

Managing Mature Willow Oaks

- Tree canopy benefits in Burlington are provided by willow oak trees planted over 80 years ago.
- In a 2012 storm, one tree fell. The oak next to it had a lean, so it was cut down. Suspected defects were noted in 28 survivors. The City carefully explored its management options.
- 3 unhealthy trees were removed. 25 trees were improved with specified reduction pruning.
- 3 years later, 24 trees are thriving. Risk and maintenance are low, and benefits are high.

- The flare gets broader, adding stability.
- If the roots are not damaged by work on curbs and sidewalks, support is retained.
- If the load in the crown is reduced, the tree's useful life is extended indefinitely.



#1: Inspect the Flare and Roots

- Objective: Maximize health, safety, and longevity. Minimize liability and expense.
- Gather facts from the tree before guessing.
- Start inspecting the fulcrum of the lever arm, where the tree joins the earth.



Typical curb-tree interaction



The flare spreads over the curb, and replaces it.

Tire damage is scarred
over;
compartmentalized





New root growth replaces the old.



Root damage during concrete replacement is detrimental to tree health and structure. Alternative solutions avoid this damage.



Any damage should be viewed in context of the entire flare. Trees can tolerate the loss of some structural integrity, more when the load is reduced.



Buttress roots spread on both sides of the damaged area, compensating for loss of strength.

Response growth over fungus:
Support is on the outside of the trunk



#2: Specify pruning.

- Reduce load
- Reduce risk to average, as low as reasonably practical
- Retain tree volume, value, beauty, benefits.



Vigorous sprouts = inner canopy



Reduce branches back to buds.





Small cuts at the periphery
leave a more symmetrical
and stable asset.



Previous pruning: A heavier reduction was specified, with cuts in a line.



Cuts >10 cm are too large. Too much is removed. The tree's natural form is lost, with heavy sprouting. Over time, the tree can recover.



3 years after removal of 10%-15% of the crown, 10'-15'. This looks like a sustainable solution.

- Small cuts on the outside stimulates new growth on the inside.
- Reduction pruning causes trees to 'grow downward'.



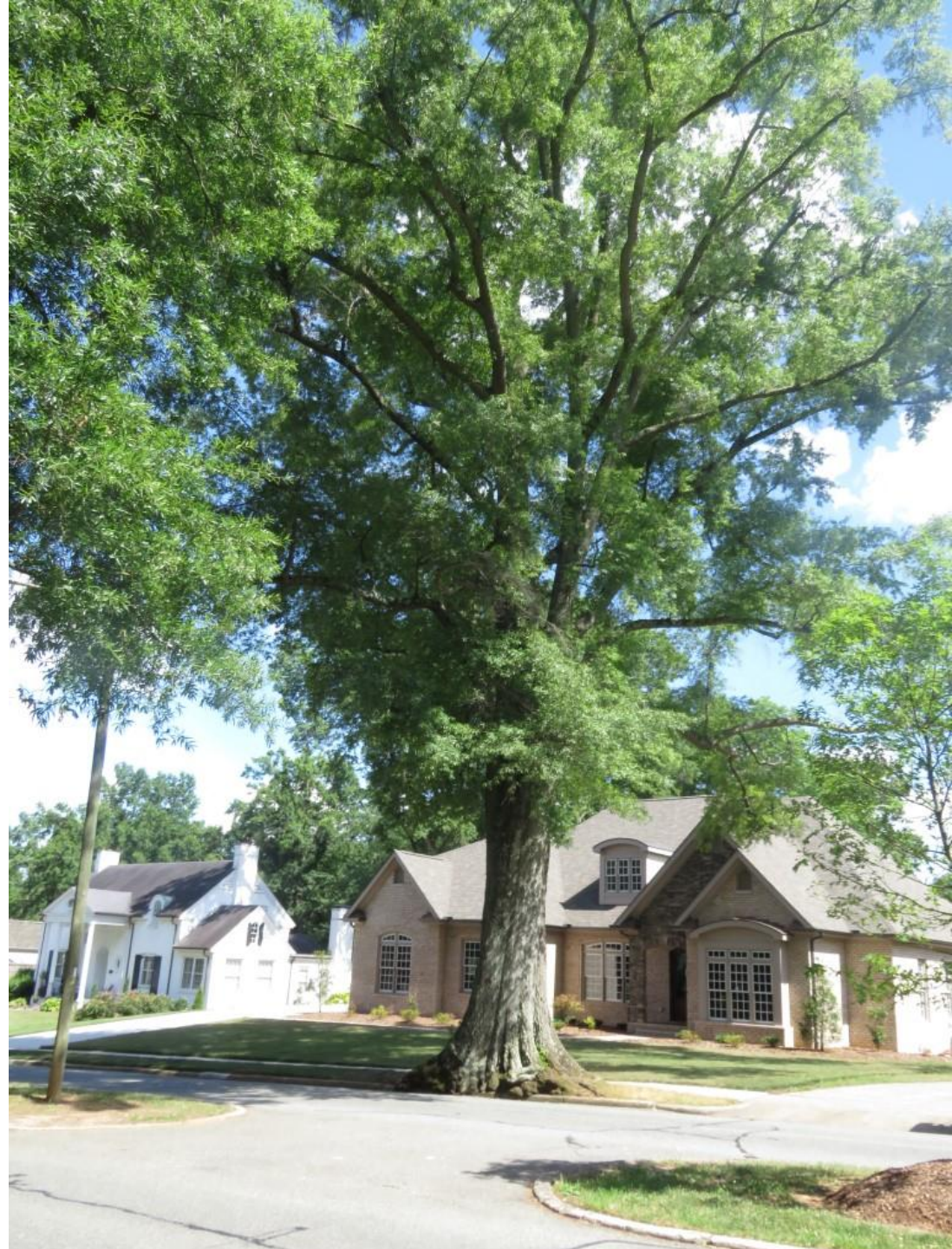
Response growth in a natural form





Limbs sprawling over road were reduced to restore symmetry and stability. The tree's response over 3 years, generating interior growth, indicates it will not need more reduction in the foreseeable future.

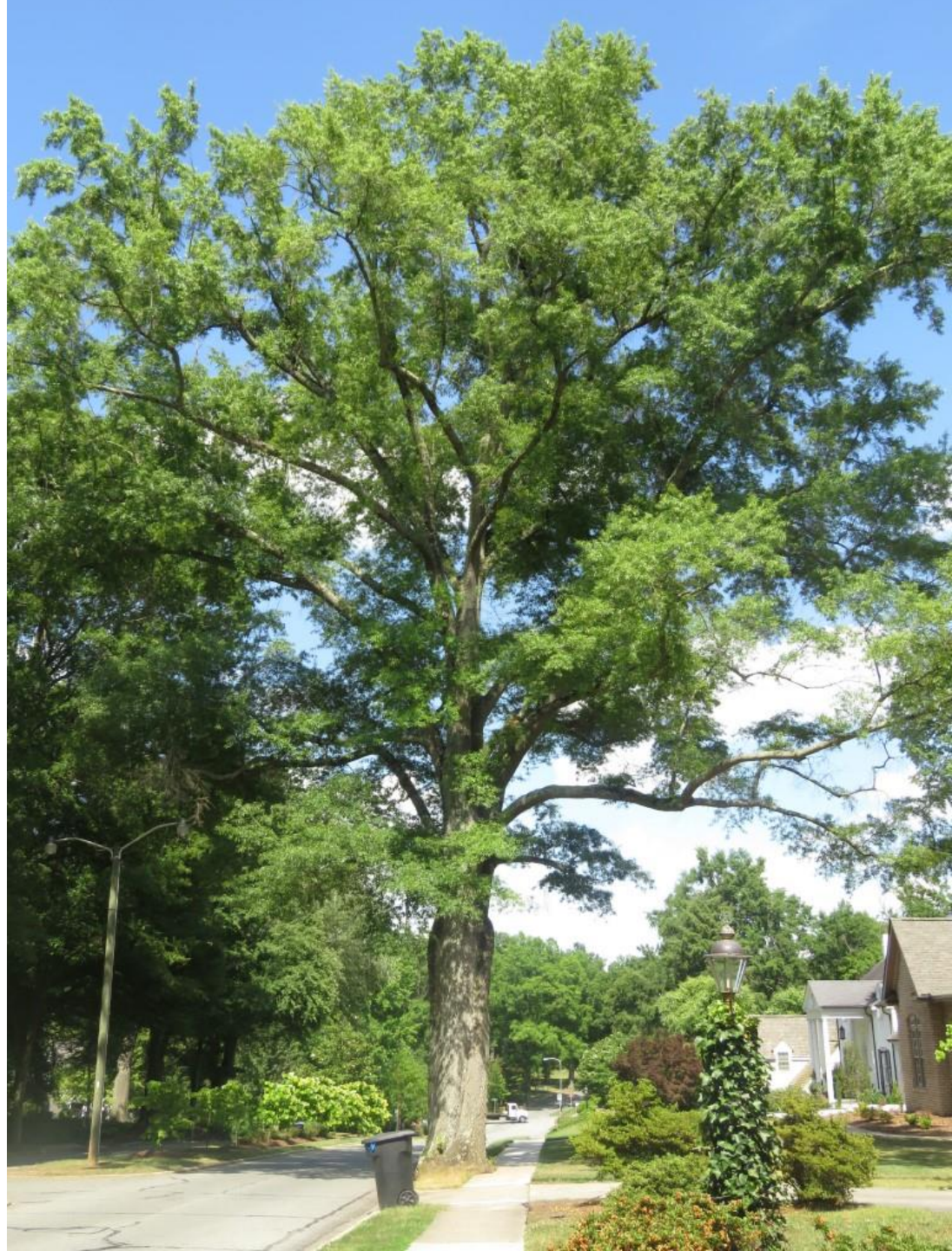
- A typical tree on this street: 90 feet tall and 90 years old, with a potential 90 or more left to go.
- Lower branches are retained. The trunk gets thicker, and the center of gravity is lowered by new interior growth.
- Smaller and safer, with a long period of mature vitality ahead.



- The cathedral-like quality of the tree canopy is retained when sprawl is managed.
- A long column on the tension side builds stability.

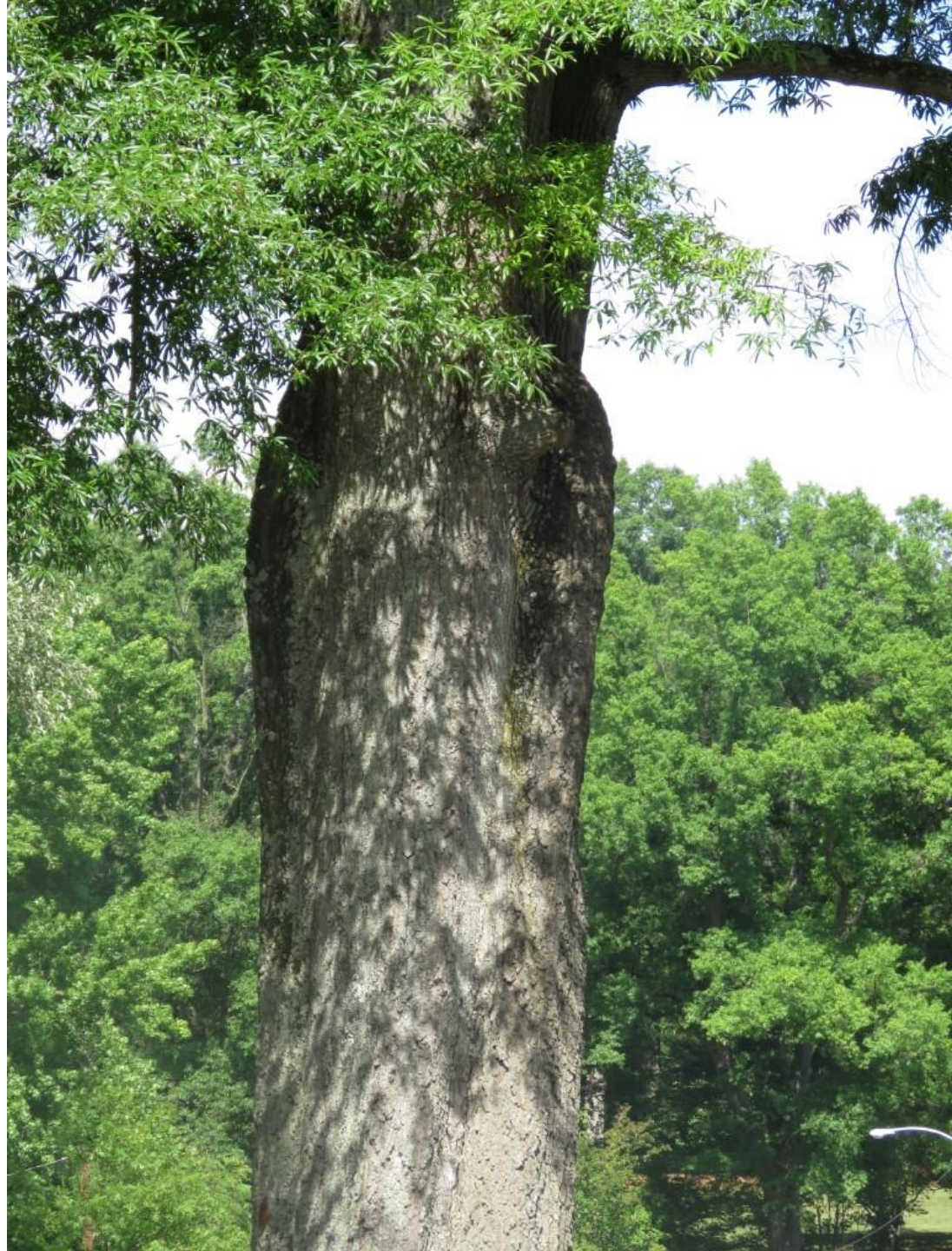


- 3 years after the top was reduced 10'-15', the natural form is restored.
- The base of the tree was not weakened.
- Limbs over the road were left to connect with the tree across the street.
- Continuous canopy is the goal.



Mitigating Defects

- “Elephant Ear” = included bark.
- Reduction pruning lessens strain and resists splitting.
- Cabling minimizes pruning and maximizes canopy.





Parallel branches weaken structure. On the upper leader, downward growth is reduced. On the lower leader, length is reduced

- Trees naturally spread into open areas over roads, wires, and houses.
- Routine pruning limits sprawl and risk of failure.
- Long-term clearance is gained by a small input of resources.



Mature Tree Management by Specified Reduction Pruning:

- Causes no loss to property values, or disruption to neighborhoods
- Costs far less than tree removal. Does not rely on unreliable replacement of trees
- Retains all of the benefits of the mature tree canopy over every community