

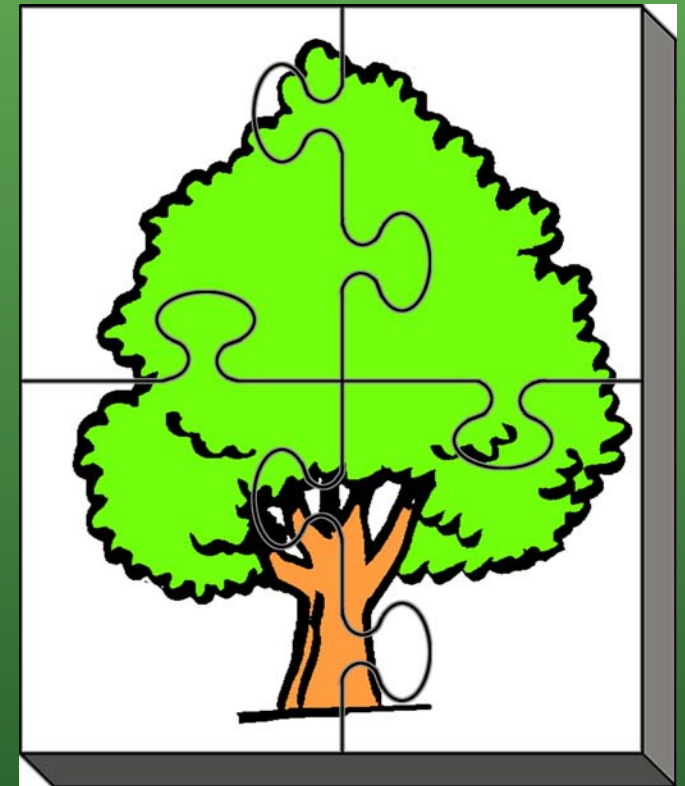
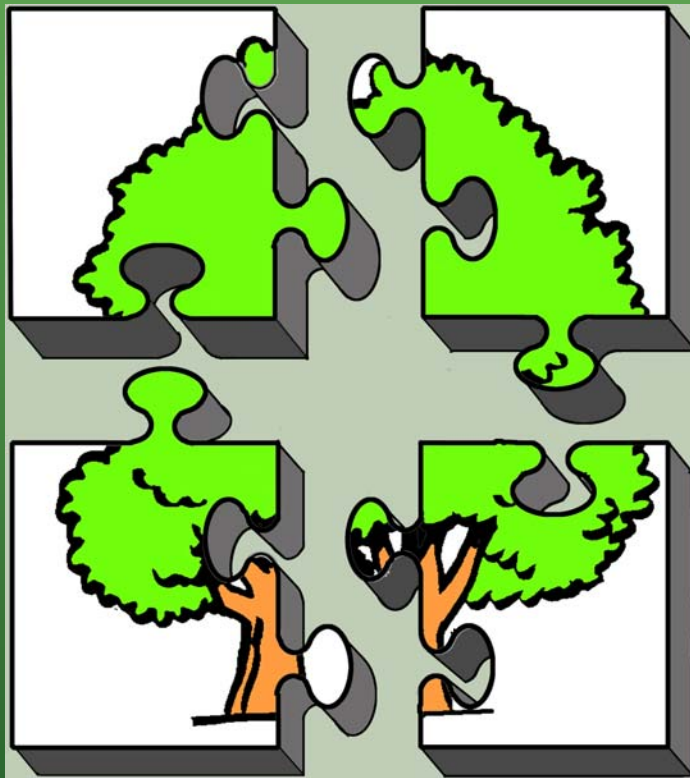


Integrating Green Infrastructure into the City: From Planning to Best Practices



Local
Government
Commission

Dan Staley
staley.dan@gmail.com
<http://danstaley.net>



Making space for Green Infrastructure:
By 2030, 50% of all buildings will have
been built in the last 50 years

Agenda

- What does it take to change?
- How to Engage The Change Makers
- Putting It All Together



NOT Smart Growth



NOT Green Infrastructure

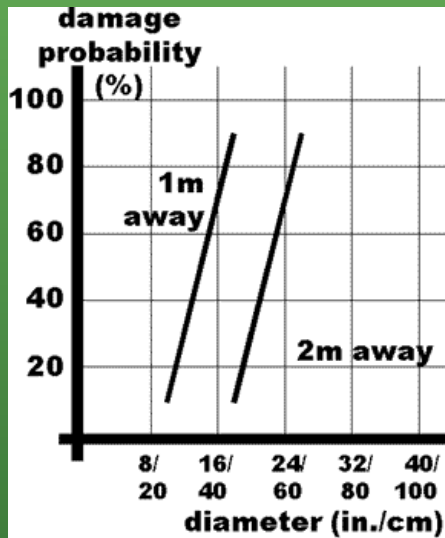
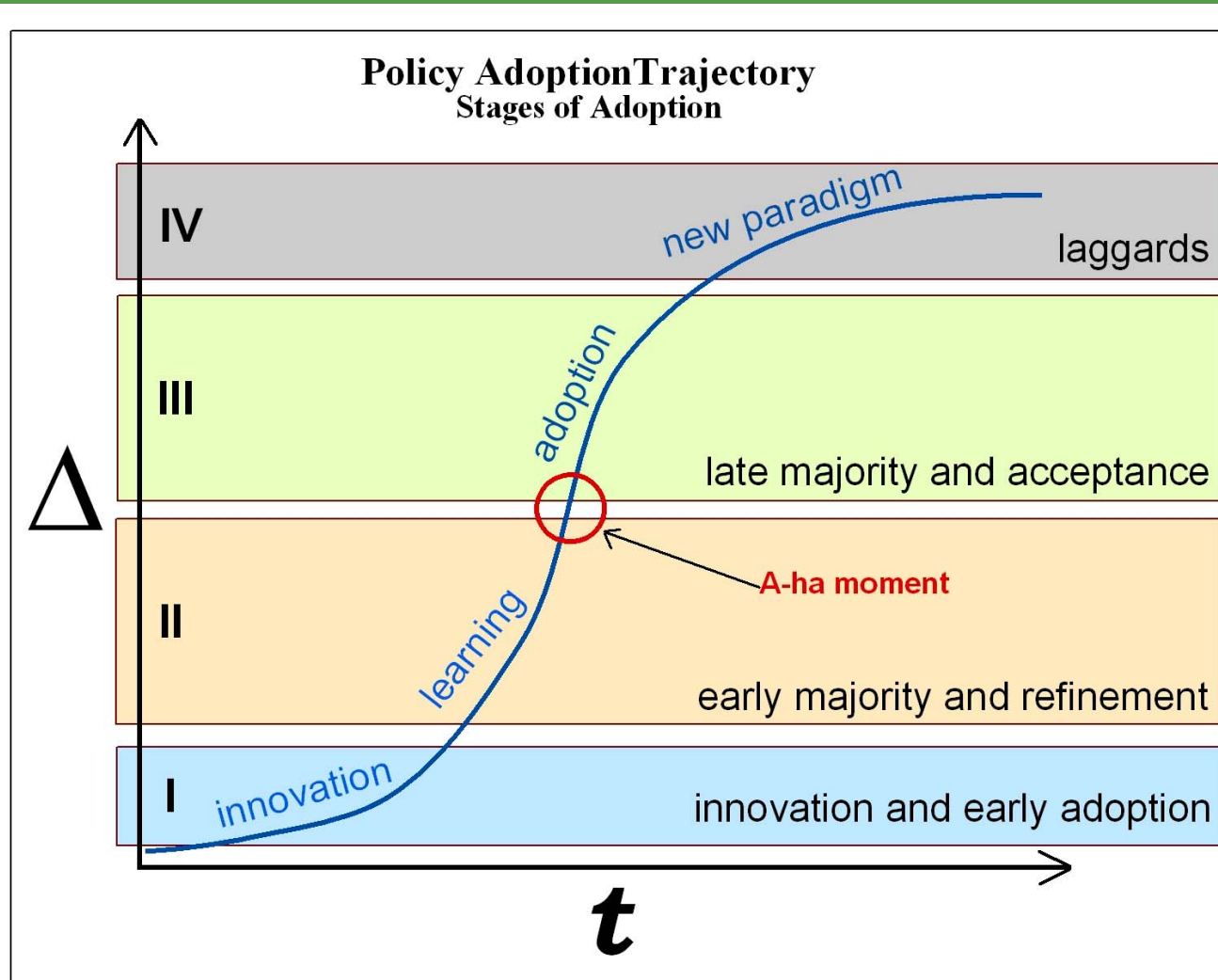


Figure 1: Infrastructure damage potential based upon tree diameter and distance away from infrastructure for one species. (21)
(1 MPa = 100 kPa = 1 bar)



Society and Community

Information and change asymmetry





Changemaking Reasons

- Multiple reinforcing benefits
- Conflict avoidance
- Co-location
- Support multiple goals and/or plans
- High design standards
- Environmental: stormwater, human health, urban heat island, air quality, energy savings, safety



Changemaking

- Plan Language
- Land-use Code
- Design Standards

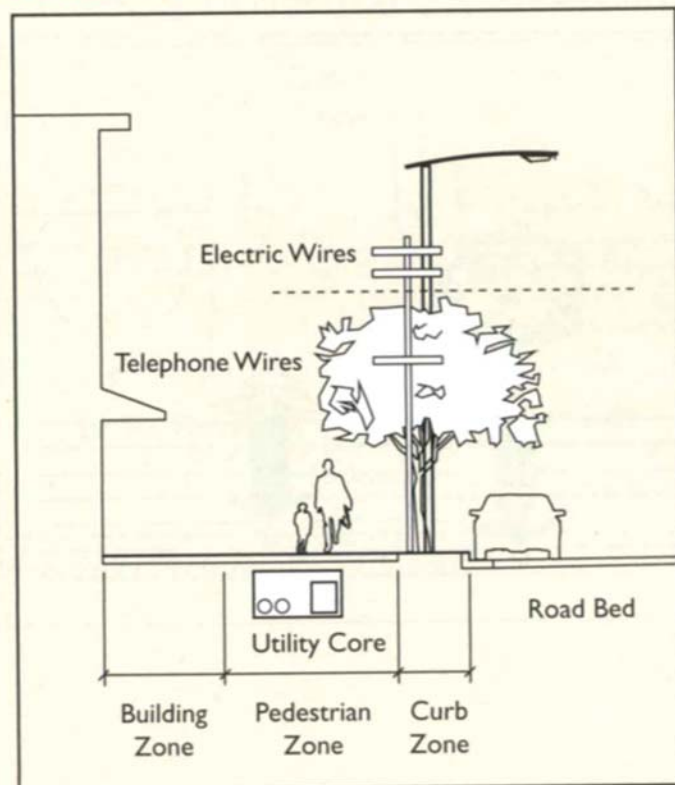
Stormwater, CSS, Urban Heat
Island (UHI)

Human Health and Preferences

We don't have a density problem, we have a
design problem.

Your Green Infrastructure Partners

Street Trees and Utilities



Your Green Infrastructure Partners



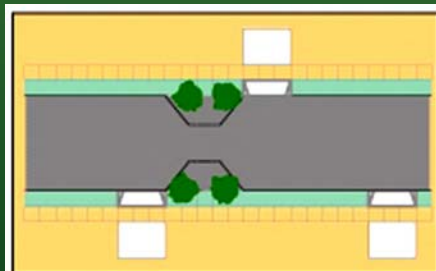
Your Green Infrastructure Partners



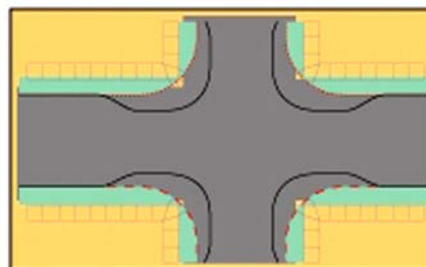
Gray and Green Infrastructure



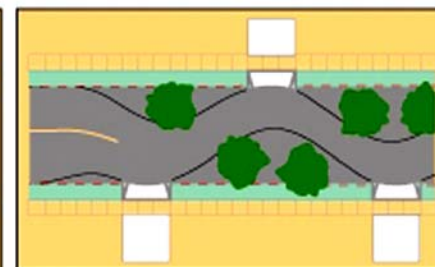
Context-Sensitive Solutions – Complete Streets



Mid-Block Choker



Narrowed Intersection



Chicane

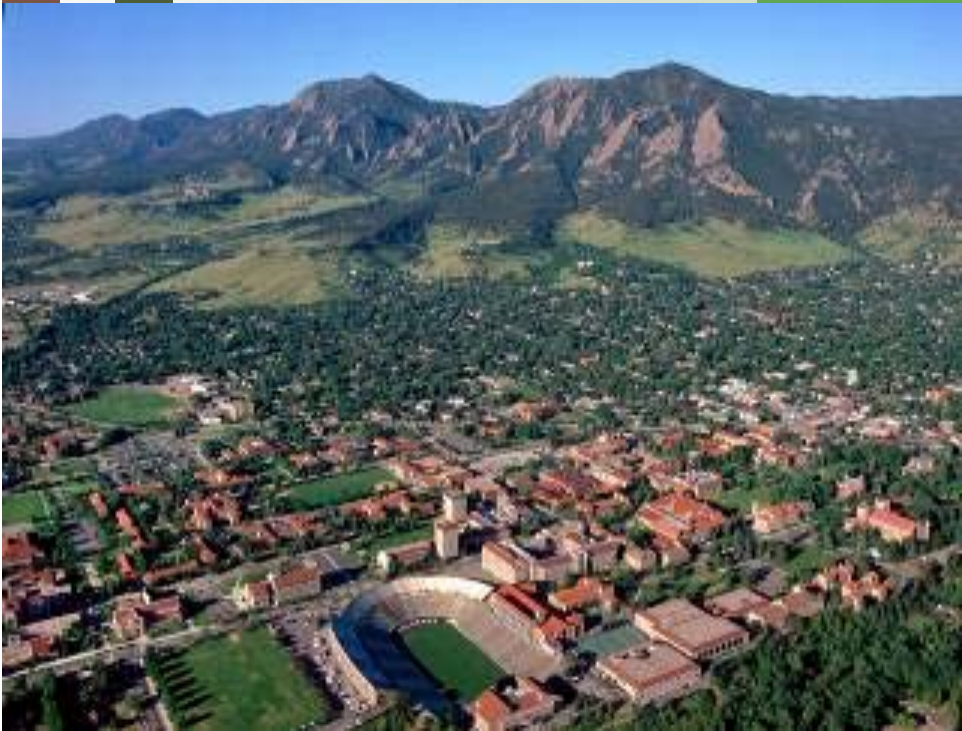
Community Plans

- Comprehensive Plans
 - City, County scales
- Set high-level goals
- Green Infrastructure as a goal
- Green Infrastructure supports many planning and community goals





Q&A



Thank you!



Gray and Green Infrastructure



Design Standards

- Trees *shall* have adequate rooting volume as determined by...
- Trees *shall* have enough distance from infrastructure as determined by...

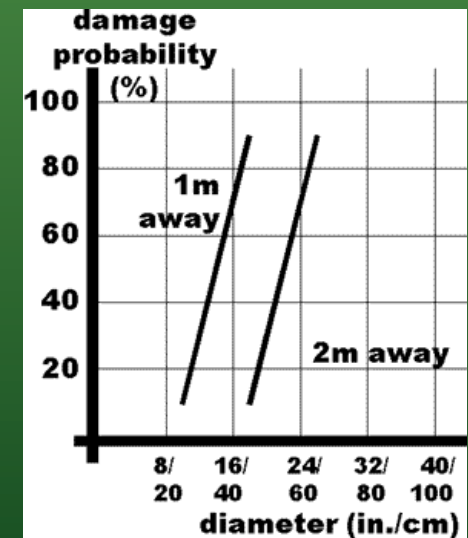
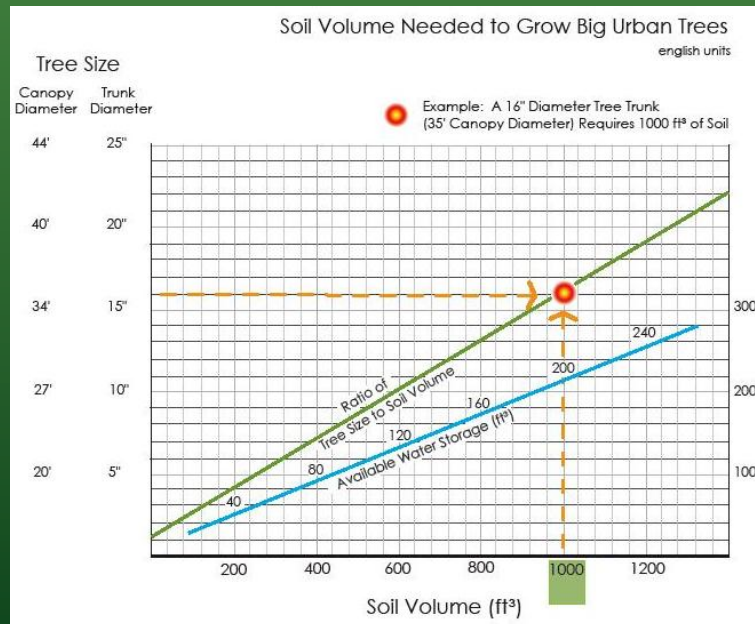
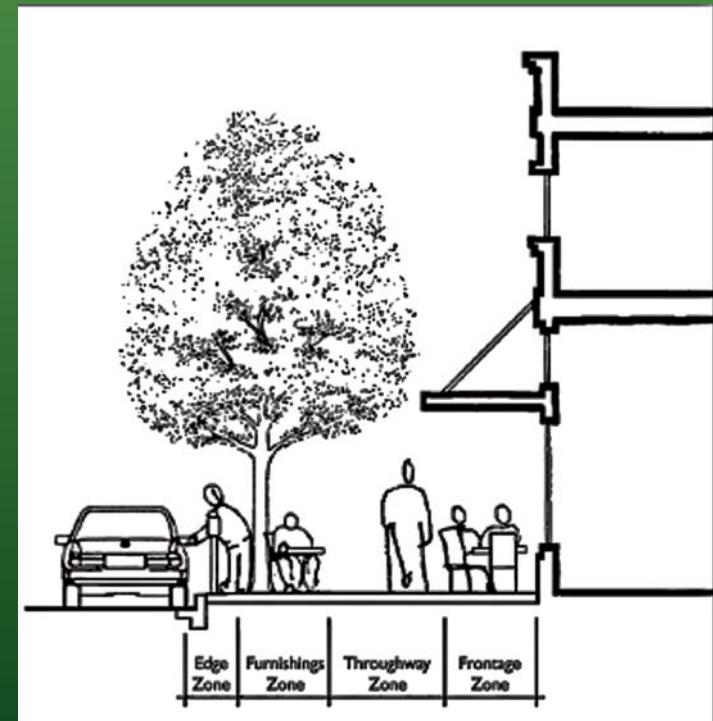


Figure 1: Infrastructure damage potential based upon tree diameter and distance away from infrastructure for one species. (21)
(1 MPa = 100 kPa ≈ 1 bar)

Design Standards

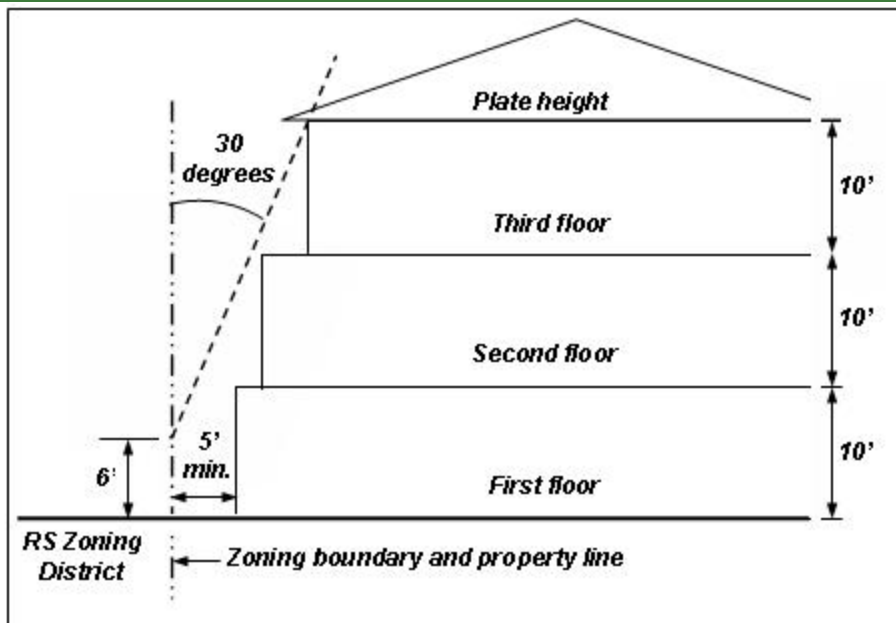
- Avoid Conflicts
- Trees doing work for many



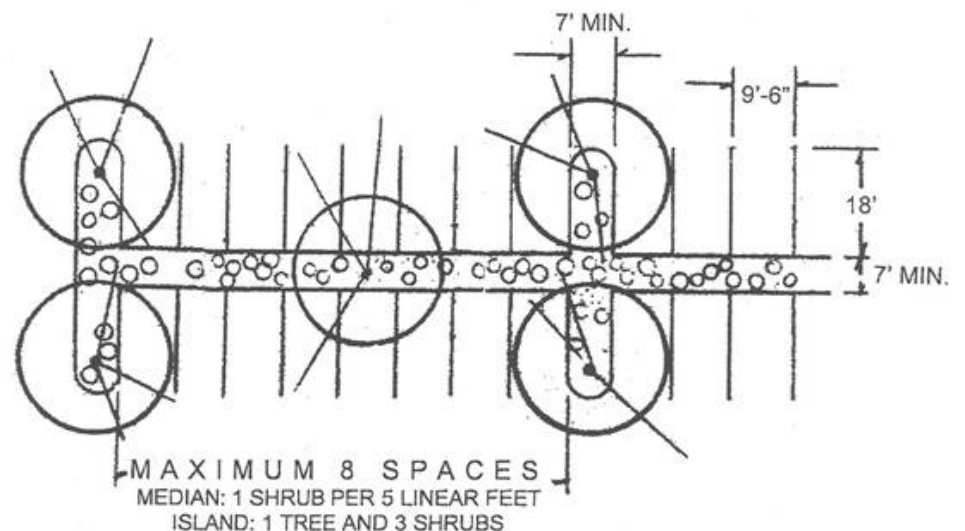
Design Standards

- Increase shading
- More room for tree canopy

Encroachment plane



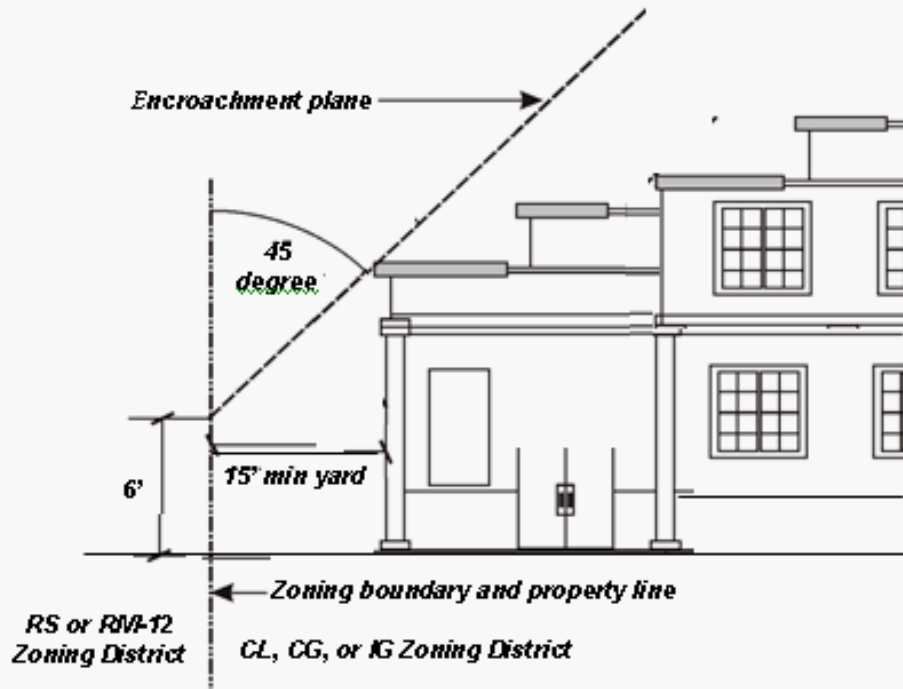
Maximum spacing



Design Standards

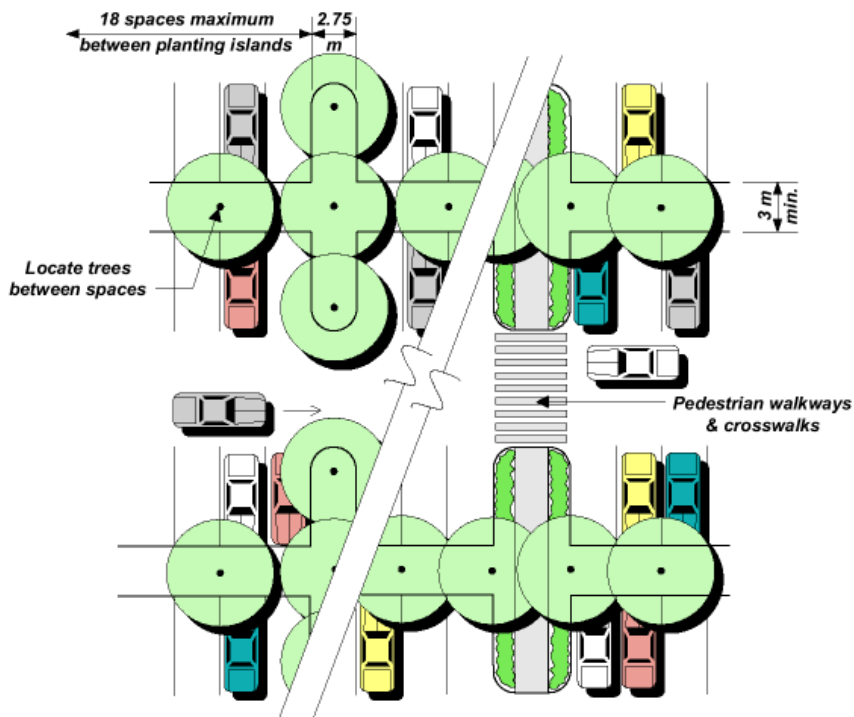
- Increase shading
- More room for tree canopy

Encroachment plane

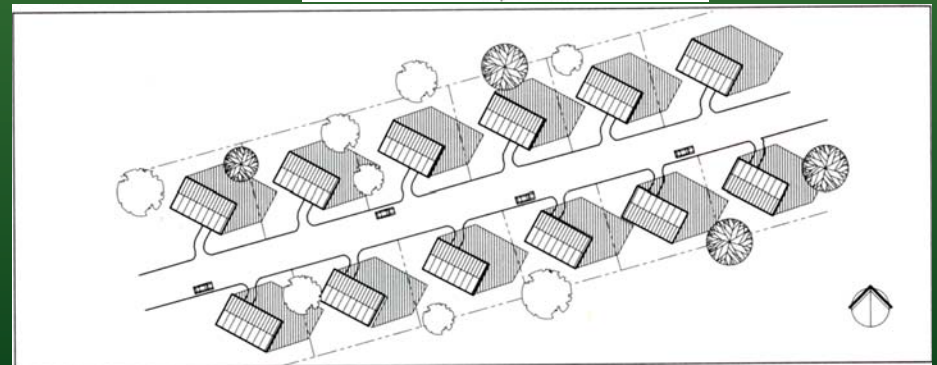
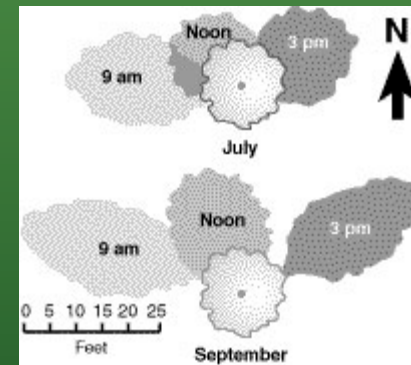


Design Standards

- Increase shading, decrease maintenance
- Make room for safety



Solar access





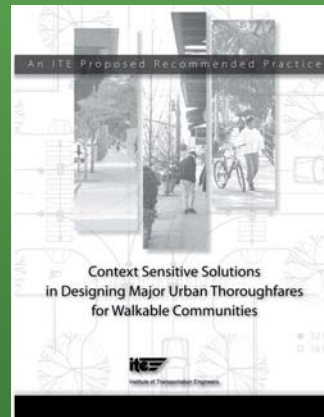
Take-home Messages

- Use Green Infrastructure as a Stormwater Utility
- Re-think how Grey Infrastructure is sited
- Green Infrastructure supports many planning and community goals
- Many actors have different pieces of a finished puzzle

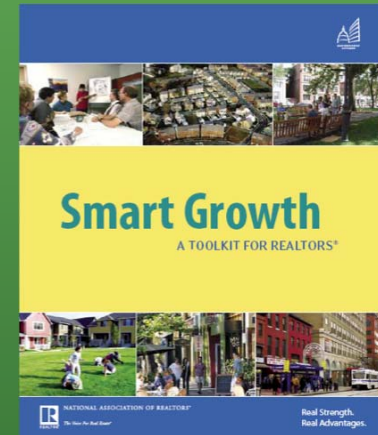
Key References



CITY TREES sustainability guidelines & best practices
<http://www.treetrust.org/pdfs/citytrees-bonestroopilot.pdf>



Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities
<http://www.ite.org/bookstore/RP036.pdf>



Smart Growth: A Toolkit for Realtors®
http://www.realtor.org/smart_growth.nsf/pages/toolkit_smart_growth