

# URBAN FORESTRY

## Why Is It Important?

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*City of Carmel, Indiana*



# What is the urban forest?

## Where is it?

Trees:

- In cities and towns
- In neighborhoods and parks
- In commercial and retail sites
- Along highways
- In cemeteries
- In urban woodlots



# Summary:

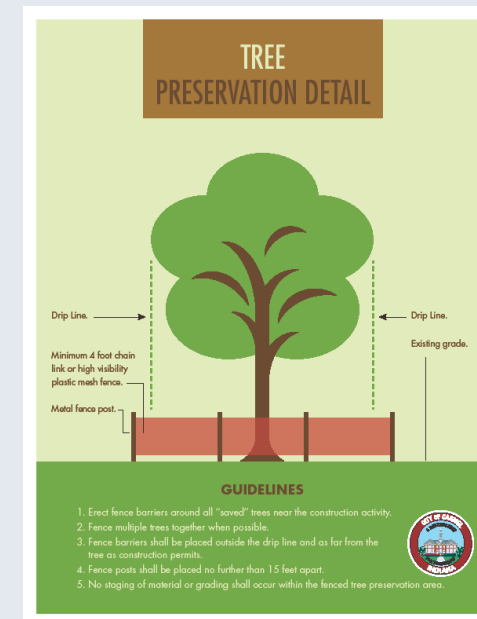
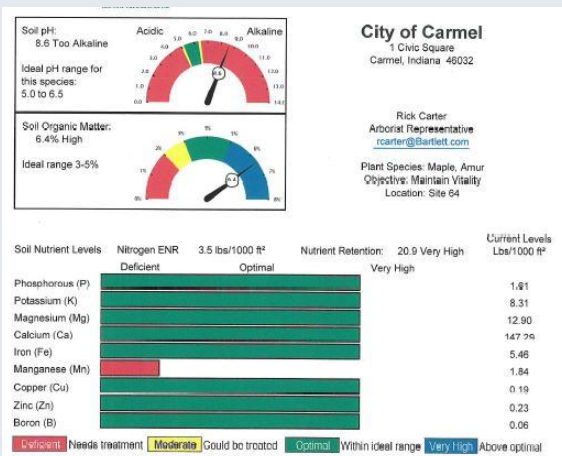
- The City of Carmel Urban Forestry Program
  - Directs the landscaping efforts through all aspects of private development.
  - Manages existing greenspace health throughout all city-owned properties.
- These efforts are constantly being confronted with environmental and biological factors. The basic means of overcoming the stresses that beset urban greenspace and restoring the vigor of the community forest is to properly manage habitat protection and creation.
- The key to success for an area-wide effect is implementing innovative policies through the city planning and zoning process.
- Community education and participation are essential tasks of the emerging professional urban forestry program.



# The Practice of *Urban Forestry*

is the protection, conservation, maintenance, removal,  
and planting of trees in urban areas.

- Planning and zoning landscape ordinance requirements
- Urban specific plant health care program
- The no mow philosophy - naturalizing areas
- Managing tree preservation areas and guidelines



# Planning and Zoning Landscape Ordinance Requirements

## Carmel Unified Development Ordinance

### 5.19 LS-01: Commercial Landscaping Standards

These Landscaping Standards (LS) apply to the following zoning districts:

**B1 B2 B3 B5 B6 B7 B8 MC I1 M3**

- A. Purpose and Intent: The purpose of *Section 5.18: Commercial Landscaping Standards* is to protect and enhance the community's environmental, economic and aesthetic quality, thereby contributing to the overall objective of promoting the public's health, safety and general welfare. This section is intended to enhance, preserve and develop Carmel's environment by:
1. Promoting compatibility between land uses through reducing the visual, sound and lighting impacts of commercial and residential developments;
  2. Managing development impacts by planting trees and landscaping in order to increase the real estate values of properties; and
  3. Creating innovative and environmentally-friendly landscape designs that enhance and define the public and private spaces.

### 7.19 OP-01: Open Space Standards

This Open Space Standards (OP) section applies to the following types of development:

**CS RS TS CM**

# Planning and Zoning Landscape Ordinance Requirements

## Carmel Unified Development Ordinance

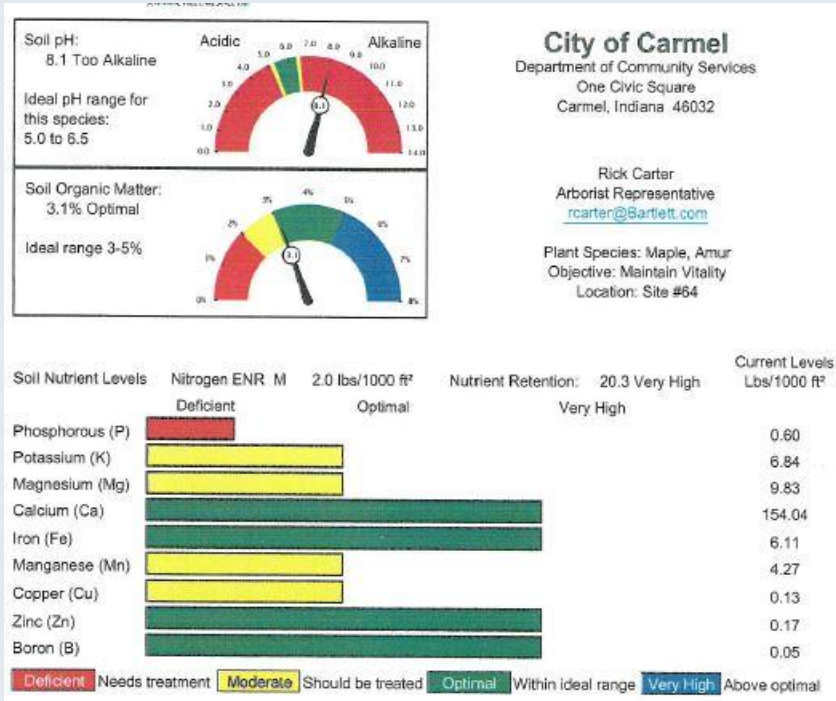
- G. Innovative Landscape Design Applications: At least two (2) innovative and environmentally-friendly applications are required and shall be described and shown on the landscape plan. When within Carmel City limits, examples in *Section 5.19(G)(1)(a) through Section 5.19(G)(1)(d)* may also count toward stormwater quality BMPs, as defined in *Chapter 700 of the Stormwater Technical Standards Manual* established by *Carmel City Code §6-186*.
1. Examples of Applications:
    - a. Rain gardens consistent with water quality calculations contained in *Chapter 700 of the Stormwater Technical Standards Manual*.
    - b. Bioswales consistent with water quality calculations contained in *Chapter 700 of the Stormwater Technical Standards Manual*.
    - c. Pervious surfaces, such as pavers, concrete and asphalt consistent with water quality calculations contained in *Chapter 700 of the Stormwater Technical Standards Manual*.
    - d. Green roof system covering at least twenty-five percent (25%) of the roof area
    - e. Native trees making up a significant percentage (generally 75%) of the total tree count as determined by the Urban Forester. For purposes of this section, a native tree may be considered a tree species with some form of a cultivar or variety of an Indiana native tree. (See *Appendix D: Recommended Tree List*)
    - f. Existing tree protection - Proper tree preservation of at least ten percent (10%) of the Bufferyard or twenty-five (25) inches of trunk diameter (DBH) within the property.
    - g. Foundation planting areas that are asymmetrical or curvilinear provided that the required amount of space is landscaped.
    - h. Parking Lot Interior Planting areas that are asymmetrical or curvilinear, provided that the required amount of space is landscaped.
    - i. Soil Volume Replacement Technologies to provide connectivity of planting beds or to provide each tree with at least 200 square feet of root volume as determined by Urban Forester.
    - j. Rubber sidewalks or similar technology within ten (10) feet of any tree or as determined by Urban Forester.



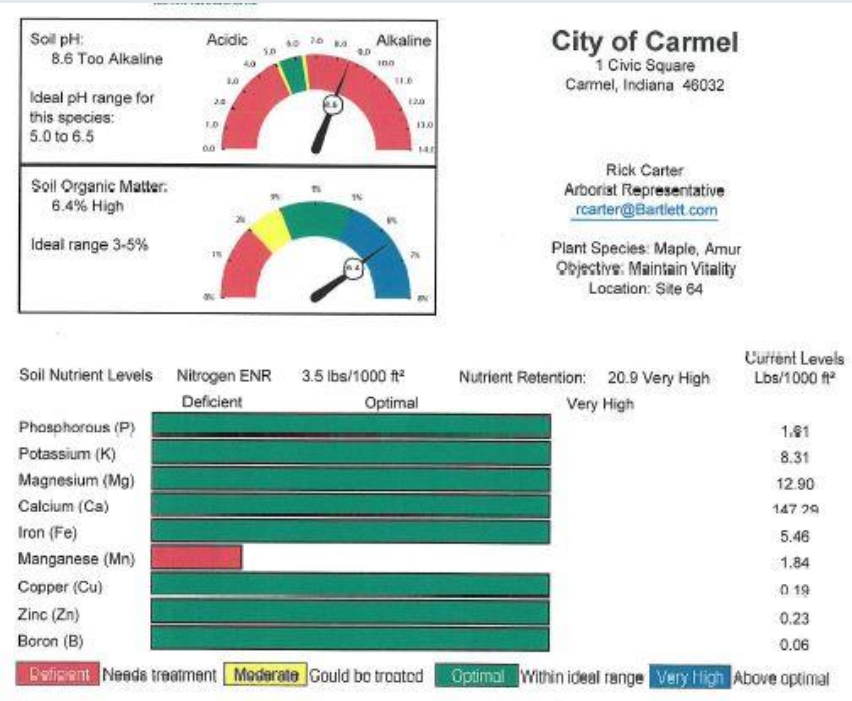
# Urban Specific Plant Health Care

## Soil Sample Tests

Before



After



# Urban Specific Plant Health Care

## i-Streets Statistical Analysis – Eco Benefits

protection, conservation, maintenance, removal, and planting of trees

### **BASE - 2010 – 21,434 street trees**

Greenhouse Gas Benefits

\$7,089

918,428 lbs CO<sub>2</sub> avoided

1,440,310 lbs CO<sub>2</sub> sequestered

Water Benefits

\$111,060

17,911,673 gallons saved

Energy Benefits

\$38,066

419,600 kWh saved

9,797.2 Therms saved

Air Quality Benefits

\$13,647

11,123.9 lbs pollutants saved

### **Achieved - 2017 – street trees 29,240**

Greenhouse Gas Benefits

\$10,012.14

1,323,987.00 lbs CO<sub>2</sub> avoided

1,983,804.01 lbs CO<sub>2</sub> sequestered

Water Benefits

\$183,376.75

29,576,895.46 gallons saved

Energy Benefits

\$65,767.99

757,141.04 kWh saved

14,678.72 Therms saved

Air Quality Benefits

\$20,504.26

13,951.85 lbs pollutants saved



# The No Mow Philosophy - Naturalizing Areas

BEFORE



AFTER



# Tree Preservation Areas and Guidelines

## Tree Preservation Area

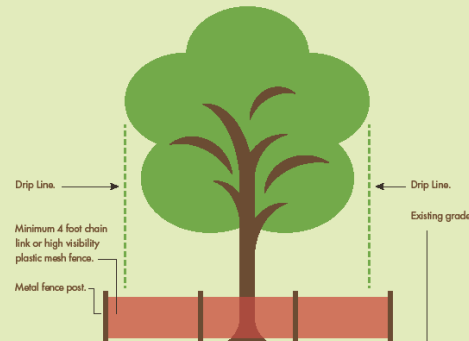


### Habitat and Wildlife Protection (Private Property)

*The Carmel Urban Forester shall regulate the planting, maintenance, and removal of preservation area trees to insure public safety and to preserve the value, aesthetics and ecology of tree preservation areas.*  
(Department of Community Services: 317-571-2417)

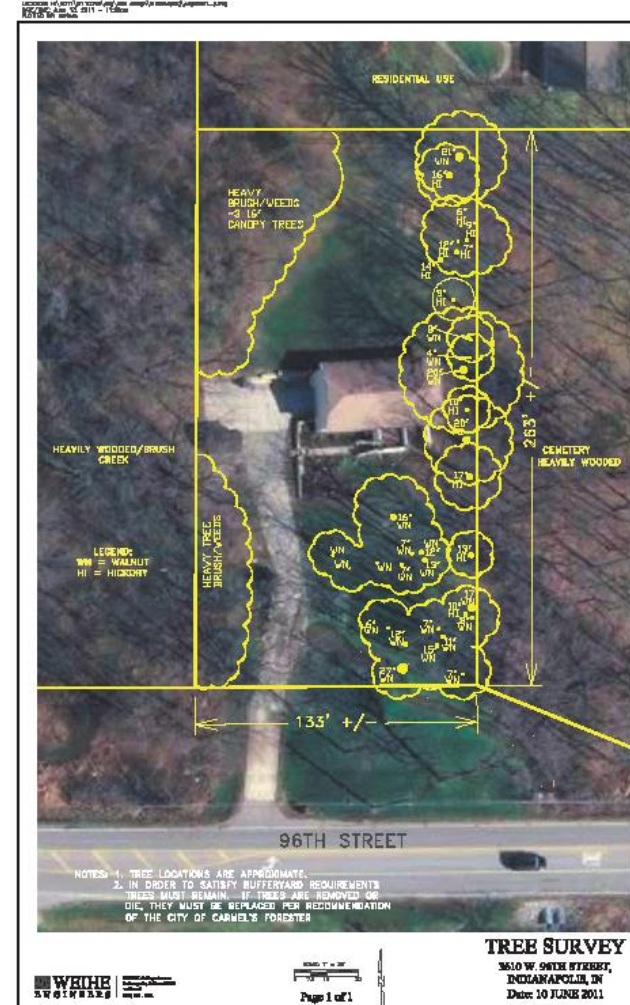
- NO Mowing
- NO Dumping of leaves or debris
- NO Removal of vegetation other than exotic and invasive vegetation and hazardous trees
- NO Construction of any permanent or semi-permanent structures
- NO Seeding; including grass seed, sod or the planting of any garden

## TREE PRESERVATION DETAIL



### GUIDELINES

1. Erect fence barriers around all "saved" trees near the construction activity.
2. Fence multiple trees together when possible.
3. Fence barriers shall be placed outside the drip line and as far from the tree as construction permits.
4. Fence posts shall be placed no further than 15 feet apart.
5. No staging of material or grading shall occur within the fenced tree preservation area.





# For More Information:

<http://www.carmelurbanforestry.com>

- Society of Municipal Arborists accredited
- Indiana Bird Town – Indiana Audubon Society
- Tree City USA – Arbor Day Foundation





# Watch Your Urban Forest Grow!

