NorthPort
FLORIDA

2024 North Port Tree Canopy Assessment

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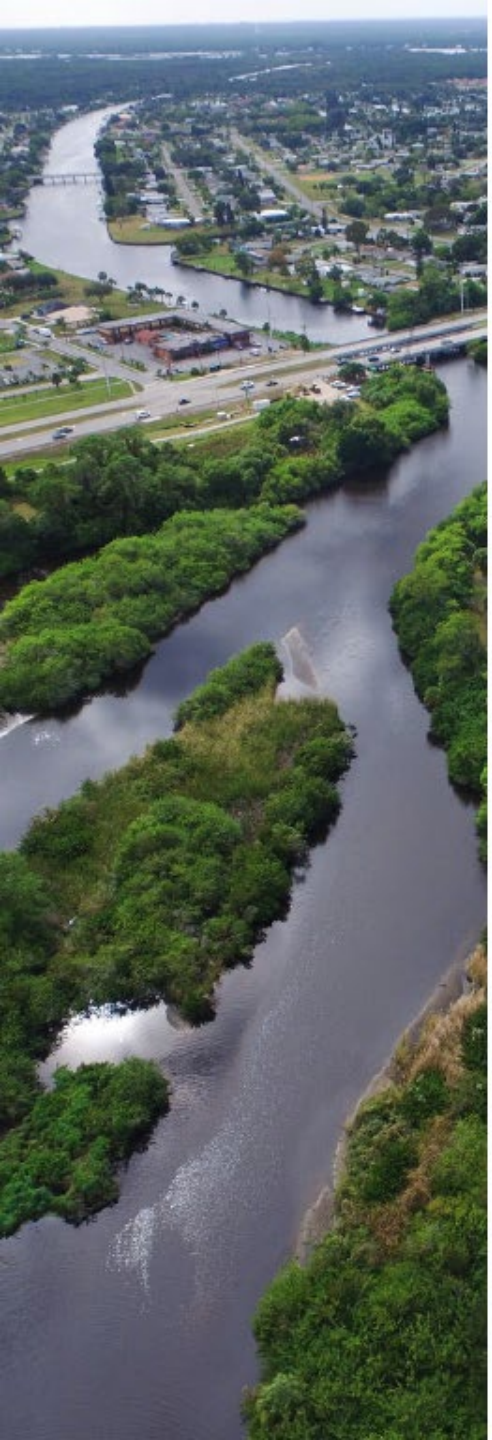
North Port Natural Resources Division

City Commission Workshop

October 7, 2024



Goals of this Presentation

To present the findings and conclusions of the 2024 North Port Tree Canopy Assessment to the North Port City Commission, and to answer any questions that Commission may have.

Overview

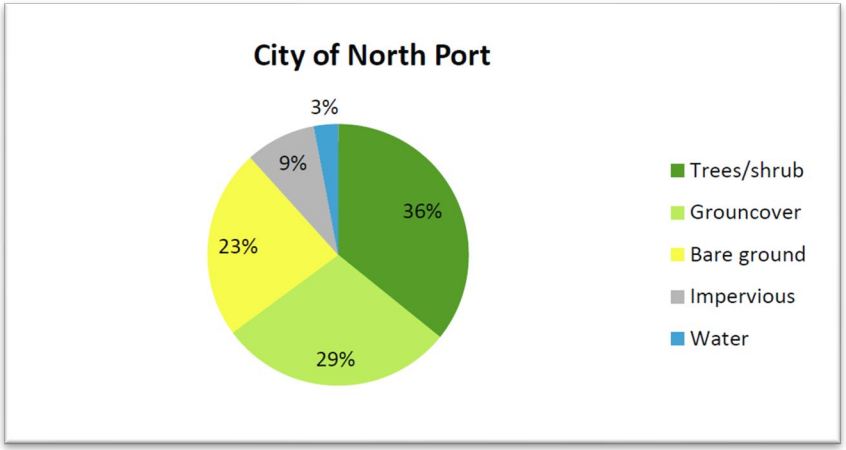
- Study completed in the beginning of June, 2024
- Conducted internally – saved time and resources
- Mimicking the model of the Sarasota Country 2013 Tree Study

Sarasota County Tree Canopy Study

- A comprehensive study for the entire Sarasota County
- Includes limited data for North Port
- Conducted internally in 2013 by the County's Environmental Protection Division
- Utilized i-Tree Software
- Used Statistical Interpolation (new data points within the range of a known data set)

Results for North Port, According to the 2013 Sarasota County Tree Canopy Study

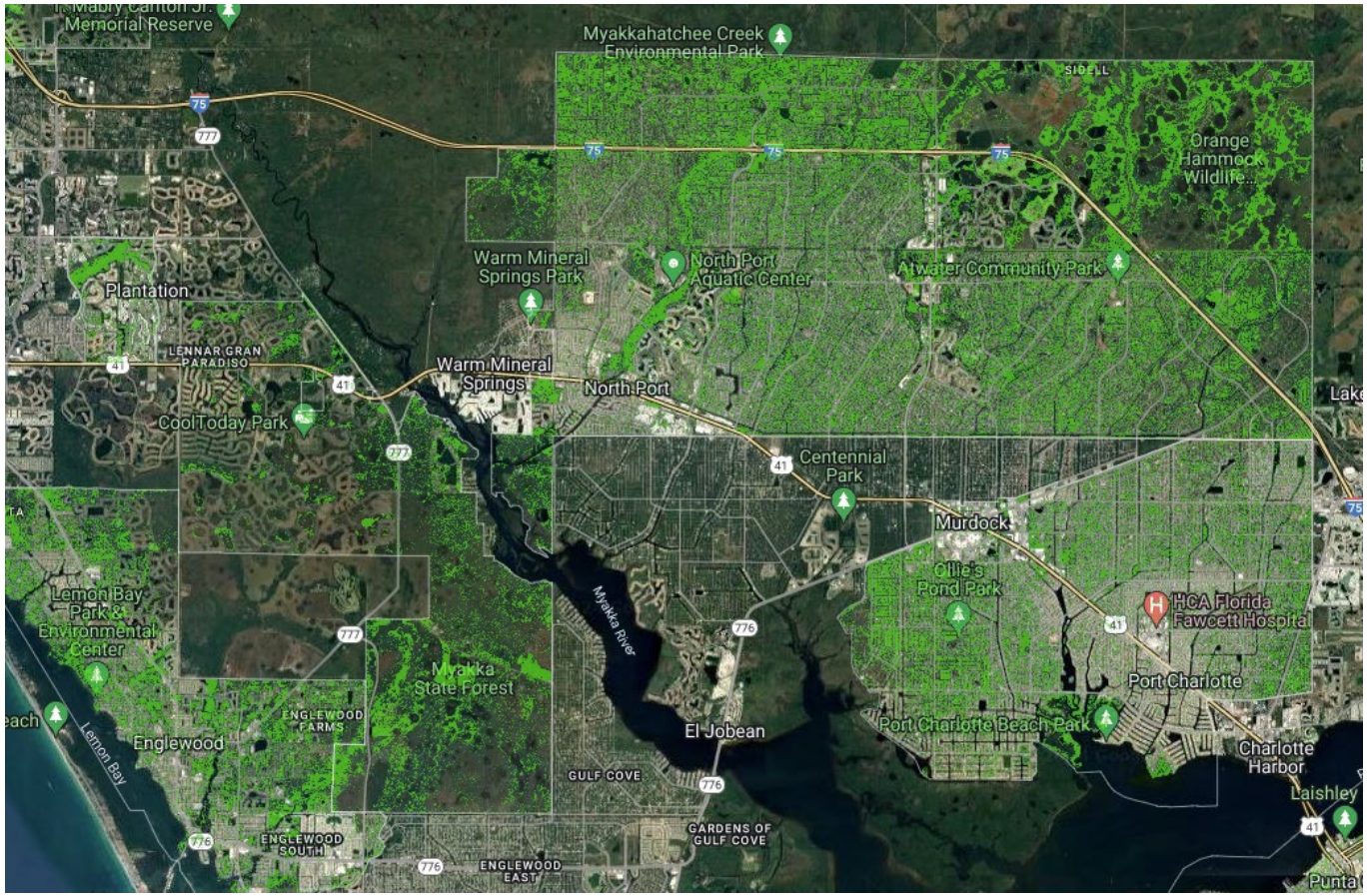
Cover Class Distribution	
Trees or Shrubs	36%
Groundcover	29%
Bare Ground	23%
Open Water	3%
Impervious Surface	9%



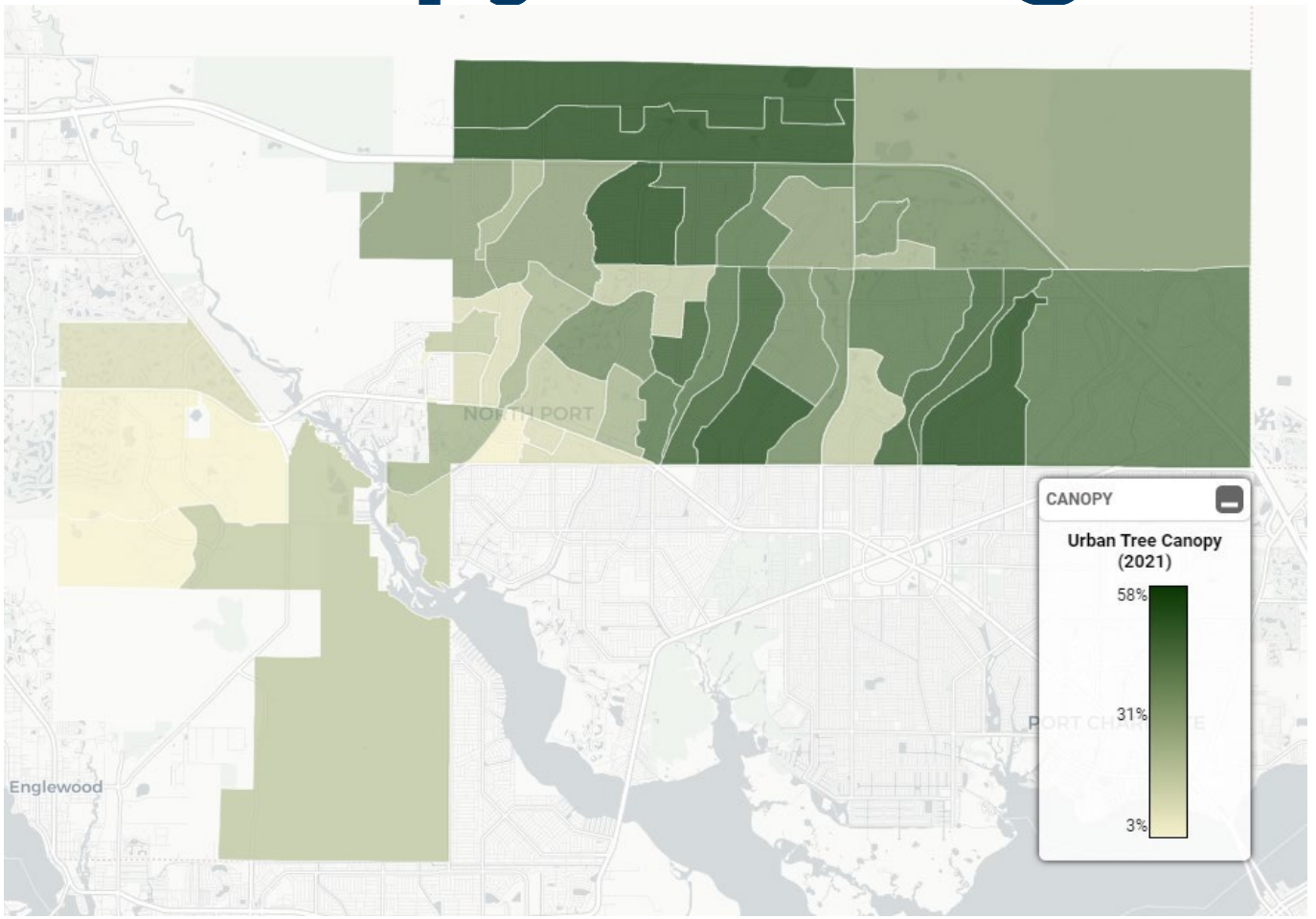
Florida Urban Tree Canopy Assessment

- Florida Department of Agriculture and Consumer Services in collaboration with a private vendor
- Open source study
- Conducted in 2024
- Accurately depicts urban tree coverage
- Data points from 2013, 2017, and 2021
- Only trees 10 feet or taller are included as part of the canopy coverage calculation

Florida Urban Tree Canopy Assessment for the City of North Port

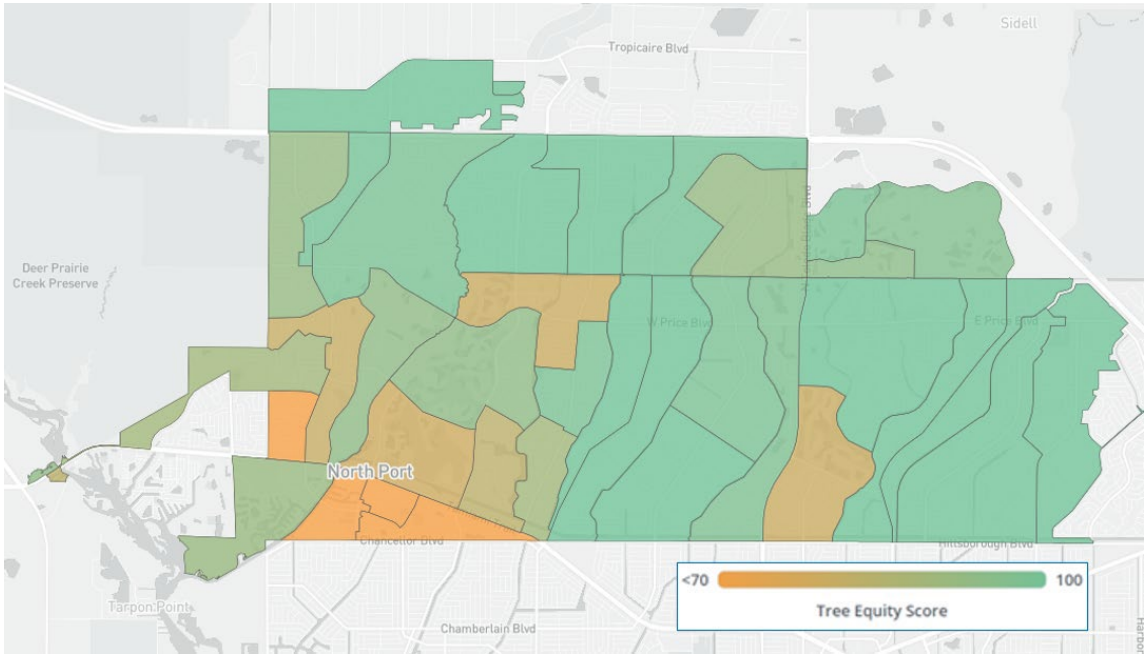


Florida Urban Tree Canopy Assessment Canopy Coverage



Tree Equity Score

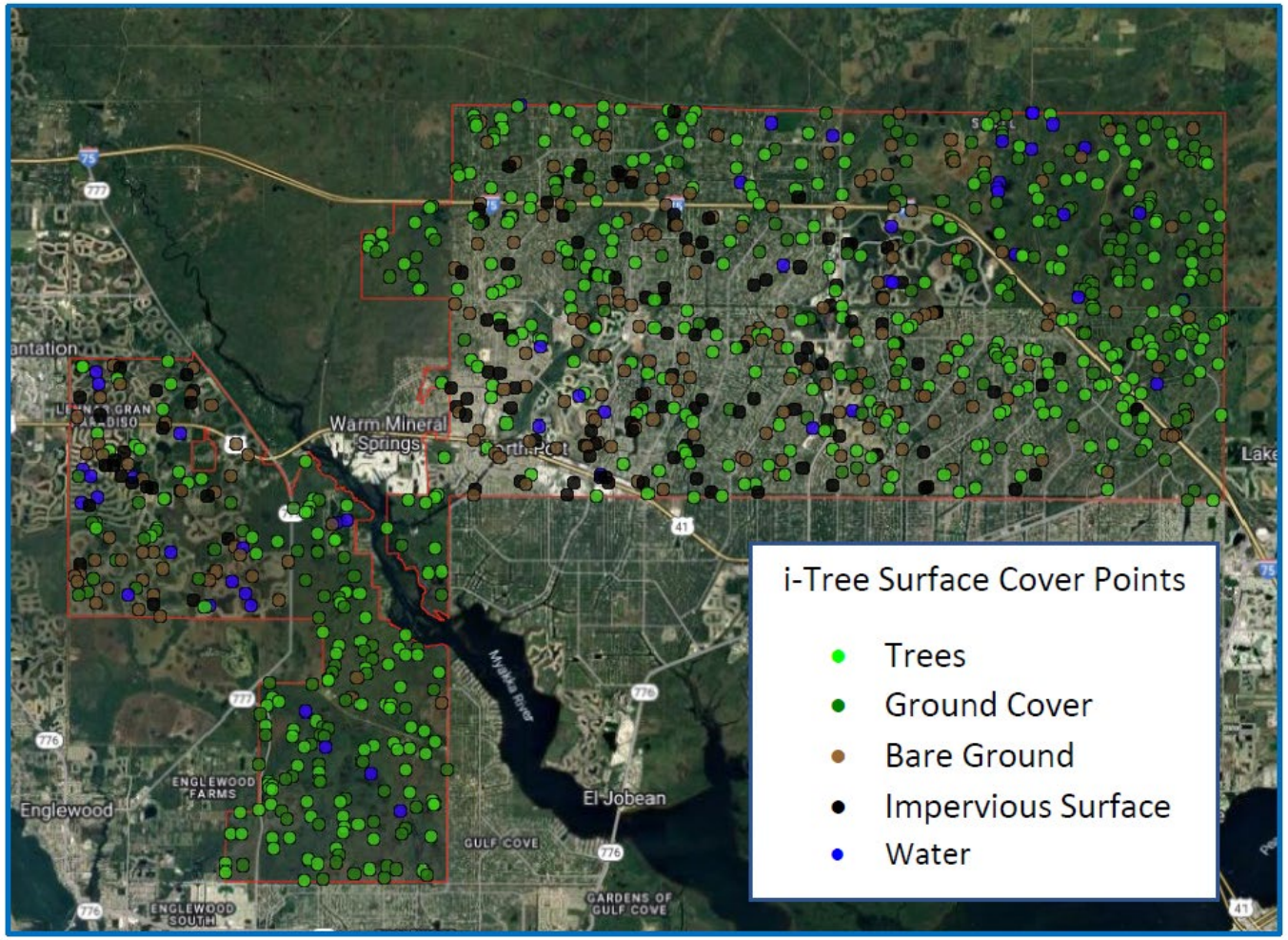
- Data map tool linking canopy coverage and citizen well-being
- Freely available online
- Overall urban tree canopy are accessible to various communities
- Also considers socio-economic factors



2024 North Port Tree Canopy Assessment

- Natural Resources Division has explored various software options for the project and chose the i-Tree software due to its convenience and compatibility.
- The i-Tree software was used in the 2013 Sarasota County Tree Canopy Study, and its use in North Port ensures consistency with the County's methodology.
- The i-Tree software can categorize land cover and tree canopy in any region using random sampling of aerial images, and quantify the environmental benefits of tree canopies.
- The software's capabilities, such as carbon dioxide sequestration, air quality improvement, and stormwater management, provide valuable insights for the City's environmental evaluations.
- As an open-source, peer-reviewed product that is free to use, i-Tree Canopy it is a cost-effective choice for North Port's Natural Resources Division.

North Port Canopy Coverage Including Myakka State Forest and Orange Hammock Wildlife Management Area



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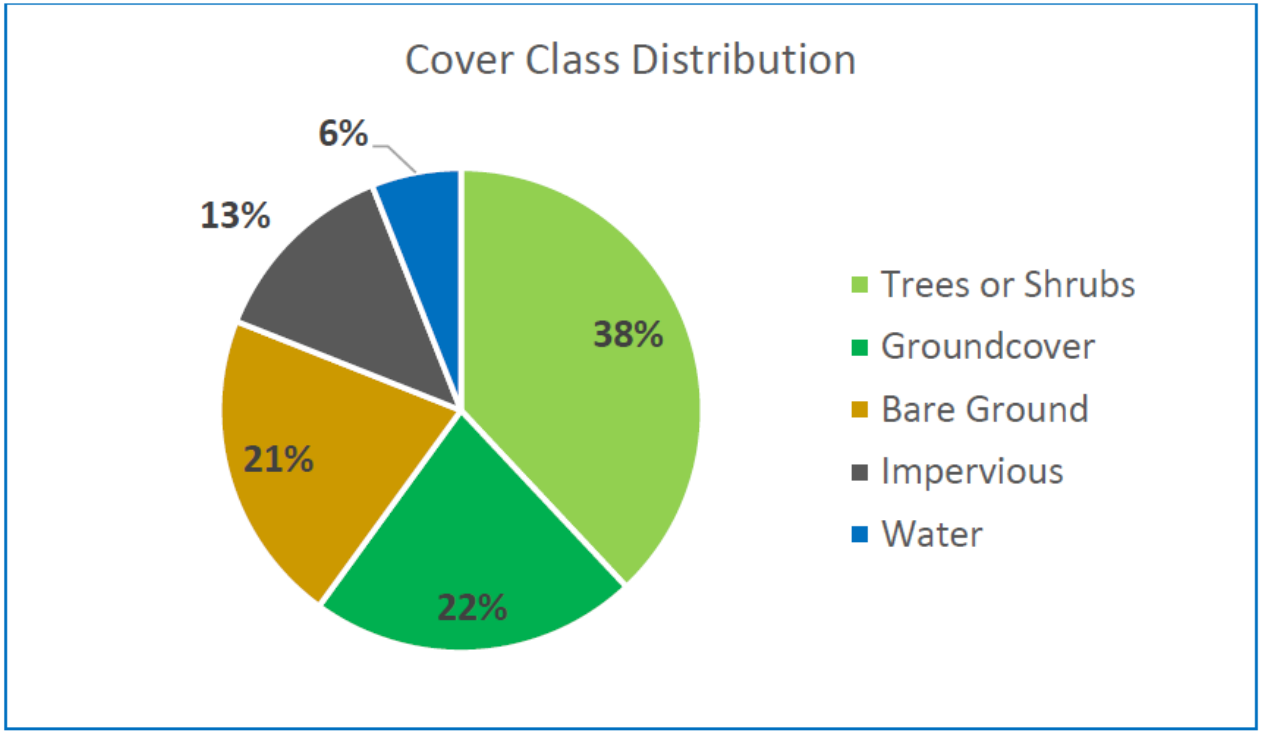
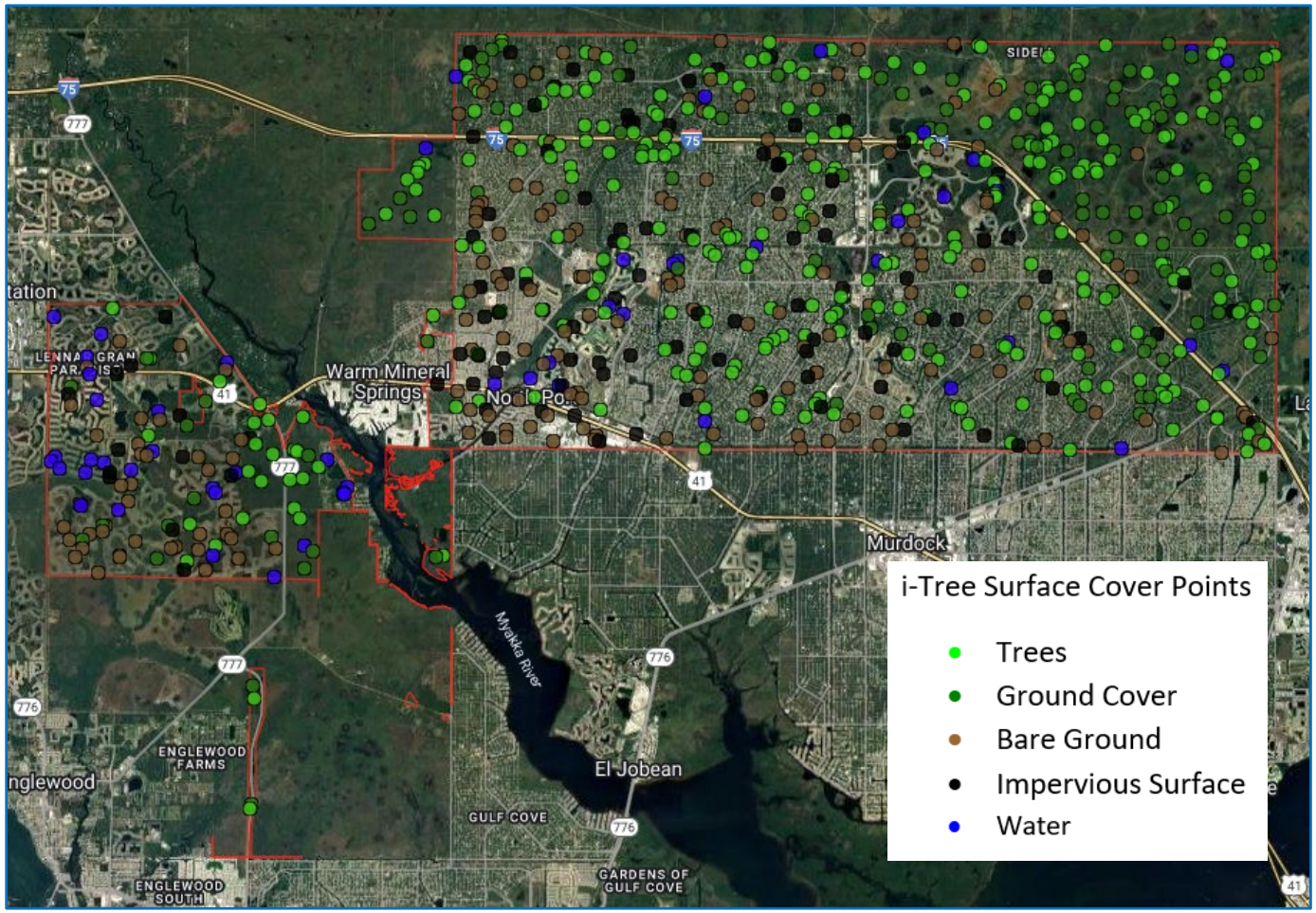
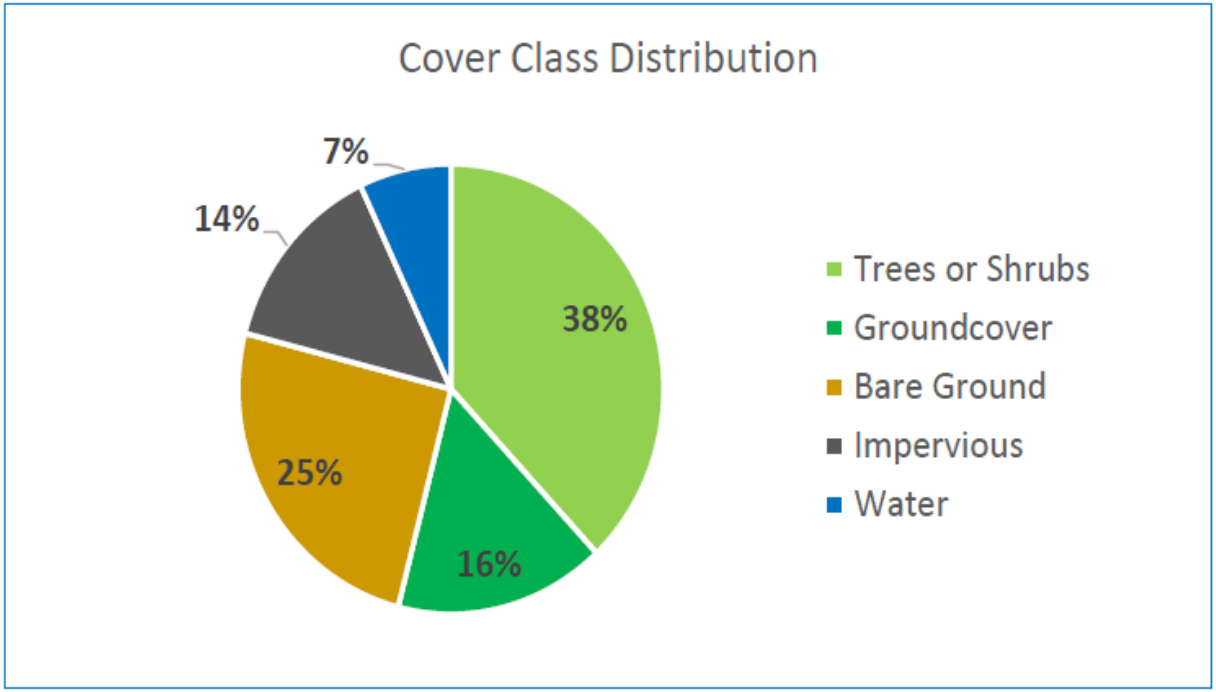


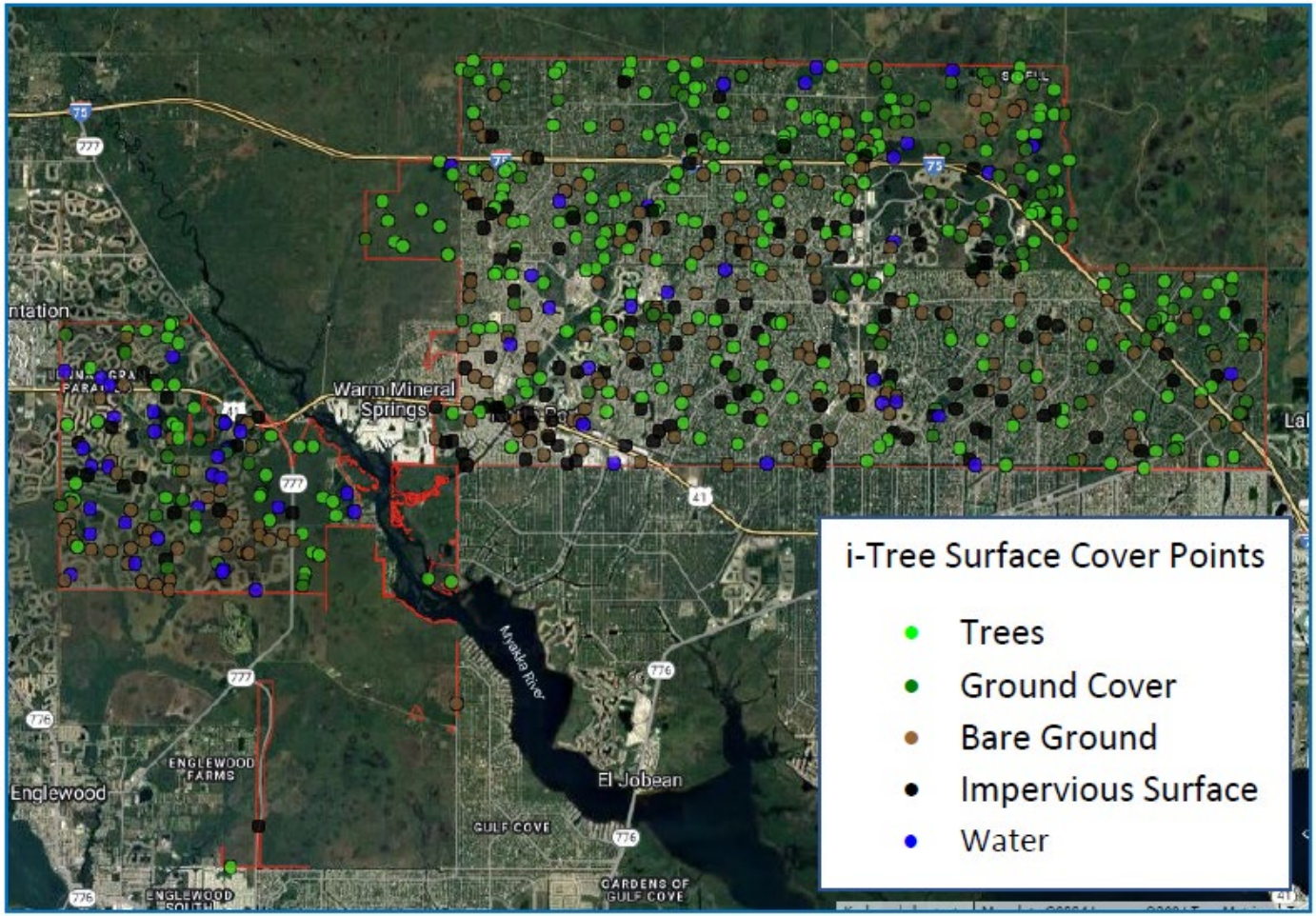
North Port excluding Myakka State Forest



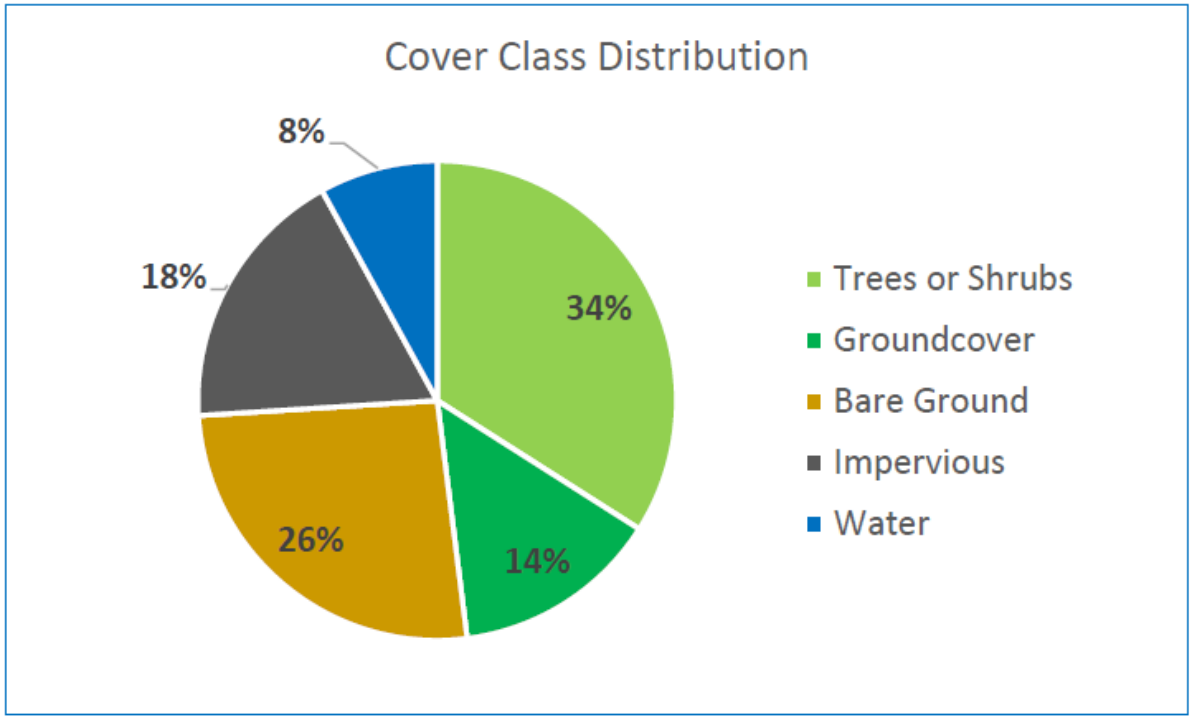
North Port excluding Myakka State Forest



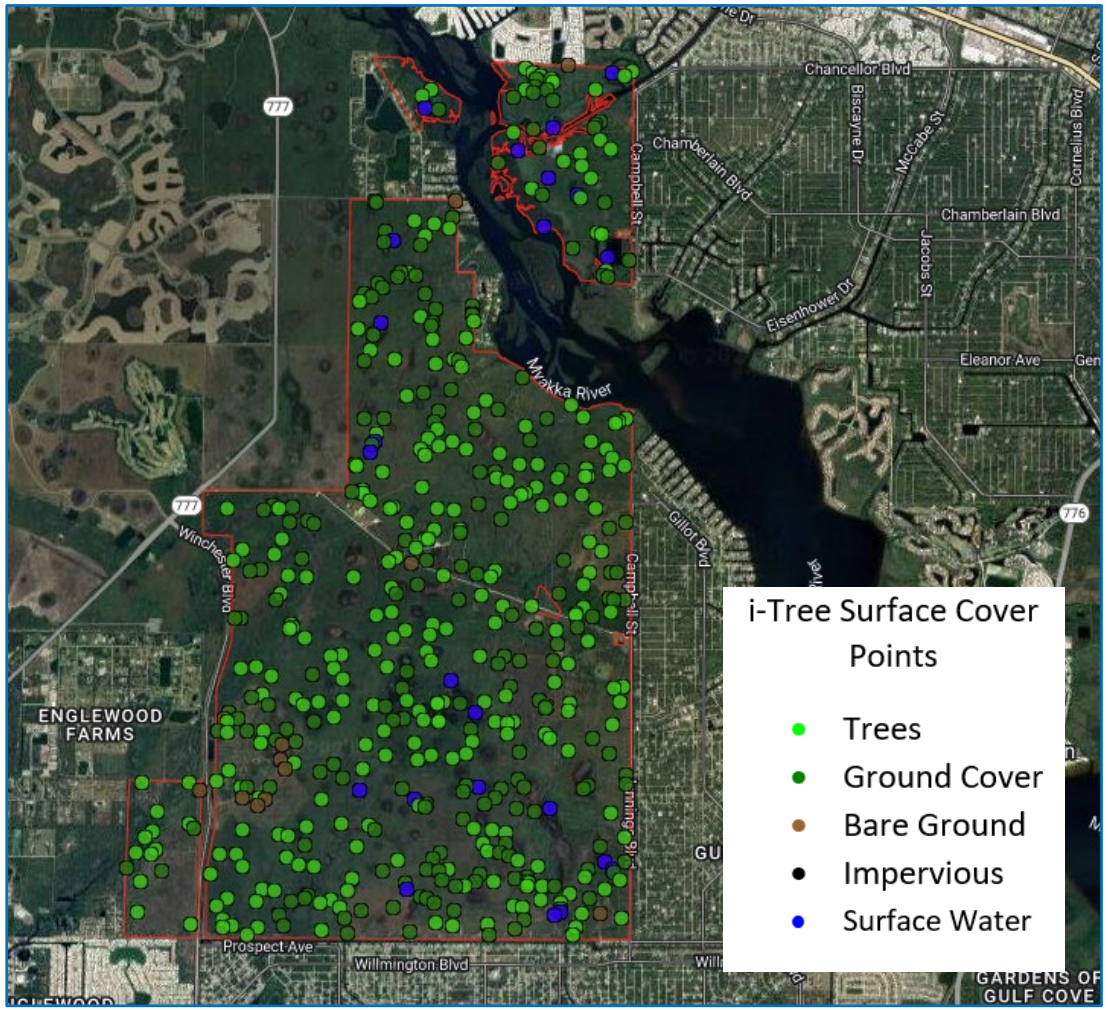
North Port excluding Myakka State Forest and Orange Hammock Wildlife Management Area



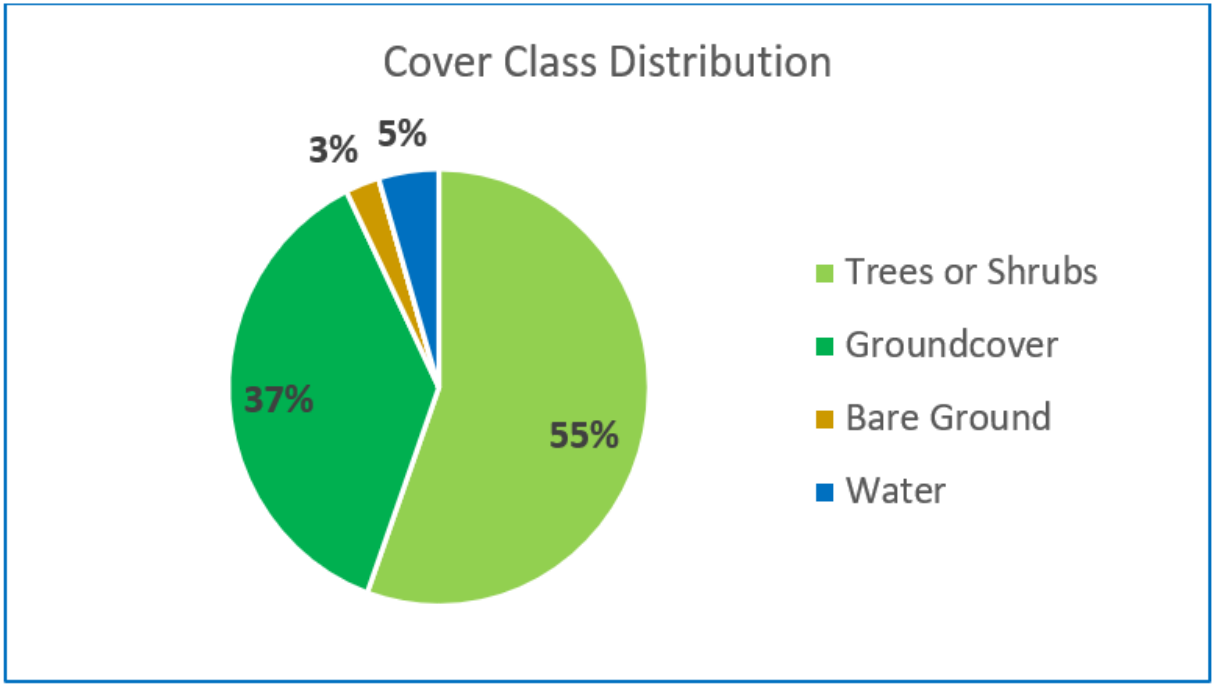
North Port excluding Myakk State Forest and Orange Hammock Wildlife Management Area



Myakka State Forest Coverage



Myakka State Fores Coverage



Tree Benefits – City of North Port without MSF

Benefit	Amount (Mgal*)	±SE	Value (USD)	±SE
Avoided Runoff	20.09	±0.93	$179,509	±8,325
Evaporation	1,657.47	±76.87	N/A	N/A
Interception	1,665.74	±77.25	N/A	N/A
Transpiration	2,568.38	±119.12	N/A	N/A
Potential Evaporation	12,602.33	±584.48	N/A	N/A
Potential Evapotranspiration	12,602.33	±584.48	N/A	N/A

Description	Carbon (kT*)	Standard Error	CO_2 Equiv. (kT*)	±SE	Value (USD)	±SE
Sequestered annually in trees	30.54	±1.42	111.98	±5.19	$5,208,687	±241,572
Stored in trees (Not an annual rate)	766.98	±35.57	2,812.27	±130.43	$130,809,666	±6,066,787

Tree Benefits – City of North Port without MSF (Continued)

Description	Amount (T*)	Standard Error	Value (USD)	±SE
Carbon Monoxide removed annually	10.10	±0.47	$3,951	±183
Nitrogen Dioxide removed annually	50.54	±2.34	$1,240	±58
Ozone removed annually	537.37	±24.92	$62,320	±2,890
Sulfur Dioxide removed annually	50.48	±2.34	$214	±10
Particulate Matter less than 2.5 microns removed annually	26.56	±1.23	$130,430	±6,049
Particulate Matter greater than 2.5 microns and less than 10 microns removed annually	190.95	±8.86	$374,102	±17,350
Total	**866.00**	**±40.16**	**$572,257**	**±26,541**

Overall Surface Comparison

North Port Area Surface Coverage				
	2013 Sarasota County Tree Canopy Study, including MSF* and OSHWA*	2024 North Port Tree Canopy Assessment, excluding MSF* and OHWMA*	2024 North Port Tree Canopy Assessment, excluding OHWMA*	2024 North Port Tree Canopy Assessment, including MSF* and OSHWA*
Trees or Shrubs	36%	34%	38%	38%
Groundcover	29%	14%	16%	22%
Bare Ground	23%	26%	25%	21%
Open Water	3%	8%	7%	6%
Impervious Surface	9%	18%	14%	13%

Discussion

- Sarasota County Canopy Study and City's development patterns show comparable canopy distribution, but less ground cover and more impervious coverage.
- North Port Tree Canopy Assessment shows 38% canopy, 22% ground, and 21% bare ground. Impervious surfaces and surface water are 13% and 6%, respectively.
- Excluding Myakka State Forest and Orange Hammock Wildlife Management area, the cover shifts to 34% canopy, 14% ground, and 26% bare ground, with impervious surfaces rising to 18%.
- Comparing these datasets reveals similar canopy coverage but a significant shift in ground cover, due to City development and limited land management/natural fire.
- A notable 4% surge in impervious surfaces was observed.

Conclusions

- 38% trees and tall shrubs, including environmental areas
- 34% trees and tall shrubs, without environmental areas
- Myakka State Forest provide comparable canopy coverage, but significantly higher ground coverage
- Tree canopy is crucial for shading, temperature regulation, stormwater attenuation, biodiversity
- Natural ground cover, including wetlands also plays a vital role and its importance should not be overlooked
- Future canopy assessments by the City's Department of Natural Resources will enhance the tracking of canopy coverage trends

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Every task, no matter how small, can contribute towards the protection of our natural resources.

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Thank you for your time!

Questions?