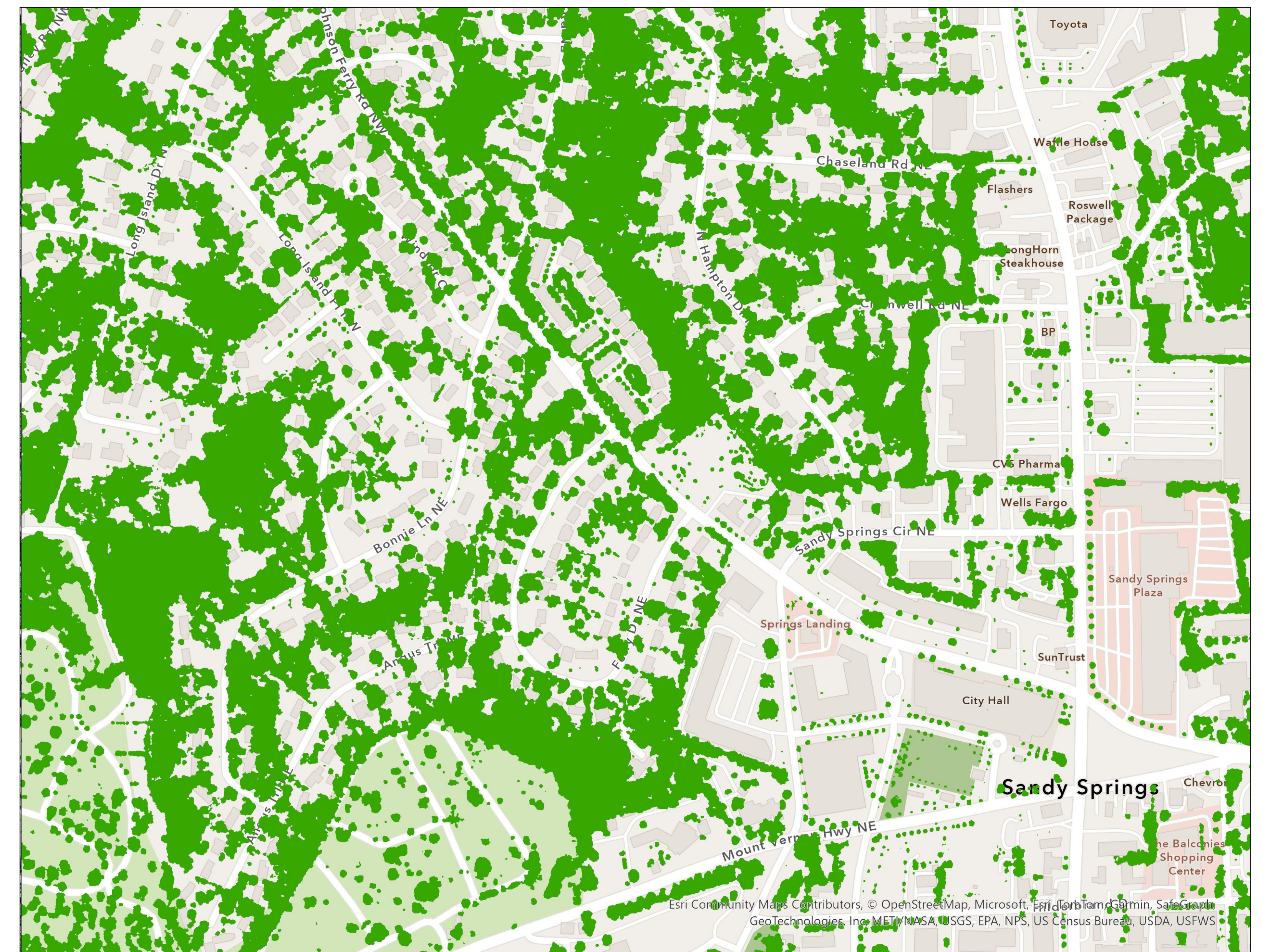
Nearmap AI medium-high vegetation from summer 2023 imagery

Nearmap AI medium-high vegetation from summer 2017 imagery

2017

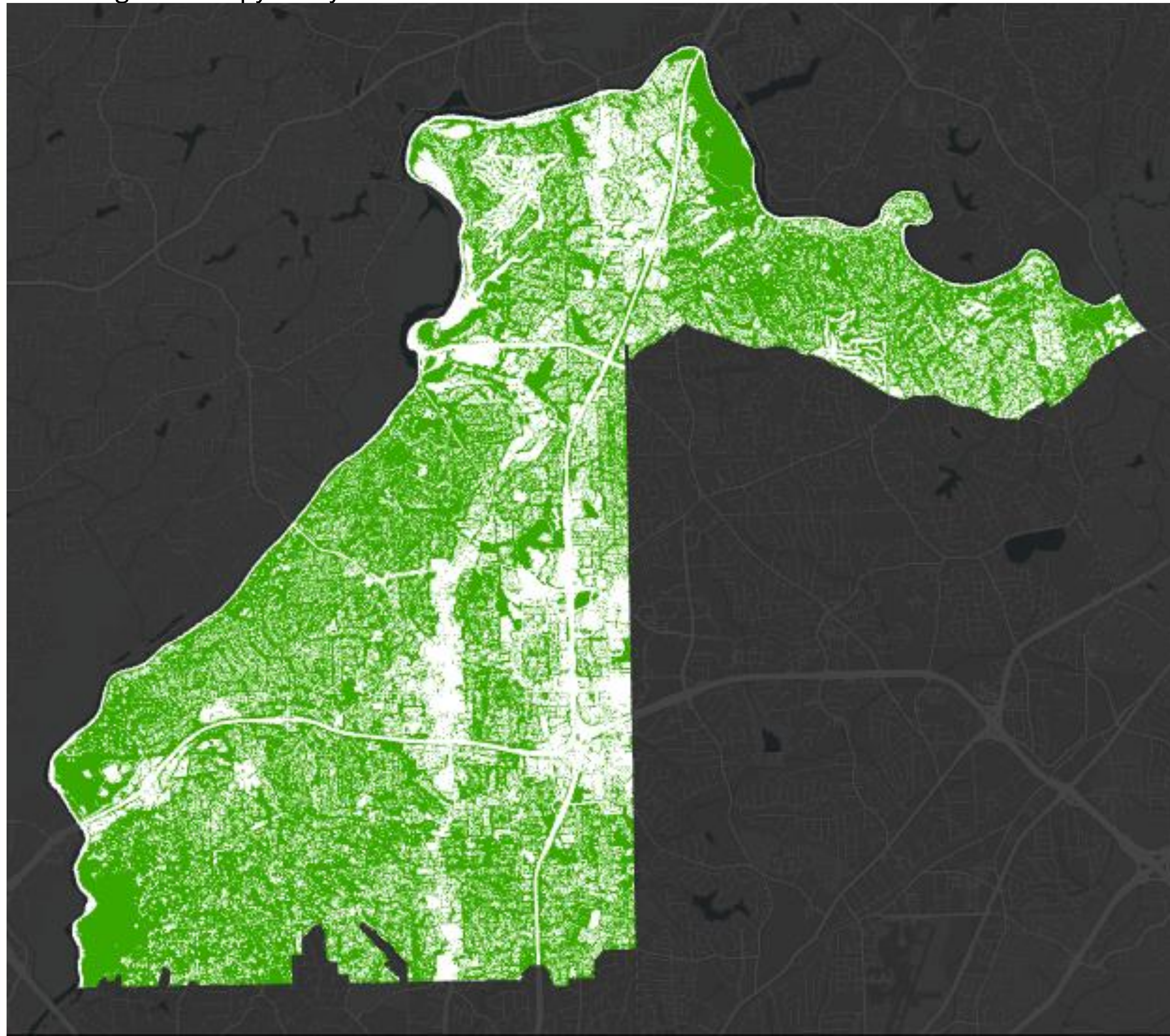


2023

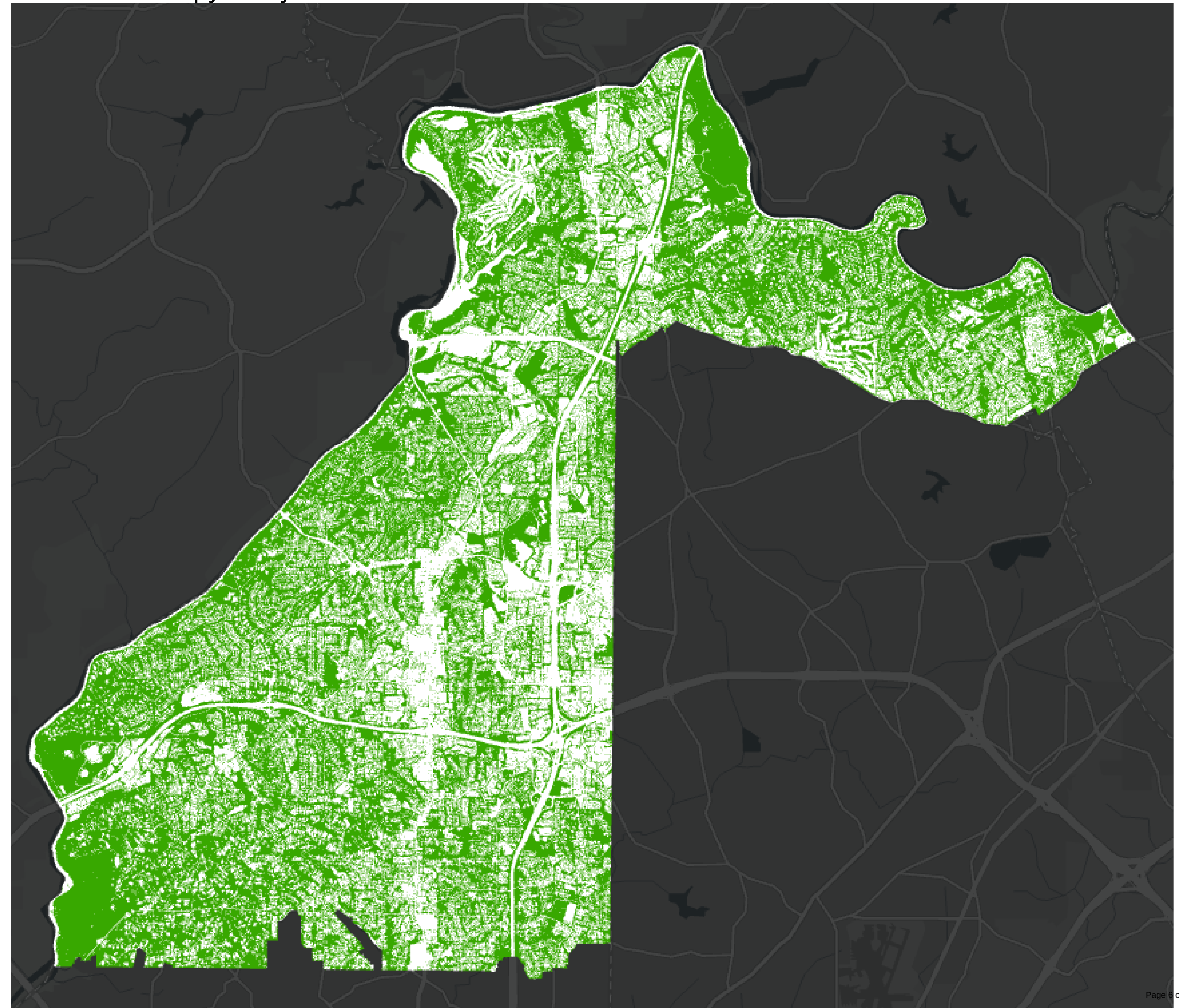


2017 Original Study Compared to 2017 AI Data

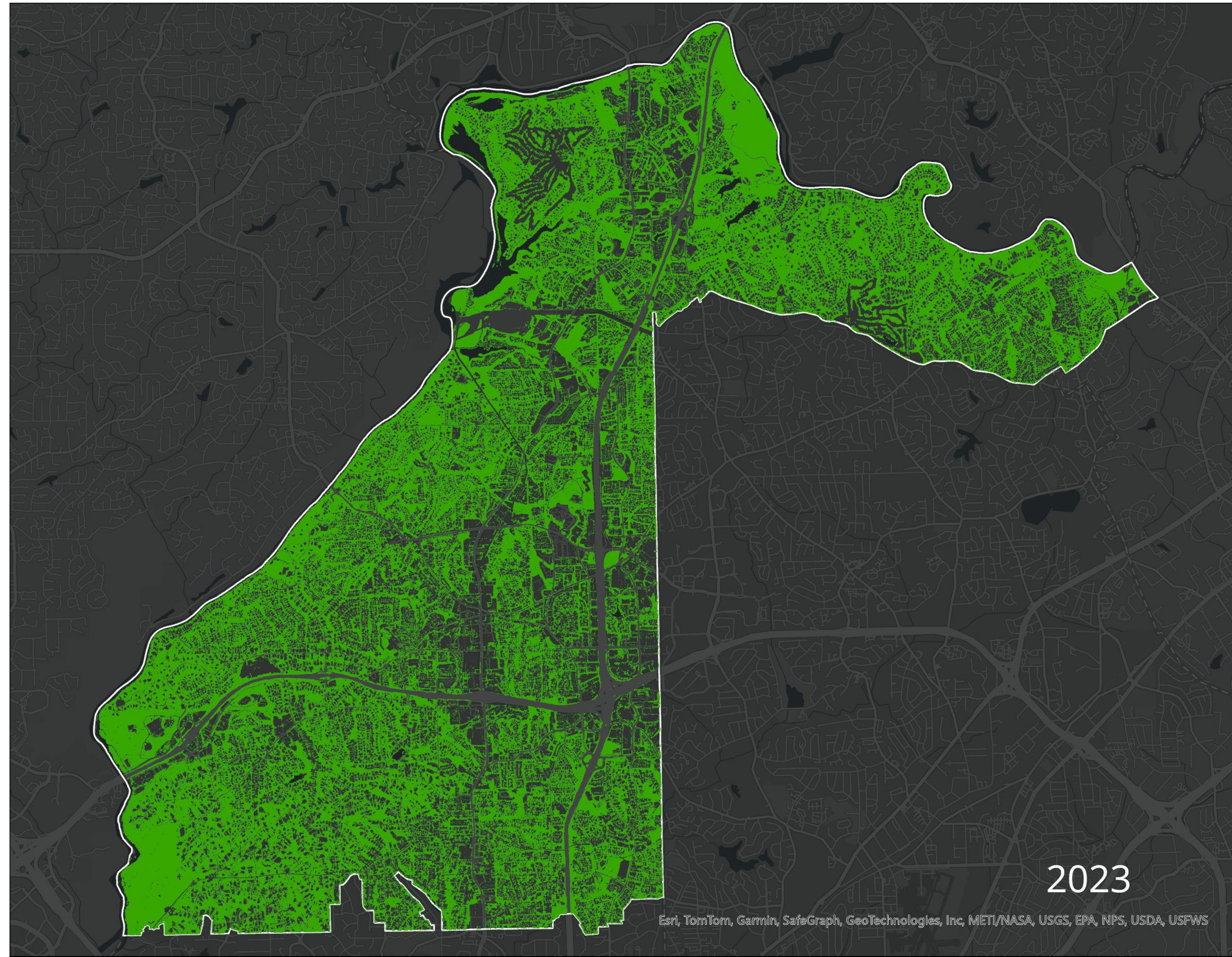
2017 Original Canopy Study



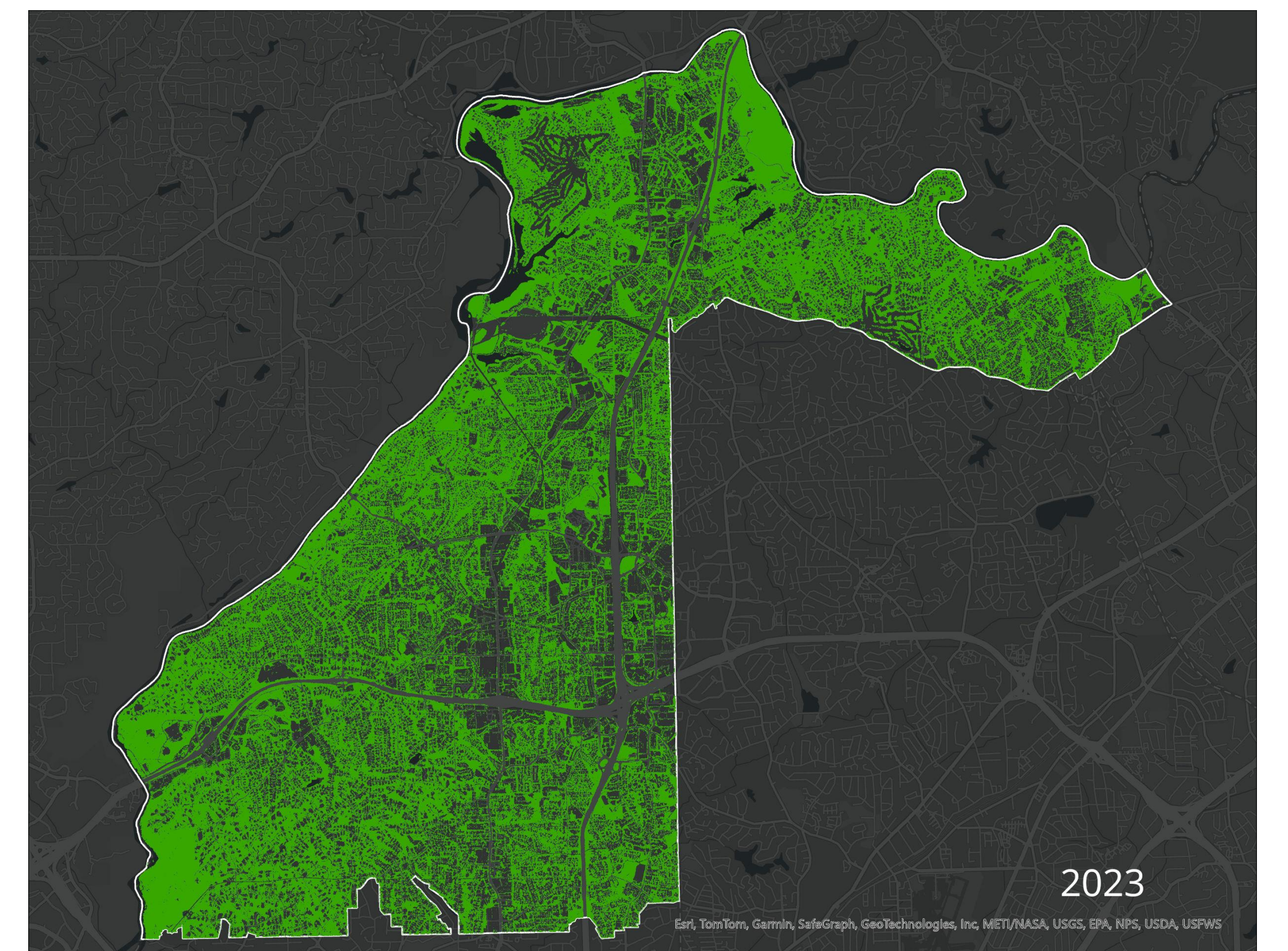
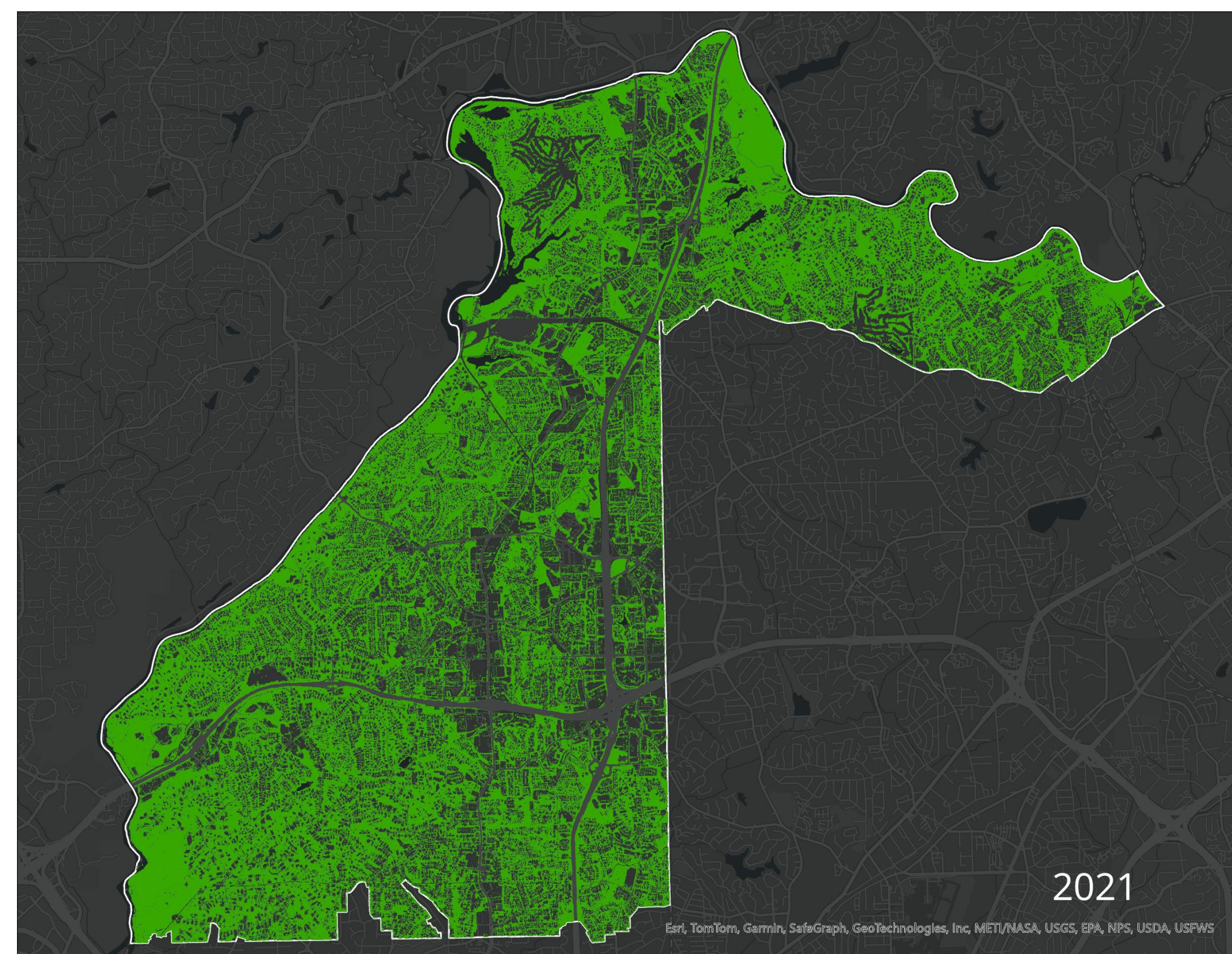
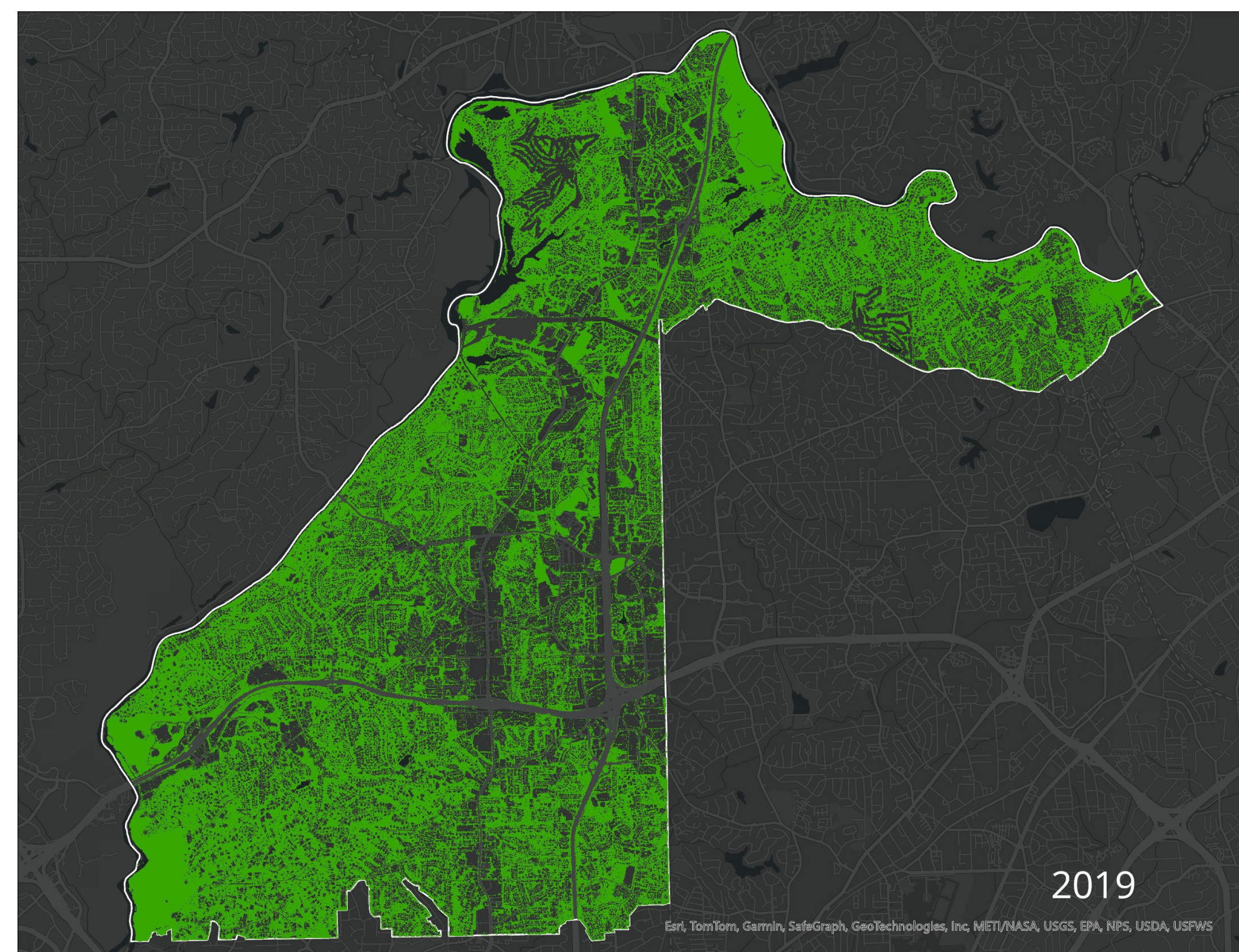
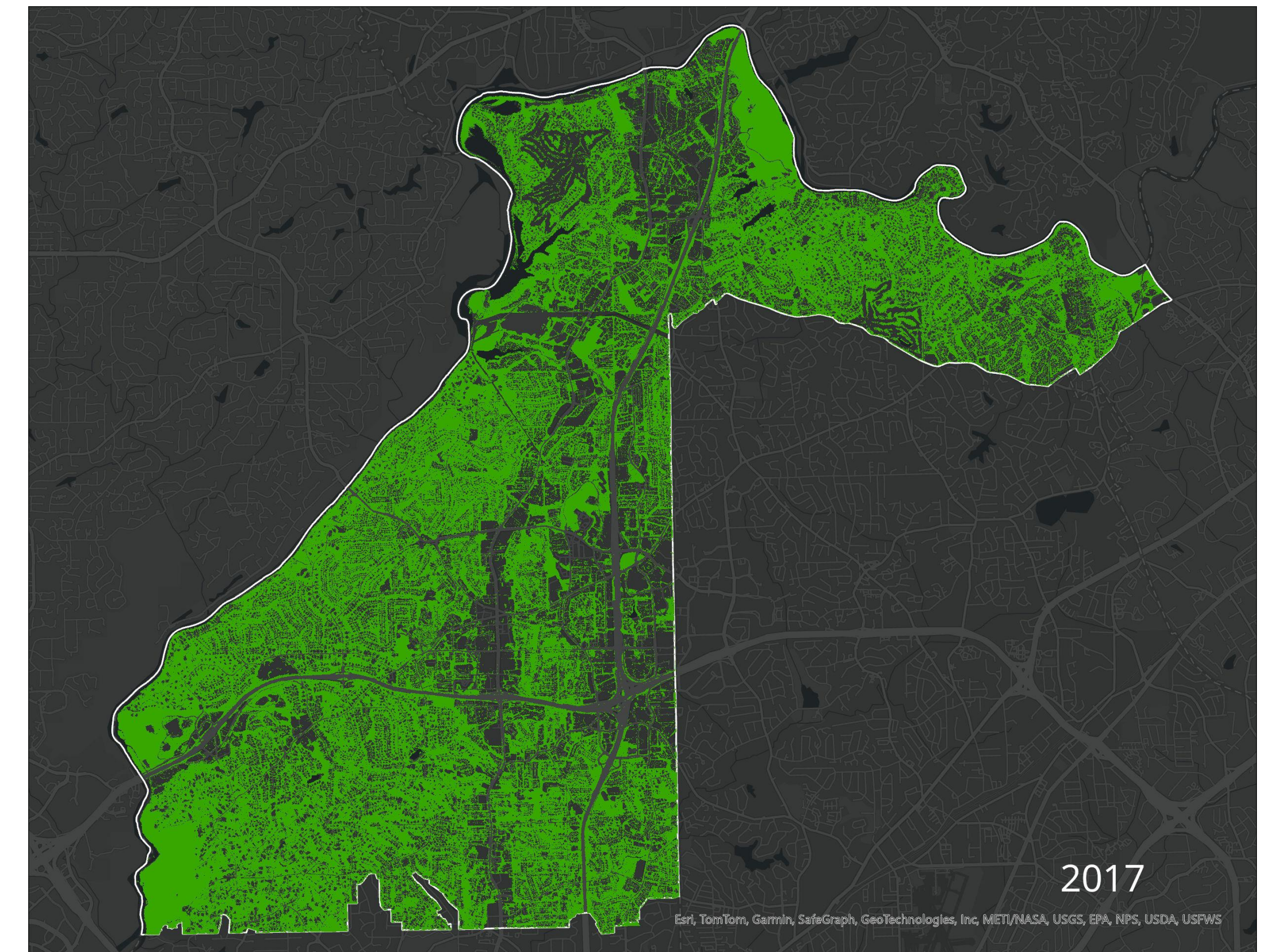
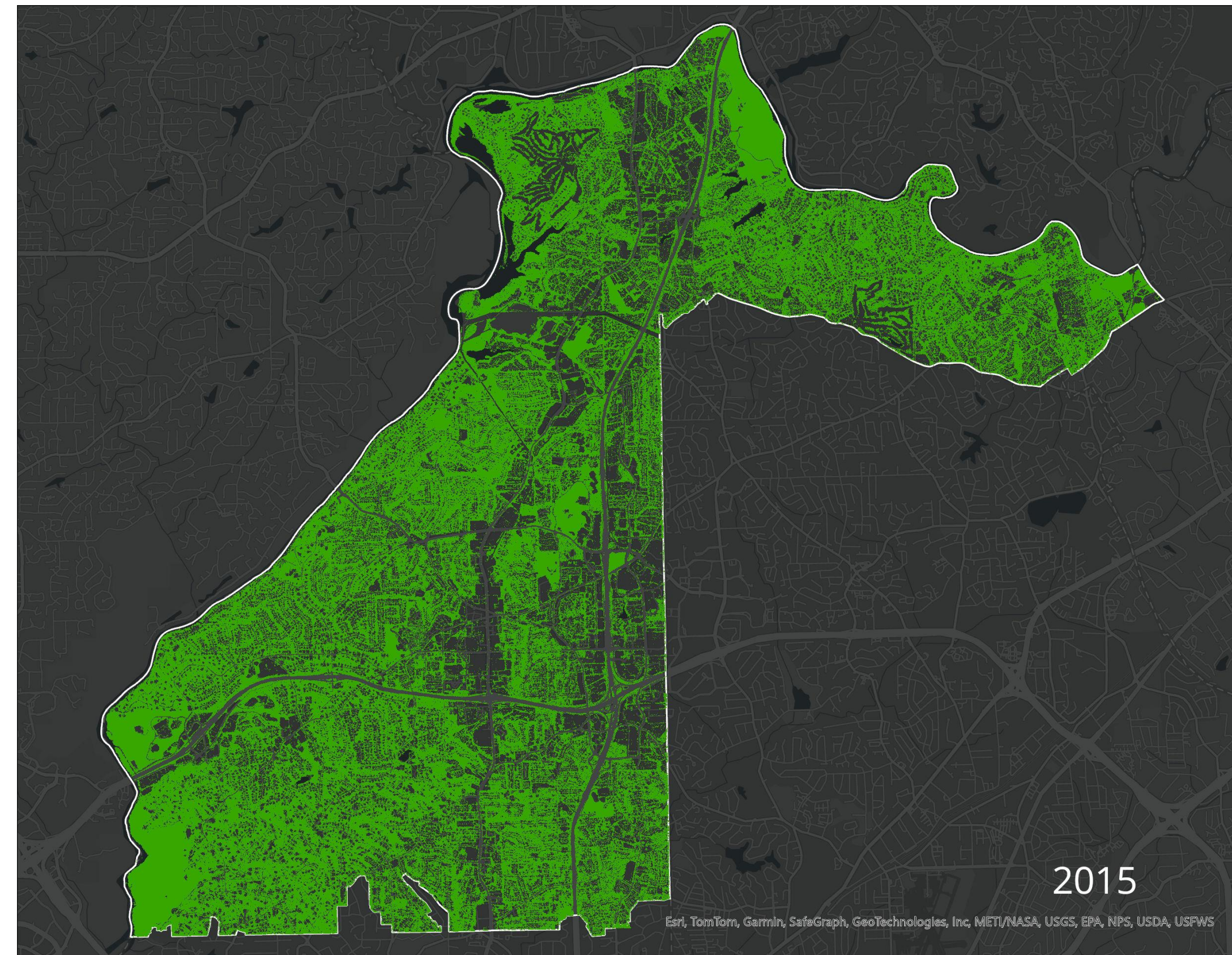
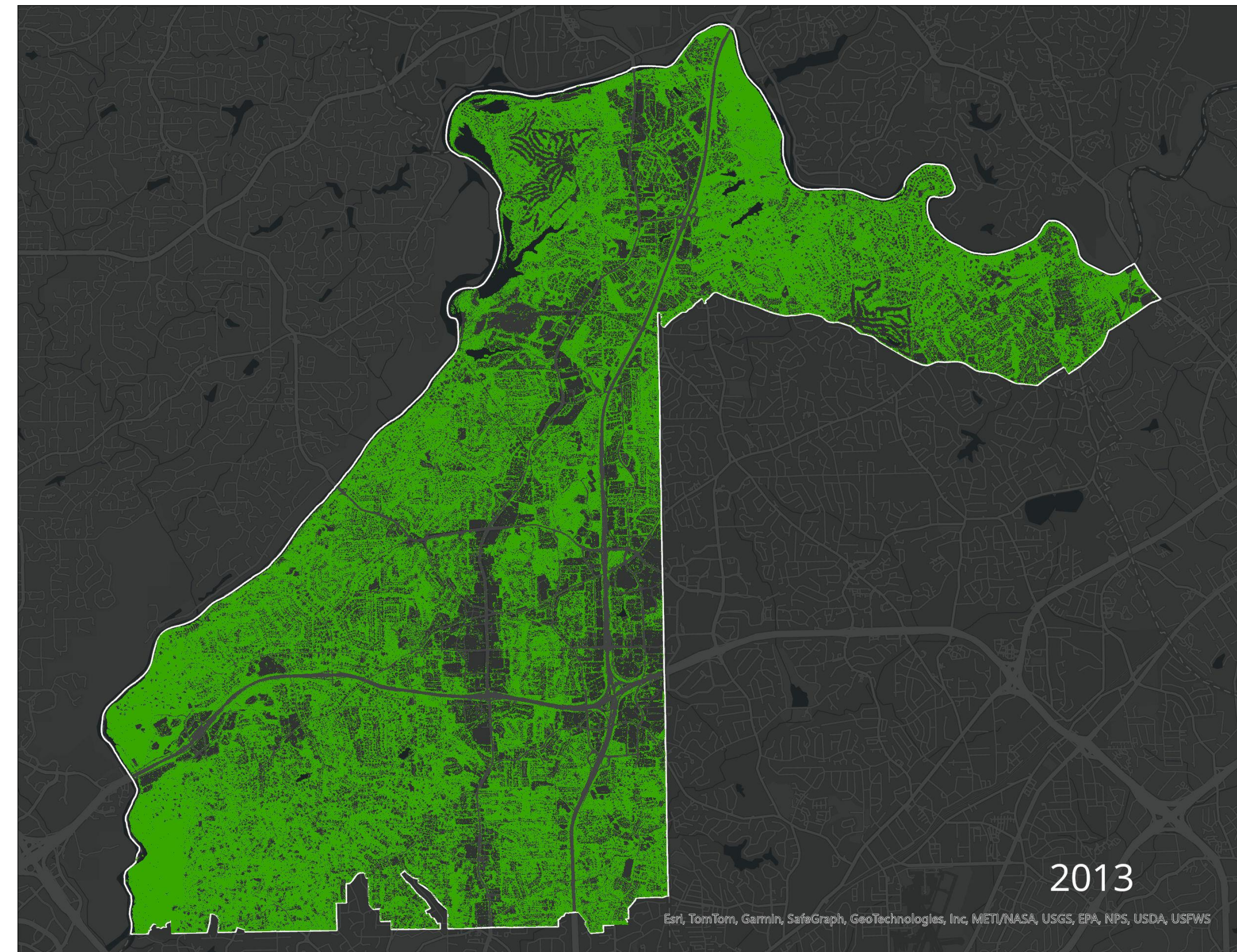
2017 AI Canopy Study



Canopy 2013 – 2023



Canopy 2013 – 2023



Estimated Area of Canopy

Year	2013	2015	2017	2019	2021	2023
ISO	58.7%	58.6%	60.3%	58.1%	58.1%	
AI			56.5%		55.0%	54.5%

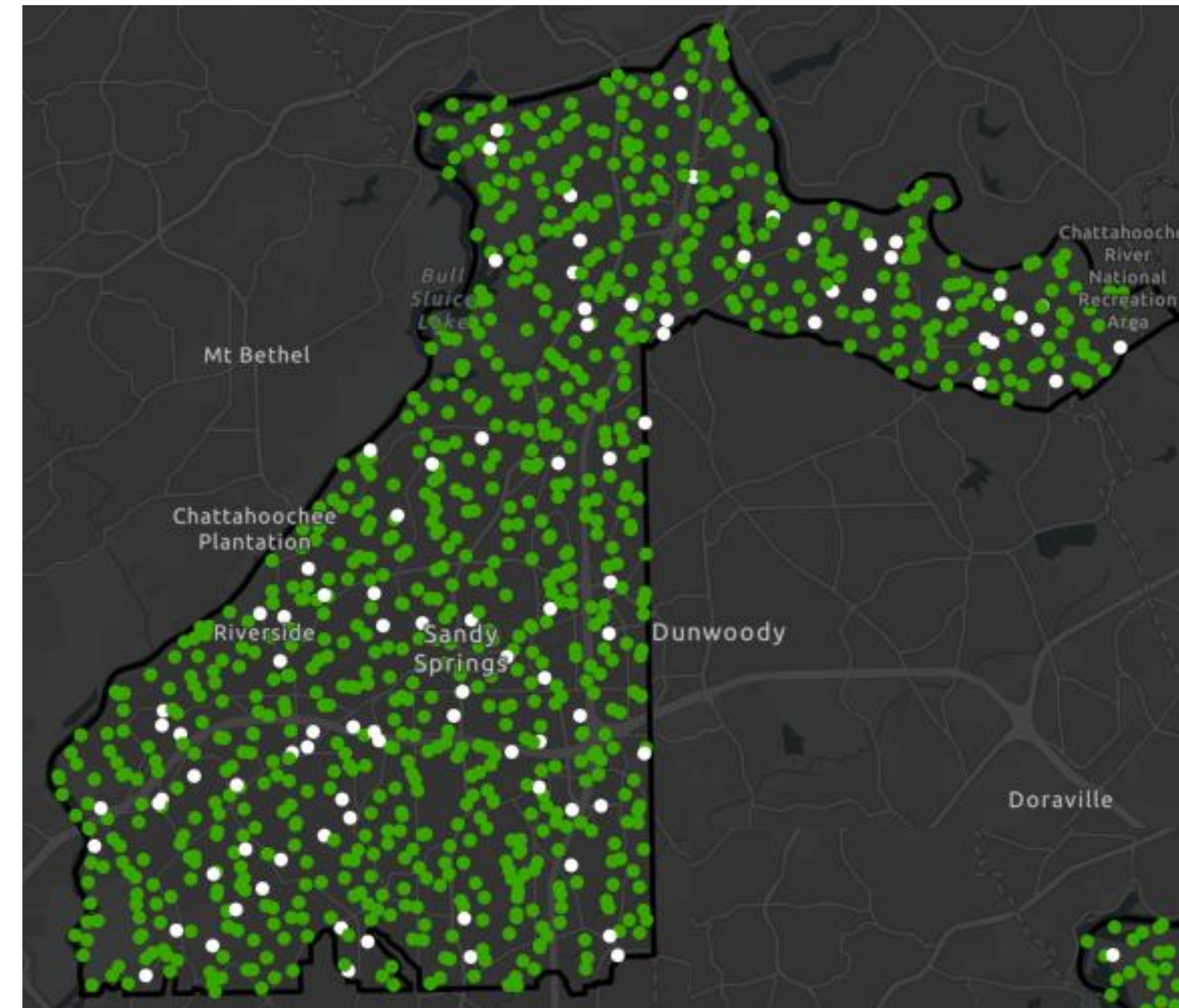
Accuracy Assessment

1000 random QC sites

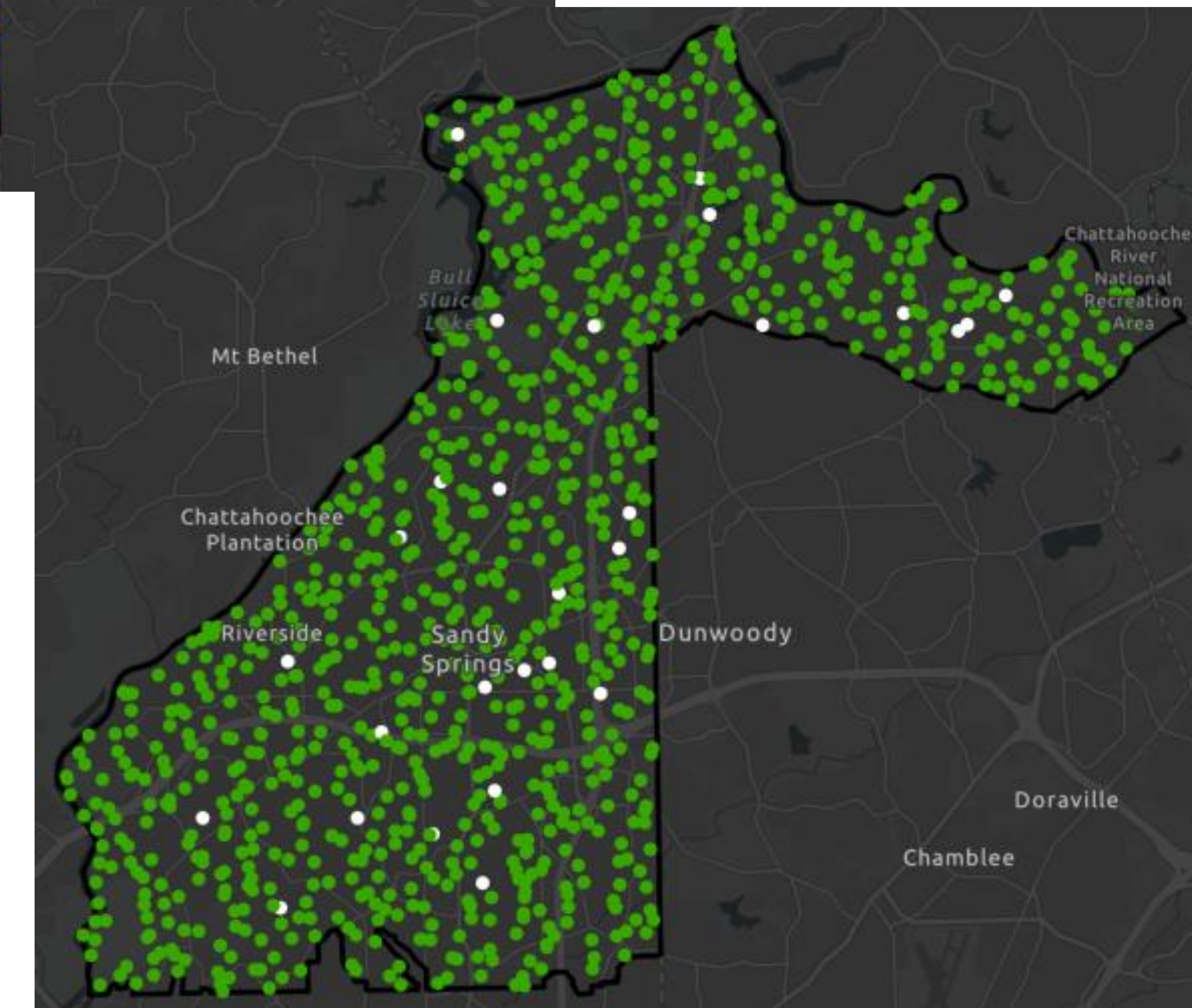
- How well did the map perform at the inspected sample points?

Overall Model Accuracy

2013	83.8%
2015	88.8%
2017	92.3%
2017 AI	>95%
2019	92.4%
2021	90.1%
2021 AI	>95%
2023 AI	>95%



ISO Accuracy



AI Accuracy

Tree Canopy Comparison

City	Canopy	Year	City Size
Alpharetta	49-53%	2018	27 sq mi
Atlanta	47%	2018	136 sq mi
Brookhaven	48%	2021	12 sq mi
Chamblee	36%	2017	7.7 sq mi
Decatur	57%	2019	4.6 sq mi
Johns Creek	57%		31 sq mi
Norcross	38%	2015	6 sq mi
Roswell	--	--	42 sq mi
Sandy Springs	55%	2023	38.5 sq mi

Analysis

Stream Buffer (50ft) Canopy Coverage

AI percent canopy within the 100 ft stream corridor

Non-canopy area seems to be a result of open water and low vegetation rather than presence of impervious surfaces.

Watershed	AI 2021	AI 2023
Crooked Creek	79.8%	80.5%
Long Island Creek	80.5%	78.2%
Marsh Creek	68.7%	69.7%
Nancy Creek	74.9%	71.8%

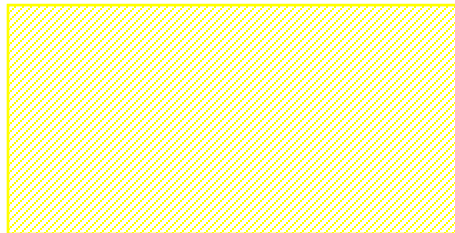


Stream Buffer (50ft) Canopy Coverage

Nancy Creek



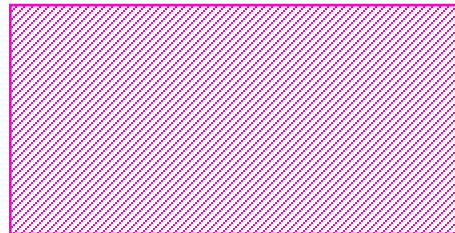
2021 Aerial image with 2023 and 2021 tree canopy and stream buffer



2021 Vegetation



2023 Aerial image with 2023 and 2021 tree canopy and stream buffer



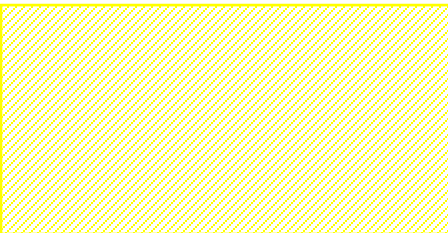
2023 Vegetation

Stream Buffer (50ft) Canopy Coverage

Long Island Creek



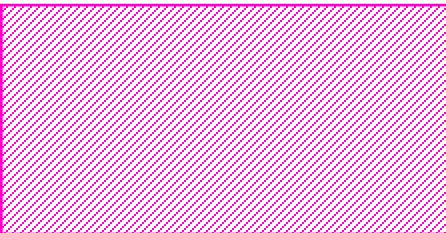
2021 Aerial image with 2023 and 2021 tree canopy and stream buffer



2021 Vegetation



2023 Aerial image with 2023 and 2021 tree canopy and stream buffer



2023 Vegetation

2023 AI Acreage of Canopy by Council District

**Council District boundaries changed in 2023*

	Council District 1	Council District 2	Council District 3	Council District 4	Council District 5	Council District 6	City-wide
AI Canopy Acreage	3,271	2,054	1,733	1,013	1,321	4,166	13,564
<i>2021</i>	<i>3,149</i>	<i>1,817</i>	<i>2,877</i>	<i>1,049</i>	<i>1,505</i>	<i>3,277</i>	<i>13,679</i>
Council District Acreage	5,382	3,778	3,732	2,132	2,940	6,865	24,830
<i>2021</i>	<i>5,193</i>	<i>3,475</i>	<i>5,429</i>	<i>2,350</i>	<i>3,154</i>	<i>5,229</i>	<i>24,830</i>
Percent Canopy	61%	54%	46%	48%	45%	61%	55%
<i>2021</i>	<i>61%</i>	<i>53%</i>	<i>53%</i>	<i>45%</i>	<i>48%</i>	<i>63%</i>	<i>55%</i>

2023 AI Acreage of Canopy by Council District

**2021 Acreage using 2023 Council District boundaries*

	Council District 1	Council District 2	Council District 3	Council District 4	Council District 5	Council District 6	City-wide
AI Canopy Acreage	3,271	2,054	1,733	1,013	1,321	4,166	13,564
<i>2021</i>	<i>3,223</i>	<i>2,026</i>	<i>1,719</i>	<i>982</i>	<i>1,408</i>	<i>4,316</i>	<i>13,679</i>
Council District Acreage	5,382	3,778	3,732	2,132	2,940	6,865	24,830
Percent Canopy	61%	54%	46%	48%	45%	61%	55%
<i>2021</i>	<i>60%</i>	<i>54%</i>	<i>46%</i>	<i>46%</i>	<i>48%</i>	<i>63%</i>	<i>55%</i>

2023 AI Percent Canopy by Council District and Zoning

	Council District 1	Council District 2	Council District 3	Council District 4	Council District 5	Council District 6	City-wide
CC	24 (23)	35 (38)	(29)	20 (19)		34 (20)	29 (28)
CON	97 (96)	49 (51)	52 (66)	89 (87)	82 (84)	97 (97)	82 (82)
CS			19 (19)	8 (6)	(25)	55 (54)	19 (19)
CX	33 (36)	31 (33)	20 (22)	24 (24)	26 (28)	20 (21)	27 (27)
IX	41 (49)	(28)					41 (38)
NEX		9					9
ON					39 (46)	38 (40)	39 (44)
OX	45 (48)	47 (44)	30 (57)	43 (42)	47 (48)	66 (62)	52 (53)
PK	41 (43)	60 (60)	59 (75)	68 (68)	66 (66)	92	66 (66)
PM					28 (29)		28 (29)
PR			42 (47)	17 (28)			34 (38)
PX			31 (28)	54 (49)	26 (26)		36 (35)
RD	61 (60)	73 (73)	59 (62)	58 (57)	55 (60)	57 (58)	61 (61)
RE	68 (67)	46 (44)	61 (68)	51 (48)	59 (63)	67 (70)	64 (65)
RM	57 (56)	59 (59)	41 (49)	50 (49)	41 (43)	36 (38)	52 (52)
RT	51 (53)	58 (61)	45 (48)	41 (38)	43 (45)	50 (53)	49 (49)
RU	50 (48)	36 (40)	31 (27)	36 (37)	44 (50)	73 (73)	45 (47)
RX		14 (9)				15 (18)	15 (16)
SX	44 (44)	22 (18)	21 (21)	5 (6)		22 (24)	23 (22)
TX	29 (32)	35 (28)		56 (54)			37 (36)
No Zoning	35 (34)	25 (24)	22 (26)	20 (17)	27 (28)	32 (35)	28 (28)
Total	61 (61)	54 (53)	46 (53)	48 (45)	45 (48)	61 (63)	55 (55)

2021 AI Percent Canopy by
2023 Council District

No zoning – right of way,
Bull Sluice

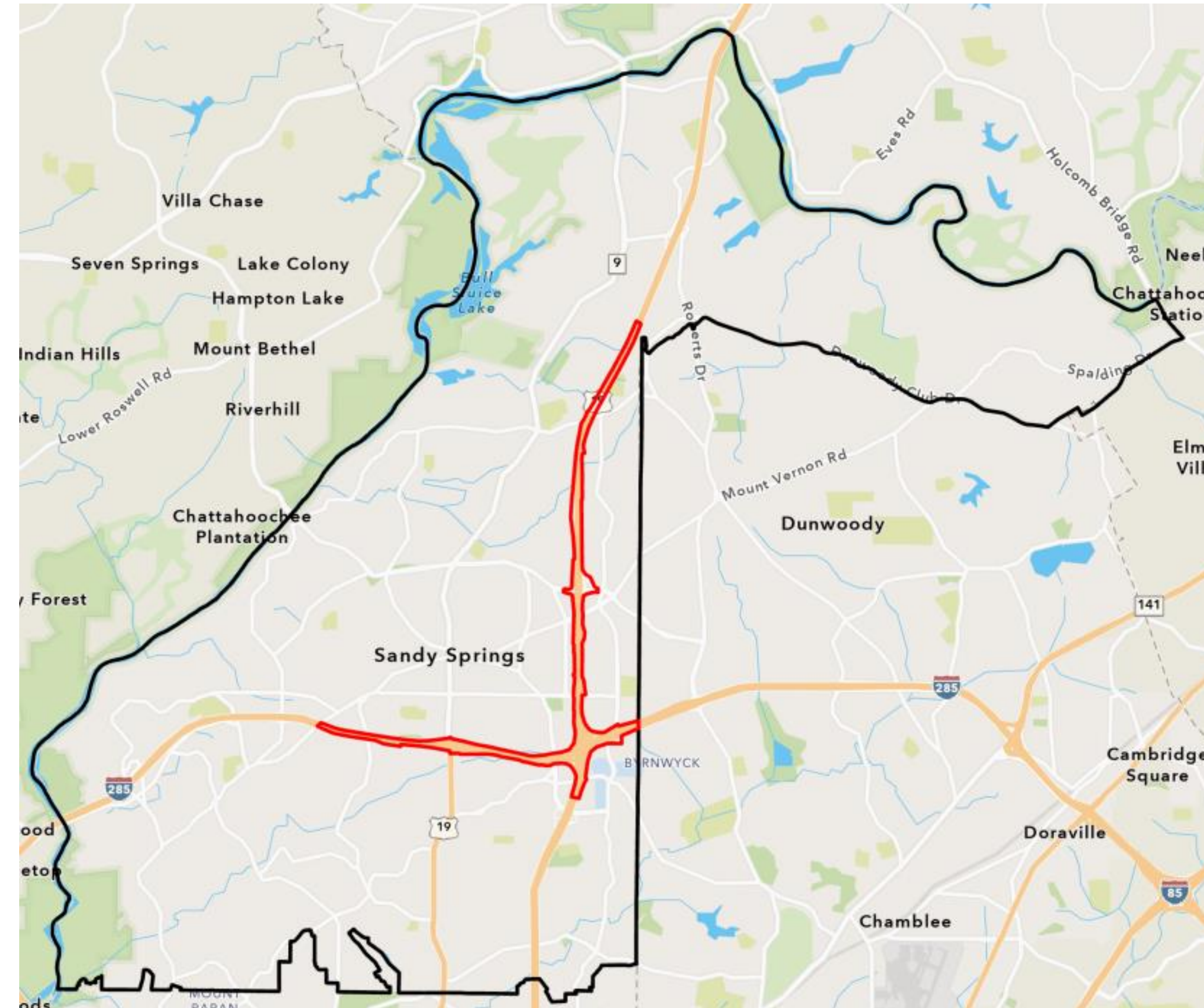
NEX in District 2 was SX in
2021

Canopy Changes in I-285/SR 400 Project Area

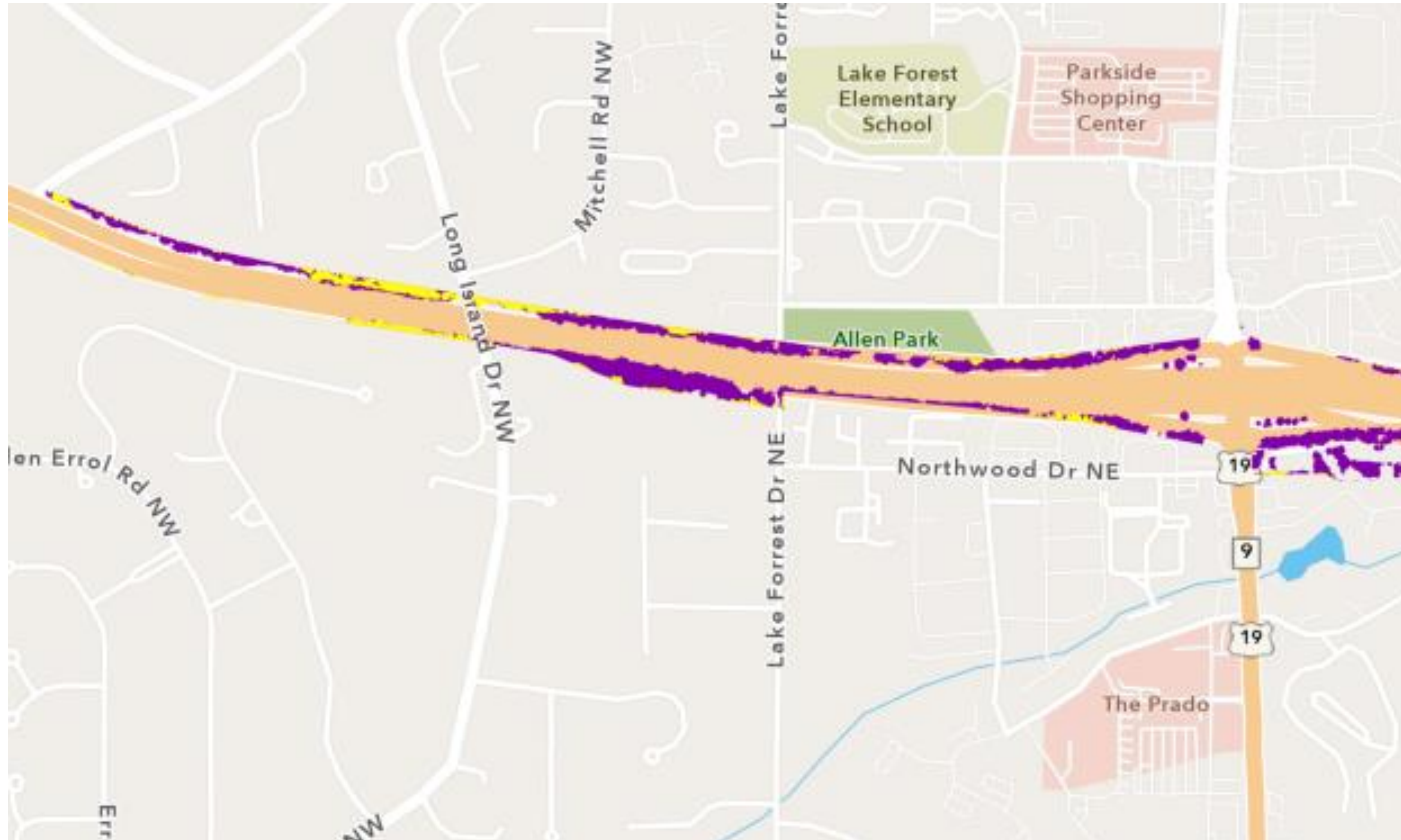
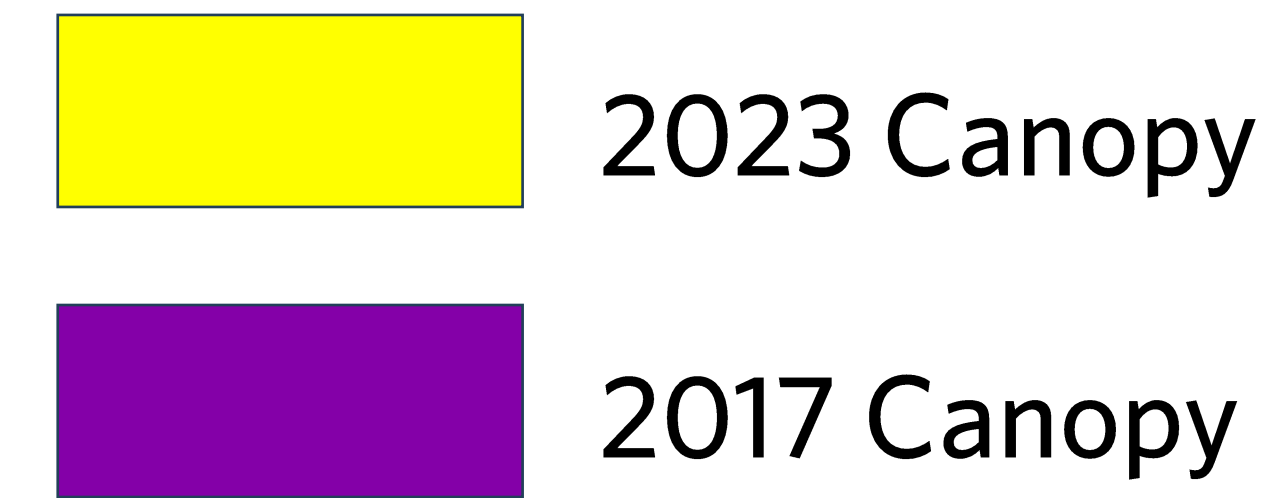
- Mount Vernon Highway to eastern city limits
- Glenridge Connector to Pitts Road

Canopy

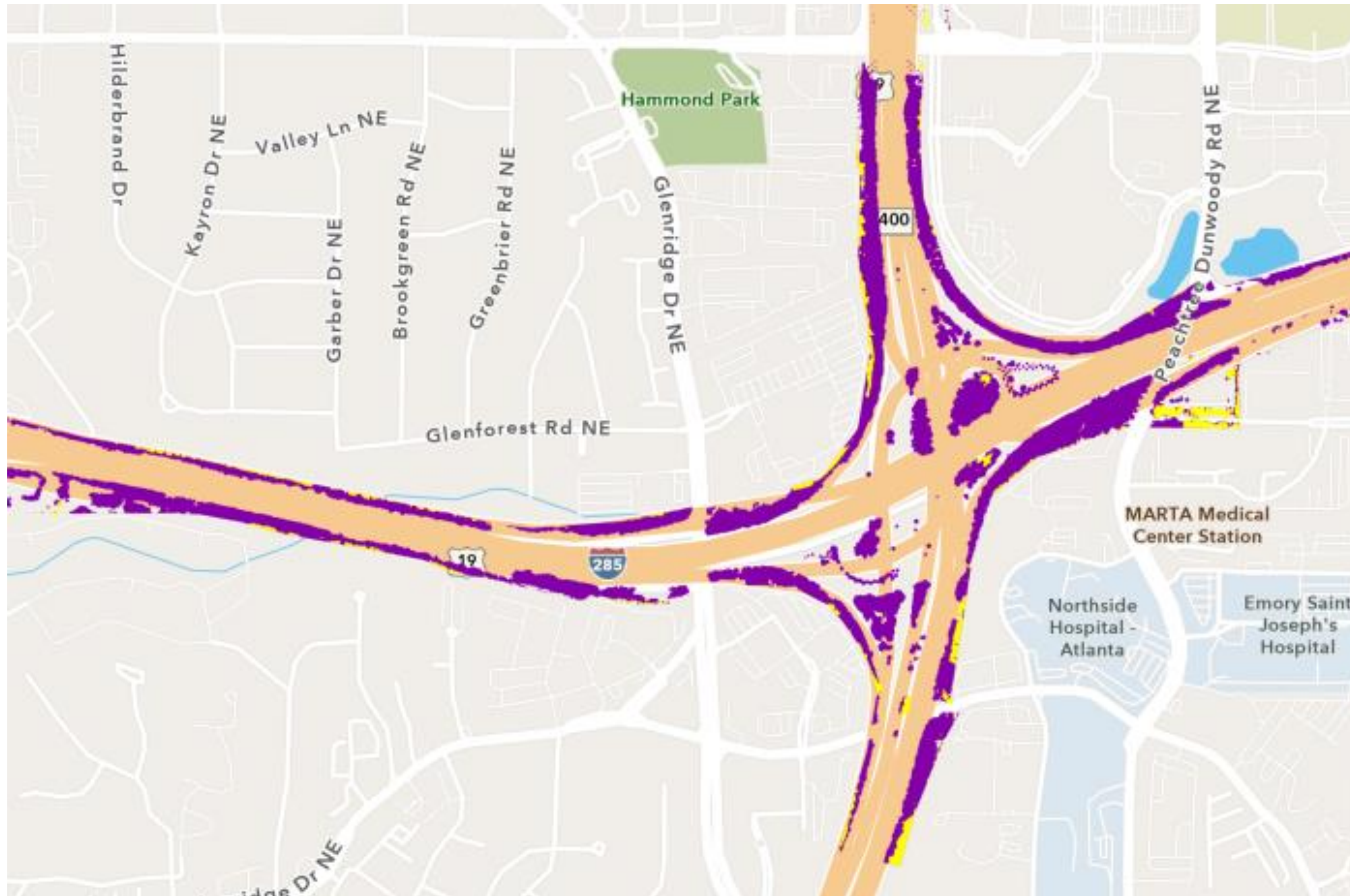
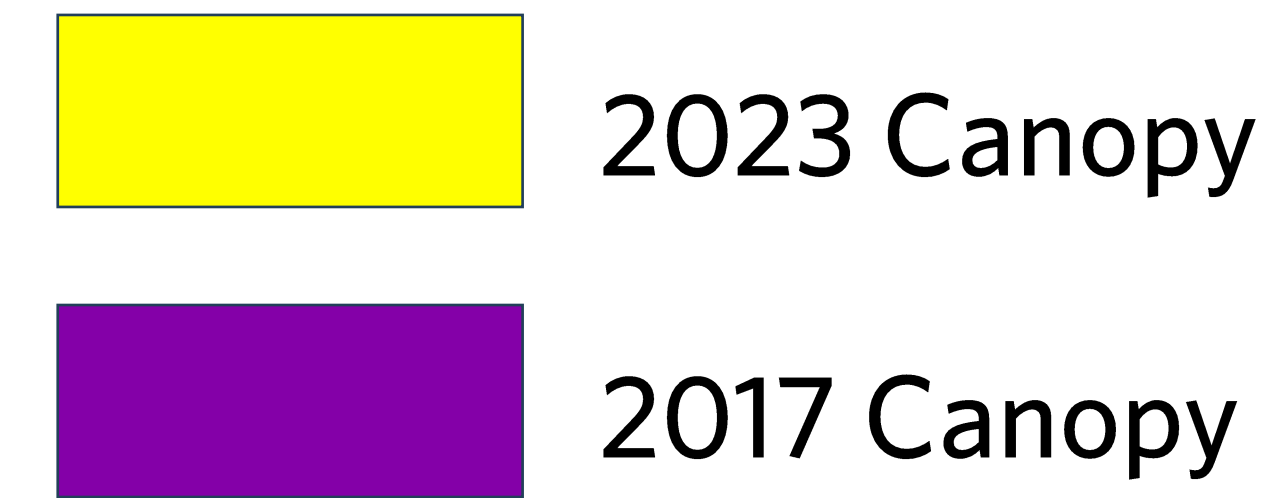
- 2017: 106 acres
- 2021: 22 acres
- 2023: 20 acres



I-285/SR 400 Project



I-285/SR 400 Project



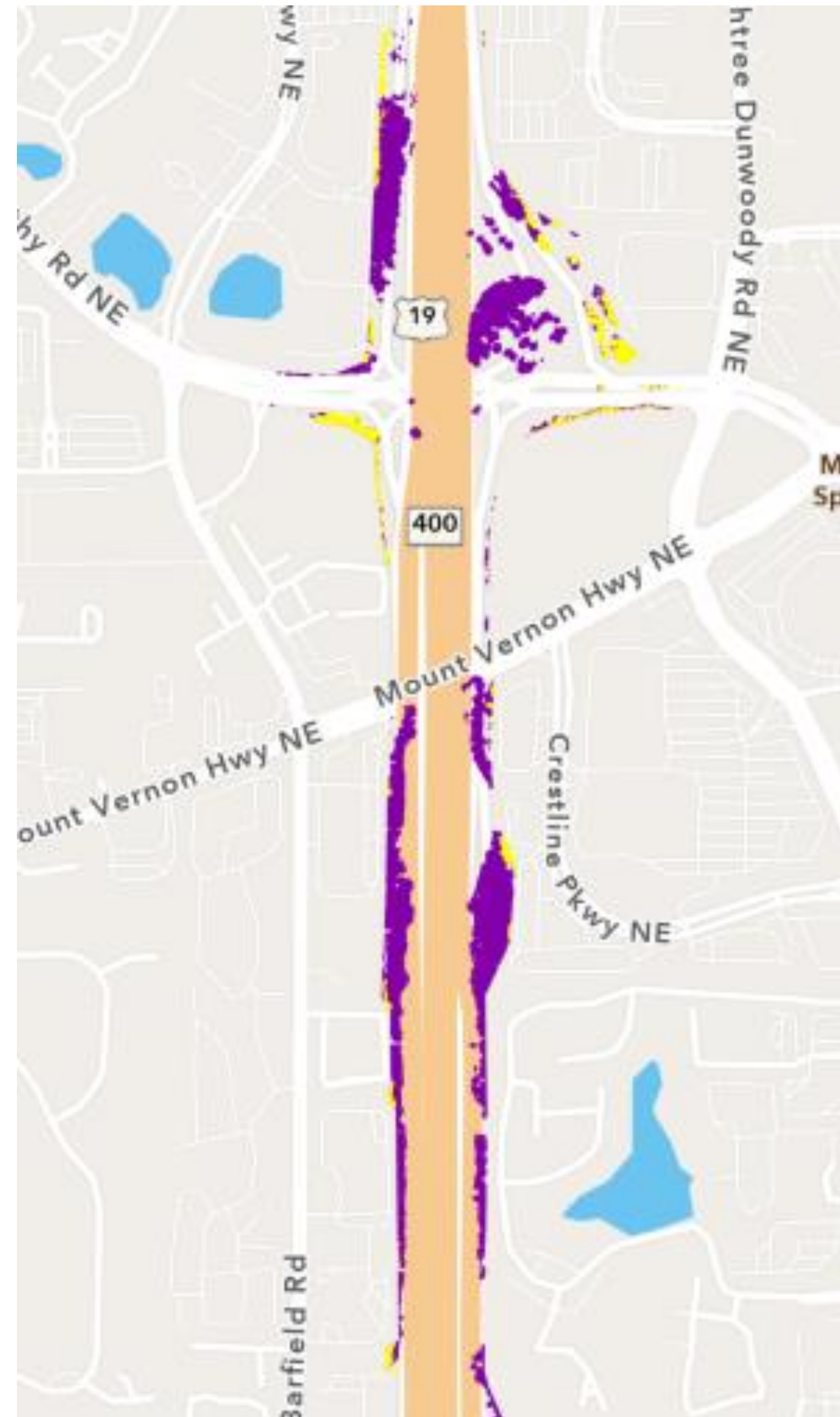
I-285/SR 400 Project



2023 Canopy



2017 Canopy



Conclusion

Similar canopy percentage in 2021 and 2023

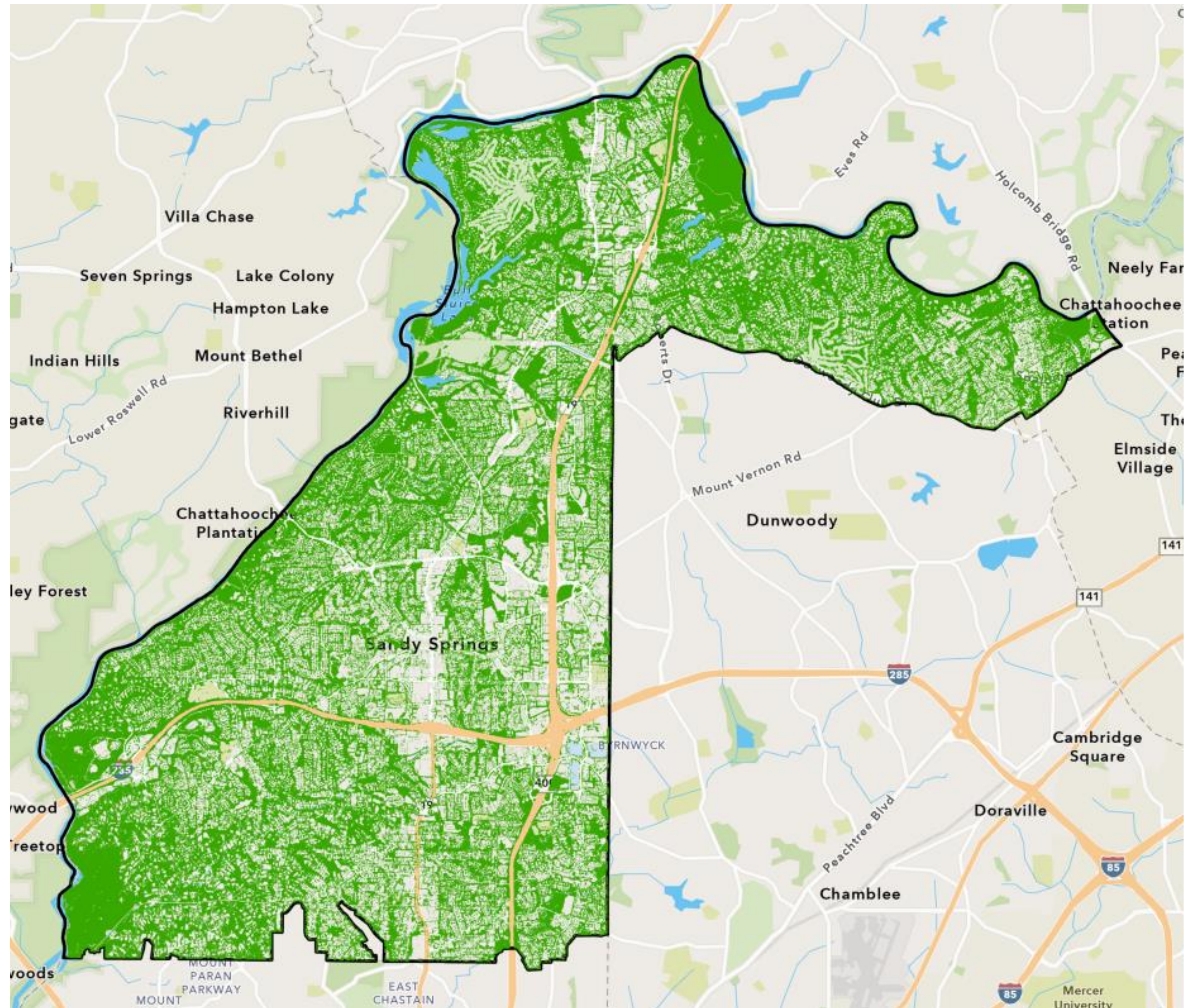
2017: 14,048 acres (56.5%)

2021: 13,679 acres (55%)

2023: 13,564 acres (54.5%)

AI produces high accuracy data

Staff focuses on analysis rather than pixel classification



Questions?