

Work Session of the Sandy Springs City Council was held on December 3, 2024 at 6:00 PM, Mayor Rusty Paul presiding.

I. Staff Discussion Items

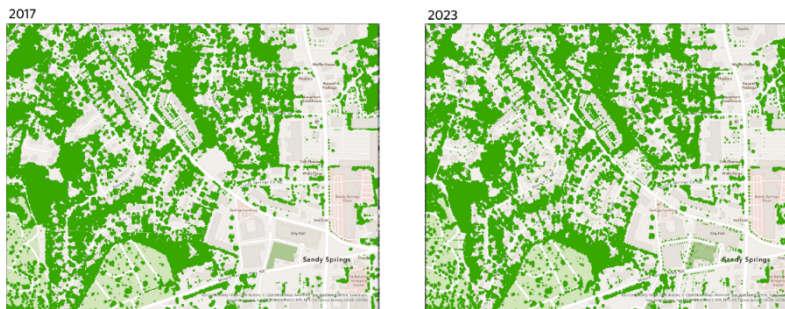
A. 2024-299 2023 Tree Canopy Study Update

Bridget Lawlor, GIS Manager, presented the 2023 Tree Canopy Study Update.

GIS Manager Lawlor said for the most recent Canopy Study, we used Nearmap imagery and AI vegetation from 2023. Based on the 2021 Canopy Study, we did not do pixel classification for 2023 and only used AI vegetation. We used medium-high vegetation, and vegetation greater than two meters was considered for the canopy. We ran the analysis for percent canopy by Council district, zoning, and within the transformed I-285/SR-400 project area. The results were also compared to the 2021 Canopy Study, both by Council district and zoning. The Council districts changed between 2021 and 2023, and both were combined to compare previous and current Council districts. At the previous canopy study, Council requested that we compare the 2017 pixel classification results with the 2017 AI data, and we did that as well.

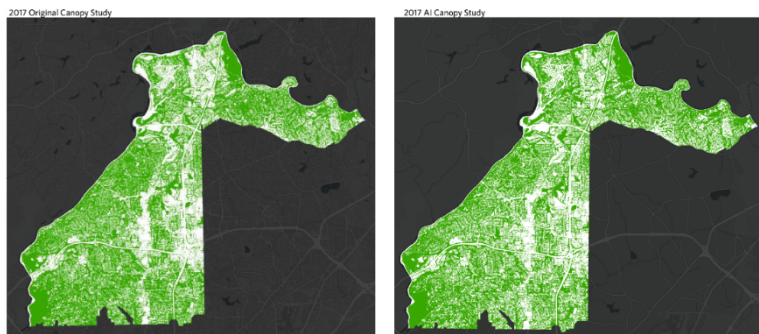
Canopy Study

Nearmap AI medium-high vegetation from summer 2023 imagery
Nearmap AI medium-high vegetation from summer 2017 imagery



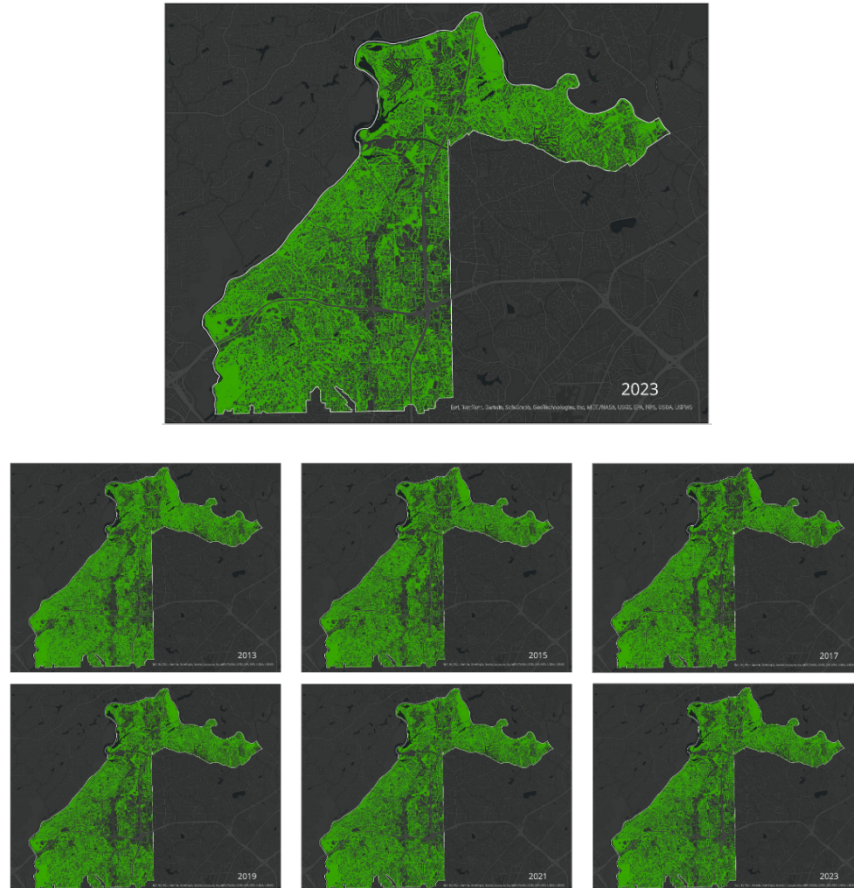
The 2017 and 2023 studies look similar, but in 2023 there were plantings around City Hall. This is not seen in 2017 because the building was being built.

2017 Original Study Compared to 2017 AI Data



The 2017 pixel data on the left appears similar to the 2017 AI data on the right, however AI did better in picking up canopy along the edges of the tree cover, as well as in linear areas like parking lots. Also, the pixel classification overestimated the canopy in established areas such as the Panhandle, Riverside, and North Springs.

Canopy 2013-2023



The recent canopy study can be compared side by side with six canopy studies from 2013 through 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%

In 2017, the pixel classification percentage was estimated at 60.3% but with AI data it was less at around 56.5%. The accuracy of the AI data is much higher. For 2023, we estimate the canopy to be 54.5% using AI Data.

Accuracy Assessment

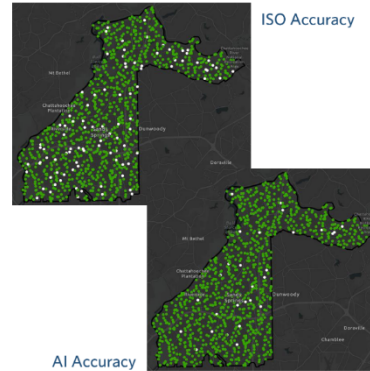
Accuracy Assessment

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%



Each year, Staff evaluates sample points to assess the accuracy of the models and determine if that represents a canopy or not. Once an agreement is reached, the visual inspection data is compared to the canopy layer. For the pixel classification accuracy with AI and ISO, green dots means there is a match and white dots indicates a difference.

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

The most recent studies for cities within the metro Atlanta is represented on this table.

ANALYSIS

This analysis compares data to the stream buffer within the Council districts and zoning.

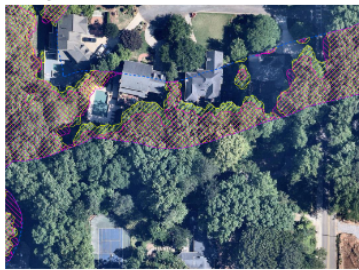
Stream Buffer (50ft) Canopy Coverage

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%



Nancy Creek



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

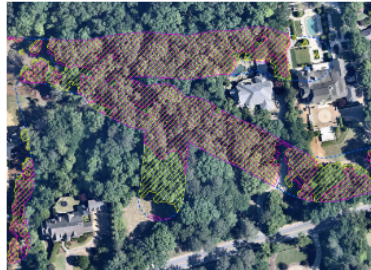
2021 Vegetation



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

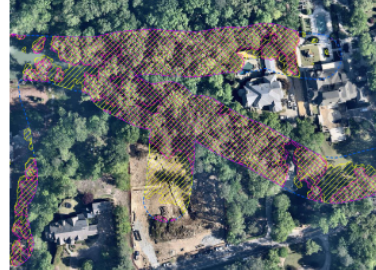
2023 Vegetation

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

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Studio Theatre, Sandy Springs City Hall and Broadcast Via Live Webinar and Teleconference
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**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
2021	3,149	1,817	2,877	1,049	1,505	3,277	13,679
Council District Acreage	5,382	3,778	3,732	2,132	2,940	6,865	24,830
2021	5,193	3,475	5,429	2,350	3,154	5,229	24,830
Percent Canopy	61%	54%	46%	48%	45%	61%	55%
2021	61%	53%	53%	45%	48%	63%	55%

It may appear to be significant changes in the canopy comparing 2021 data to 2023, but the total area needs to be taken into account. For example, District 3 went from 2,877 to 1,733 acres because the area changed.

**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
2021	3,223	2,026	1,719	982	1,408	4,316	13,679
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%
2021	60%	54%	46%	46%	48%	63%	55%

The 2021 AI data was divided in the current Council district boundaries which allows for comparison on how the Council districts have changed between the two years.

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)

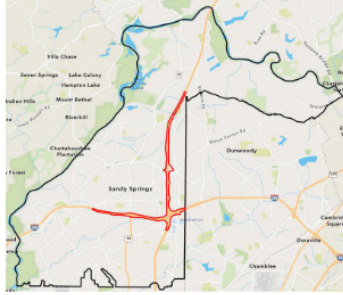
2021 AI Percent Canopy by
2023 Council District
No zoning - right of way,
Bull Shire
NEX in District 2 was SX in
2021

Canopy Changes in I-285/SR 400 Project Area

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

Canopy

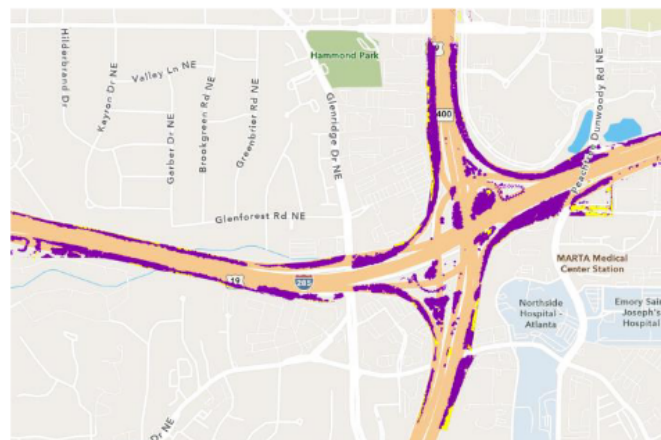
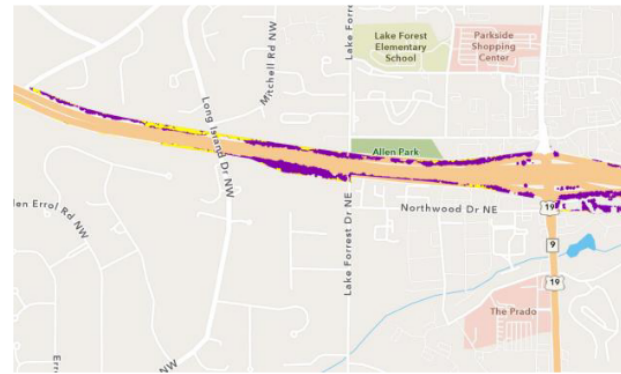
- 2017: 106 acres
- 2021: 22 acres
- 2023: 20 acres

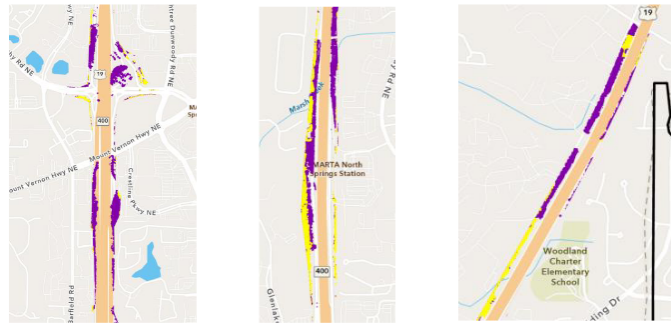


For the transformed I-285/SR 400 project area, a decrease is still seen for canopy acreage, but at a slower pace than previously.

I-285/SR 400 Project

In comparing 2017 and 2023 data images, purple represents canopy loss and yellow is canopy today.





Conclusion

There is a similar canopy percentage between 2021 and 2023.

2017: 14,048 acres (56.5%)

2021: 13,679 acres (55%)

2023: 13,564 acres (54.5%)

AI data continues to produce a much higher accuracy, and Staff focuses on analysis rather than pixel classification.

Councilmember Melissa Mular said this is great data, and I like the normalization from 2017 to 2023. This is important for Sandy Springs, but why do other cities not have the data?

GIS Manager Lawlor said that information is not available tonight. Johns Creek for example may not have the staff and time and, Roswell may not have done it.

Councilmember Mular said it is interesting that data from the urban forest perspective is not available.

William Park, Urban Forest Coordinator, said getting canopy studies across other municipalities and jurisdictions in metro Atlanta has to do with funding and bandwidth. The original canopy study was done when they were trying to get their Tree City USA credentials and did not find it as important. It is important that the City stays on the front end of this to keep close track of canopy gains and losses.

Councilmember Mular said the impact of canopy along the roadway from 2017 to 2021 was surprising.

GIS Manager Lawlor said it was significant from 2017 to 2021 but slowing down now.

Councilmember Mular asked why was there such a big loss in stream buffer canopy coverage along Long Island Creek? Was there a development going there?

GIS Manager Lawlor said this information is not available tonight but can be provided to Council.

Councilmember John Paulson said this is interesting. Is the overhead view taken at the same time every year so that the trees are in full bloom comparably?

GIS Manager Lawlor said yes. We take it when the canopy is as full as possible, and it is roughly within a month of each other. We receive aerial imagery from Fulton County every year in January, and that is better to see how development has changed.

Councilmember Paulson said it sounds like AI data is a more accurate depiction of this.

GIS Manager Lawlor said yes, the data is more accurate. We appreciate that we do not have to spend time classifying millions of pixels, and it is more exciting and challenging to do the analysis.

Councilmember Paulson said the key is there is a means of measurement liked, and different ways of measuring can be stopped. Is there a way to take the desire to plant more trees and couple it with this information so that the City is smarter about where trees are planted?

GIS Manager Lawlor said it can be assumed so. There are areas where canopy is decreasing as privately owned, and there is a balance between encouraging planting versus forcing.

Councilmember Paulson said it would be nice to know.

GIS Manager Lawlor said we can work with **Urban Forest Coordinator Park** to do some overlays there.

Councilmember Paulson said the open area that is water is never going to have a tree on it, and it would be pulled out. Everything that has a hard surface and dense canopy will be pulled out. There are only so many places left as the knowns are removed. That may be one way of approaching the analysis.

GIS Manager Lawlor said especially on the Public Works projects where they are doing the replanting. It is a good opportunity to increase the canopy in the future.

Councilmember Andy Bauman said this is a great report. We should feel good about the City's canopy. Congratulations **Urban Forest Coordinator Park** on your achievement in receiving the Georgia Tree Council's 2024 Outstanding Urban Arboriculture Grand Award. Your efforts do not go unnoticed in the community. Citizens do not always have a lot of interaction with Staff, but you do, and I have heard it from more than one place. Thank you for what you have done.

As with **Councilmember Paulson**, we do not have the data for the sake of it. It is a way to look back at how the City's controllables are impacting the results and the desired outcomes. Not all canopies are equal, and certain are more valuable as it relates to shape and effect for instance. Now that we have all of this data to show what controllables are working to achieve objectives as it relates to canopy goals, what actionable items does this data now suggest for planting? I am interested in seeing the effect of planting and how we overlay. The City is doing a good job of tracking what is planted. Going forward I want to see the impact of our actions and recommendations for policies to achieve the goals.

Urban Forest Coordinator Park said there is an incredible amount of granularity in the data, and we can now look at more specific pinpoints. Canopy coverage is not the only indicator of a strong and resilient urban forest. To maximize the City's ecosystem services, we need to infill existing forest areas and increase the health and resilience of those tracks. Furthermore, the data shows what areas have not been planted that we want to infill. We love playable fields such as backyards, reading gardens with gazebos, and open air markets where you can appreciate the fresh air and sunlight. We should use this data for targeted plantings to maximize the effects of the City's Tree Fund dollars and push that forward.

Having this data does not mean we can plant trees in any available space because that can infringe on future progress.

Councilmember Bauman said that is an important point. Measurable canopy is the wrong conversation to determine if you are going in the right or wrong direction, because the health of your canopy can be as, or more important. **Urban Forest Coordinator Park**, you have done a good job of framing that conversation. Too often people are fixated on canopy percentage when there are a lot of other pieces. This data lets us deal with that. It is the quality of the canopy more than the percentage that provides some indication, and we would be better off harping on that.

II. City Council Discussion Items

There being no further business, the meeting adjourned at 6:20 p.m.