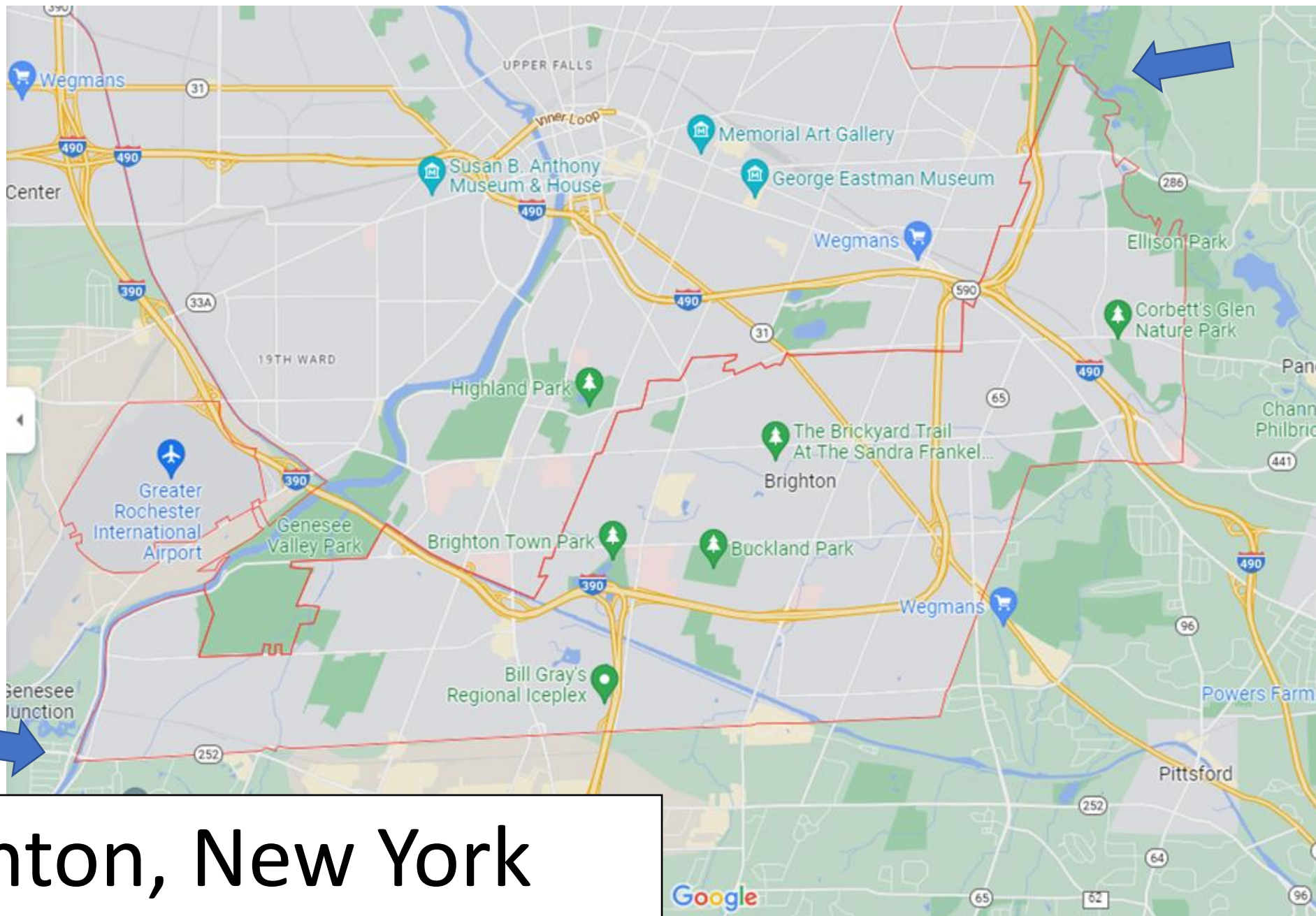


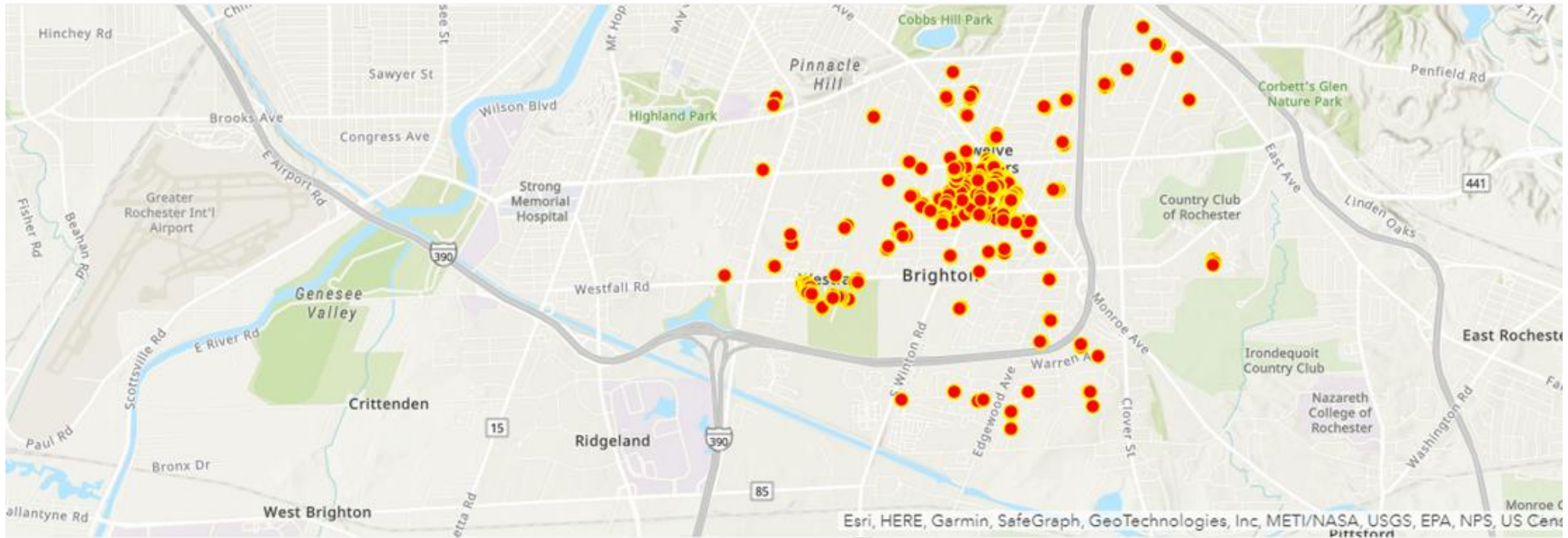
Urban and Community Forestry

Town of Brighton,
New York

George L. Smith
Conservation Board
Science Teacher



Brighton, New York

9/25/20 - 5/2/22  Filter[Report](#)[Export ▾](#)[Open in Map Viewer](#)Form view ☒

by

Street(s) address
tree is located

Species of tree

Total tree height (feet)

Find the DBH (diameter at
breast height) of this treeSpecify if this tree is a
town treeHealth of this tree and
crown condition

Other

Town Tree Survey: 500 trees = 2% of “street trees”

Existing Support for Urban and Community Forestry:

Town of Brighton – Arbor Day Foundation “Tree City USA”

- Town Tree Survey (which we are updating)
- Funding for tree replacement (“street trees”)
- Town Conservation Board/Tree Council
- Annual Arbor Day tree-planting (Saturday after
the last Friday in April)

Arbor Day 2019 – Buckland Park





Department of
Environmental
Conservation

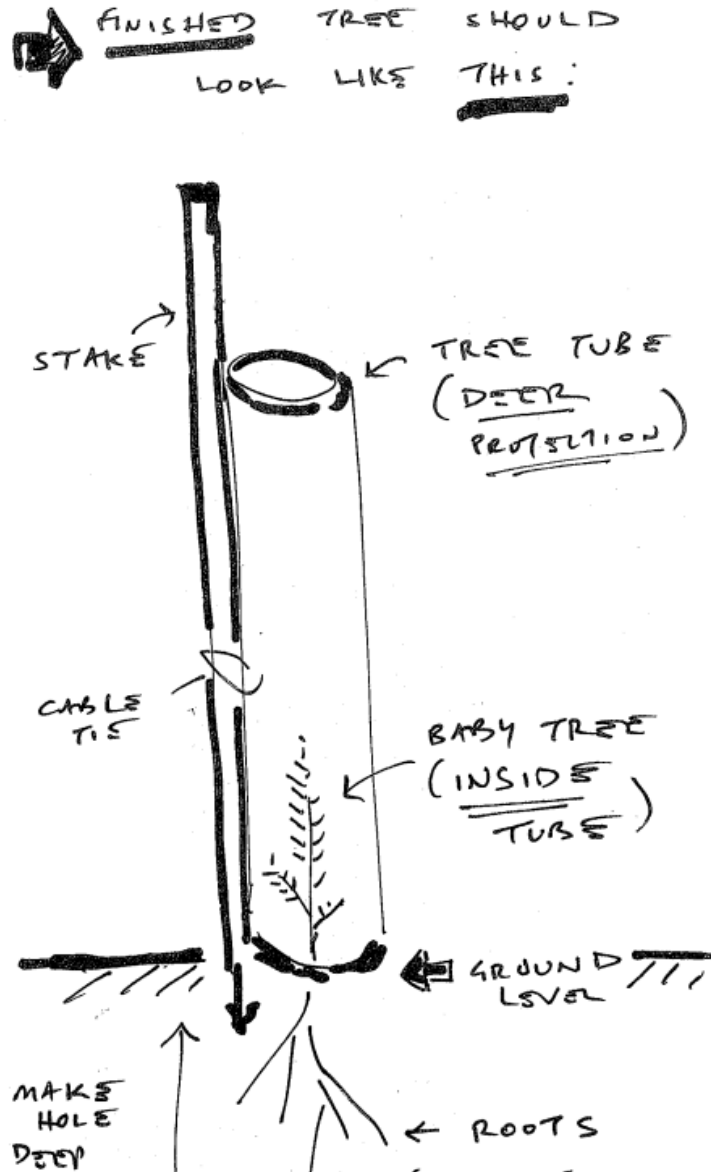
TREES COURTESY OF:



School
Seedlings



Planting
for
Knowledge



Trees donated by NYS DEC's "School Seedlings" and "Trees for Tribes" programs.

Arbor Day 2019 and 2020 trees planted along Allens Creek, S.E. corner Buckland Park

Google Maps



Arbor Day 2021 – southern margin of Buckland Park

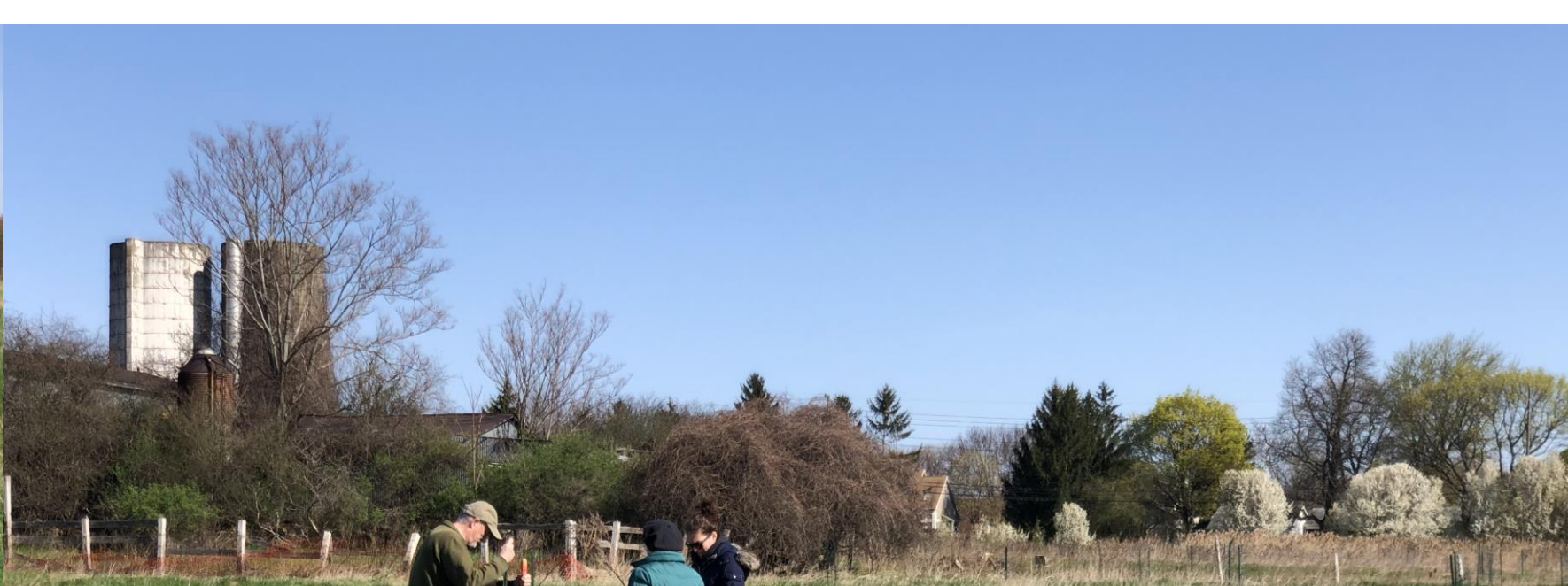


Arbor Day 2021



Arbor Day 2022 – along wetland west of perimeter trail





Arbor Day 2022



Other activities – trimming and invasive species removal along new grass trail:



Completion and opening – Nov 2020

Mowing - Sept 2020



Color Brighton Green's tree nursery (trees are donated to community members):



Future needs:

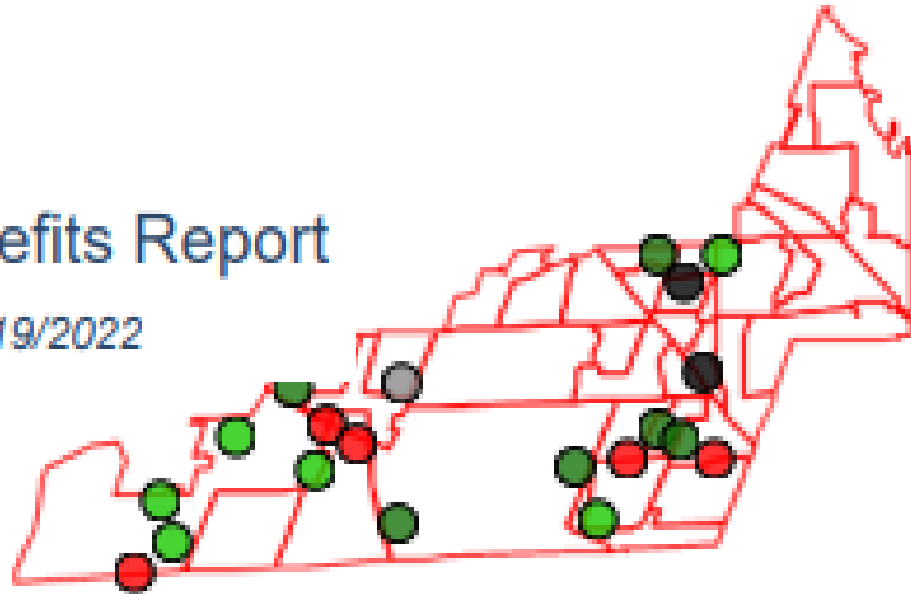
1. Increasing urban tree cover (UTC)
2. Improving equity of urban tree cover
3. Quantifying UTC benefits to Brighton community

Tools:

i-Tree Canopy

Cover Assessment and Tree Benefits Report

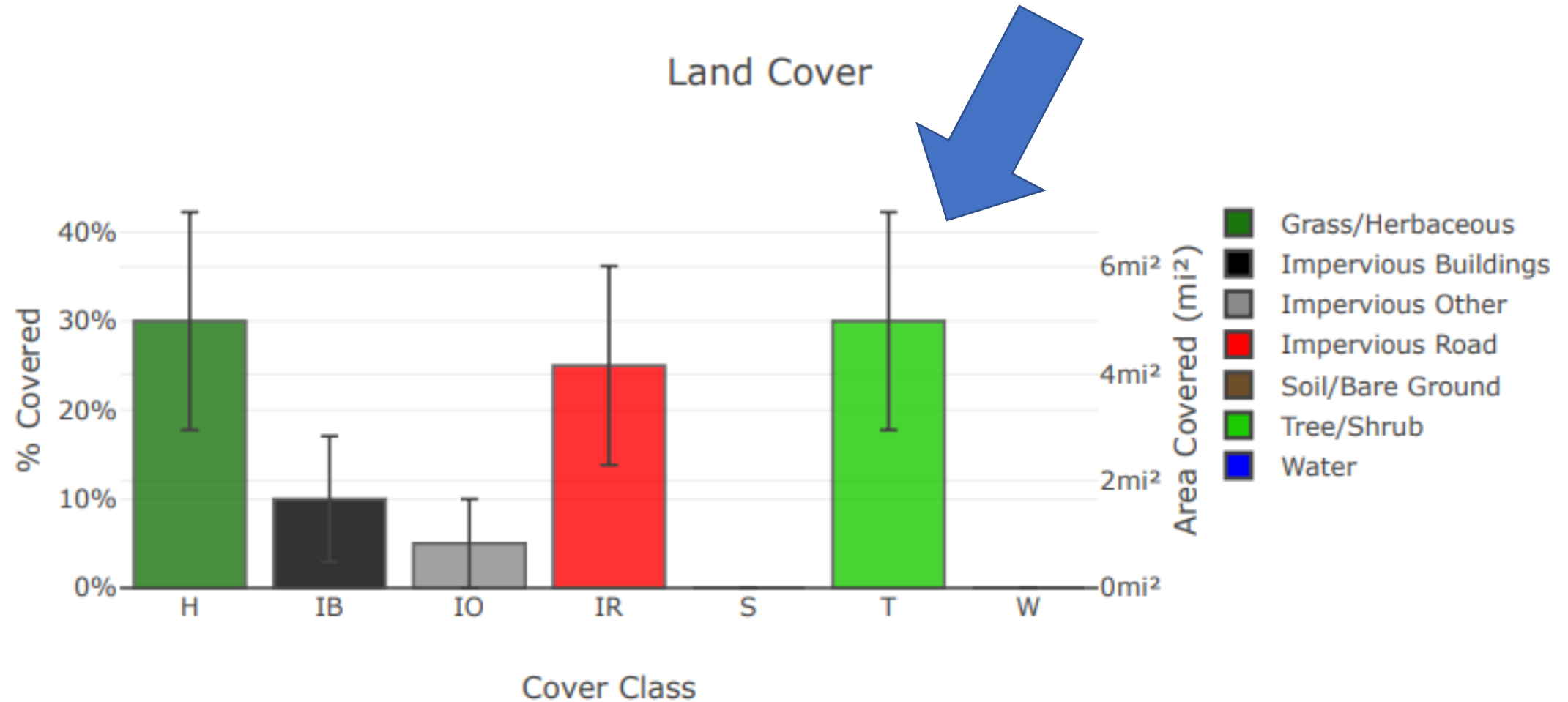
Estimated using random sampling statistics on 4/19/2022



i-Tree Canopy

Cover Assessment and Tree Benefits Report

Estimated using random sampling statistics on 4/19/2022



Abbr.	Cover Class	Description	Points	% Cover ± SE	Area (mi ²) ± SE
H	Grass/Herbaceous		6	30.00 ± 12.25	4.99 ± 2.04
IB	Impervious Buildings		2	10.00 ± 7.07	1.66 ± 1.18
IO	Impervious Other		1	5.00 ± 5.00	0.83 ± 0.83
IR	Impervious Road		5	25.00 ± 11.18	4.16 ± 1.86
S	Soil/Bare Ground		0	0.00 ± 0.00	0.00 ± 0.00
T	Tree/Shrub		6	30.00 ± 12.25	4.99 ± 2.04
W	Water		0	0.00 ± 0.00	0.00 ± 0.00
Total			20	100.00	16.62



Tree Benefit Estimates: Carbon (English units)

Description	Carbon (kT)	±SE	CO ₂ Equiv. (kT)	±SE	Value (USD)	±SE
Sequestered annually in trees	4.36	±1.78	15.97	±6.52	\$742,930	±303,300
Stored in trees (Note: this benefit is not an annual rate)	109.40	±44.66	401.12	±163.76	\$18,657,753	±7,616,996



Currency is in USD and rounded. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Amount sequestered is based on 0.874 kT of Carbon, or 3.203 kT of CO₂, per mi²/yr and rounded. Amount stored is based on 21.940 kT of Carbon, or 80.446 kT of CO₂, per mi² and rounded. Value (USD) is based on \$170,550.73/kT of Carbon, or \$46,513.84/kT of CO₂ and rounded. (English units: kT = kilotons (1,000 tons), mi² = square miles)

Tree Benefit Estimates: Air Pollution (English units)

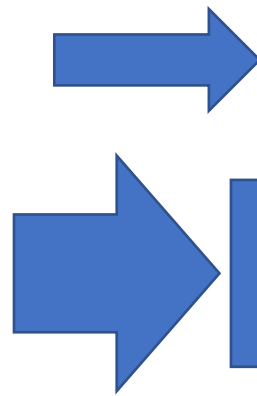


Abbr.	Description	Amount (T)	±SE	Value (USD)	±SE
CO	Carbon Monoxide removed annually	1.44	±0.59	\$122	±50
NO2	Nitrogen Dioxide removed annually	7.85	±3.20	\$211	±86
O3	Ozone removed annually	78.13	±31.90	\$10,975	±4,481
SO2	Sulfur Dioxide removed annually	4.94	±2.02	\$37	±15
PM2.5	Particulate Matter less than 2.5 microns removed annually	3.80	±1.55	\$22,687	±9,262
PM10*	Particulate Matter greater than 2.5 microns and less than 10 microns removed annually	26.17	±10.68	\$7,968	±3,253
Total		122.33	±49.94	\$42,000	±17,146

Currency is in USD and rounded. 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 T/mi²/yr @ \$/T/yr and rounded:

CO 0.289 @ \$85.08 | NO2 1.573 @ \$26.86 | O3 15.670 @ \$140.47 | SO2 0.991 @ \$7.45 | PM2.5 0.761 @ \$5,975.67 | PM10* 5.249 @ \$304.43 (English units: T = tons (2,000 pounds), mi² = square miles)

Tree Benefit Estimates: Hydrological (English units)



Abbr.	Benefit	Amount (Kgal)	±SE	Value (USD)	±SE
AVRO	Avoided Runoff	1.65	±0.67	\$15	±6
E	Evaporation	136.24	±55.62	N/A	N/A
I	Interception	137.01	±55.93	N/A	N/A
T	Transpiration	184.36	±75.26	N/A	N/A
PE	Potential Evaporation	1,032.37	±421.46	N/A	N/A
PET	Potential Evapotranspiration	842.33	±343.88	N/A	N/A

Currency is in USD and rounded. 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 Kgal/mi²/yr @ \$/Kgal/yr and rounded:

AVRO 0.331 @ \$8.94 | E 27.324 @ N/A | I 27.477 @ N/A | T 36.974 @ N/A | PE 207.046 @ N/A | PET 168.932 @ N/A (English units: Kgal = thousands of gallons, mi² = square miles)



Analysis

Estimating the Economic Impact of Stormwater Runoff in the Allen Creek Watershed



Kelly Hellman^{a,*}, Jeffrey Wagner^b, Daniel Lass^a, Karl Korfmacher^c, Bríd Gleeson Hanna^b

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^b Department of Economics, Rochester Institute of Technology, United States

^c Environmental Science Program, Rochester Institute of Technology, United States

ARTICLE INFO

Keywords:

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Stormwater management
Urban runoff
Water quantity implicit prices
L-THIA

ABSTRACT

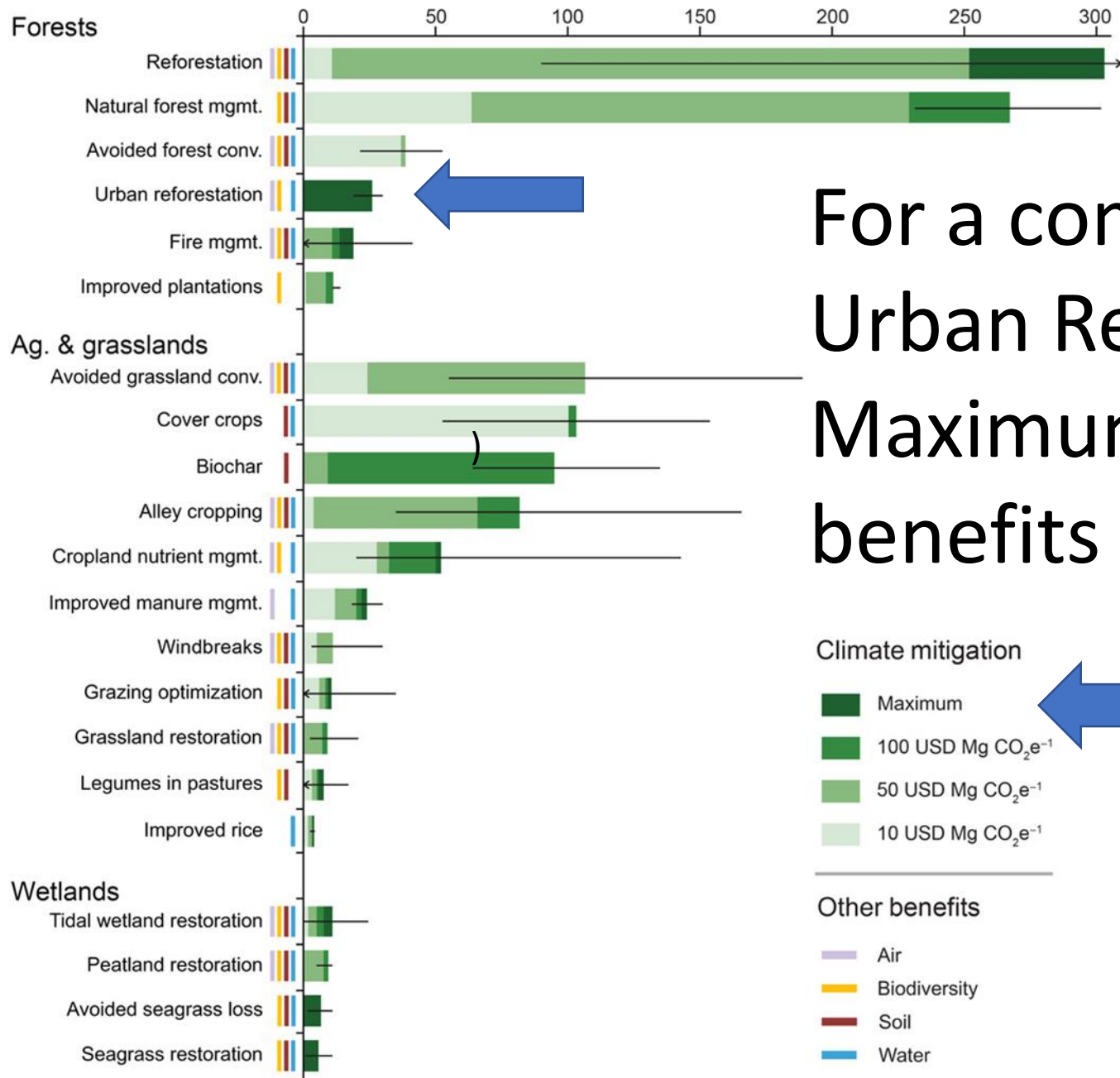
Stormwater runoff generated by increased landscape imperviousness results in flooding and degradation of aquatic systems. This paper proposes an economic model of stormwater runoff damage estimation. Using a hedonic property model that allows us to account for the heterogeneity in each parcel's generation of stormwater runoff, we estimate the marginal implicit cost of an additional 10,000 ft³ of annual runoff (which represents about a 2% increase in the average annual runoff volume coming from each lot) to a downstream community in the Allen Creek watershed located in Rochester, NY. We estimate that an additional 10,000 ft³ of runoff translates to nearly \$12,000 (or \$1.20 per cubic foot) of damages to downstream residences under current development conditions. Results can be compared with abatement cost estimates from other studies to help quantify one important part of the tradeoffs between the desirability of development versus the increase in environmental challenges and economic costs that may result.



“10,000 cubic feet of runoff translates to nearly \$12,000 of damages to downstream residences”
(Hellman et al., 2018)

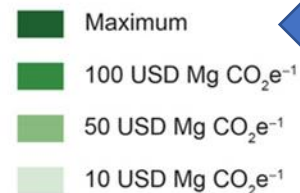
(Related to proposed plans – at that time – for development south of Buckland Park)

Climate mitigation potential in 2025 (Tg CO₂e year⁻¹)

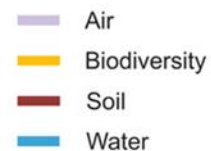


For a community like Brighton, Urban Reforestation provides Maximum climate mitigation benefits (Fargione et al., 2018)

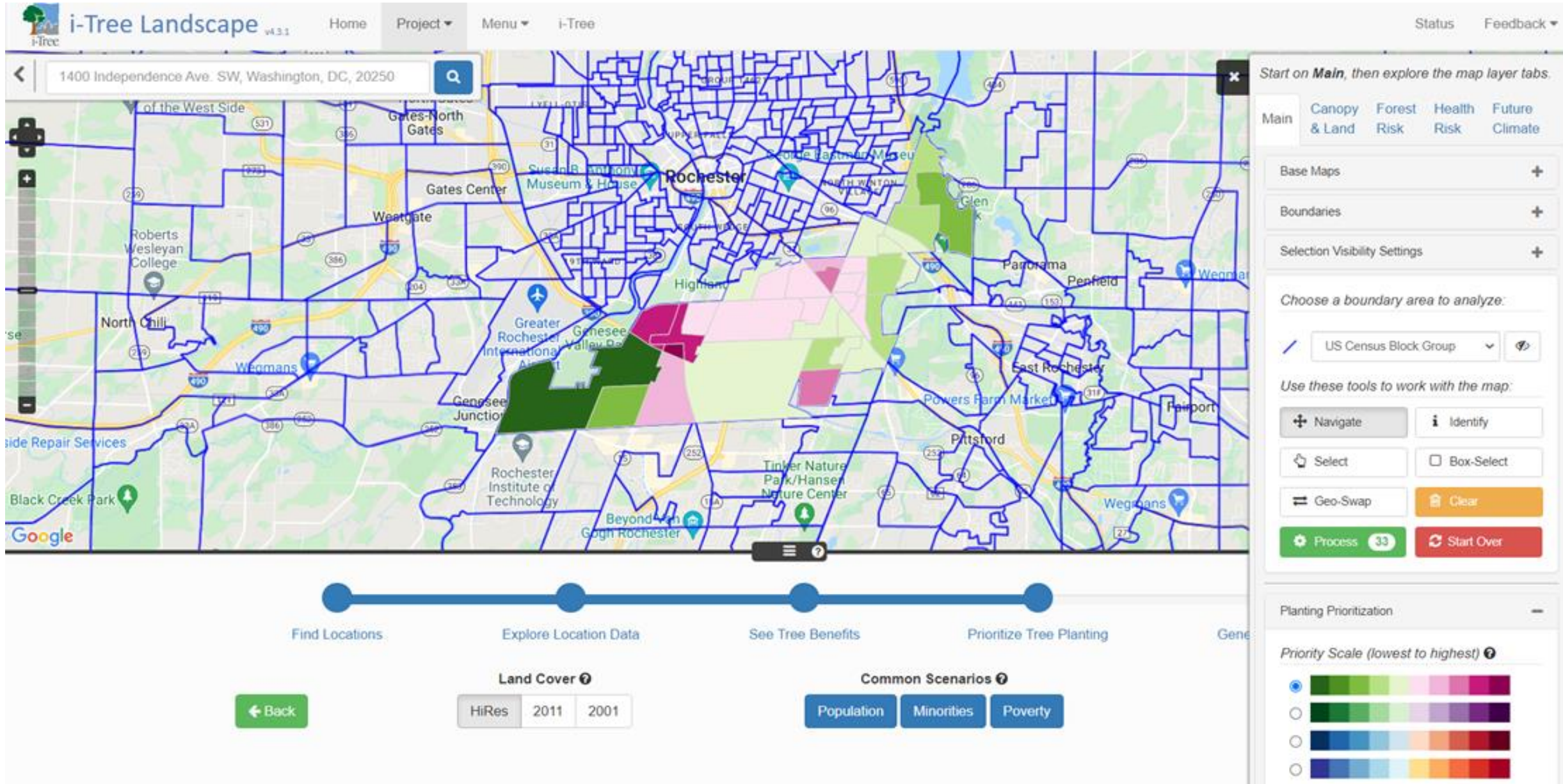
Climate mitigation



Other benefits



Equity issues related to UTC in the Town of Brighton:

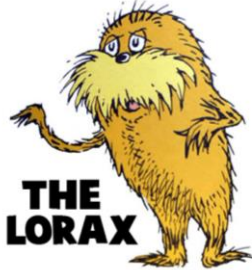


Work to be done!

1. Tree Survey



2. Outreach and Education (Equity/inclusion and UTC value)



**THE
LORAX**

"I speak for the trees,
for the trees have no tongues."

- Dr. Suess



3. Tree planting and maintenance