

**Tree Survival:
Why does it matter?
How can it impact our work?**

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dc urban tree

40% canopy goal

Current UTC = 36%

We need to plant
216,300 trees by 2035
=
8,600 trees per year



Goal Assumptions

We need to plant

216,300 trees by 2035 = 8,600 trees per year

This is assuming a 6% Mortality of all trees.

REALISTIC?

Is all growth equal?

Is 94% survival achievable?

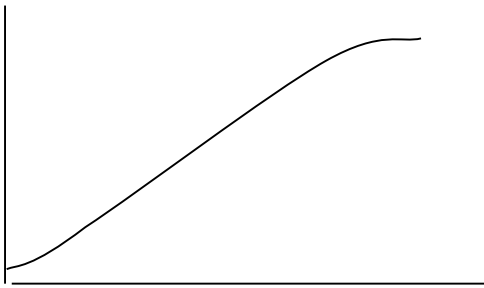
Sustainable DC Goal 2032 – ups goal by 3 years

The average life of a downtown street tree is 7-10 years post-transplant
Moll G (1989) The state of our urban forest. American Forests
November/December:61-64



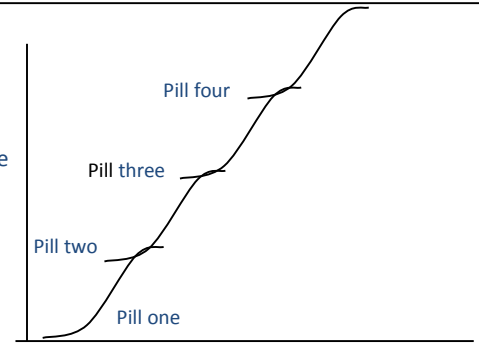


Plant growth



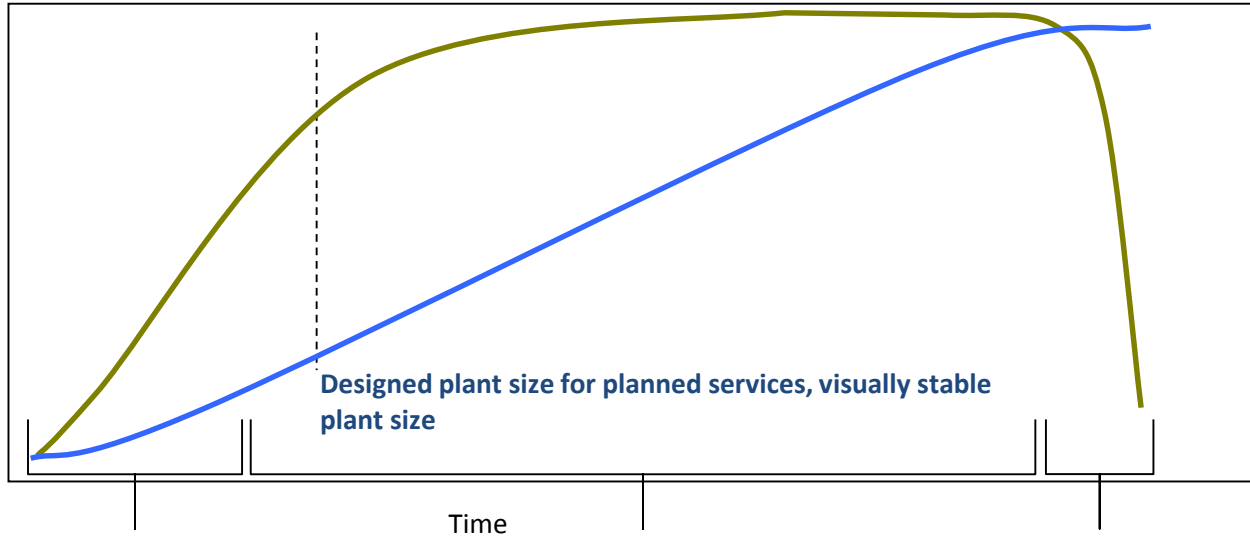
Time

Medicine release



Time

Perceived plant size
Ecosystem
Services (ES)
Value
criterion



Designed plant size for planned services, visually stable plant size

Time

Establishment

Installation-10%

maturity

11-90%

overmature

91%-removal



Different factors that could affect the mortality

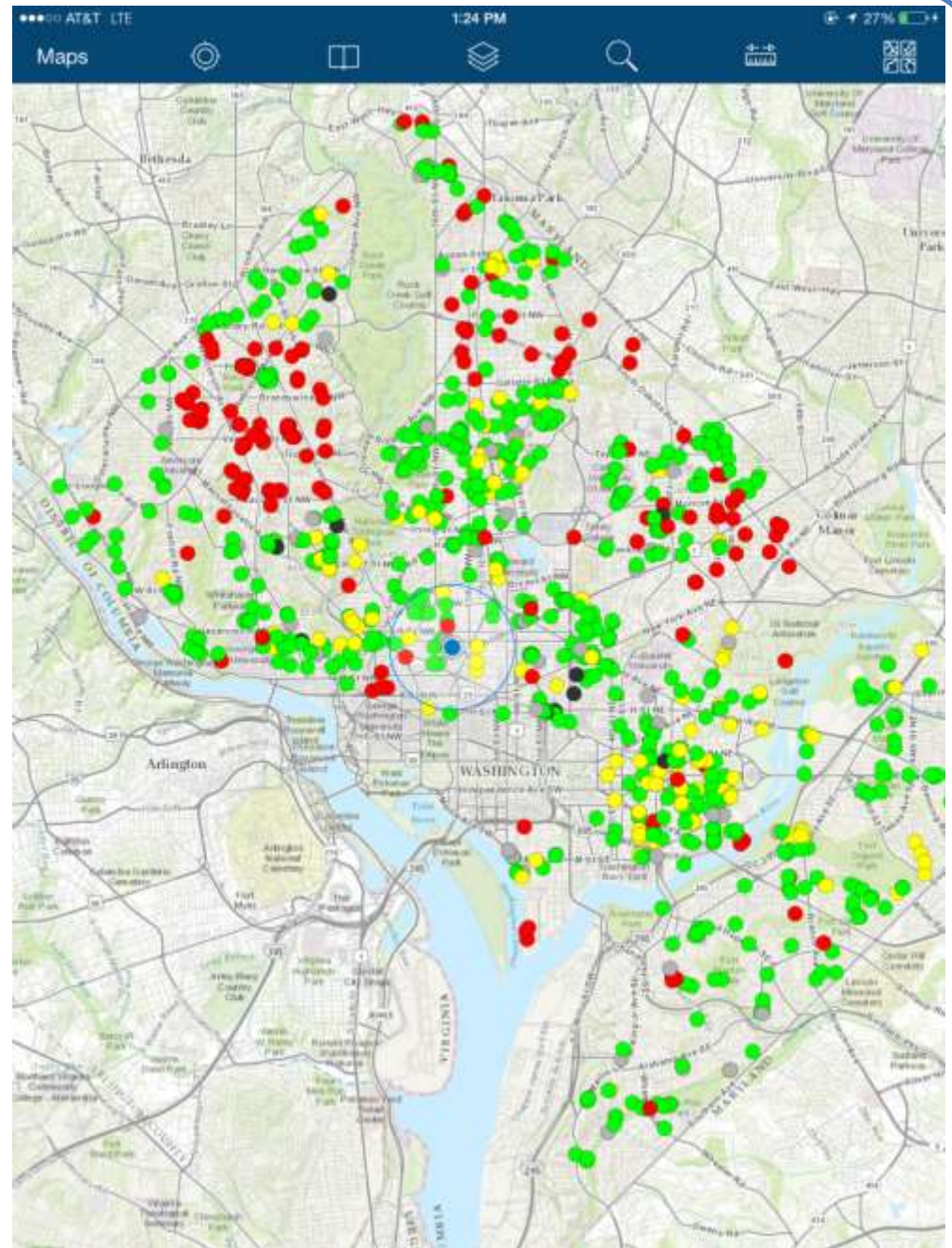
- Land use
- Neighborhood
- Year Planted
- Season Planted
- Species Type
- Soil Availability Access
- Stock Type
- Private vs. public
- And many more...



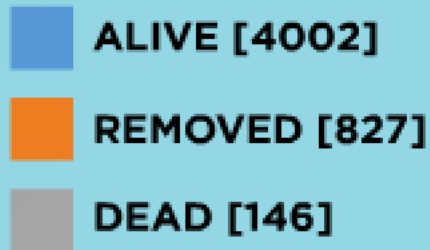
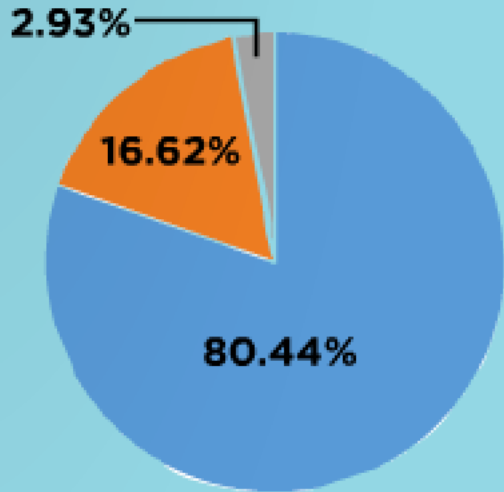
Photo credit: G Dahle

2014 Study

- 3rd year of study
- 51% of all trees planted 2002-2011
- 4466 Trees surveyed in 2014



CASEY TREES HAS PLANTED OVER 17,000 TREES SINCE 2002. OUR MORTALITY STUDY EXAMINES 51 PERCENT OF THE TREES WE'VE PLANTED THAT HAVE BEEN IN THE GROUND FOR OVER THREE YEARS. IN 2014, WE STUDIED 4975 TREES.



PERCENTAGES SHOWN INCLUDE HEALTHY LIVING TREES, TREES THAT WERE COMPLETELY DEAD BUT WERE STILL IN THE GROUND AND TREES THAT WERE MISSING OR REMOVED. THE MISSING OR REMOVED TREES WERE EITHER REMOVED BY A HOMEOWNER BECAUSE THEY HAD DIED OR WERE ASSUMED TO BE REMOVED DUE TO CONSTRUCTION OR DEVELOPMENT.

Preliminary thoughts

- Years in ground matters
 - Cohorts of trees
 - Duration of time in ground matters to receive benefits.
 - Establishment
 - 11.6% mortality for 2011 Trees
 - 2.85% mortality for 2003 Trees
- Area planted matters
 - Private vs. public
 - Land use
 - Spatially in the city
- Planting program matters
 - Tenure of program
- Highlighted Takeaways

Species Selection and Nursery Matter

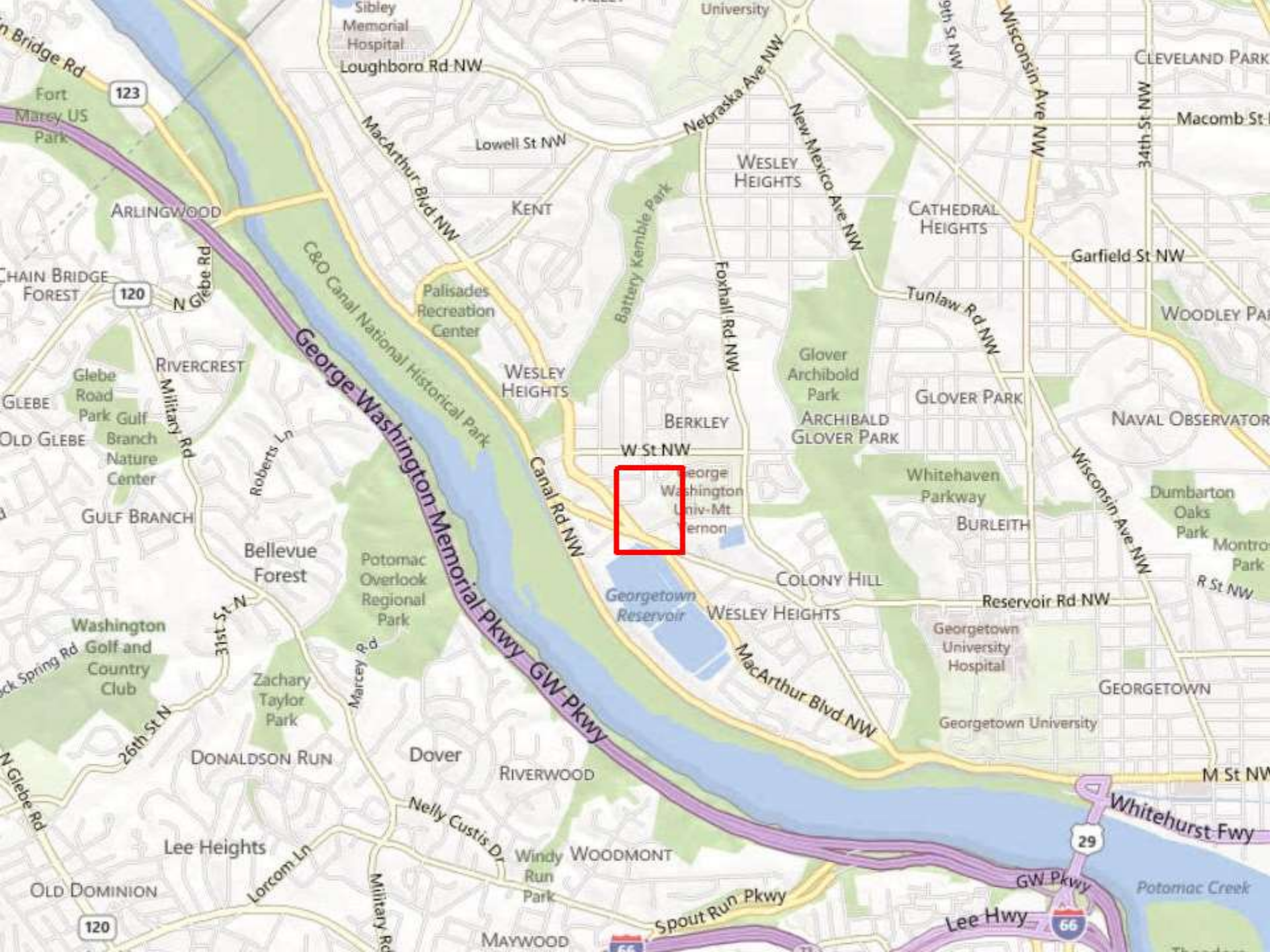


Sanders et al 2013



Construction and Development Matter

- From 2006-2011: 75% of the time we can predict tree loss based on Construction permits alone.
- Increasing permit application
- Increasing development
- Preserve soil for trees in future



George Washington Univ-Mt Vernon

Georgetown Reservoir

George Washington Memorial Pkwy GW Pkwy

C&O Canal National Historical Park

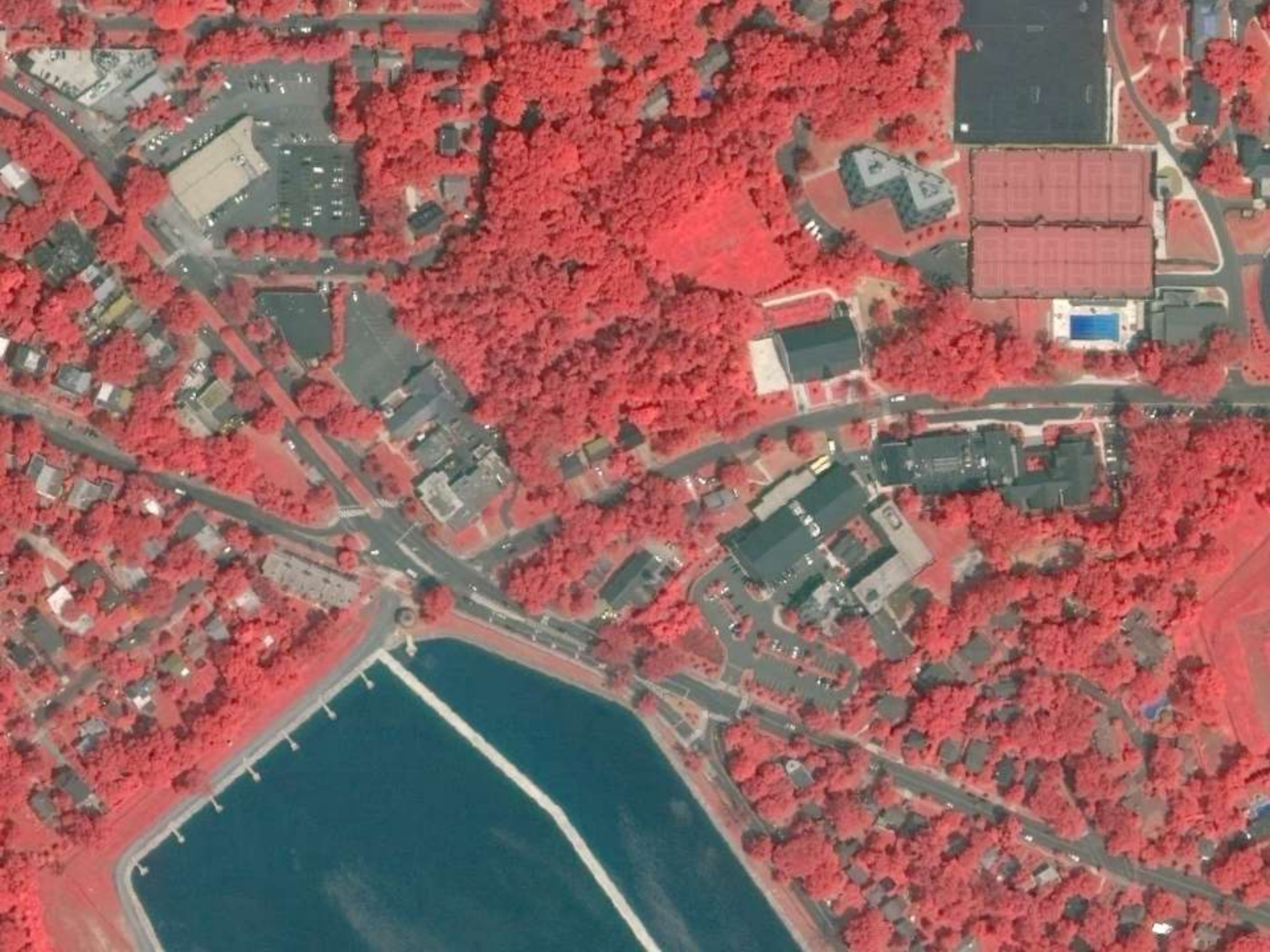
123

120

29

120

66





Invitation and Conclusion

- Collaboration is important
- All trees matter.
- How do we all achieve more together?
- Coordinated effort to reach goals.
- Trees can survive and thrive if we let them



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Questions?



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