TREES FOREVER

This guide includes basic guidelines for project selection, site evaluation, and developing a site plan.

Project Selection

The site for planting depends on the goals for your community. If your community has completed a tree inventory and forest management plan, you have a blueprint for areas where trees are needed. If you do not already have such a plan, you might consider one of the following tree-planting projects:

Residential energy efficiency plantings

In public right-of-way along streets in town

At retirement homes

At non-profit and service organizations

In and around parking lots

At community entrances

At parks and playgrounds
  golf courses, ball fields, tennis courts, athletic fields, stadiums, recreational trails

At schools and colleges

Near public buildings
  city halls, libraries, fire and police stations, detention centers (jails, prisons), civic centers, community buildings, courthouses, water treatment facilities

At hospitals

Near churches

In cemeteries

At fairgrounds

Near public transportation centers
  airports, railway stations, bus terminals, transit centers

In industrial parks

Along riparian areas
  riverfronts, lakefronts, stream banks, holding basins or retention ponds

Site Evaluation

Sketch a site plan that is drawn to scale and includes a North arrow. Consider and note on the plan the following factors:

1. Design Considerations

  A. Locate all utilities

  • Electrical

  • Telephone and TV cables

  • Water lines

  • Sewer lines

  • To locate utilities, call *Iowa One Call* in Iowa or *JULIE* in Illinois at 811

  B. Note good views to be framed or enhanced

  C. Identify undesirable views to be screened

D. Identify site clearances that need to be maintained for safety – such as road, street, driveway, or walkway intersections.

E. Determine the character of the site:

- Informal: many existing trees, random spacing, naturally occurring water features, wildlife, more nature than buildings.
- Formal: may be a major street or boulevard, commercial or retail area, civic space where many people gather; higher proportion of buildings and circulation areas than landscaped areas.
- A combination of informal and formal.

2. Environmental Considerations

A. Soil conditions

- Good productive soil - no major modification needed.
- Poor soils (compacted, mixed, backfill material) – may need to replace or amend.
- Soil pH - trees can be affected by alkaline or acid soils (e.g., pin oaks will not tolerate basic soils). If soil has been mixed or disturbed, or if unusual pH is suspected, such as near a gravel road, you may need to have your soil tested.

B. Hardiness zone

- Choose plants that are hardy in your zone or a colder zone. Here's a link to the Arbor Day Foundation's hardiness zone map: *www.arborday.org/treeinfo/zonelookup.cfm*

C. Moisture conditions of the site

- Choose trees that can tolerate the typical moisture conditions of the site
- Determine if there is a risk the site may flood
- Consider the aspect of the land (i.e., flat, north-, east-, south-, or west-facing slopes) and how that will affect the trees you plant.

D. Special considerations

- Are you planting in an area that experiences heavy foot traffic, air pollution, or heavy winds? These conditions may require you to address compaction problems or to use stakes or other devices to protect trees.
- Are plantings needed to buffer noise?
- Are plantings needed to stop existing erosion?
- Do you need to select salt-tolerant species?

3. Designing for Energy Efficiency

All trees in an urban area help save energy in the summer and winter. Trees are like mini-air conditioners that help cool their immediate surroundings through evaporative cooling. Shade trees also help cool built surfaces such as driveways, parking lots, or sidewalks. When not shaded, these surfaces absorb heat and release it back to the environment, causing urban areas to be as much as 7° F warmer than their rural counterparts (called the Heat Island Effect). In the winter, trees collectively help moderate heating energy usage by breaking up and redistributing cold winds.

When designing for a particular site, trees can be strategically planted to help maximize energy savings.

Shade trees should be planted on the east and west sides of the building. Generally trees within 60 feet of the structure provide some direct shading to buildings in the summer and therefore maximize energy savings. To maximize energy savings, choose a large-sized tree (at maturity) such as an oak, rather than an ornamental tree. Avoid planting trees directly south of a building if they are going to block solar warmth in the winter. If a shade tree is planted to the south, prune the branches gradually, over several years, to minimize branching that can block winter sun. Southwest and southeast corners of buildings make good locations for shade trees. Trees can also help shade driveways and sidewalks to keep those surfaces cooler.

Windbreaks should be planted on the north and west sides of buildings to block prevailing winter winds from the northwest. Evergreen trees are most commonly used for windbreaks because they retain their leaves/needles year-round and have low branching. Consider using a variety of species rather than a single species. Shrubs and deciduous trees can also be included in your windbreak.

Good care and maintenance of trees after they are planted is critical so that trees reach their maximum lifespan, size, and energy-saving potential.

Develop a Site Plan

A site plan is a sketch that shows the scale of your project area, existing plants and infrastructure features, species to be planted, and locations where each species is to be planted. Most tree grants require a site plan so funders know where you are planting which species. This plan should be completed to a scale that is appropriate for the size of the project and should contain the following information:

- Scale (e.g. 1"=50')
- North arrow
- Plant locations, species and size planned
- Location of overhead and underground utilities

Trees Forever encourages you to use design professionals and tree specialists when possible – either as consultants or as community volunteers. If your community has a limited budget or professionals are not available, talk with your Trees Forever field coordinator about the assistance you need and the best sources for getting that assistance. You can submit your plan to your field coordinator to get input. Depending on the complexity of your design you may need professionally designed plans. Below is a list of professionals you may wish to consider working with and the skills they can offer.
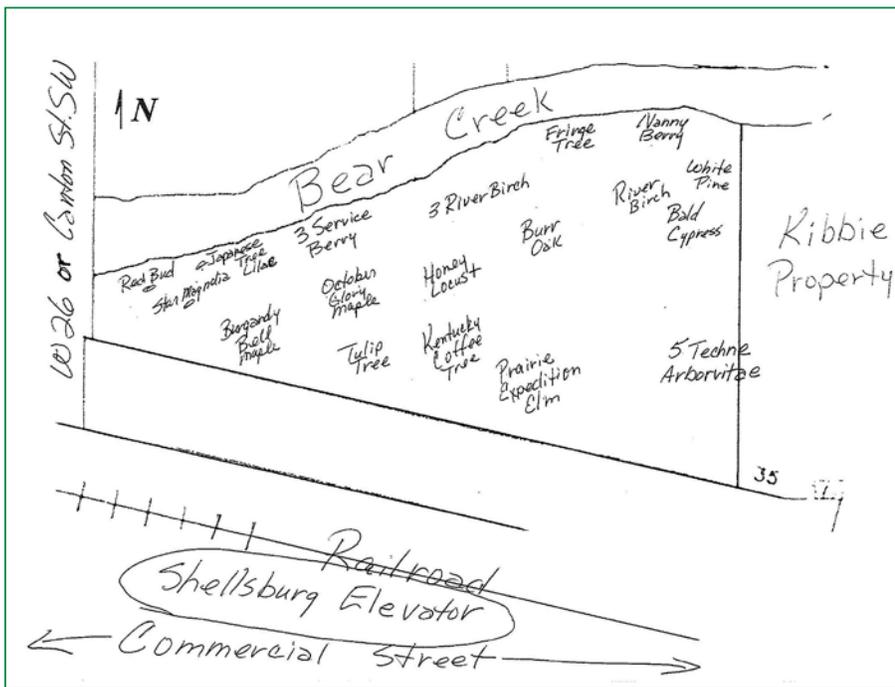
Landscape Architects: design assistance, long-term planning, tree selection, and maintenance considerations.

Landscape Designers: design assistance, tree selection, and maintenance considerations.

Horticulturists: tree selection, maintenance needs, and advice on diseases.

Urban Foresters: tree selection, maintenance needs, and advice on diseases.

Arborists: tree selection, maintenance needs, and advice on diseases.

Design Review Checklist
Scale and North arrow are included
Utilities, sidewalks, streets, buildings are shown on plan
Existing trees are noted
Proposed trees named (specific varieties) with size and root condition indicated (bare root, container, or balled and burlapped)
Trees are hardy for the area and are appropriate for the local site conditions
Tree spacing is adequate to perform desired use
If planting for energy efficiency, trees are properly located
The proposed plan does not create any dangerous or undesirable condition or maintenance problem such as:

- If trees are proposed under electric lines, is an appropriately sized variety chosen?

- Is there adequate site clearance for traffic at streets, alleys, and driveways? (Unless local code is more limiting, consider the minimum distance from the intersection of street curbs to be 35 feet, and no closer than 10 feet to the nearest alley or driveway)

- Will trees chosen contribute messy fruit in a pedestrian or parking area?

- Will fruits or nuts be produced that may cause problems in the future?

- Are trees in front of swings, slides, or other existing structures that may be harmful to children or the tree?

- Are trees protected from car overrun? Are there parking barriers?

- Will snow removal be harmful to the trees?

TREES FOREVER
Planting a better tomorrow™

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