

**Agreement for  
Specification of Work  
for a  
GIS-based Public Tree Inventory  
and Associated Services  
for  
City of Franklin, Indiana**

October 24, 2011

The following work specification details all services and deliverables including deliverable products and work to be performed by Davey Resource Group (hereinafter referred to as Davey) in connection with the City of Franklin, Indiana (hereinafter referred to as Client). This document does not replace any prior correspondence, proposals, RFP's, and written correspondence, but is instead part of a development process that will move the project from proposal, to final delivery and/or acceptance by the client.

Davey and the Client project managers will be the primary point of contact for all critical project related communication. This will ensure frequent communication so that both parties are informed of project progress, challenges, and any resultant changes in requirements or schedules. Projected delivery dates contained in this document are approximate and based on conditions at the time of the contract and/or agreement. Changes to this agreement should be noted in writing to both the client and Davey representative with documentation of the need for a change. Changes to either the client representative or the Davey representative should also be noted in writing.

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Client Contact Information

*Primary Contact:* Jim Farr  
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Davey Resource Group Contact Information

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*Mailing Address:* Davey Resource Group  
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### ***Schedule of Deliverables***

Deliverable	Comments	Estimated Delivery Date	Price
Task One: Tree Inventory  <i>Attachments A &amp; B</i>	Inventory trees, stumps, and planting sites along Public Streets, Public Parks, and Public Facilities.  Tree inventory data will be delivered as ESRI® shapefile and/or geodatabase, an Access™ database, an Excel™ spreadsheet, and i-Tree Streets project file.	December, 2011	\$3.79/site
<b><i>Depending on the final quantity of trees inventoried and the remaining budget, the client may select one or more the of the following options:</i></b>			
Options for Task Two: Multi-Year Management Plan <i>Attachment C</i>	One bound, color copy and one electronic PDF copy on CD-ROM Extra printed copies \$175	Within 60 days of project completion	\$3,100
Inventory Summary Report <i>Attachment D</i>	Brief written analysis of inventory data and i-Tree Streets analysis.  One printed color copy and electronic version on CD-ROM		\$520
Tree Inventory Workbook <i>Attachment E</i>	Organized listing of all inventoried sites and maintenances.  One printed color copy and electronic version on CD-ROM		\$300
Option for Task Three: TreeKeeper® 7.7 – Subscription <i>Attachment F</i>	Tree Management Software	Within 60 days of project completion	\$2,100 (one-year fee)
Software Training & Support	One comprehensive, on-site training session performed on day of TreeKeeper® installation and set-up and one year of unlimited phone support.		\$2,300
<b>Total (Not-to-Exceed)</b>			<b>\$30,000</b>

### ***Notice of Disclaimer***

This pricing is based on inventorying an estimated 8,750 trees, stumps, and planting sites. Davey provided this estimate at the time the proposal was prepared using our best educated guess. As with any estimate, Davey does not provide assurance that this number is accurate to any degree of certainty. However, any significant deviation between actual and estimated tree counts will be identified as soon as possible while Davey's inventory staff is on the job. It is Davey's understanding that the Client would like to capture as much of the public tree population as possible; therefore, optional services have been listed as additional tasks so not to exceed the project's budget.

Inventory data provided by Davey are based on visual recording at the time of inspection. Visual records do not include individual testing or analysis and do not include aerial or subterranean inspection. Davey is not responsible for discovery or identification of hidden or otherwise non-observable hazards. Records may not remain accurate after inspection due to variable deterioration of inventoried material. Davey provides no warranty with respect to the fitness of the urban forest for any use or purpose whatsoever.

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, assess their condition, and recommend measures to enhance the beauty and health of trees, while attempting to reduce risk. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the failure of a tree. Trees are living organisms that fail in ways that cannot always be predicted. Conditions are often hidden within trees and below ground, and can develop quickly after an inspection. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments cannot be guaranteed.

Important: Know and understand that this basic visual assessment is confined to the designated subject tree(s), and that this consultation was performed in the interest of facts of the tree(s) without prejudice to or for any other service or any interested party.

### ***Client Responsibilities***

- Provide Davey with all maps and other information necessary at no charge. This includes, but is not limited to: digital orthophotographs; available GIS data layers, electronic or paper copies of maps for roads; pavement widths; right-of-way widths; boundaries and utilities; and an electronic file or printed list of street names and end points.
- The Client is requested to coordinate with Davey project staff to host and conduct an informational kick-off meeting immediately prior to the start of the fieldwork.
- Provide daily contact information and directions as needed during the inventory process.
- For the management plan, the Client is requested to complete an urban forestry management questionnaire, provide an electronic or printed copy of the current street tree ordinance, landscape regulations, and other urban forestry program information as needed.

**AUTHORIZATION**  
***Specification of Work***  
***for***  
***GIS based Public Tree Inventory and Associated Services***  
***City of Franklin, Indiana***

Total (not to exceed).....\$30,000

***Purchase Order Number:*** \_\_\_\_\_

***Authorized Client Representative***

Signature:\_\_\_\_\_ Date:\_\_\_\_\_

Title: \_\_\_\_\_

***Davey Resource Group Representative***

Signature:\_\_\_\_\_ Date:\_\_\_\_\_

Title: \_\_\_\_\_

## **Attachment A**

### **Street/Park/Public Space Tree Inventory**

#### **Data Field Definitions**

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The data fields that will be collected for each tree, stump, and planting site during the inventory are defined as follows:

- **Mapping coordinate.** X and Y coordinate locations.
- **Area.** Tree locations will be identified by subdivision, management area, park name, or other discrete location/property name as determined by Davey Resource Group and the Client.
- **Location.** The tree's physical location in relation to public ROW and/or public space will be recorded.
- **Blockside and Address.** Davey Resource Group will identify the location of each street tree and planting site so that they can easily be identified for future maintenance work. Street trees and planting sites will be located using an address number, street name, side of lot, tree number, and blockside information (on street, from street, and to street). Each tree and/or planting site at an address will receive a Site Number to aid in locating the site. Park and open space trees are organized by unique tree site number and property name.

**Land Use:** A description of the type of area where the tree is growing:

1. Single-family residential
  2. Multi-family residential - duplex, apartments, condos
  3. Industrial/large commercial
  4. Park/vacant/other - agricultural, riparian areas, greenbelts, park, etc.
  5. Small commercial - minimart, retail boutiques, etc.
- **Species.** Trees will be identified by genus and species, with the exception of genera such as *Crataegus* or *Malus*, where field identification of species is often not practical.
  - **Diameter.** Diameter is measured in inches at 4-1/2 feet above the ground, or diameter-breast-height (DBH).
  - **Stems.** The number of stems a tree has will be recorded.

- **Condition.** In general, the health and structure of each tree will be recorded in one of the following categories based on visible root, trunk, scaffold branch, twig, and foliage conditions at the time of the inventory and adapted from the rating system established by the International Society of Arboriculture and based on visible root, trunk, scaffold branch, twig, and foliage conditions at the time of the inventory:
1. Excellent. 100% condition rating.
  2. Very Good. 90% condition rating.
  3. Good. 80% condition rating.
  4. Fair. 60% condition rating.
  5. Poor. 40% condition rating.
  6. Critical. 20% condition rating.
  7. Dead. 0% condition rating.
- **Primary Maintenance Need.** The following primary maintenance needs will be determined based on ANSI A300 standard specifications:
1. Removal. Trees designated for removal have defects that cannot be cost-effectively or practically treated. The majority of the trees in this category have a large percentage of dead crown. All trees with safety risks that could be seen as potential threats to persons or property and seen as potential liabilities to the client would be in this category. This category includes large dead and dying trees that are high-liability risks as well as those that pose minimal liability to persons or property (such as trees in poor locations or undesirable species).
  2. Large Tree Clean. These trees require selective removal of dead, dying, broken, and/or diseased wood to minimize potential risk. Priority of work should be dependent upon the *Risk* associated with the individual trees. Trees in this category may be large enough to require bucket truck access or manual climbing.
  3. Small Tree Clean. These trees require selective removal of dead, dying, broken, and/or diseased wood to minimize potential risk. Priority of work should be dependent upon the *Risk* associated with the individual trees. These trees are small-growing, mature trees that can be evaluated and pruned from the ground.
  4. Young Tree Train. These are young trees that must be pruned to correct or eliminate weak, interfering, or objectionable branches in order to minimize future maintenance requirements. Generally, these trees may be up to 20 feet in height and can be worked with a pole pruner by a person standing on the ground.
  5. Stump Removal. This category indicates a stump that should be removed. Lacking specific information on stump removal required by local code requirements per the client.
  6. Plant Tree. During the inventory, vacant planting sites will be identified by street, address, and site number. The size of the site is designated as small, medium, or large (indicating the ultimate size that the tree will attain), depending on the growing space available and the presence of overhead wires. Lacking local code definitions, planting sites are determined based on standard specifications set forth in accepted technical journals and by the arboriculture industry.

- **Secondary Maintenance Need.** The following secondary maintenance needs will be determined based on ANSI A300 standard specifications:
  1. Raise. Trees requiring pruning to remove low branches that interfere with sight and/or traffic. Lacking specific information on clearance required by local code per the client, 8 feet over sidewalk for *Pedestrian* clearance, 14 feet over roads for *Traffic* clearance, and 7 feet in public/park areas to allow for grounds maintenance will be used.
  2. Reduce. Selective pruning to decrease height and/or spread of the crown in order to provide clearance for electric utilities and lighting.
  3. Thin. The selective removal of water sprouts, epicormic branches, and live branches to reduce density.
  4. Restoration. Selective pruning to improve the structure, form, and appearance of trees that have been severely headed, vandalized, or damaged.
  5. None. No secondary maintenance is recommended for the tree. This will be used as the default value when *Primary Maintenance* equals Removal, Stump Removal, or Plant Tree.
- **Observations.** Significant observations affecting a tree's health, structure, and location will be made.
- **Further Inspection.** This field will be used to indicate that a particular tree will require further or periodic inspection due to particular conditions with the tree that could cause it to be a safety risk and, therefore, potentially hazardous to the public.
- **Clearance Required.** Trees which are causing or may cause visibility or clearance difficulties for pedestrians or vehicles will be identified, as well as those trees blocking clear visibility of signs or traffic signals, street lights, traffic signals, or other safety devices.
- **Hardscape Damage.** Damage to sidewalks and curbs by tree roots is noted.
- **Overhead Utilities.** The inventory indicates whether overhead conductors or other utilities are present at the tree site that could result in conflicts with the tree.
- **Growing Space Type**—Growing space locations are categorized as:
  1. Island
  2. Median
  3. Open/Unrestricted
  4. Raised Planter
  5. Tree Lawn/Parkway
  6. Unmaintained Area
  7. Well/Pit
- **Space Size.** The minimum width of the growing space for root development is recorded.

- **Risk Assessment.** A risk rating will be assigned using an assessment protocol based on the USDA Forest Service Community Tree Risk Rating System.

1. Probability of Failure (1–4 points). Identifies the most likely failure and rates the likelihood that the structural defect(s) will result in failure based on observed, current conditions.

- a) Low: some minor defects present.
  - minor branch/crown dieback
  - minor defects or wounds
- b) Moderate: several moderate defects present
  - stem decay or cavity within safe shell limits: shell thickness >1 inch of sound wood for each 6 inches of stem diameter
  - crack(s) without extensive decay
  - defect(s) affecting 30–40% of the tree's circumference
  - crown damage/breakage: hardwoods up to 50%; pines up to 30%
  - weak branch union: major branch or codominant stem has included bark
  - stem girdling roots: <40% tree's circumference with compressed wood
  - root damage: <40% of roots damaged within the critical root radius
- c) High: multiple of significant defects present:
  - stem decay or cavity at or exceeding shell safety limits: minimum shell thickness = 1 inch of sound wood for each 6 inches of stem diameter
  - cracks, particularly those in contact with the soil or associated with other defects
  - defect(s) affecting >40% of the tree's circumference
  - crown damage/breakage: hardwoods >50%; pines >30%
  - weak branch union with crack or decay
  - girdling roots with >40% of tree's circumference with compressed wood
  - root damage: >40% of roots damaged within the critical root radius
  - leaning tree with recent root breakage or soil mounding, crack or extensive decay
  - dead tree: standing dead without other significant defects
- d) Extremely High: multiple and significant defects present; visual obstruction of traffic signs/lights or intersections:
  - stem decay or cavity exceeding shell safety limits and severe crack
  - cracks: when a stem or branch is split in half or has cracks on opposite sides
  - defect(s) affecting >40% of tree's circumference or critical root radius and extensive decay or crack(s)
  - weak branch union with crack and decay
  - leaning tree with recent root breakage or soil mounding and crack or extensive decay
  - dead branches: broken (hangers) or with a crack
  - dead trees: standing dead with other defects, such as cracks, hangers, extensive decay, or major root damage
  - visual obstruction of traffic signs/lights or intersections
  - physical obstruction of pedestrian or vehicle traffic

2. Size of Defective Part (1–3 points). Rates the size of the part most likely to fail. If the trunk is the part most likely to fail, tree will be recommended for removal and the DBH value will be used for the size of the defective part.

- a) Parts less than 4 inches in diameter
- b) Parts from 4 to 20 inches in diameter
- c) Parts greater than 20 inches in diameter



3. Probability of Target Impact (1–3 points). Rates the use and occupancy of the area that would be struck by defective part.
    - a) Occasional Use: low-use roads and park trails; parking lots adjacent to low-use areas; natural areas such as woods or riparian zones; transition areas with limited public use; industrial areas.
    - b) Intermediate Use: moderate- to low-use school playgrounds, parks, and picnic areas; parking lots adjacent to moderate-use areas; secondary roads (neighborhoods) and park trails within moderate- to high-use areas; and dispersed campgrounds.
    - c) Frequent Use: emergency access routes, medical and emergency facilities and shelters, and handicap access areas; high-use school playgrounds, parks, and picnic areas; bus stops; visitor centers, shelters, and park administrative buildings and residences; main thoroughfares and congested intersections in high-use areas; parking lots adjacent to high-use areas; interpretive signs, kiosks; scenic vistas; and campsites (particularly drive-in).
  4. Other Risk Factors (0–2 points). This optional subjective risk rating is used if professional judgment suggests the need to increase the total risk rating and invoke immediate corrective action. For example, trees with a numeric risk rating of 9 or 10 would be identified as high-priority trees to receive corrective treatments first. An inspector may wish to increase a tree's risk rating from 8 to 9 as a means of ensuring the tree will receive immediate corrective treatment. The total risk rating should not exceed 10 points.
- **Risk Rating.** Generally, trees with the highest numeric risk ratings should receive corrective treatment first. The overall risk rating of the tree will be indicated, based on the sum of above risk assessment field values. See the formula below:

$$\text{Risk Rating (3–10 points)} = \text{probability of failure (1–4 points)} + \text{size of defective part (1–3 points)} + \text{probability of target impact (1–3 points)} + \text{optional subjective risk rating (0–2 points)}$$

Trees assessed as lower risk may fail before trees assessed as higher risk. There are many uncontrollable conditions, such as weather, pests, and human involvement, that can contribute to tree failure. Davey's assigned risk is meant only to be used as a guideline to make safety-driven maintenance decisions and to direct normal tree maintenance programs efficiently. All risk ratings are based on observable defects at the time of assessment. All observations are made from the ground. The following risk ratings will be assigned:

1. None. Numeric *Risk Rating* equals 0. Used for planting and stump sites only.
2. Low. Numeric *Risk Rating* equals 3 or 4. Trees designated as presenting a Low risk have minor visible structural defects or wounds in areas with moderate to low public access. At the current time, the observable defects—using visual inspection—do not meet the threshold of failure. No corrective action is required.

3. Moderate. Numeric *Risk Rating* equals 5 or 6. Trees designated as presenting a Moderate risk have defects that may be cost-effectively or practically treated. The majority of trees in this category exhibit several moderate defects affecting <40% of a tree's trunk, crown, or critical root zone. This category may also include young or newly planted trees in frequent public use areas, such as downtown business districts or popular parks. At the current time, the observable defects—using visual inspection—do not meet the threshold of failure. The defects may or may not result in eventual tree failure. These trees can be recommended for pruning or removal and should be addressed after all *Severe* and *High* risk tree maintenance.
  4. High. Numeric *Risk Rating* equals 7 or 8. Trees designated as presenting a High risk have defects that cannot be cost-effectively or practically treated. The majority of the trees in this category have multiple or significant defects affecting >40% of the trunk, crown, or critical root zone. Defective trees and/or tree parts are most likely between 4–20 inches in diameter and can be found in areas of frequent occupation, such as a main thoroughfare, congested streets, and/or near schools. Currently, these defects indicate that the tree is failing, is in immediate danger of failing, or has already partially failed. These trees can be recommended for pruning or removal and should be addressed immediately after all *Severe* risk removals.
  5. Severe. Numeric *Risk Rating* equals 9 or 10. Trees designated as presenting a Severe risk have defects that cannot be cost-effectively or practically treated. The majority of the trees in this category have multiple and significant defects present in the trunk, crown, or critical root zone. Defective trees and/or tree parts are most likely larger than 20 inches in diameter and can be found in areas of frequent occupation, such as a main thoroughfare, congested streets, and/or near schools. Currently, these defects indicate that the tree is failing, is in immediate danger of failing, or has already partially failed. Large, dead and dying trees that are high-liability risks are included in this category. This category is reserved for the highest priority removals only and corrective action should be taken as soon as possible.
- **Notes.** Additional information regarding disease, insect, mechanical damage, etc. can be included in this field.

## **Attachment B**

### **Inventory Data Field Descriptions and Sizes**

The following data fields and input/collection code formats are Davey's recommended fields for a street tree inventory. These fields and their acceptable values will be programmed into Davey's hand-held field computers for the inventory data collection.

Data Field Name	Field Format	Input Notes	Definition
<b>Blockside Input Fields</b>			
<i>On Street</i>	Pick List	Street name: master file	Street tree is located on
<i>From Street</i>	Pick List	Street name: master file	Cross street from tree
<i>To Street</i>	Pick List	Street name: master file	Cross street towards tree
<b>Address Input Fields</b>			
<i>Area</i>	Dynamic Pick List	Alpha & Numeric	Subdivision name or code #
<i>Location</i>	Pick List	Borderline Off ROW Park/Public Space Street Unknown	Public space site
<i>Land Use</i>	Pick List	Single-family residential Multi-family residential Industrial/large commercial Small commercial	Describes the type of area or use of land where tree is growing
<i>Address</i>	Open Entry	Numeric	Property address
<i>Assigned?</i>	Yes/No	100X Main Street 100 Main Street	Yes = addressed assigned No = address not assigned
<i>Street</i>	Pick List	Street name: master file	
<i>Side</i>	Pick List	Front Side To Side Away Rear Median	Location of site at address
<i>Site</i>	Auto Generate	Numeric	Unique # per address and side
<b>Tree/Site Input Fields</b>			
<i>Species</i>	Pick List	Species: master file	
<i>Diameter</i>	Pick List	Numeric	DBH (inches)
<i>Stems</i>	Pick List	1 (default) 2 to 99	One stem only # of multiple stems
<i>Condition</i>	Pick List	Excellent Very Good Good Fair Poor Critical Dead	100% 90% 80% 60% 40% 20% 0%

Data Field Name	Field Format	Input Notes	Definition
<b><i>Primary Maintenance Need</i></b>	Pick List	Large Tree Clean Small Tree Clean Young Tree Train Removal Stump Removal Plant Tree	
<b><i>Secondary Maintenance Need</i></b>	Pick List	Raise Reduce Thin Restoration None	
<b><i>Observations</i></b>	Pick List	Cavity/Decay Grate/Guard Improperly Installed Improperly Mulched Improperly Pruned Mechanical Damage Memorial Tree Nutrient Deficiency Pest Problem Poor Location Poor Root System Poor Structure Remove Hardware Serious Decline Signs of Stress	
<b><i>Further Inspection</i></b>	Yes/No	No (default) Yes	No Further Inspection Further Inspection Recommended
<b><i>Clearance</i></b>	Pick List	None needed (default) Light Building Pedestrian Sign/Signal Vehicle	
<b><i>Hardscape Damage</i></b>	Yes/No	No (default) Yes	Damage <i>not</i> present Damage present
<b><i>Overhead Utilities</i></b>	Yes/No	No (default) Yes	Utilities <i>not</i> present Utilities present
<b><i>Growing Space Type</i></b>	Pick List (Keeps last value)	Island Median Natural Area Open/ Unrestricted Raised Planter Tree Lawn/Parkway Well/Pit	

<b>Data Field Name</b>	<b>Field Format</b>	<b>Input Notes</b>	<b>Definition</b>
<b><i>Growing Spacing Size</i></b>	Open entry	Numeric	Narrowest dimension (feet)
<b><i>Probability of Failure</i></b>	Pick List	N/A 1 2 3 4	(N/A) Low Moderate High Extremely High
<b><i>Size of Defect</i></b>	Pick List	N/A 1 2 3	(N/A) < 4 inches 4–20 inches >20 inches
<b><i>Target Rating</i></b>	Pick List	N/A 1 2 3	(N/A) Occasional Use Intermittent Use Frequent Use
<b><i>Other Risk Factors</i></b>	Pick List	N/A 0 1 2	(N/A) No Additional Risk Additional Risk High Additional Risk
<b><i>Risk Rating</i></b>	Automatically Calculated	0 3–4 5–6 7–8 9–10	None Low Risk Moderate Risk High Risk Severe Risk
<b><i>Notes</i></b>	Open entry	Alpha & Numeric	Special conditions noted
<b><i>GPS X</i></b>	Easting	Numeric	Projected longitude coordinate
<b><i>GPS Y</i></b>	Northing	Numeric	Projected latitude coordinate
<b><i>Serial Number</i></b>	Open entry	Numeric	Unique identifier #
<b><i>Date</i></b>	MM/DD/YY		Date collected or edited
<b><i>Time</i></b>	00:00:00		Time collected (24 hour)
<b><i>Staff</i></b>	Pick List		Staff name or initials

## **Attachment C**

### ***Tree Inventory Management Plan***

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The *Tree Inventory Management Plan* details an action plan for urban forest maintenance based on an analysis of tree inventory data. Included in the management plan are various inventory data reports of the current tree population, growing environment, and maintenance needs, as well as long-range management recommendations.

#### ***Management Plan Sections***

**Executive Summary**—This section presents a brief overview of inventory findings. It discusses major trends identified in the inventory, including species composition, maintenance requirements, tree values, and conditions.

**Methodology**—This section details the definitions and data collection methods used to conduct the inventory. All information collected will be documented.

**Tree Population**—This section discusses tree population characteristics that affect management, especially species diversity, urban forest stocking level, potential planting sites, urban forest condition, and maintenance requirements. Additionally, specific trends, observations, and concerns noted during data collection will be discussed.

**Urban Forest Management Program**—This section details the activities that will constitute a multi-year urban forest management program. Headings in this section will include: priority maintenance needs; routine pruning program; training and small tree pruning programs; annual tree planting programs; and public relations. A comprehensive estimated budget will also be provided for each of the above activities.

**Appendices**—Also provided is a complete set of appendices that will be an important reference for the future. Included are the following: planting and pruning guidelines; recommended tree species; a sample comprehensive tree ordinance; a sample tree preservation ordinance; sample specifications for contracting tree work; and sources of additional information in urban forestry and arboriculture.

## ***Attachment D***

### ***Inventory Summary Report***

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An *Inventory Summary Report* contains an analysis of the inventory data and brief, general management recommendations. The *Inventory Summary Report* will include the following information and reports:

1. Executive Summary. This section presents a brief overview of inventory findings. It discusses major trends identified in the inventory, including species composition, maintenance requirements, tree values, and conditions. It also discusses the function and value of the urban forest based on i-Tree Streets reports.
2. Relevant Frequency Reports. Species, Genus, Condition, Primary Maintenance, Observations, etc.

## ***Attachment E***

### ***Tree Inventory Workbook***

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The Workbook includes the following reports:

1. Total Tree List—This report consists of an alphabetized street address and site number printout of all trees.
2. Trees Recommended for Removal by Risk Rating:
  - Severe-Risk Removal
  - High-Risk Removal
  - Moderate-Risk Removal
  - Low-Risk Removal
3. Trees Recommended for Cleaning by Risk Rating:
  - Severe-Risk Tree Clean
  - High-Risk Tree Clean
  - Moderate-Risk Tree Clean
  - Low-Risk Tree Clean
4. Trees Recommended for Young Tree Train.
5. Stump Removal Sites.
6. Potential Planting Sites.
7. Sites Located Under Overhead Primary Utility Lines.
8. Sites with Hardscape Damage.
9. Trees Recommended for Further Inspection and Monitoring.



## Attachment F

### TreeKeeper® 7.7—Subscription

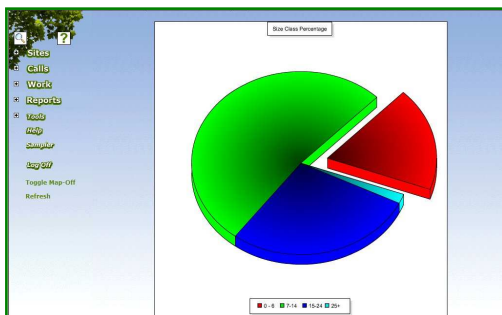
Davey Resource Group hosts the data on its web-server. Clients retain full ownership of all data and can access the data from anywhere in the world that internet access is available. Davey Resource Group backs up and maintains the data and web-server. Program upgrades are provided to the client free of charge. Concurrent access is possible. There is a recurring annual cost for this deployment.

### TreeKeeper® 7 Reporting Capabilities

Another great feature of the TreeKeeper® 7 management software is its very flexible reporting system which allows the user to design his own reports and to save report layouts to run again in the future with other data.

Various reports can be created, including: customized site listing reports, customized summary reports, tree valuation reports based on the *ISA Guide for Plant Appraisal, 9<sup>th</sup> Edition*, and even pie and bar chart reports. Some simple pre-formatted reports have been created by Davey Resource Group and are provided.

Not only is the data easy to report on, it is easily exported to other software applications, such as Microsoft® Office and other word processing programs and spreadsheet programs.

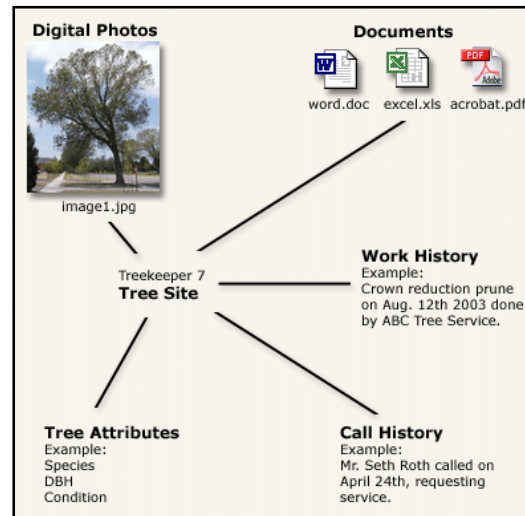


Tree Valuation Report									
(This tree value shown in this report is not intended nor should it be used as a substitute for a detailed inspection and appraisal by a qualified arborist)									
Address	Botanical Name	Common Name	Species Rating	DBH	Basic Cost	Adjusted Value	Condition	Location	Appraised Value
130 Gardner Front 1	<i>Quercus rubra</i>	Oak: Red	50%	22	\$ 11,931.16	\$ 5,965.58	75%	70%	\$ 3,131.93
144 Gardner Front 1	<i>Gleditsia triacanthos</i>	Honeylocust	50%	16	\$ 6,203.80	\$ 3,101.90	75%	70%	\$ 1,628.50
159 Gardner Front 2	<i>Gleditsia triacanthos</i>	Honeylocust	50%	12	\$ 3,390.36	\$ 1,695.18	75%	70%	\$ 889.97
159 Gardner Front 3	<i>Acer rubrum</i>	Maple: Red	50%	20	\$ 9,821.08	\$ 4,910.54	45%	70%	\$ 1,546.82
159 Gardner Front 4	<i>Prunus serotina</i>	Cherry: Black	50%	16	\$ 6,203.80	\$ 3,101.90	75%	70%	\$ 1,628.50
Total Appraised Value									\$ 8,826.71

## ***TreeKeeper® 7 Data Tracking Capabilities***

The diagram to the right illustrates the types of data that TreeKeeper® 7 is capable of tracking. A key feature of TreeKeeper® 7 is its ability to track various types of data including electronic documents. This means that not only is TreeKeeper® 7 capable of tracking work histories, it can also store digital photos, letters to the residents, tree hazard evaluation forms, and other pertinent documents that the user may wish to keep associated with a given tree or site.

All electronic documents are easily accessible through the “view site screen” of TreeKeeper® 7. From this screen, the user can download documents to review or upload new documents to file with the site.



## **Software Training and Support**

Davey Resource Group can provide a six-hour, on-site training seminar specifically designed for the client. Training will focus on GIS basics and TreeKeeper® 7 software capabilities, including working with the “map screen” and map data as well as introducing users to attribute input and querying. Other aspects of the software are reviewed with time allotted based on user interest and skill level. With the on-site training, one full year of unlimited telephone support is included. Additional five-hour blocks of telephone support may be purchased for following years.