USDA Forest Service

Urban Forest Connections
webinar series

Second Wednesdays | 1:00 – 2:15 pm ET
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MONITORING URBAN TREES: SURVIVAL, GROWTH, AND ENERGY-SAVING PERFORMANCE

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Arbor Day Foundation
Part III: A Comparison of Survey Methods to Estimate Survivability of Energy-Saving Trees in Houston, Texas

Pete Smith, Arbor Day Foundation
A Strategic Tree Planting Program
Welcome!

Welcome to Energy-Saving Trees, a unique program designed to help you better understand where to plant trees on your property for maximum energy savings. This program is made possible by the Arbor Day Foundation and JEI.

At JEI, we're committed to a greener, healthier world. Trees around homes will not only help reduce the amount of energy your home requires, but they also add to your property value, reduce your carbon footprint, improve the air quality, and more effectively catch stormwater runoff. It is our intention that the free trees we provide be a gift to you and your community.

JEI is proud to sponsor this program and provide you with up to 2 free trees. In less than ten minutes, you can reserve your free trees. Thanks for participating in this exciting program.

Available trees
Eastern Redbud, Norway Spruce, Red Maple, River Birch

Find your home  (Step 1 of 4)
Type in your address below to get started.

Street address:  
3400 S. 27th St.

City, State:  
Lincoln, NE

ZIP code:  
68502

Start

Ordering for multiple homes?
Place your trees (Step 2 of 3)
Begin placing trees around your home by clicking “Add a tree”, then “Checkout”.

To add a tree, drag the circle below to the desired area near your house. Once you drop the circle, you’ll be able to specify the type of tree you’d like to plant. You can order up to 3 free trees.

Placement guide
For higher energy savings, place your tree on the Northwest or North side.
Tree Selection & Energy Savings

Place your trees (Step 3 of 4) → Back → Checkout

1. Norway Spruce
   * Placed at: ables
   * Est. savings: $24.72/yr
   * Location: Poor, Good, Ideal

2. Eastern Redbud
   * Placed at: ables
   * Est. savings: $16.20/yr
   * Location: Poor, Good, Ideal

3. River Birch
   * Placed at: ables
   * Est. savings: $16.20/yr
   * Location: Poor, Good, Ideal

4. Red Maple
   * Placed at: ables
   * Est. savings: $16.20/yr
   * Location: Poor, Good, Ideal

Checkout (Step 4 of 4)

Mapping address:
3400 S 27th St
Lincoln, NE 68502

Your trees (Savings shown are in year 20)

- **Norway Spruce**
  - Estimated savings: $24.72/yr
  - kWh benefits: 88.57 kWh/yr
  - Thermal benefits: 22.64 Therm/yr

- **River Birch**
  - Estimated savings: $16.20/yr
  - kWh benefits: 65.64 kWh/yr
  - Thermal benefits: 14.09 Therm/yr

Powered by: i-TREE
Models of Tree Delivery

Direct Delivery
Models of Tree Delivery

Local Pick-Up
Projected 20 year cumulative values:

- **Total Trees Planted**: 135,168
- **Total Homeowners Engaged**: 76,032
- **Carbon Sequestered/Avoided**: 298,150 metric tons (C)
- **MWh Saved**: 294,043
- **Therms Saved**: 3,833,418
- **Energy and Community Benefits**: $87 Million
- **Leveraged by Our Partners**: $3.2 Million

*Projected 20 year cumulative values*
Where are we going?
SurveyMonkey

We are assessing the survival and care of trees distributed in spring 2015 as part of the Energy-Saving Trees program, a partnership between the Arbor Day Foundation and CenterPoint Energy. Please answer the following questions about your tree or trees. Your responses will help us improve the program for future tree distributions!

1. Please enter your order number (provided in the email you received to access this survey):

2. How many trees did you receive? Did you plant your tree(s) after you brought them home?
   - I received only one tree and planted it when I brought it home
   - I received only one tree, but never got around to planting it in the ground
   - I received two trees and planted them both
   - I received two trees, but only planted one of them
   - I didn’t plant either of the trees I received

- Survey sent to 848 customers, accounting for all 1,591 trees
- 267 surveys completed, 31.5% response rate!
Results

• High ‘survivability’ for the intended address

• 11% of trees distributed planted elsewhere

• 6% of trees ‘not planted’
SurveyMonkey

Centerpoint EST SurveyMonkey: Reported Stewardship

trees planted in the ground: 469
protected trunk during transport: 300
91% of trees planted away from power lines: 426
88% watered weekly: 420
72% added mulch around root zone: 342
60% avoided staking trees: 277
86% trees left unpruned: 405

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
0 50 100 150 200 250 300 350 400 450

trees planted in the ground protected trunk during transport trees planted away from power lines watered weekly added mulch around root zone avoided staking trees trees left unpruned

ENERGY-SAVING TREES
Arbor Day Foundation

Davey
Proud Solution for a Greener World
Field Audit

- 320 trees randomly chosen
- 289 tree audits completed = 18.2% sample
Field Audit

Results

- 50% of trees ‘alive’ at the registered address
- 10% of trees ‘not planted’
- 40% of trees ‘missing’
Field Audit

Centerpoint EST Field Audit: Condition & Stewardship Statistics

- Trees planted in the ground ALIVE: 146
- Trees w/o utility conflict: 145
- Trees w/o fine twig dieback: 126
- Trees w/o lower trunk damage: 116
- Trees w/ 'vigor' rating = 'good': 113
- Trees w/ 'mulch': 88
- Trees w/o 'staking': 108
- Trees w/o pruning evidence: 146

99.3%, 86.3%, 79.5%, 77.4%, 60.3%, 74.0%, 100.0%
Centerpoint EST SurveyMonkey: Reported Disposition of Trees by Household

- Trees planted at recipient’s address & ALIVE: 76.4%
- Trees planted elsewhere & ALIVE: 10.5%
- Trees planted elsewhere & DEAD: 0.9%
- Trees not planted or still in pot: 5.8%
- Trees not planted or still in pot: 10.4%

Centerpoint EST Field Audit: Survivability Statistics

- Trees planted at recipient’s address & ALIVE: 50.5%
- Trees missing from recipient’s address: 39.1%
- Trees not planted or still in pot: 10.4%
Comparison of Methods

SurveyMonkey
- Quick and easy
- Inexpensive
- Supports good customer relations

Field Audit
- Requires planning, time & $$$
- Credible third-party
- Requires persistence
What’s Next?

• Continue monitoring using both methods
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• Improve systems to improve outcomes
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- Evaluate planting location data
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• Continue monitoring using both methods

• Improve systems to improve outcomes

• Evaluate planting location data

• Make regulatory case for Energy-Saving Trees
Thanks!

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