A Breakthrough Technology for Adapting to Climate Change !

If you were told there was a machine that can:

- Reduce cooling & heating costs and peak energy loads
- Reduce **stormwater** runoff & Combined **Sewer Overflows**
- Clean the **air & water**
- **Double investments in local economies**
- Provide local **jobs**
- Increase **property values**
- Improve **public health**
- **Sequester carbon**
- Get ***better*** **over time**

Would you want one??

GREENING
THE GATEWAY
CITIES

*DCR hires local foresters and crews
-approx. 100 new jobs

*80% of trees in yards located w/ forester and resident

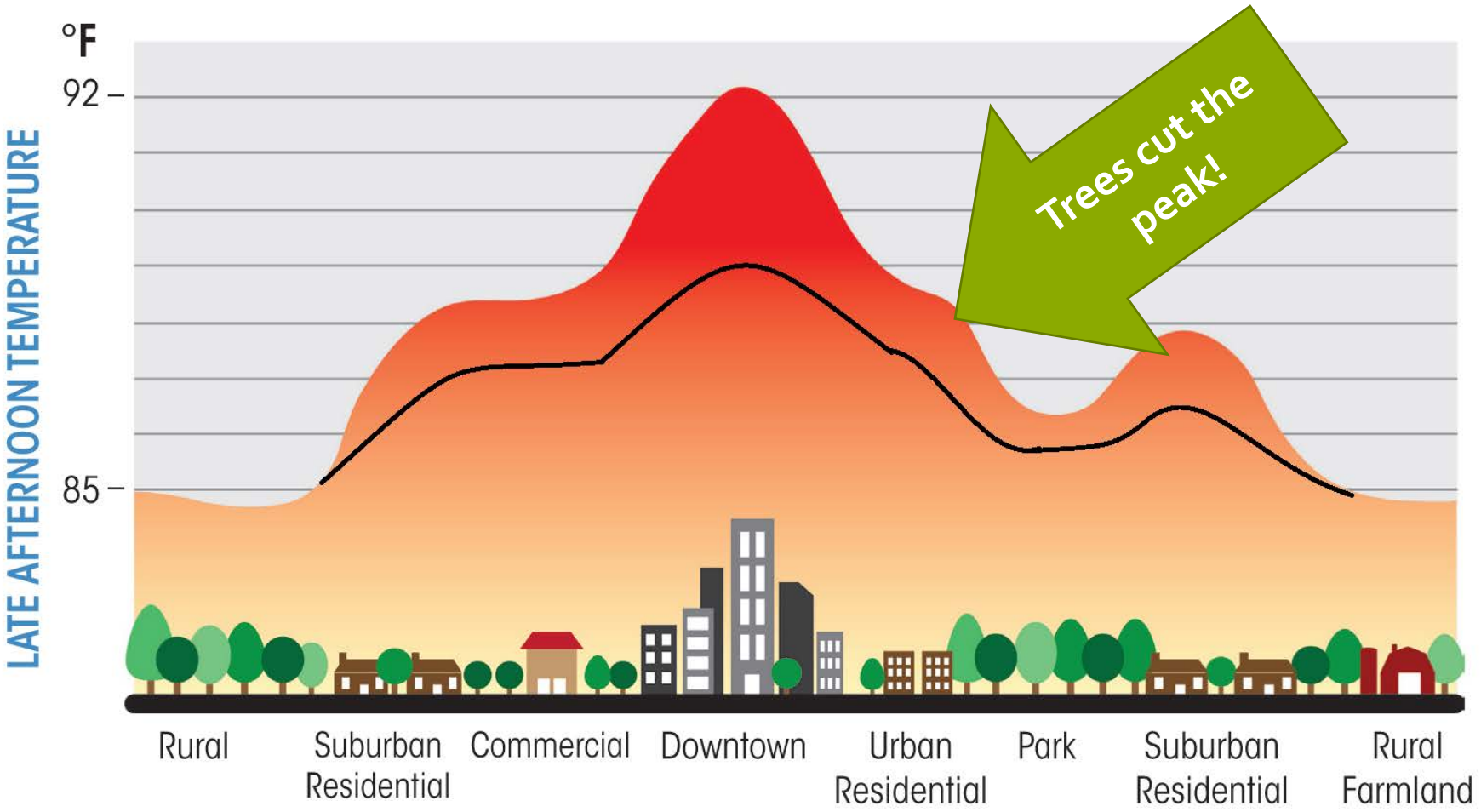
*20% on streets working w/ city DPW's

*Outreach by local non-profits and DCR

*Watering by residents, DCR, non-profits and City DPW's

GREENING THE GATEWAY CITIES

Urban Heat Island: the peak in peak load - UMass study predicts days over 90 degrees will increase from 11 to 90 per year in Boston by 2070.



Actual Energy Use Studies: MA and MN

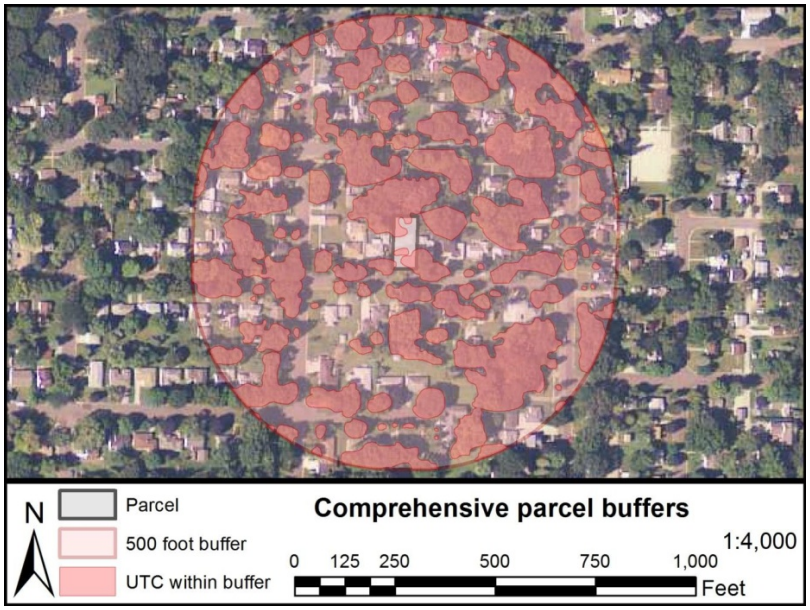
- Tree canopy brings greatest benefits when established over a **neighborhood area,** by lowering wind speeds, providing shade, and reducing summertime air temperature.

Canopy increase : energy savings

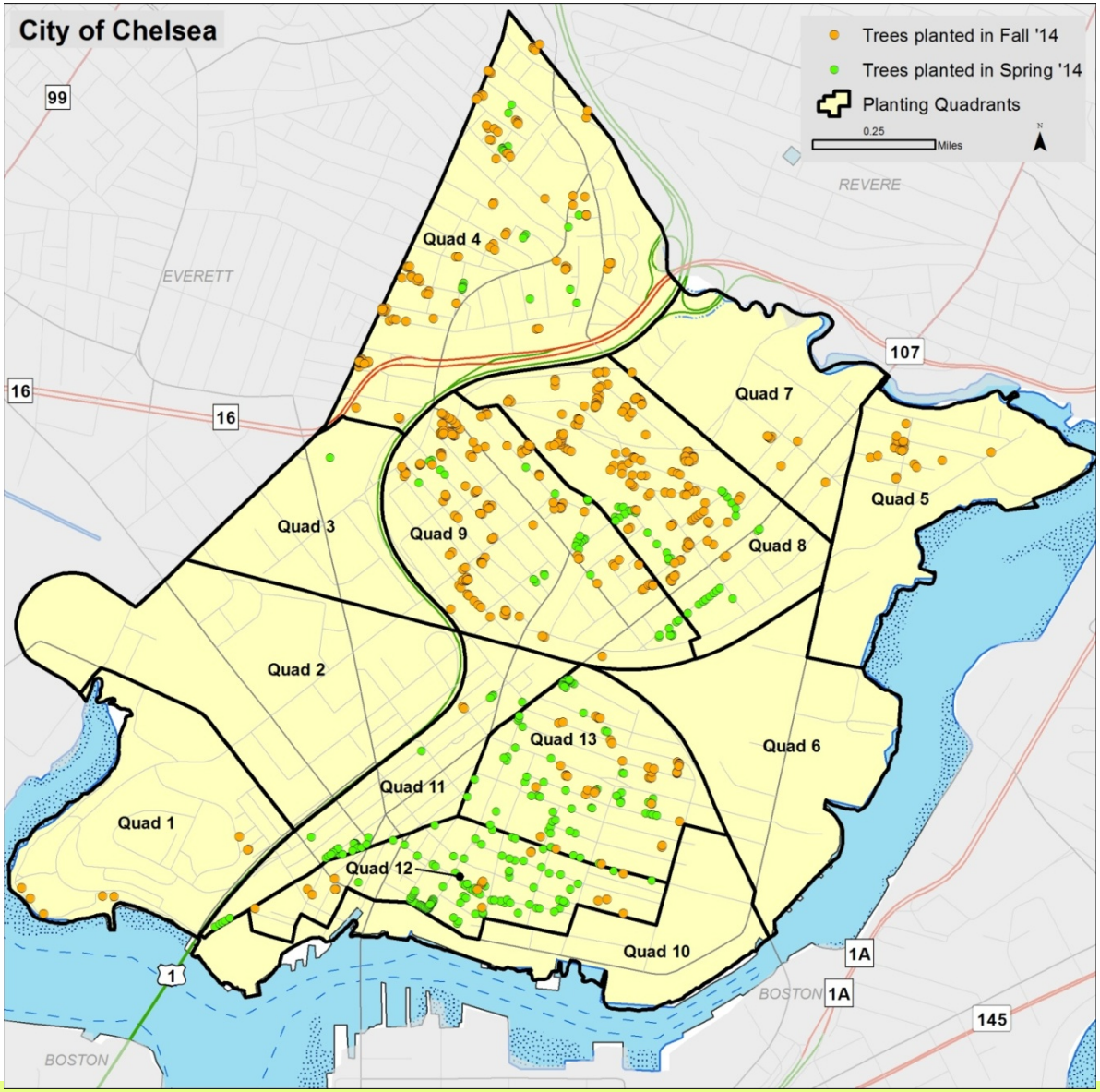
HEAT SAVINGS: 1% new canopy =1.1% savings

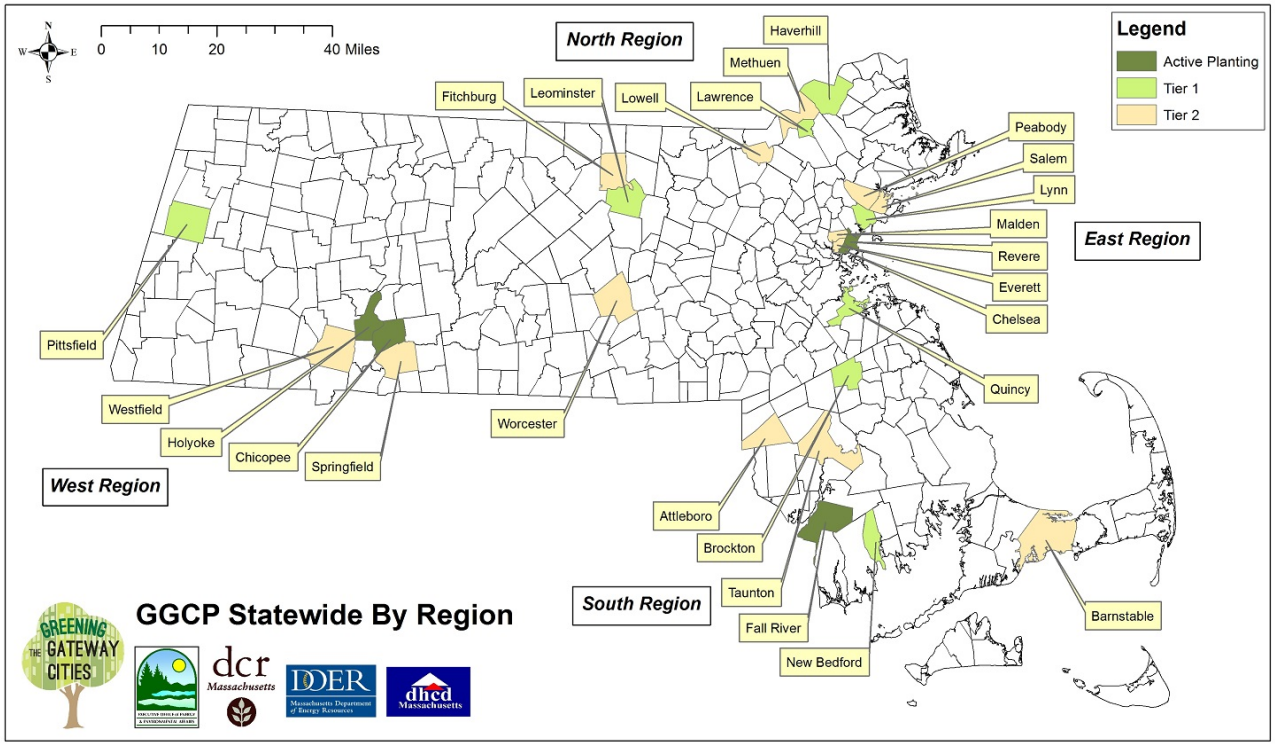
COOLING SAVINGS: 1% new canopy=1.9% savings

- **The whole neighborhood benefits!**

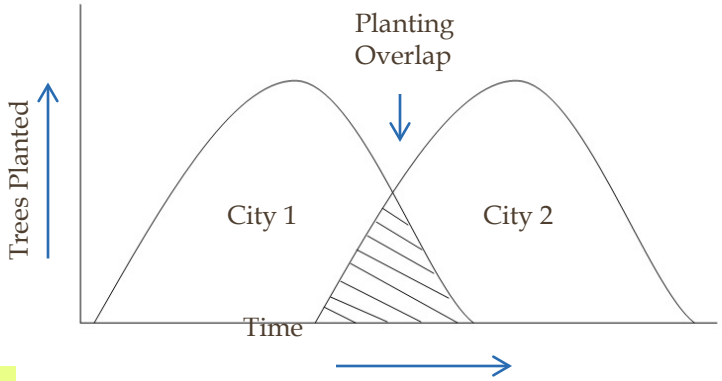


A tree within 50 feet of where 5,000 people live!
Recent phone survey shows many social benefits





- Expanding to 13 cities in 2017!
- Over time, planting crews will move to adjacent cities to allow for overlap. This will minimize downtime and provide a more consistent level of tree plantings



10 trees per acre…1% in 8 years
10% in 30 years

Greening the Gateway Cities:
Planting new trees in low-income neighborhoods in Gateway Cities. Goal of adding new tree canopy cover to 5- 10% of area of target neighborhoods

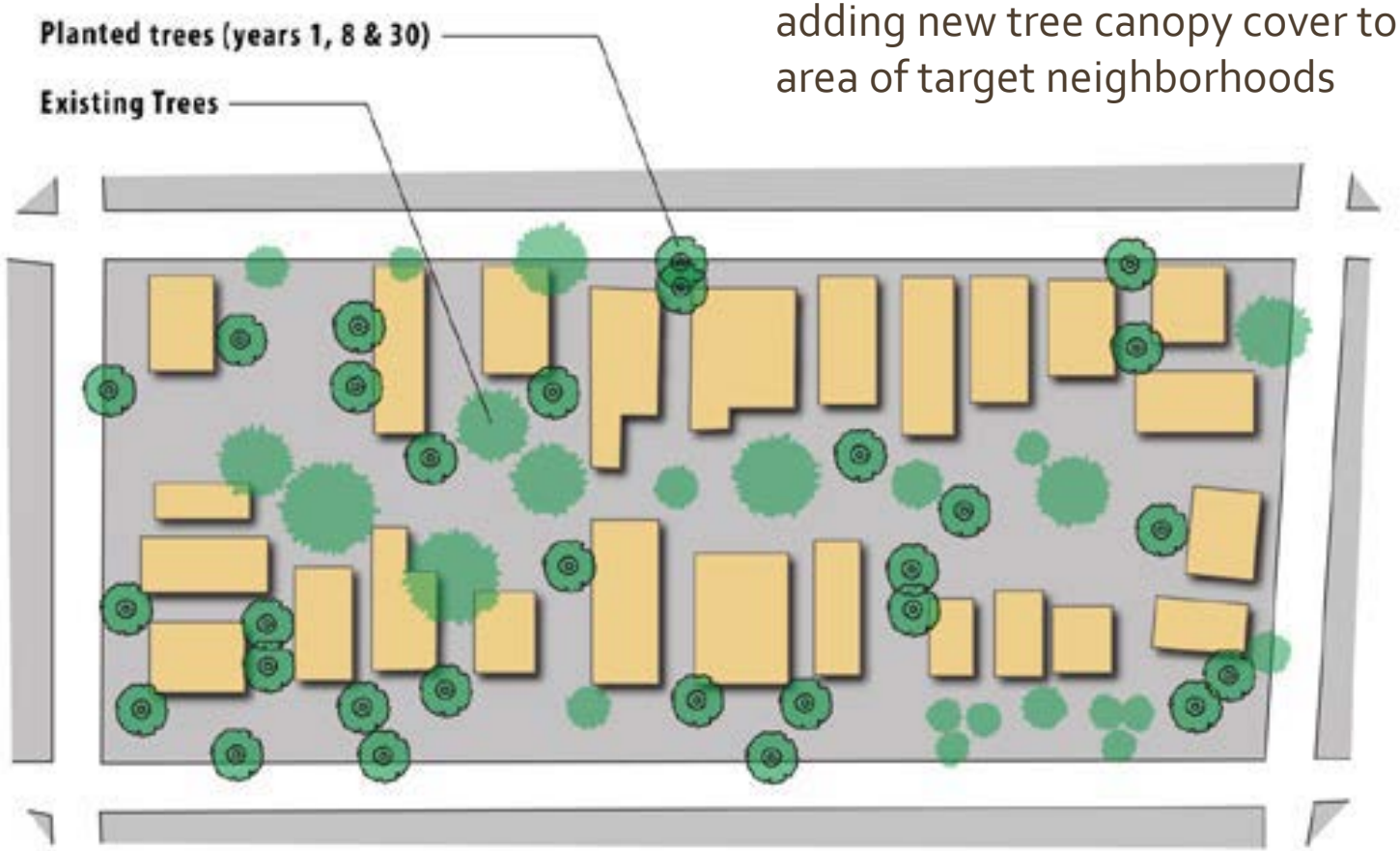


Figure 4. Tree Plantings on a Representative Block (approx. 3 acres)

Tree planting: Why Gateway Cities?

Big *opportunity* for savings

- Old, tall, poorly insulated houses
- Dense residential areas
- Low existing canopy cover

Big *need* for savings

- High poverty rates
- Large minority & immigrant population
- Large renter population
- Limited municipal resources

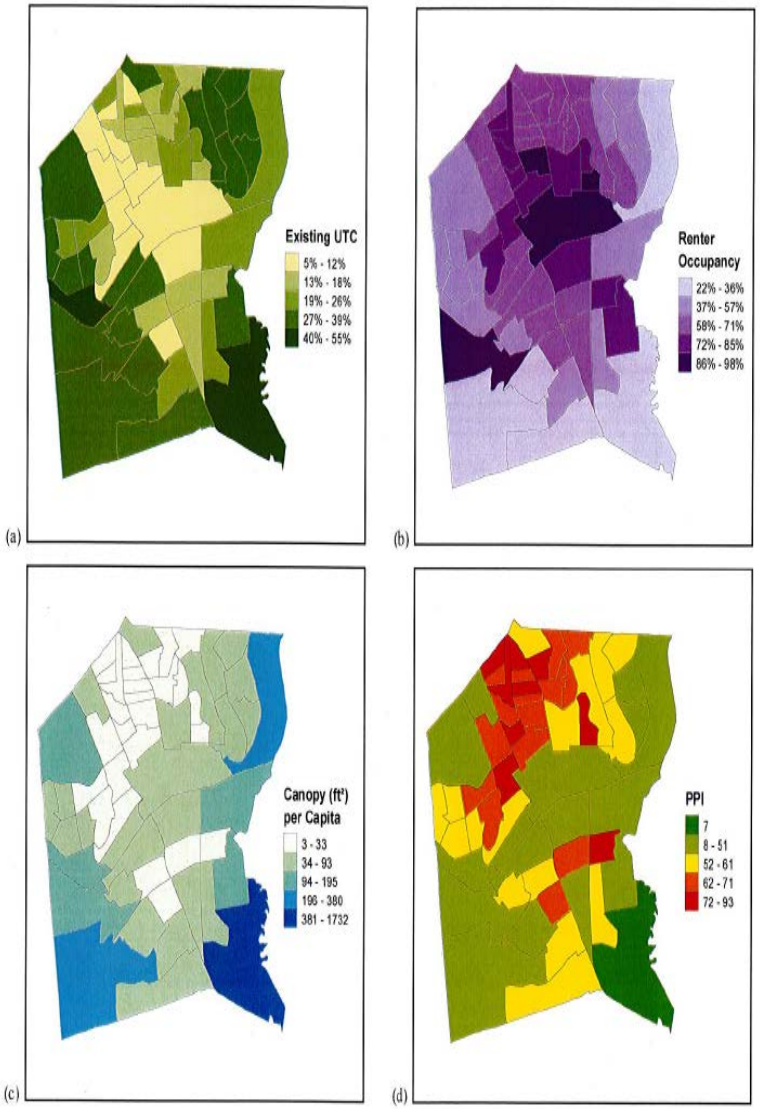


Figure 9: (a) Percent Existing UTC; (b) proportion of housing units occupied by renters; (c) tree canopy per capita; and (d) Priority Planting Index.

Improving GGC for a Changing Climate:

*Expand nursery tree offerings for climate-adapted species and market these trees to residents;

*Focus on meeting tree density goals in 3 cities with UMass weather monitoring and at large public housing communities;

*Expand outreach capacity to exceed tree density goals – the key limiting factor is phone calls!

*Strive to find cost-efficient ways to plant within paved areas to reduce Urban Heat Island and stormwater runoff;

*Explore carbon off-set programs for tree carbon AND energy saved.