CITY OF NOBLESVILLE, HAMILTON COUNTY, INDIANA
NOTICE OF REQUEST FOR PROPOSALS (RFP)

The City of Noblesville, Hamilton County, Indiana ("City"), pursuant to Ind. Code §§ 5-22-9, hereby provides NOTICE of the City's Request for Proposals for Roundabout Beautification Services.

PROJECT DESCRIPTION

The City of Noblesville, Hamilton County, Indiana, an Indiana municipality duly organized pursuant to the laws of the State of Indiana ("City"), issues this Request for Proposal ("RFP") to prospective entities interested in submitting a proposal ("Offerors") for roundabout beautification services (collectively, the "Project") as more particularly defined herein, all pursuant to Ind. Code §5-22-9 et seq., (the "Act").

The purpose of this Request for Proposal is to select a qualified design/build landscape company to complete design and installation for all 11 roundabouts. The City of Noblesville's expectation is to have attractive roundabout areas which are not only aesthetically pleasing, but also provide a visual screen to help motorist be more aware of the roundabout.

EVALUATION
The selection, negotiation and award of an agreement for Roundabout Beautification Services will be based upon: information and data provided by the Offerors in response to the RFP. The City of Noblesville shall award a contract to the firm that presents the best combination of Technical Proposal, Presentation and Fees. The Technical Proposal and Fees shall be utilized to prepare a shortlist of firms within the competitive range. The final shortlisted firms may be invited for a personal presentation, which may be utilized to make the final selection.

All questions/inquiries regarding this RFP must be submitted in writing to Patty Johnson, Street Commissioner, at pjohnson@noblesville.in.us prior to **4:30 p.m. on March 3, 2020**. RFP Responses must be received by the City in the format specified by the RFP **by March 9, 2020 at 4:00 p.m. EST** (the "Submission Deadline") to City of Noblesville Street Department, Attn: Patty Johnson, 1575 Pleasant Street, Noblesville IN 46060. Only complete RFP Responses delivered before the Submission Deadline will be accepted by the City.

The full text and additional information concerning the RFP is immediately available online at www.cityofnoblesville.org and available at the Street Department at the address above.

City of Noblesville

Request for Proposal

For

Roundabout Beautification

Response Deadline Date/Time

Monday, March 9, 2020 – 4:00 p.m.

Roundabout Beautification Request for Proposal

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APPENDIX

CONTACT INFORMATION

City of Noblesville
Street Department
1575 Pleasant Street
Noblesville, IN 46060
Patty Johnson, Street Commissioner
317-776-6348
Pjohnson@noblesville.in.us

Each company interested in this RFP must register your interest with the City of Noblesville as soon as possible so that your company will be included on future email correspondence. You can register your company by sending an email with your primary RFP point of contact information, including company name, email and phone number to pjohnson@noblesville.in.us.

INTRODUCTION

The City of Noblesville is initiating a project to beautify 11 roundabouts located throughout the city. It is the City's desire to install low-maintenance plantings, planters, and updated surface treatments to create four season interest and provide a consistent aesthetic throughout the City.

PURPOSE OF RFP

The purpose of this Request for Proposal is to select a qualified design/build landscape company to complete design and installation for all 11 roundabouts. The City of Noblesville's expectation is to have attractive roundabout areas which are not only aesthetically pleasing, but also provide a visual screen to help motorist be more aware of the roundabout. Ideally the City would like to have low maintenance vegetation including trees, shrubs and perennials. However, the use of large scale containers for planting is acceptable provided the pots are self-watering. The ground plane of the roundabouts should be covered in either mulch, grass, stone, or ideally a combination of these materials. All work must be performed by the prime contractor. No subcontractors are allowed.

Selection of Roundabout Beautification Contractor shall be based upon a combination of Technical and Fee Proposals as described in this RFP. Personal presentation to the City of Noblesville shall be scheduled individually for each proposal considered to be within the competitive range.

The City of Noblesville reserves the right to reject all proposals or elect not to utilize a Roundabout Beautification Contractor as a delivery system of this project. The Owner specifically reserves the right to make an award based upon a combination of technical merit, presentation and fee.

ROUNDABOUT INFORMATION

- Three roundabouts that are approximately 115 feet in diameter. All three of these roundabouts currently have brick pavers which will need to be removed. Planting for these roundabouts should consist of a mixture of low maintenance trees, shrubs and perennials. An assortment of larger stones can be included along with the low maintenance vegetation for visual interest. The surface can be sod, mulch, stone or any combination of these.
- Six roundabouts are between 60 and 75 feet in diameter. Four of these are currently sod and two have brick pavers which will need to be removed. Planting for these roundabouts should consist of a mixture of low maintenance trees, shrubs and perennials. An assortment of larger decorative stones can be included along with the vegetation for visual interest. The surface can be sod, mulch, stone or any combination of these.
- Two of the roundabouts are between 30 and 40 feet in diameter. Both of these roundabouts have brick pavers which will need to be removed. Planting of these roundabouts could consist of large containers of appropriate scale in addition to low maintenance trees, shrubs and

perennials. Container(s) would have a self-watering system to extend the time between watering.

- All pavers will be disposed of using city trucks. The cost of disposal will be covered separately by the city.
- All roundabouts will require the addition of some top soil. The city will provide the topsoil and transportation of the topsoil to the site.

PROPOSAL REQUIREMENTS

- Provide a brief company profile outlining location, company background, years in business and services of the company. Include contact information and the name of the company's primary contact person for contract negotiation.
- Provide the name and qualifications of the proposed project manager.
- Provide the name, location, scope and photos of three planting projects completed by your company that are similar in size and scope to this work.
- Provide the names and contact information for three references.
- Provide one conceptual design plan of each type of roundabout (large, medium and small diameter using 115 feet, 65 feet and 35 feet for the diameters). Each concept should be drawn to scale and include a plan view illustrating planting types and locations, decorative elements such as stones or planters, and surface treatments. A typical section should also be included to illustrate the height relationship of proposed plants and decorative elements.
- List of proposed trees to be installed, including characteristics of the species. Trees should be hardy, salt and drought tolerant, and preferably native to Indiana or the Midwest. Cultivars of native trees are acceptable.
- List of proposed shrubs to be installed, including characteristics of the species. Shrubs should be hardy, salt and drought tolerant, and preferably native to Indiana or the Midwest. Cultivars of native shrubs are acceptable.
- List of proposed perennials to be installed including characteristics of the species. Ideally the mixture of perennials selected will provide three seasons of bloom. Perennials should be salt and drought tolerant. Larger massings of fewer species should be used versus small quantities of many species.
- List of proposed base products. Mulch shall only be natural brown in color, double tumbled extra fine texture (commonly referred to as 'forest fines'). Provide name, color, aggregate sizes, and photo for any proposed stone mulch.
- Provide cut sheets and photos of proposed planting containers to be included in designs. Include manufacturer, planter material, detailed size information, proposed color and finish. All proposed trees must meet the current arboricultural requirements (Exhibit C) for deciduous trees. Non-deciduous trees, normally not allowed in the right of way will be allowed in roundabouts as long as they have a tolerance to road salt.
- Roundabout designs should not include the use of electricity or running water in their design.
- All containerized plantings should include the use of a self-watering (water bladder) feature in containers.
- Roundabouts can be similar in design, but no two roundabouts should be identical.
- Provide a proposed schedule of work from award of contract to completion of construction
- Statement of present workload
- Submitter should provide a cost per roundabout (see the attached form) including design, materials and installation costs based on the concepts developed in this submission.

- Proposals should be edge bound, 8.5 by 11-inch format except for the concept drawings which may be 11 by 17-inch Z-folded pages.

PROJECT TIMELINE

The City desires that all work should be completed on all roundabouts by June 30, 2020. Work can begin as soon as a contract is signed. Removal of the pavers can begin during cold weather months.

QUESTIONS/INQUIRY PROCESS

All questions/inquiries regarding this RFP must be submitted in writing to Patty Johnson, Street Commissioner, at pjohnson@noblesville.in.us prior to 4:30 p.m. on March 3, 2020. If it becomes necessary to revise any part of the RFP prior to the due date for proposals, an addendum will be issued by the City. If such addenda issuance is necessary, the City may extend the due date of proposals to accommodate such additional information requirements, if required.

DUE DATE FOR PROPOSALS

Two (2) printed copies and a PDF copy of the proposal are due to the Noblesville Street Department, 1575 Pleasant Street at or before 4:00 p.m. on March 9, 2020. Proposals received late will not be considered and shall be returned unopened. PDF Copies may be emailed to pjohnson@noblesville.in.us or included with the delivery of the hard copies on a flash drive.

Proposals should be delivered to:
City of Noblesville Street Department
1575 Pleasant Street
Noblesville, IN 46060
Attn: Patty Johnson, Street Commissioner

SELECTION AND AWARD PROCESS

The selection, negotiation and award of an agreement for Roundabout Beautification Services will be based upon: information and data provided by the Offerors in response to the RFP, the City of Noblesville shall award a contract to the firm that presents the best combination of Technical Proposal, Presentation and Fees. The Technical Proposal and Fees shall be utilized to prepare a shortlist of firms within the competitive range. The final shortlisted firms may be invited for a personal presentation, which may be utilized to make the final selection.

City of Noblesville
Roundabout Beautification
Sample Proposed Perennials and Shrubs Table

Please list the species (common name) of all flowers and shrubs you would recommend utilizing in roundabout beautification

	Species (common name)	Maximum Height at Maturity	Specific Perennials or Shrub Characteristics
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

City of Noblesville
Roundabout Beautification
Sample Proposed Tree Species Table

Please list the species (common name) of trees you would recommend utilizing in roundabout beautification

	Species (common name)	Salt Tolerent Y/N	Maximum Height at Maturity	Specific Tree Species Characteristics
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

City of Noblesville
Roundabout Beautification
Sample Estimated Cost per Roundabout Table

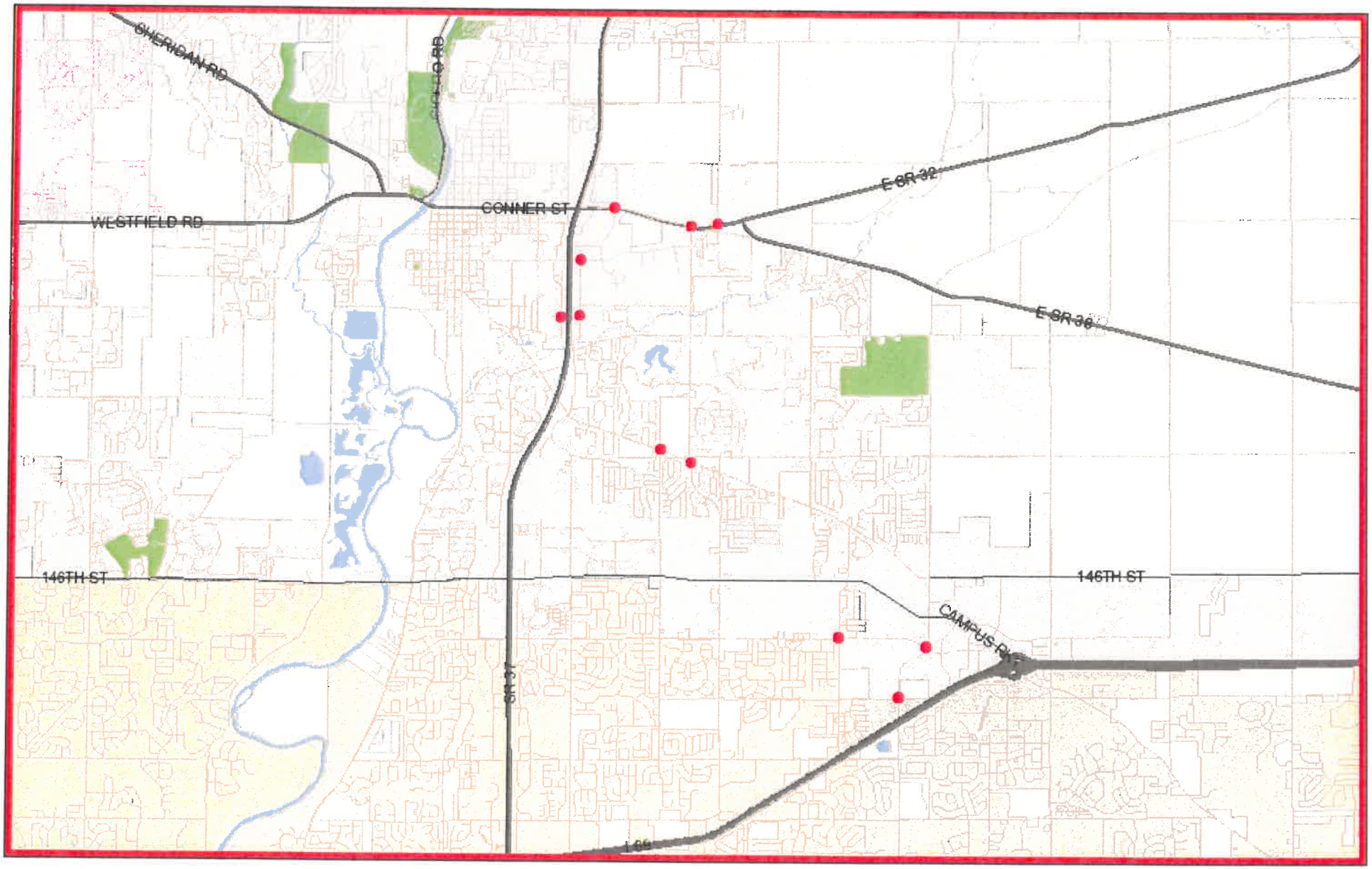
	Roundabout Location	Dimension (feet)	Estimated Cost
1	State Road 32/Promise Road	115	
2	Conner Street/Union Chapel Road	115	
3	Conner Street/Presley Drive	115	
4	Greenfield Avenue/Union Chapel Road	75	
5	141st Street/Marilyn Road	65	
6	136th Street/Brooks School Road	65	
7	141st Street/Brooks School Road	70	
8	Town & Country Blvd/Mercantile Blvd	60	
9	Greenfield Avenue/Howe Road	75	
10	Town & Country Blvd/Clover Road	38	
11	Pleasant Street/Mercantile Blvd	27	
12			
13			
14			
15			
16			
17			
18			
19			
20			

RFP Selection Rating for **City of Noblesville** **Roundabout Design 2020**

Landscape Contractor: _____

Evaluation Criteria to be Rated by Scorers					
Category	**Scoring Criteria**	**Scale**	**Score**	**Weight**	**Weighted Score**
Past Performance	***Performance evaluation score from averages from historical performance data***				
Team's Demonstrated Qualifications	***Technical expertise in landscape design and unique resources that yield a relevant added value or efficiency to the deliverable***			30	
	Demonstrated outstanding expertise and resources ident	2			
	Demonstrated high level of expertise and resources identified for required services for value added benefit.	1			
	Insufficient expertise and/or resources	0			
Project Manager	***Predicted ability to manage the project, based on: experience in size, complexity, and type***			20	
	Demonstrated outstanding experience in similar type and complexity	2			
	Demonstrated high level of experience in similar type and complexity	1			
	Experience in different type or lower complexity	0			
Approach to Project	***Project understanding and innovation that provides cost and/or time savings***			20	
	High level of understanding and viable innovative ideas proposed	3			
	High level of understanding of the project	2			
	Basic Understanding of the project	1			
	Lack up project understanding	0			
Schedule	***Proposed Schedule***			30	
	Ready for contracts for full project completion by 6/30/2020	2			
	Ready for contracts for full project completion by 8/31/2020	1			
	Ready for contracts for full project completion by 10/31/2020	0			

Roundabout Beautification Locations - Exhibit A



October 28, 2019

1:72,001

0 0.5 1 2 mi

0 1 2 4 km

ArcGIS WebApp Builder

Exhibit B

Noblesville Roundabout RFP Locations/Condition

Roundabout Location	Diameter	Current Condition
SR32/Promise	115	Pavers/Electricity Available
Conner/Union Chapel	115	Pavers/Electricity Available
Conner/Presley	115	Grass/No Electricity
Greenfield/Union Chapel	75	Pavers/Electricity Available
141st Street/Marilyn Rd	65	Pavers/Electricity Available
136th/Brooks School	65	Pavers/No Electricity
141st/Brooks School	70	Grass/No Electricity
Town & Country/Mercantile	60	Pavers/Electricity Available
Greenfield/Howe	75	Grass
Town & Country/Clover	38	Pavers/No Electricity
Pleasant/Mercantile	27	Pavers/No Electricity

EXHIBIT C

ARBORICULTURAL SPECIFICATIONS MANUAL

CITY OF NOBLESVILLE, INDIANA

SEPTEMBER 2014

CONTENTS

DEFINITIONS

A) Reference to any other specifications or standards means the latest revision in effect on date of invitation to bid. This set of specifications governs when disagreement with a reference specification occurs.

B) Specified - Means specified in the invitation to bid and/or order or contract.

C) ANSI Z-133 - American National Standard for Arboriculture Operations – Safety Requirements.

D) ANSI A300 - American National Standard for Tree Care Operations – Tree Shrub, and Other Woody Plant Management.

E) ANSI Z60.1 - American National Standard for Nursery Stock

F) City Forester - A City representative which will administer the technical aspects of this tree planting contract. The current city forester for this contract is:

Vince Baker
City Urban Forester
1575 Pleasant Street
Noblesville, IN 46060
vbaker@noblesville.in.us
(317) 776-6348

G) Person(s) – Any person, firm, partnership, association, corporation, company, or organization of any kind.

H) Contractor - A company which earns the majority of its annual revenue from planting or maintaining trees and/or shrubbery and is hired by City of Noblesville or a private person(s) to perform work.

I) Small trees – Any tree with a maximum mature height up to 30 feet.

J) Medium tree – Any tree with a mature height of more than 30 feet and less than 40 feet.

K) Large tree – Any tree with a mature height of more than 40 feet.

CITY WIDE STREET TREE PLANTING AND TRANSPLANTING SPECIFICATIONS FOR THE CITY OF NOBLESVILLE, INDIANA

I. SCOPE OF WORK

To provide all supervision, material, labor, equipment, service operations and expertise required to deliver, locate, transplant street trees in the City of Noblesville as specified herein. Contractor/Person(s) has responsibility to:

A) Furnish, transport and transplant trees.
B) Reserve work space along streets.
C) Excavate in-place soil, plant and backfill with topsoil approved by the City Forester.
D) Furnish and place mulch.
E) Remove excess material and cleanup site.
F) Contractor/Person(s), guarantee trees for one year from date of planting and makes appropriate replacement planting per forester's instructions.
G) Keep work site safe at all times in accordance with OSHA requirements.
H) Any work incidental to the above.

II. MATERIALS SPECIFICATIONS

Mention of any product name neither constitutes an endorsement of that product nor excludes the use of similar products meeting specifications.

A) **Tree Stock** - All trees healthy, vigorous and well-grown, showing evidence of proper root and top pruning, single-trunked, high-branched specimens suitable for use along streets. All newly planted nursery stock trees and transplanted trees are to be a minimum 1 ½ - 2 caliper measured at DBH (diameter at breast height) at the time of planting unless otherwise noted. All transplanted trees grown at least five years in their current location having similar climatic conditions as Noblesville, Indiana, whereas one year of the same for nursery stock. All trees must meet ANSI Z60.1 standards for top grade. Nursery trees with a label attached to each tree indicating botanical name and common name. The city forester may inspect and mark trees at location where trees will be obtained before they are transplanted or newly planted and has final approval of species or variety used and nursery from which trees were obtained.

B) **Root balls and burlap** - All trees balled and bur lapped with ball shape and size conforming to ANSI Z60.1 standards. Trunk flare will be easily visible on root balls. Root balls adequately protected at all times from sun, heat,

freezing and drying. City forester will reject any cracked or manufactured root balls.

C) **Mulch** - Year-old compost created by local tree service companies or compost/wood chip mulch.

III. WORK PROCEDURES

A) **Source of supply** - Contractor submits to the city forester, within ten (10) days after receipt of notice of award of contract, complete and detailed information concerning the source of supply for each item of plant material specified in the planting list.

B) **Tree location** - Contractor/Person(s) will also be responsible for notifying Indiana 811 at 1-800-382-5544 or 811 prior to digging. Contractor/Person(s) will be responsible for any damage to utilities during the planting process. All newly planted trees must be centered between the sidewalk and the curb, unless otherwise specified by the city forester before planting begins. Planting sites must be approved by the urban forester or his/her representative prior to planting.

C) **Delivery** - Trees shall be transported and handled with adequate protection. Trees shall be covered with burlap or tarpaulin during transit or transported in closed truck to prevent drying out of the tree.

D) **Temporary storage** - Root balls of trees not immediately planted after delivery must be adequately protected by mulch or heeling-in and watering until planting occurs. Person(s) assumes all risk and expense of temporary storage.

E) **Planting holes for transplanted trees** - Holes may be dug by mechanical tree spade (preferable 90 inch spade) or other approved equipment at specified location. The tree spade shall be capable of digging and transplanting trees with the greatest amount of roots in a solid earth ball. The minimum size of hole/ball is to be ten inches for each caliper inch of tree. Watering should be done during the digging operation and also after setting the tree in its final location. The tree will be watered according to the amount required by the tree. Walls of the planting hole shall be dug so that they are properly sloped and sufficiently loosened to remove the glazing effects of the digging. The planting hole shall be elliptical in shape with the top diameter two times that of the ball. The bottom of the hole shall be rough, flat and deep enough to have the plant at its original planting depth or slightly higher. Holes shall be dug only on day tree is planted. The person(s)

is responsible to ensure all holes are safe until planted and covered with mulch.

F) **Planting holes for nursery stock trees** - Holes may be dug by hand, backhoe, auger, or other approved equipment at specified location. Walls of the planting hole shall be dug so that they are properly sloped and sufficiently loosened to remove the glazing effects of the digging. The planting hole shall be elliptical in shape with the top diameter two times that of the ball. The bottom of the hole shall be rough, flat and deep enough to have the plant at its original planting depth or slightly higher. Holes shall be dug only on day tree is planted. Contractor is responsible to ensure all holes are safe until planted and covered with mulch.

G) **Precautions during digging** - When underground utilities are encountered, Contractor/Person(s) immediately calls: 1) Controlling agency or company. Indiana 811 at (800) 382-5544 or 811 handles electric, gas and telephone requests. 2) City Forester at (317) 776-6348. Contractor, at his expense, restores to original condition all structures, facilities and other property damaged by his company's work.

H) **Surplus excavation** - Removed and disposed of by Contractor/Person(s) at his own expense.

I) **Planting** - Planting is only allowed from March 1st and May 31st, or October 1st through December 31st weather permitting. Planting is only allowed when the soil is not frozen. Balled and bur lapped trees are set on tamped backfill, placing tree up to two inches (2") higher than the level from which it was retrieved. Planting height may be adjusted if unusual site situations are encountered after approval by the city forester. Strings, twine, burlap and metal baskets must be completely removed prior to planting. Trees with forked top oriented with forked limbs shall be pointed parallel to street and not toward street. Planting is not allowed on days when temperatures fall below 30°F. Other planting dates may be approved at discretion of City Forester.

J) **Root pruning** - Ends of broken or damaged roots more than 1/4 inch in diameter should be pruned with a clean cut, removing only injured portion.

K) **Backfilling** - Backfill with existing soil if suitable. Excess soil from hole must be removed; leftover soil should never be placed over the root zone,

L) **Pruning** - Dead, damaged or poorly located branches will be removed using proper pruning techniques.

M) **Mulching** - A layer of mulch 2 to 4 inches (2-4") thick, and 3 feet where possible away from the trunk, will be applied around tree in a circle. Under no circumstances should trees be volcano mulched. Do not pile mulch directly against the tree trunk.

N) **Staking** - Use three (3) stake methods using minimum 9 gauge wire and ½ inch diameter flexible rubber hose wire contacts at branches and trunks, exact method must be approved by the city forester. Tree should only be staked if needed, or as instructed by the city forester.

O) **Extra holes** - Excess or improperly located planting holes are to be immediately backfilled and seeded with seed mix that matches existing turf and covered with two inches (2") of straw at Contractor's/Person(s) expense.

P) **Watering** - Thoroughly water to settle backfill when half of backfill is in place and again after all backfill is placed (approximately 25 gallons for a 2-inch tree). Any trees planted between March 1st and May 31st requires a slow release tree watering bag.

Q) **Wrapping** - Trunk wrap is only required for specific thin barked trees (as indicated by the city forester). When trunk wrap is indicated it should not come into direct contact with the trunk of the tree, corrugated perforated plastic pipe slightly larger diameter than the tree or similar is acceptable.

R) **Productivity** - Production schedule beginning and ending dates will be agreed upon in writing between the contractor and the city forester.

S) **Supervision** - Contractor/Person(s) are required to consult with the City Forester concerning details and scheduling of all work. Contractor/Person(s) shall have competent person in charge of work at all times to whom the City Forester may issue directions and who is authorized to accept and act upon such directives. Contractor must provide the City forester with a proposed planting schedule and coordinate initial planting date with the City forester.

T) **Public relations** - An information sheet shall be supplied by the city forester to the city contractor for distribution to property owner.

U) **Planting locations** - All trees are to be planted in the center of the grass strip between the curb and sidewalk.

- 25 feet from any street corner without a stop sign.
- 35 feet from any street corner with a stop sign.
- 20 feet from the edge of any driveways.

- 10 feet from any fire hydrant.
- 10 feet from any lateral storm water line or sewer line.
- 10 feet from any water meter pit.
- Or planted in any location not relative to its mature growth size.
- No tree may be planted in a location where at its mature height any limbs will be 10 lateral feet from any overhead power lines. Any locations where overhead power lines are present are considered a small location.

Spacing between the trees shall be 40-60 feet apart, except in special plantings designed or approved by the city forester. Only tree species on the 'City of Noblesville Approved Tree Species List' are permitted to be planted as street trees. The only exemption from this rule is if there is special written permission by the city forester.

The planting site size is determined by the width from sidewalk to street curb as follows:

Small Site	3' minimum
Medium Site	5' minimum
Large Site	8' minimum

Other site characteristics such as utility lines may vary the site size.

IV. SUBSTITUTIONS

If a species or variety is used as a substitute, with the approval of the city forester, the per tree price paid by the city is the lowest of:

1) The per tree price of the species or variety originally bid on/or;
2) The lowest bid price for the substitute species or variety if it is specified elsewhere in this contract.

V. INSPECTIONS – New Development

A) **Initial inspection** - The City Forester, at his own discretion, may request and inspect the tree stock prior to removal from truck and planting.

B) **Planting inspection** - Periodic inspection may be made by City Forester to review the progress of planting and condition of trees, any problems will be noted and forwarded to appropriate person(s) and should be corrected in a timely manner.

C) **Performance bond release (also includes certified checks, certificate of deposits, and irrevocable letter of credit)** - A request for inspection of trees will be made by the developer to the city forester prior to the last planting season before the release of performance bonds. All required corrections will be noted in the inspection report and will be forwarded to appropriate person(s). All items noted must be corrected and trees re-inspected prior to acceptance of trees and release of bond. Neglect of the developer to make this request prior to the last planting season before the requested bond release, may result in a delay of the release of bonds. Inspection requests for any performance bonds eligible for release between October 31st and May 1st must be made by August 1st (i.e. 90 days prior to October 31st) to provide the city forester adequate time to inspect trees prior to dormant season.

D) **Maintenance bond inspection** - Trees under maintenance bond will be periodically inspected to insure that they are being properly maintained; any problems will be noted and forwarded to appropriate person(s) to be corrected. A request for inspection of trees will be made by the developer to the city forester prior to the last planting season before the maintenance bond expires. An inspection report will be forwarded to appropriate person(s). All corrections must be made prior to bond release. Neglect of the developer to make this request prior to the last planting season before the requested maintenance bond release, may result in a delay of the release of maintenance bonds. Inspection requests for any maintenance bonds eligible for release between October 31st and May 1st must be made by August 1st (i.e. 90 days prior to October 31st) to provide the city forester adequate time to inspect trees prior to dormant season.

E) **Final inspection** - Prior to any acceptance of trees or release of any type of bond, all trees must meet specifications and changes made as noted in inspection reports.

VI. INSPECTIONS – City Contractor or Resident Contractor

A) **Initial inspection** - The city forester, at his discretion, will inspect and mark tree stock purchased under this contract prior to digging.

B) **Planting inspection** - The city forester, at his discretion, inspects the progress of planting or temporarily stored trees, to review the progress of the work and condition of trees.

C) **Guarantee period inspection** - The city forester inspects planting work to verify completion and begin guarantee period. Contractor requests this

inspection in writing at least ten (10) days before its scheduled date. After inspection, the city forester notifies contractor in writing of date of beginning of guarantee period or of deficiencies to correct before guarantee period begins.

D) **Correction inspection** - Two months before end of guarantee period, the city forester inspects work and notifies contractor of replacement and other corrections required to make-work acceptable.

E) **Final inspection** - At the end of guarantee period, city forester inspects trees to determine final acceptance.

F) **Stock inspections** - The city forester reserves the right to inspect trees before they are removed from the delivery truck at the work site. A delivery truck driver, other agent, or the contractor should call the city forester prior to unloading any stock.

G) **Other inspections** – The city forester reserves the right to inspect on-site work at any time without notice. The contractor calls the city forester on morning of each working day to provide work location.

H) **Independent planting** - When a contractor or other person(s), so desires to independently plant or transplant a street tree in the city right-of-way it must be approved by the city forester. All work and procedures must be in compliance with the City Street Tree Ordinance and specifications within this manual.

VII. GUARANTEE

Contractor guarantees that all trees remain alive and healthy until the end of a one-(1) year guarantee period. Contractor replaces; as specified and at his expense, any dead trees, that in the opinion of the city forester has become unhealthy or unsightly or has lost their natural shape due to dead branches, improper pruning or maintenance, or any other cause due to the contractor's negligence, or weather conditions. Contractor straightens any leaning trees, at contractor's expense.

VIII. REJECTION

Contractor disposes of any tree rejected by the city forester at the contractor's expense.

IX. TREE INVENTORY

Following completion of the tree planting a formal electronic copy of the inventory must be submitted to the city forester and the GIS coordinator by the appropriate person(s). The information provided should be a CAD file in NAD83, Indiana State Plane Coordinate System, East Zone using Survey Feet, showing the exact location of each tree in an overall base map. Trees will be represented as blocks with an ID. In conjunction with the AutoCad file please fill out the trees portion of the attached digital asbuilt spreadsheet.

Digital Asbuilt Spreadsheet 2014.xls

City Forester:
Vince Baker
1575 Pleasant Street
Noblesville, IN 46060
(317) 776-6348
vbaker@noblesville.in.us

GIS Coordinator:
Michael Morris
16 S. 10th Street
Noblesville, IN 46060
(317) 776-6368
mmorris@noblesville.in.us

TREE REMOVAL AND PRUNING SPECIFICATIONS
CITY OF NOBLESVILLE, INDIANA

I. SCOPE OF WORK

To provide all labor, supervision, equipment, services and expertise necessary to perform urban forestry maintenance work in the City of Noblesville as specified herein. Since this work is of a potentially dangerous nature, and requires special expertise, it is to be performed by a contractor which derives a majority of its annual income from arboricultural work and whose employees are highly trained and skilled in all phases of tree service work. Contractors must have been in business for at least five years. The City will require proof of Contractor's involvement in tree service work. The contractor has the responsibility to:

A) Remove or prune designated trees.
B) Reserve work space along streets.
C) Grind out stump when tree is to be removed.
D) Remove excess material and cleanup site.
E) Add sufficient amount of topsoil and see.
F) Guarantee that specifications be met.
G) Keep work site safe at all times.
H) Provide all necessary traffic control per MUTCD standards.

II WORK PROCEDURES

A) **Equipment** - In case of city contractor, all bidders must have in their possession or available to them by formal agreement at the time of bidding: trucks, devices, chippers, hand tools, aerial and other equipment and supplies which are necessary to perform the work as outlined in these specifications. The city may inspect such equipment prior to the awarding of a contract.

B) **Tree location** - Work limited to trees located on all public right-of-ways and city owned property. All work under this contract shall be assigned by supplying the contractor with a list of trees and their exact location and required work. Trees to be removed will be marked and the homeowner notified. The city reserves the right to change, add, or delete areas or quantities to be pruned or removed as it deems necessary and in the public's best interest. Pruning and removal operations will commence no later than thirty (30) days after the contract has been awarded and will be completed no later than 90 days after work has begun. The contractor will be responsible for any damage during the removal or pruning process.

C) **Public relations** - The city forester will send an information sheet to the property owners.

D) **Supervision** – The contractor consults with the city concerning details of scheduling of all work. The contractor must provide the city forester with a proposed work schedule and coordinate initial work starting date with the city forester. Contractor is required to have a competent person in charge of his work at all times to whom the city may issue directives and who shall have the authority to act upon such directives. Failure for the supervisor to act on said directives shall be sufficient cause to give notice that the contractor is in default of contract unless such directives would create potential personal injury or safety hazards.

E) **Inspections** - The city forester or his representative shall inspect work at the city's discretion. A full inspection of work from a city representative is required before payment of invoices. Requests should be made in writing five days in advance of the completion of this contract.

F) **Tree damage** - Climbing irons, spurs or spikes are not used on trees to be pruned. Any tree damage caused by contractor is repaired immediately at no additional expense to the satisfaction of the city forester. Trees damaged beyond repair, as judged by the city forester, are removed at no expense to the city and replaced by a tree of size and species designated by the city forester at no additional expense to the city or the dollar value of such damaged trees, as determined by the city forester, is deducted from the monies owed the contractor.

G) **Pruning specifications** - Conform to latest revision of the ANSI A300 American National Standard for Tree Care Operations – Tree Shrub, and Other Woody Plant Management. Topping of trees is prohibited within the City of Noblesville. All cuts shall be made as close as possible to the trunk or parent limb, without cutting into the branch collar or leaving a protruding stub. Bark at the edge of all pruning cuts should remain firmly attached. All branches too large to support with one hand shall be precut to avoid splitting or tearing of the bark. Where necessary, ropes or other equipment should be used to lower large branches or stubs to the ground. Treatment of cuts and wounds with wound dressing is not necessary and is discouraged. Equipment that will damage the bark and cambium layer should not be used on or in the trees. For example, the use of climbing spurs (hooks or irons) is not an acceptable work practice for pruning operations on live trees. Sharp tools shall be used so that clean cuts will be made at all times. All cut limbs shall be removed from the crown upon

completion of the pruning. Cleanup of branches, logs or any other debris resulting from any tree pruning shall be promptly and properly accomplished. The work area shall be kept safe at all times until the cleanup operation is completed. Under no condition shall the accumulation of brush, branches, logs or other debris be allowed upon a public property in such a manner as to result in a public hazard. Trees impeding vehicle or pedestrian traffic should be raised up at least 13 feet over streets, and 8 feet over sidewalks. Trees obstructing control devices (stop signs, yield signs and traffic lights) should be trimmed to allow for adequate visibility.

H) **Removal specifications** - Removals will include topping and other operations necessary to safely remove the specified tree(s). No trees or trunks are felled onto pavement. Work includes removal of basal sprout and brush and weeds within three feet of the trunk. The tree stump will be ground out to a depth of eight inches (8") below the normal surface level including all surface roots. Any variation in grinding depth must be approved by the city forester. Immediately after grinding each stump, the grindings must be removed from the work area. Adjacent sidewalks, lawns, streets and gutters will be cleaned. Backfill consisting of clean earthen soil should be used to fill the cavity, free of debris, to normal ground level and seeded with an approved seeding mix. Do not backfill with wood chips. All labor, supervision, equipment, materials and supplies necessary for the execution of this work must be provided for by the contractor at no additional cost to the city. The contractor at no additional cost to the city must provide all debris disposals. The chosen contractor will be required to follow the ANSI Z-133 Standards for tree worker safety.

I) **Traffic control** – Is the total responsibility of the contractor and is coordinated with the proper department of the City of Noblesville. The contractor shall be solely responsible for pedestrian and vehicular safety and control within the work site and shall provide the necessary warning devices, barricades and personnel needed to give safety, protection, and warning to persons and vehicular traffic within the area. Blocking of public streets shall not be permitted unless prior arrangements have been made with the city and is coordinated with the appropriate departments. Traffic control is the responsibility of the contractor and shall be accomplished in conformance with Manual of Uniform Traffic Control Devices (MUTCD).

J) **Utility agencies** - Are contacted by contractor any time assistance is needed to work safely around overhead or underground installations. The city provides a list of principal contacts and telephone numbers for public and private utility organizations. Tree trimming and removal operations may be conducted in areas where overhead electric, telephone and cable

television facilities exist, the contractor shall protect all utilities from damage, shall immediately contact the appropriate utility if damage should occur, and shall be responsible for all claims for damage due to his operations. The contractor shall make arrangements with the utility for removal of all necessary limbs and branches, which may conflict with or create a personal injury hazard in conducting the operations of this contract. If the contractor has properly contacted the utility in sufficient time to arrange for the required work by the utility, delays encountered by the contractor in waiting for the utility to complete its work will not be the responsibility of the contractor.

K) **Safety** - Work conforms to the latest revision of American National Standard for Arboricultural Operations – Safety Requirements Z-133 (Safety Requirement for Pruning, Trimming, Repairing, Maintaining, Removing Trees and for Cutting Brush). At the time a contract is entered into, the contractor shall certify in writing to the city that all contractor's employees working on this job are either "Qualified Line Clearance Tree Trimmers" or "Qualified Line Clearance Tree Trimmer Trainees:" as defined in the above ANSI Z-133 standards.

L) **Clean up** - Clean up procedures are completed within two hours after debris have been placed around the site of each tree requiring pruning or removal. The work site is left equal to or cleaner than pre-work conditions. Tree parts dropped or lowered from trees are kept off private property. It shall be the responsibility of the contractor to remove and dispose in a proper and acceptable manner all logs, brush and debris resulting from the tree maintenance operations.

M) **Damages** - Any damages done by the contractor to any person or property, public or private, are the total responsibility of the contractor and are repaired or compensated for by the contractor to the satisfaction of both injured party and the city at no cost to the city.

N) **Insurance** - Contractor shall be fully insured as specified and shall be completely covered by State Workers' Compensation during the life of this Contract at Tree Service Rate. The contractor shall have liability insurance in the amount of $1,000,000.00 for each occurrence and shall name the city as an additional insured on its policy for the work being performed in the City of Noblesville.

O) **Payments** - Partial billings are acceptable. Payment is made according to actual number of trees pruned, planted, or removed. Ten percent (10%) of each invoice is withheld until contractor's work is completed to the

satisfaction of the city. Billing for work along any street may not be made until contractor completes all work on that street. At the discretion of the city, half of the ten percent (10%) retainer may be held until spring if enough snow is on the ground that a proper inspection of sites cannot be conducted. When an inspection is done and the contractor, as directed by the city, corrects any problem which may occur, the remainder of the retainer will be paid.

P) **Working hours** - The contractor will schedule work between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday unless authorized by the city to do otherwise.

Q) **Subcontracts** - The contractor will not be allowed to subcontract work under this contract unless written approval is granted by the city. The subcontractor, as approved, shall be bound by the conditions of the contract between the city and the contractor. The authorization of a subcontractor is to perform in accordance with all terms of the contract and specifications. All directions given to the subcontractor in the field shall bind the contractors as if the notice had been given directly to the contractor.

R) **Execution of contract** - The successful bidder shall, within five (5) calendar days of the mailing of written notice of selection as the successful bidder, enter into contract with the city on forms included within the bidding documents for the performance of work awarded him and shall simultaneously provide the appropriate bonds, indemnities and insurance required hereunder. The contract, when executed, shall be deemed to include the entire agreement between the parties; the contractor shall not base any claim for modification of the contract upon any prior representation or promises made by representatives of the city, or other persons.

S) **Discontinuance of work** - Any practice obviously hazardous as determined by the city shall be immediately discontinued by the contractor upon receipt of either written or oral notice to discontinue such practice.

T) **Observance of laws, ordinances and regulations** - The contractor, at all times during the term of this contract, shall observe and abide by all federal, state and local laws which in any way affect the conduct of the work and shall comply with all decrees and orders of courts and competent jurisdiction. The contractor shall comply fully and completely with any and all applicable state and federal statutes, rules and regulations as they relate to hiring, wages and other applicable conditions of employment.

U) **Supervision** - This contract will be under the direct supervision of the city forester or its authorized representatives. Any alteration or modifications of the work performed under this contract shall be made only in written agreement between the contractor and the city authorized representative and shall be made prior to commencement of the altered or modified work. No claims for extra work or materials shall be allowed unless covered by written agreement.

V) **Bidding specification and contractual terms** - Tree maintenance work done under the direction of this contract shall be bid on forms as provided by the city.

W) **References** - Municipal tree pruning and removal experience is required. The bidder may be required to provide references upon request.

X) **Award** - For a bid to be considered, prices must be quoted for the entire pruning and removal project.

Y) **Contract termination** - The city shall have the right to terminate a contract or a part thereof before the work is completed in the event:

1) Previous unknown circumstances arise making it desirable in the public interest to void the contract.
2) The contractor is not adequately complying with the specifications.
3) Proper arboricultural techniques are not being followed after warning notification by the city forester.
4) The city or its authorized representatives.
5) The contractor refuses, neglects or fails to supply properly trained or skilled supervisory personnel and/or workers or proper equipment of the specified quality and quantity.
6) The contractor, in the judgment of the city, is unnecessarily or willfully delaying the performance and completion of the work.
7) The contractor refuses to proceed with work as directed by the city.
8) The contractor abandons the work.

Z) **Indemnification** - The contractor, agrees to indemnify, hold harmless, and defend the city from and against any and all loss, damage, or expense which the city may suffer or for which the city may be liable by reason of any injury (including death) or damage to any property arising out of negligence on the part of the contractor in the execution of the work to be performed hereunder. This indemnity provision shall not apply in cases where the contractor has not been provided with timely notice, nor shall the contractor be liable to the city for any settlement of any complaint affected without the prior written consent of the contractor. This indemnity

provision also specifically does not apply to loss, damage or expense arising out of contact with the city's trees by persons (other than employees of the contractor engaged in the work contemplated by this agreement) who are around such trees.

III. Independent pruning and removal

A resident may prune lower branches up to one inch on city street trees using a manual pruning device, such as loppers. Any work other than lower branch pruning for pedestrian or vehicular traffic, which does not meet the criteria above is not allowed by residents. A person hired by a resident who wishes to prune; remove or plant a tree within the right-of-way, must adhere to the City of Noblesville street tree ordinance and arboricultural specifications. A tree work permit, which is obtained through the city forester at the Noblesville Street Department, must be obtained prior to any work on city street trees in the right-of-way. There is no charge for this permit.

CITY WIDE STREET TREE FERTILIZATION SPECIFICATIONS CITY OF NOBLESVILLE, INDIANA

I. SCOPE OF WORK

To provide all supervision, material, labor, equipment, service operations and expertise required to fertilize street trees in the City of Noblesville as specified herein. Contractor has responsibility to:

A) Furnish, transport and apply water soluble fertilizer.
B) Reserve work space along streets.
C) Use hydraulic sprayer and soil probe or lance at 100-200 PSI.
D) Remove excess material and clean-up site.
E) Keep work site safe at all times.
F) Any work incidental to above.

II. MATERIAL SPECIFICATIONS

SECTION A: Types of Fertilizer to be Used

1) Inorganic fertilizer (chemical) - Is that derived from chemical sources. These nutrients are readily available in the soil and are rapidly soluble, with a short residual period.
2) Soluble fertilizer - Is mixed with water and applied in liquid form. Soluble fertilizers may be applied via the deep root feeding method. Soluble fertilizers are usually inorganic and readily available. Materials with a limited solubility that dissolve slowly are often listed on fertilizer labels as water insoluble nitrogen (WIN).

SECTION B: Fertilizer Analysis

1) Established plantings should use fertilizers with N-P-K ratios of 3-1-2 or 3-1-1 for best response. These formulations may have slight variations.
2) Inorganic (water soluble) nitrogen should be supplemented with synthetic or organic nitrogen (WIN) for the slow availability characteristics of the insoluble form of the material.

SECTION C: Rates of Application

1) For optimum plant growth, apply 4 -6 lbs. of actual nitrogen per 1000 sq. ft. every two years.

2) Diameter at Breast Height (DBH) - Measure the trunk diameter at 4.5 feet above grade. Generally for optimum growth, apply 1/4 lb. actual nitrogen per inch DBH to trees less than 6 inches in diameter. The rate can be increased to 1/2 lb. N per inch DBH for most trees more than 6 inches DBH. The majority of the trees to be fertilized in this project will be 2 - 4 inch DBH. Using a 3 inch DBH tree and fertilizing with 1/4 lb. actual N per inch DBH would require 4.2 lbs. of an 18-5-11 complete fertilizer: 3 inches (dia.) x 0.25 lb./inch (rate) = 0.75 lb. (amount of N). 0.75 lb. (amount of N) / 0.18 (%N in 18-5-11) = 4.166 lbs. of 18-5-11.

3) Liquid application - Diluted fertilizer solutions should be applied at the rate recommended by the manufacturer according to operating pressure and flow rate of the equipment to be used. Apply sufficient liquid mixture to supply the required rate of fertilizer as determined by the surface area of DBH method. It is suggested that one apply 150 gallons to each 2000 sq. ft. of surface area. Inject approximately 1/2 gallon of fertilizer solution per injection at 2.5 ft. spacing.

SECTION D: Timing of Fertilizer Applications

Early spring before bud break is the recommended time for fertilizing. Fertilizing should not be done after leaves have fully expanded.

SECTION E: Method of Fertilizer Application

Liquid injection - Injections using a soil probe or lance should be 2.5 feet apart, and 6 - 12 inches deep for trees. Begin lance injection 2 - 3 feet from the tree trunk and work out about 8 feet beyond the trunk or to the sidewalk or other hardscape obstacle, whichever is farthest. Use a hydraulic sprayer at 100-200 lbs. pressure and soil lance designed for liquid fertilizer with a manual shut off valve and three or four horizontal discharge holes at 90 degrees in its point. Inject half a gallon of fertilizer solution into each hole. The addition of water to dry soil as occurs during the liquid injection process is an excellent side-benefit.

SECTION F: Additional Guidelines

1) Only fertilize trees that are on the Noblesville tree fertilization list of trees to be fertilized. Tree species that are considered undesirable that could be found on tree lawns or on public right-of-ways are: silver maple, boxelder, alder, birch, catalpa, red bud, Russian olive, Osage orange, apple, mulberry, poplars, cottonwood, purple leaf plum, black cherry, black locust, sassafras, willows, and elms.

2) Be aware that over-fertilizing small trees such as flowering crabapple can result in excessive succulent growth. Succulent growth is more prone to fire blight symptoms on susceptible plants such as pear, crab apple and mountain ash.

3) Fertilize in moist soils - Fertilizer should always be applied in moist soils to enhance fertilizer uptake and reduce fertilizer injury to plants and aid in soil injection treatment. If soils are not moist, irrigation should precede fertilization to moisten the plant root zone area. The liquid injection method of fertilizing trees will help moisten the soil in the root zone while applying desired nutrients.

4) Fertilizing excessively wet soils- Avoid fertilizing trees growing in soil that is excessively wet. The roots in wet soil are often damaged from lack of oxygen caused by the accumulation of toxic gases. Adding fertilizer in any form may contribute to root injury.

5) Read the label - Read the entire label of any fertilizer product before application and apply per label recommendations.

III. Independent Tree Fertilization

When a contractor or person(s) other than those hired by the City of Noblesville wishes to perform fertilization of any kind to trees within the right-of-way, they must adhere to City Ordinance and arboricultural specifications within this manual.

TREE PROTECTION FOR
ROAD IMPROVEMENT
CONSTRUCTION & EXCAVATION

GENERIC PROJECT
CITY of NOBLESVILLE
PROCEDURES AND SPECIFICATIONS

PROCEDURES

GENERAL PROCEDURES FOR SANITARY SEWER LATERAL CONSTRUCTION ADJACENT TO SIGNIFICANT TREES AS DETERMINED BY THE ENGINEERING DEPARTMENT WITH GUIDANCE FROM THE CITY FORESTER REGARDING TREE HEALTH AND SURVIVABILITY.

1. Review site plan to determine presence of significant trees or list of properties containing significant trees identified by engineering representative. Public trees on adjacent row are included also.

2. Review proposed location of lateral as shown by engineer on construction drawings

3. Determine existing house connection and mark in front of house

4. Schedule walk -through of proposed or revised lateral locations in order to determine layout for least impact to tree or for special considerations, utilities inspector and engineering representative can be scheduled for one or more streets per visit.

5. Mark root prune line within root protection zone (RPZ) and hand dig zone (HDZ).

6. Root prune for excavation within RPZ.

7. Excavate RPZ with tractor, backhoe, or by hand taking care not to cut beyond the root prune line.

8. Excavate HDZ with sharp spade, taking care to protect roots 2" and larger from damage.

9. Arrange open trench inspection by engineering department representative on designated lots and public trees. Inspection dates should be scheduled one week or more in advance.

SPECIFICATIONS

1) **Significant tree:**
These trees are designated as trees of concern to the city engineering department and/or the city forester. Due to their size, species, or quality, these trees have been identified and are adjacent to proposed construction. Protection of these trees in construction involves both above ground (canopy) as well as below ground (root system) cautions and procedures: refer to "canopy" and "root protection zone" for more specifics.

2) **Root protection zone:**
General - a trees root system varies in width and depth (and structural characteristics) with the species of tree as well as soils and moisture levels. Manmade structures such as curbs, road beds, and old retaining walls also obstruct or redirect root growth. The root protection zone (RPZ) of each significant tree has been designated on the tree protection plan.
Construction procedures - the following items are restricted from the identified RPZ: concrete washout, fuel or chemical storage, temporary stockpile of soil, construction materials, and operation of equipment. Exceptions for site constraints may be approved by engineering representative.

3) **Hand dig zone:**
General - this area has been identified by the City of Noblesville's representative as the area the root system is most likely to contain larger roots two (2) inches in diameter or greater. The HDZ varies with size and species and soil characteristics for each tree. Roots two inches (2") and larger are deemed the most important for supplying nutrients to the tree but also to provide the most stability against wind throw.

4) **Construction procedures:** once the location of the proposed lateral has been determined in the field, the length of lateral within the HDZ is measured also. All excavation to a depth of twenty-four inches (24") is to be performed by hand. Roots less than two inches (2") are to be cut cleanly at the edge of excavation with spade, shovel, pruning shears or saw. Once excavation reaches twenty-four inches (24") depth and large roots do not prohibit, equipment can be utilized to deepen the trench. Large roots retained bridging the excavation are to be protected from further damage and can be wrapped in burlap or other protective material that will prevent drying and abrasion during excavation.

5) **Layout of sanitary sewer laterals:**
Based upon pre-construction televised inspection and; if any underground obstructions are identified, some modifications of proposed lateral locations may be needed. Should the layout intrude into the RPZ or HDZ more than shown in the

plans, a pre-construction site visit can be arranged through the engineering department and the city forester. Some trees of special concern may be identified for receiving this field review by an authorized city representative.

6) **Root prune:**

General - the purpose for root pruning of existing trees adjacent to construction is to provide a cleaner, more controlled cut than is normally accomplished by conventional excavating machines.

Construction procedures - root pruning within the RPZ can be accomplished by hand with sharpened spades, shovels or hand pruners, or with a specialty root pruning machine (when several lots together make it cost effective). This specialty machine is a "vibratory plow' or cable puller" with a twenty-four inch (24") long blade. The blade must be sharpened prior to each project start. The location of the cut is at the edge of proposed excavation. For assistance in determining the suitability of utilizing this machine or its specific location of cut, a pre-construction inspection is available. Large roots encountered that stop the progress of the machine are to be avoided and instead cut by means of hand saw.

7) **Concrete demolition and removal within RPZ:**

All concrete and asphalt removal completed within the RPZ should be completed by a method which prevents any severance or damage to roots located directly beneath the hardscape surface. Sidewalk sections or other manageable pieces could be picked up in their entirety by equipment on site.

8) **Excavation procedures:**

General - protection of existing trees adjacent to excavation involves three areas of operations:

A: placement of excavated dirt
B: root pruning
C: protection of trunk and limbs

Construction procedure - excavated fill dirt should be placed away from any adjacent trees RPZ when there is sufficient room. If no room exists due to structures or adjacent trees, fill dirt may be placed on plywood or other suitable "deck" to contain the fill and minimize mechanical damage to surface roots. Other means of protecting roots from damage due to root pruning should take place prior to excavation with equipment. Refer to "root pruning" for specific procedures. Equipment damage that scars trunks and major limbs should be avoided. Protecting a trunk from mechanical damage with plywood may be necessary when work is very close. Over hanging limbs can be pulled and tied out of the way for small trees and branches. Larger low hanging limbs may need pruning, especially on private property. The homeowner must be notified of

limbs over two inches (2") diameter that need pruning. These situations also can be reviewed in a pre-construction walk through or during lay out of laterals.

9) **Open trench inspections:**
All excavations within a HDZ should be inspected prior to backfilling to verify retaining roots two inches (2") and larger and to review possible liabilities for large trees and wind throw. To insure adequate personnel are available, putting the engineering department on notice as to anticipate lots needing inspections for the week is advised. Specific appointment can be made that will not hold up construction. It is not necessary for all pipe to be installed prior to this inspection.

10) **Protecting tree canopy:**
Protecting tree limbs and canopy during construction may involve protective barriers, roping of limbs out of the way, or pruning. These items should be addressed during pre-construction walk through with an engineering department representative. Plywood, tarps, and other flexible matting may be used depending on the specific situation.

11) **Damage to limbs, trunks or roots:**
Construction damage for adjacent trees will be assessed by the engineering department representative for remedial action or contract penalties.

12) **Arboricultural procedures:**
General - Due to variations in species, size, weather, and unforeseen natural conditions, some specialty arboricultural procedures may be called out by the engineering department representatives for specimen trees after pre-construction walk through and lateral layout. These services are to be performed by an experienced I.S.A. (International Society of Arboriculture) certified arborist unless otherwise approved. Some of these procedures are as follows:

Selective pruning of construction-damaged trees -This is a highly specialized type of pruning for the purpose of compensating for root loss by removing a percentage of the tree canopy. It is accomplished with a modified Maintenance Prune (ANSI A300 - 2.2, 3.3) as outlined in the National Arborist's Association specifications. Natural form of the tree is to be maintained. Exact specifications, percentage of canopy removed and selection of trees will be determined by the Engineering Department Representative, as well as site supervision and direction.

Pre-construction pruning -The purpose of this pruning is to provide construction equipment and building access under and next to the canopy of existing trees to be preserved and prevent unnecessary limb breakage. This

operation will be field-directed by the Engineering Department Representative in conjunction with the selective (ANSI A300 - 2.2, 3.3) pruning.

Final aesthetic (punch list) pruning - The purpose of this pruning is to repair damage and limb breakage occurring during construction. This can be accomplished at the time of project clean up.

Soil conditioners and root stimulation - The purpose of the root stimulation is to encourage growth to those trees' root systems damaged by construction. The following items will be specified: Adjuvant soil conditioner, humic acids from naturally derived kelp products, urea based, Nitro-form, slow-release fertilizers and endo\ecto mycorrhizae. The components are water soluble and injected by high pressure into the tree's root system. Pesticides and herbicides related to tree care will be specified if needed and supervised by the Engineering Department representative. Every attempt will be made to select organic, biological or biodegradable chemicals to provide least impact to the environment. Mixing, spraying and injections will be supervised at the site by the Engineering Department Representative.

Tree protection signage program -The exact design should be consistent with the city colors, logo, and lettering style. Wording developed over many years of experience will be provided in the final specifications. The purpose of the Tree Protection Signage Program is to alert contractors and construction trades as to the importance placed upon tree protection on this project.

13) **Tree work permit:**

The contractor shall conform to all requirements of the City of Noblesville's tree ordinance and usage of public property specifications. The contractor must have tree protection that is specified, installed prior to start of construction. A tree permit will be required for all excavation within the root protection zone of any tree on city property. The contractor will be provided with a copy of the tree permit at the pre-construction meeting which shall be retained at the jobsite for the duration of the project.