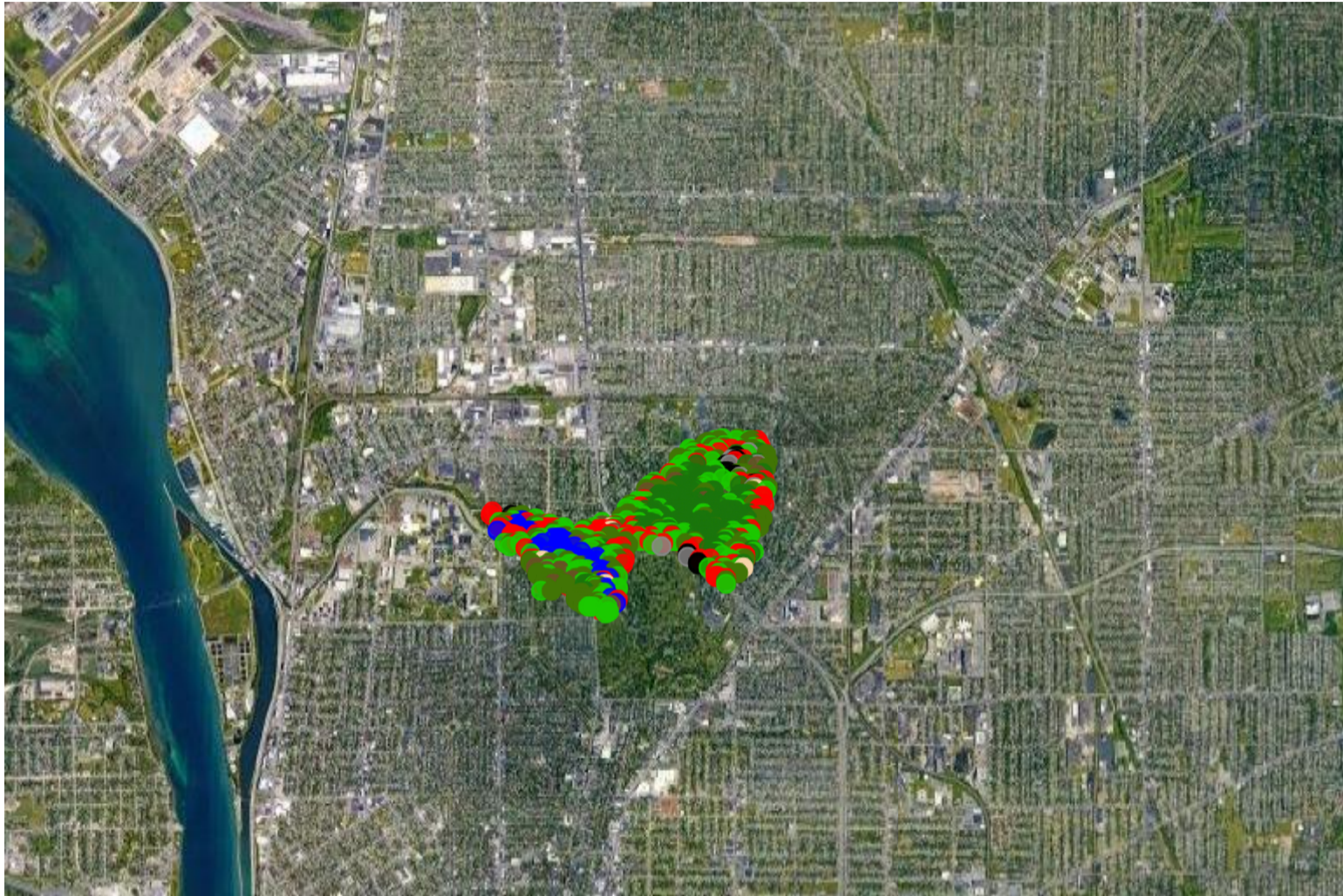# i-Tree Canopy v7.0

Cover Assessment and Tree Benefits Report

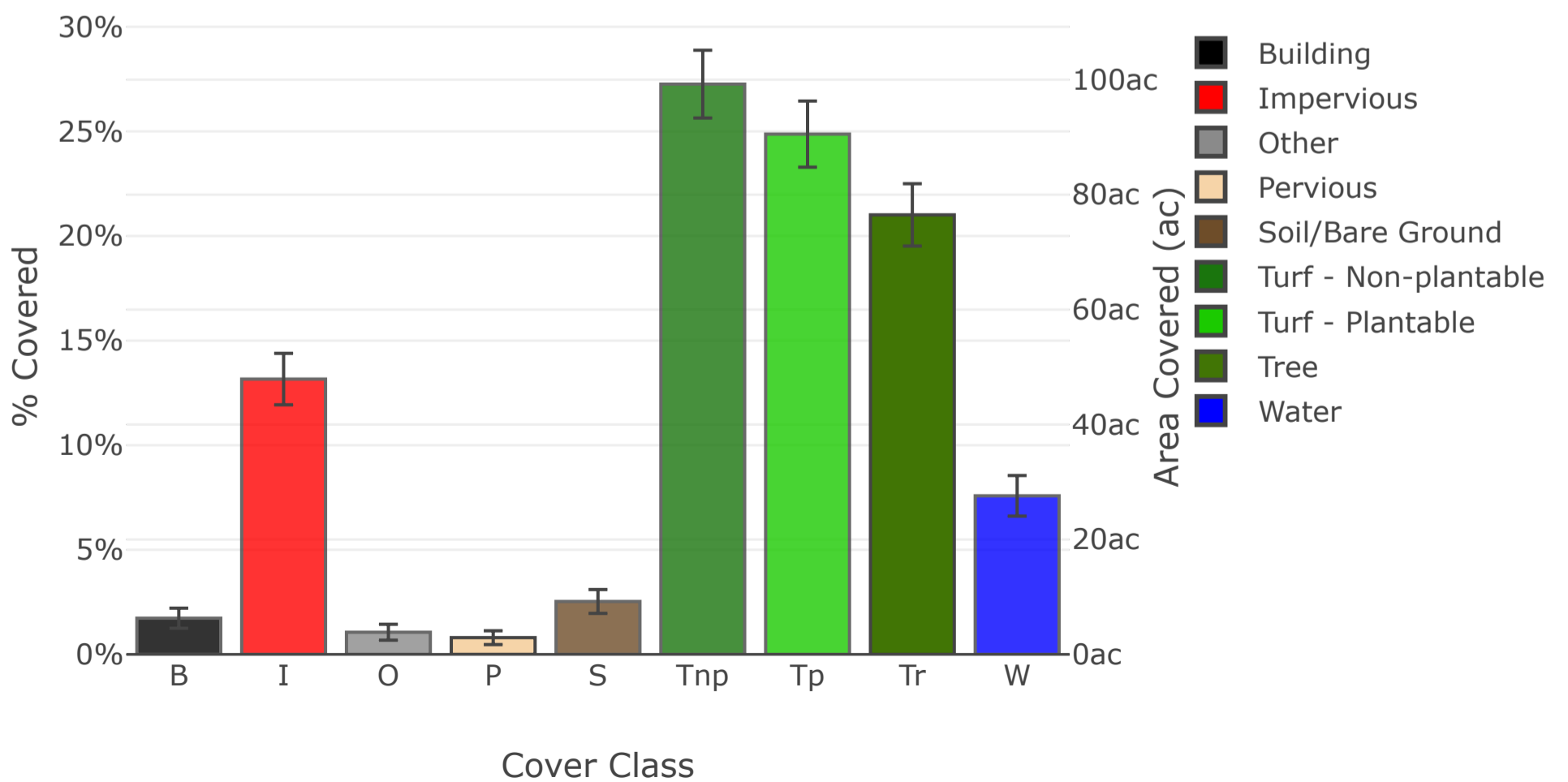*Estimated using random sampling statistics on 5/6/2020*

Delaware Park

Imagery ©2020 , CNES / Airbus, Landsat / Copernicus, Maxar Technologies, New York GIS, U.S. Geological Survey, USDA Farm Service Agency

Land Cover

Legend:
- Building (Black)
- Impervious (Red)
- Other (Gray)
- Pervious (Tan)
- Soil/Bare Ground (Brown)
- Turf - Non-plantable (Dark Green)
- Turf - Plantable (Light Green)
- Tree (Olive Green)
- Water (Blue)

Abbr.	Cover Class	Description	Points	% Cover ± SE	Area (ac) ± SE
B	Building	building, infrastructure	13	1.73 ± 0.48	6.29 ± 1.73
I	Impervious	road, paved pathway, sidewalk, tennis court, basketball court, splash pad, parking lot	99	13.16 ± 1.23	47.92 ± 4.49
O	Other	other, unknown	8	1.06 ± 0.38	3.87 ± 1.37
P	Pervious	garden, playground	6	0.80 ± 0.33	2.90 ± 1.19
S	Soil/Bare Ground	bare ground, unpaved pathway	19	2.53 ± 0.57	9.20 ± 2.08
Tnp	Turf - Non-plantable	golf course feature, athletic field, underground conflict	205	27.26 ± 1.62	99.22 ± 5.91
Tp	Turf - Plantable	no conflict	187	24.87 ± 1.58	90.51 ± 5.74
Tr	Tree	canopy cover	158	21.01 ± 1.49	76.47 ± 5.41
W	Water	pond, lake, stream, pool	57	7.58 ± 0.97	27.59 ± 3.51
Total			**752**	**100.00**	**363.98**

Tree Benefit Estimates: Carbon (English units)

Description	Carbon (T)	±SE	CO₂ Equiv. (T)	±SE	Value (USD)	±SE
Sequestered annually in trees	104.39	±7.38	382.76	±27.06	$8,902	±629
Stored in trees (Note: this benefit is not an annual rate)	2,621.63	±185.36	9,612.63	±679.67	$223,560	±15,807

Currency is in USD. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Carbon sequestered is based on 1.365 T/ac/yr. Carbon stored is based on 34.281 T/ac. Carbon is valued at $23.26/T. (English units: T = tons (2,000 pounds), ac = acres)

Tree Benefit Estimates: Air Pollution (English units)

Abbr.	Description	Amount (lb)	±SE	Value (USD)	±SE
CO	Carbon Monoxide removed annually	82.85	±5.86	$55	±4
NO2	Nitrogen Dioxide removed annually	510.10	±36.07	$128	±9
O3	Ozone removed annually	3,861.44	±273.03	$8,465	±599
PM10*	Particulate Matter greater than 2.5 microns and less than 10 microns removed annually	555.12	±39.25	$1,740	±123
PM2.5	Particulate Matter less than 2.5 microns removed annually	290.02	±20.51	$25,582	±1,809
SO2	Sulfur Dioxide removed annually	291.45	±20.61	$20	±1
Total		**5,591.00**	**±395.32**	**$35,991**	**±2,545**

Currency is in USD. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Air Pollution Estimates are based on these values in lb/ac/yr @ $/lb/yr:
CO 1.083 @ $0.67 | NO2 6.670 @ $0.25 | O3 50.493 @ $2.19 | PM10* 7.259 @ $3.13 | PM2.5 3.792 @ $88.21 | SO2 3.811 @ $0.07 (English units: lb = pounds, ac = acres)

Tree Benefit Estimates: Hydrological (English units)

Abbr.	Benefit	Amount (Mgal)	±SE	Value (USD)	±SE
AVRO	Avoided Runoff	1.60	±0.11	$14,308	±1,012
E	Evaporation	7.40	±0.52	N/A	N/A
I	Interception	7.42	±0.52	N/A	N/A
T	Transpiration	8.27	±0.58	N/A	N/A
PE	Potential Evaporation	41.85	±2.96	N/A	N/A
PET	Potential Evapotranspiration	30.85	±2.18	N/A	N/A

Currency is in USD. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Hydrological Estimates are based on these values in Mgal/ac/yr @ $/Mgal/yr:
AVRO 0.021 @ $8,936.00 | E 0.097 @ N/A | I 0.097 @ N/A | T 0.108 @ N/A | PE 0.547 @ N/A | PET 0.403 @ N/A (English units: Mgal = millions of gallons, ac = acres)

About i-Tree Canopy

The concept and prototype of this program were developed by David J. Nowak, Jeffery T. Walton, and Eric J. Greenfield (USDA Forest Service). The current version of this program was developed and adapted to i-Tree by David Ellingsworth, Mike Binkley, and Scott Maco (The Davey Tree Expert Company).

Limitations of i-Tree Canopy

The accuracy of the analysis depends upon the ability of the user to correctly classify each point into its correct class. As the number of points increase, the precision of the estimate will increase as the standard error of the estimate will decrease. If too few points are classified, the standard error will be too high to have any real certainty of the estimate.

Use of this tool indicates acceptance of the EULA.