Nebraska Statewide Arboretum IRA Project Agreement

The Nebraska Statewide Arboretum and the University of Nebraska – Lincoln are pleased to administer Inflation Reduction Act funding to support the health and rebuilding of the community forestry infrastructure throughout the state of Nebraska in disadvantaged communities. The initiative is coordinated by the Nebraska Statewide Arboretum (NSA) and funded by the USDA Forest Service Urban and Community Forestry Program. For its part, NSA agrees to reimburse XXXXX (hereafter referred to as the Project Sponsor) up to $XXXX for eligible costs associated with implementing the XXXXXXX project.

Project Sponsor Unique Identity Number (UEI number): _____

For their part, the project sponsor agrees to the following conditions:

1. The project application and all associated notifications from NSA are hereby considered a part of this agreement.
2. No match is required and all match waived under this grant will be passed on to sub-recipients.
3. The project must be completed by XXXX. The Grant Period shall be the time between the execution of this Agreement by NSA and the Project End Date. No reimbursement requests for funds expended outside of the Grant Period will be granted. No extensions will be provided. Final invoices must be submitted to NSA by XXXXX. Failure to submit all required reimbursement request documentation by the Project End Date will result in no payments to the Project Sponsor or any vendors.
4. This program is reimbursement-only. You are responsible for providing proof of payment to all vendors when submitting reimbursement requests.
    a. To be eligible for reimbursement, project expenses (grant) shall be verified by receipt or invoice and reported in the ***Project Reimbursement Request Form***.
    b. Multiple reimbursements (phases) may be requested. It takes up to ten weeks for a project sponsor to receive payment.
    c. Reimbursement checks will be made payable only to the Project Sponsor.
5. The project shall be implemented according to the application and budget submitted to and approved in advance by NSA prior to the execution of this agreement. Changes to the scope of work and/or budget must be approved in advance by NSA and NSA will approve the change in writing.
    a. Communities will address management needs appropriate to their local situation within their scope of work. Allowable activities under IRA include:
        i. Tree planting on public property, planting large-maturing trees along streets and within parks. To build heat-resilient communities, we particularly encourage planting in areas of low-tree canopy to shade sidewalks, streets, and gathering areas.
        ii. Site preparation—prepare sites for tree planting, such as soil decompaction, soil amendments, or stump grinding.
        iii. At-risk tree removal AND replacement on public property. A minimum 1:1 tree removal to replacement ratio is required. Trees must be replaced as part of the IRA project in the same or nearby area to ensure benefits are retained in the neighborhood.

iv. At-risk tree removal AND replacement programs on PRIVATE properties within disadvantaged tracks.
v. A minimum 1:1 tree replacement is required. Federal funds may not be used to make direct payments to private property owners.
vi. Training- send staff and/or other project participants to training (e.g. arborist certification)
vii. Young Tree management (watering, mulching, structural pruning)
viii. Pruning, conducted by a Nebraska Arborist Association or an International Society of Arboriculture certified arborist, for trees in street ROW, parks, and other public areas. Private property is excluded.
ix. Other UCF activities such as food forests, urban wood utilization, and small green infrastructure projects that improve long-term tree survival may be considered (ex: removing concrete to expand a planting space).
x. Staff and contracting costs to implement the above activities.

6. IRA will require bi-annual reporting. Please take photos of your project and track metrics. All work and expenditures must be tracked to the level of designated disadvantaged tracts.

7. Signage: No outdoor signs will be required; however, USFS will provide a QR code to download a sign to be placed within a public building.

8. **100% of the work MUST be done within the designated disadvantaged area.**

9. **Compliance for Determining Disadvantage Communities:**
   a. USFS has provided the following guidelines for determining disadvantaged communities.
      i. Does the scope of work deliver 100% of the funding/program benefits to disadvantaged communities as defined by the EPA IRA Disadvantage Communities?
         1. The EPA IRA Disadvantage Communities map includes:
            a. Any census tract that is included as disadvantaged in CEJST,
            b. Any census block group at or above the 90th percentile for any of EJScreen's Supplemental Indexes when compared to the nation or state, and/or
            c. Any geographic area within Tribal lands, as included in EJScreen
            d. *If yes, continue with project as proposed or scale down as necessary. If no,*
      ii. Does the scope of work deliver 100% of the funding/program benefits to communities with census block groups at or above the 80th percentile for any of EJScreen's Supplemental Indexes when compared to the nation or state?
      If yes, continue with the project as proposed or scale down as necessary.
   b. **The Nebraska Forest Service has created an online tool that combines the above USFS compliance guidance in one easy-to-use map.** Nebraska projects shall utilize this tool to ensure compliance.

10. NSA may inspect all completed projects within 30 days of receiving a ***Project Reimbursement Request Form***. The Project Sponsor agrees to correct all significant deficiencies noted in the inspection. Reimbursement may be withheld if deficiencies are not corrected at the discretion of NSA.

11. Allowable Expenses:
    a. Supply purchase should include consumable items (ex: hoses, shovels, staking, tree protection, mulch, chainsaws, printing costs for educational materials, drip-irrigation for the watering of trees, outreach expenses, or an item under 5k in value (for one item or parts to create an item) such as a water tank.
    b. Cost of trees
    c. Contracting costs for tree planting, tree care, tree removal, tree inspection, tree pruning, etc.
    d. Equipment rental to perform project objectives.
    e. Salary/benefits for staff that are directly performing project work to carry out project activities.
    f. Minor pavement removals (example: expand the size of a tree pit.)
    g. Other expenses as pre-approved in writing by NSA to ensure federal program compliance.
    h. Community administrative costs will not exceed 20% of their subaward.
    i. Types of costs that are unallowable (never allowed): Equipment; Construction; In-ground irrigation systems for watering turf/non-tree components or major plumbing expenses; Food and Alcoholic beverages; Bad debts; Contingencies; Contributions and donations; Entertainment; Fines and penalties; Compensation for property destroyed or damaged; Fundraising; Interest and other financing costs; Loan for promised work not yet completed.
12. If planning to work on private property, you must maximize the likelihood of tree establishment and long-term survival of any trees planted, ensure landowners are aware of and give permission/access for work on their property, and include a statement that releases the federal government, the University of Nebraska and the Nebraska Statewide Arboretum, Inc. from any liability associated with work completed on private property. No payments can be made from the Project Sponsor directly to a private landowner. Project Sponsors may pay vendors directly for services provided to the private landowner (for example, tree removal or the purchase of a tree). The Project Sponsor is responsible for ensuring and certifying that the work was completed.
    a. Tree giveaway programs should limit planting to the front yard (not the back yard) or ROW.
    b. Work done on private property should follow the guidelines for removals and tree planting within this document.
    c. If the private property work includes the removal of a hazard tree or ash tree, then the tree planting can take place any place on the property so that tree benefits are replaced.

13. All projects are expected to comply with local bidding ordinances and requirements (ordinances or requirements of the governmental unit or sponsoring authority responsible for the project). However, it is not the intent of NSA that the lowest bid be automatically accepted, but rather that the lowest responsible bid is accepted. Bids shall be carefully evaluated considering nursery standards, arboriculture standards, project specifications, and plant material requirements. Suppose the local governmental unit or sponsoring authority is required to accept only the lowest bid. In that case, NSA shall be allowed to review all bids to determine whether the lowest bid is responsible and acceptable. If such a bid is unacceptable, the bidding process will be redone. All contracting must follow local, state, and federal law as applicable.

14. The project will follow all design, purchasing, planting, and care guidelines in the ***Project Design, Planting, and Care Requirements***.

15. Tree planting is allowed under the program:
    a. Nurseries contracted as part of the project must be licensed by the Nebraska Department of Agriculture. https://nda.nebraska.gov/plant/entomology/nursery/index.html
    b. It is suggested that all plant material planted on public property be guaranteed for at least one year from the planting date.
    c. Plant lists shall be submitted to NSA for approval and no plant substitutions shall be allowed without the permission and approval of NSA.
    d. Plant material can be obtained from more than one plant contractor.
    e. The size of plant material allowed is as follows:
        i. Deciduous Trees Specifications: ½" to 1 ½" trunk caliper measured at 12" above the ground.
        ii. Evergreen Trees Specifications: 3 to 6 feet tall.
        iii. Spade dug tree specifications: at least 24" of spade width is required for each 1" of trunk caliper.
        iv. Balled and burlapped (B&B) specifications: at least 18" of soil ball is required for each 1" caliper of trunk. All baskets and burlap must be removed entirely before planting or to a depth of at least 12" in the hole after planting.
        v. Bare root trees must be stored and transported correctly to avoid drying out their roots.
    f. Ineligible species:
        i. Because of the threat of emerald ash borer, native ash species including green ash (***Fraxinus pennsylvanica***), white ash (***F. americana***), black ash (***F. nigra***) and blue ash (***F. quadrangulata***) shall not be planted in the project.
        ii. Because of the invasive nature of callery pear (***Pyrus calleryana***, including, but not limited to Cleveland select and Chanticleer varieties), it shall not be planted in the project.
        iii. Because of the spread of pine wilt disease, Scotch pines (***Pinus sylvestris***) shall not be planted in the project.
        iv. Siberian elm, Amur maple, Russian olive, tamarack, Freeman maple, including 'Autumn Blaze' maple are not allowed.
        v. NSA retains the right to reject overused or other problematic species or cultivars proposed for use in the grant project.
    g. Planting may not occur during July and August unless NSA grants written permission.
    h. All plants installed in the project shall follow the specifications detailed in the American Standard Nursery Stock ANSI Z60. 1, including height, caliper, and volume measurements as applicable.
    i. All newly planted trees should be watered regularly for the first three years. Reasonable costs for drip irrigation, watering bags, and water tanks are allowable costs and should be employed.

16. Removal of Hazard or At-Risk Trees is allowed under the program.

a. Hazard or At-Risk trees for removal must be designated by 1) qualified employees of the local government (holding Nebraska Arborist Association (NAA) or International Society Arboriculture (ISA) certification) OR 2) NFS TRAQ Qualified staff OR 3) an independent ISA TRAQ Qualified arborist that is not performing the contracted tree removal work. ***A list of tree removal locations must be provided to NSA.***

b. Ash trees may be removed under the program in communities within 15 miles of confirmed EAB finds. If a community does not have an EAB response plan the community should develop an EAB Response Plan (template available from Nebraska Forest Service) before embarking on ash tree removals. It is suggested that EAB removals are spread out over time to reduce the impact of tree removal.

c. Tree removals (when approved as a part of the project) shall be done by qualified commercial arborists (Nebraska Arborist Association, International Society of Arboriculture certified or licensed by the municipality where the project resides). Commercial arborists shall provide proof of current liability insurance, including workers' compensation, to the project sponsor. Commercial arborists shall also meet all requirements provided for by local ordinances.

d. Replacement Trees must be planted in the area or nearby area where the tree was removed. A minimum 1:1 replacement is required. ***A list of tree replacement locations must be provided to NSA.***

e. All contractors providing tree removal work must follow ANSI A300 standards and ANSI Z133 Safety Standards.

f. Tree removals must follow federal law regarding migratory birds and endangered species. It is highly recommended removals are avoided between April 1st and July 31st unless the tree is deemed hazardous.

17. Tree pruning work is allowed under the program:

a. All contractors providing pruning and removal work must follow ANSI A300 standards and ANSI Z133 Safety Standard.

b. All contractors providing pruning work must have a Nebraska Arborist Association (NAA) certification or International Society of Arboriculture (ISA) certification or be working under the supervision of an NAA or ISA-certified arborist. Arborists shall provide the project sponsor with proof of current liability insurance, including workers' compensation. Commercial arborists shall also meet all requirements provided for by local ordinances.

c. Pruning should follow ANSI 300 and ANSI Z133 Safety Standard. Pruning should be performed with a clear objective of safety and tree health. Pruning should improve the structure of the tree (young tree training), and for mature trees removing dead, diseased, or compromised branches. Low-level dead could be left to benefit wildlife, particularly in low-target areas.

   i. Do not remove more the 20 percent of live branches from the crown at one time.
   ii. Pruning cuts shall not damage branch bark and branch collars.
   iii. If raising is a pruning objective for public safety, at least 2/3 (two thirds) of the live crown should remain.
   iv. In general, pruning cuts are made at a lateral branch that is one-third the diameter of the stem being removed.

d. Topping and lion-tailing are not approved tree pruning practices.

18. Select green infrastructure practices are eligible under the program.
    a. Examples include pavement removal to expand tree planting areas, suspended pavement (for trees), rain gardens (for tree planting). All green infrastructure practices and expenses should be approved by NSA before implementation or bids. Not all expenses may be eligible for reimbursement.

19. Federal funds fund this project, and as such, projects must conform to all applicable local, state, and federal laws and regulations, including those regarding bidding practices. IRA is a federally funded program, and the Code of Federal Regulations § 2 CFR 200 and § 2 CFR Part 400. should be followed.

    a. By signing this agreement, the Project Sponsor Authorized Official agrees, to the best of their knowledge and belief, that neither the Project Sponsor or its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.
    b. The Project Sponsor is hereby notified that they are required to: Inform their employees on any federal award that they are subject to the whistleblower rights and remedies; inform their employees in writing of employee whistleblower protections under §41 U.S.C. 4712 in the pre-dominate native language of the workforce; and include such requirements in any agreement made with a subcontractor.
    c. By Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs).
    d. All documents associated with the award must be retained for three years from the date of the final expenditure report.

20. The Project Sponsor agrees to on-going project maintenance for at least ten years.

21. The Project Sponsor understands and agrees that failure to comply with any of the terms of this agreement may result in the revocation or cancellation of NSA approval and funding and/or a demand for repayment of any funds previously paid to the Project Sponsor by NSA. NSA may terminate the project, in whole or in part, at any time before the expiration date of this contract whenever NSA determines that the Project Sponsor has failed to comply with the conditions of the grant.

Your assigned project coordinator for technical assistance /inspections/approvals:
Name: _____ E-mail: Phone:

Signed:

Project Sponsor **Date**

NSA Executive Director **Date**

Specifications for Partnership Projects: Design, Planting and Care Requirements

The Nebraska Statewide Arboretum (NSA) has developed the following specifications and guidelines to help grant-funded and other partnership projects achieve success and establish healthy landscapes.

PROJECT DESIGN AND IMPLEMENTATION

In general, design plans should emphasize sustainable landscape practices including wise species selection and placement that help reduce the need for costly inputs of supplemental water, fertilizers, pesticides, and difficult maintenance practices. NSA will review design plans and/or species lists and offer suggestions for changes.

PLANTING PRACTICES

IRA note: Tree demands over the next five years will be high due to the national implementation of IRA funds. We highly recommend engaging a nursery or arborist at the beginning of the project to make them aware of your needs. Most local nurseries can obtain stock from regional growers or national growers according to your specifications. In addition, you can contract grow with a Nebraska or regional grower or order in bare-root stock.

Landscape planting is most successful when good stock and proper planting methods are used. The following are specifications and guidelines required by NSA for purchasing and planting the most common types of landscape plant material (trees, shrubs, and herbaceous plants).

Plant Quality Standards

Minimum quality specifications for all nursery grown plants shall be the specifications contained in *American Standard for Nursery Stock,* specifically ANSI Z60.1, as adopted by the American Association of Nurserymen. All plants shall be free of diseases, noxious weeds, and damaging insects. All plants shall be subject to the laws and regulations of the State of Nebraska and shall be identified by plant names approved by NSA.

Projects are strongly encouraged to investigate the source of nursery stock. Stock grown in Nebraska may be best adapted to Nebraska sites. Species selected for planting shall be adaptable to Nebraska, and the NSA reserves the right to approve species selections and sizes. NSA highly recommends that trees originate from nurseries in the north central part of the United States as indicated by Figure 1.All plants shall be packed and shipped from the supplier in a manner that protects the plant against drying, freezing, breaking or other injury.

Bare-root plants shall be packed in moist packing material and bundled to ensure against heat or mold damage. Plants shall be protected against the elements while in transit and shall be thoroughly inspected before acceptance. The project coordinator or individual(s) responsible for ordering plant material shall contact the nursery supplying the order to ensure compliance with these standards.

Figure 1 - Recommended nursery source zone.

Planting Seasons: Spring and fall are the best times to plant most landscape plants in Nebraska. Planting can occur into winter if the ground is workable and plants are properly protected. **Planting should not occur and will not be approved without permission for any time during July and August.** Weather conditions can vary greatly from day-to-day and from year-to-year across Nebraska. Consequently, those coordinating planting projects shall be cognizant of recent weather patterns and be prepared to take the steps necessary to ensure successful transplanting. It is especially important that irrigation be available if the post-planting period is dry. Dry periods are common throughout the growing season in Nebraska, especially during mid to late summer. Planting during extremely wet periods can also be problematic if the planting area cannot be prepared properly, or if water stands around the root zone of transplanted plants for extended periods of time.

Pavement Cut-out Plantings: Trees planted in pavement cut-outs in downtowns, parking lots and medians are exposed to harsh and stressful growing conditions. They are subject to construction soils, compaction, temperature extremes, decreased horizontal root space, and decreased gas exchange and moisture to roots. It has been the experience of the NSA that these plantings have greatly reduced life spans. Any plantings in sites such as those mentioned will require approval. Approval will be based on recommendations for minimum open soil space and will require the use of species that have been shown to be more tolerant of these areas. An engineering plan may be required before approval of any planting in these areas. Planting strips are less stressful than individual cut-outs because they create a larger open space. At least 3 feet of good soil should be added to planting areas after construction and before planting.

Preparing the Planting Site: Before any planting begins, confirm that the soil is suitable for growing the selected plants. For questionable soils, a soil test would be helpful. If the soil is heavy clay or very compacted, the soil should also be tested to ensure that there is adequate drainage. If drainage is poor and the area seasonally wet, wet-tolerant species such as maple, sycamore, baldcypress, and swamp white oak should be considered.

For most soils, amendments to the planting area are not necessary. New construction sites shall have at least 8 inches of top soil present or applied after construction. If soils are heavy clay or very compacted, consider replacing the soil with a good loam soil and/or incorporating composted organic materials to a depth of several inches.

Tree and Shrub Planting: Protect landscape plants when transplanting them by holding and lifting them by the container, basket or ball, not by the trunk. Keep the roots moist but not saturated. If you are not able to plant your tree or shrub immediately after purchase, place them in a cool, shaded area.

***Note**: Locate all underground utilities before digging.*

Planting depth is of critical importance in the long-term health and vigor of a tree. All trees shall be planted at a depth such that the uppermost structural roots are located within the top two inches of the soil surface (see figure 2 – proper tree planting). The root flare (or trunk flare) is the area between the vertical transition of the tree stem and the structural roots and should be visible above grade upon planting. While root flare is somewhat difficult to detect in some young trees, the objective is to ensure that the uppermost two or more structural roots of the young tree are located near the soil surface.

If planting balled and burlapped stock, the wire basket shall be cut, and basket completely removed before planting. Remove burlap and all twine or similar material. Use care in handling the root ball. Part of the burlap can be left on to facilitate lifting the plant into the hole. After the plant is in the hole, the burlap should be cut away to the bottom of the planting hole, or as deep as possible. Shipping labels, wire, tags, wrapping, and staking material shall be removed from the trunk and branches.

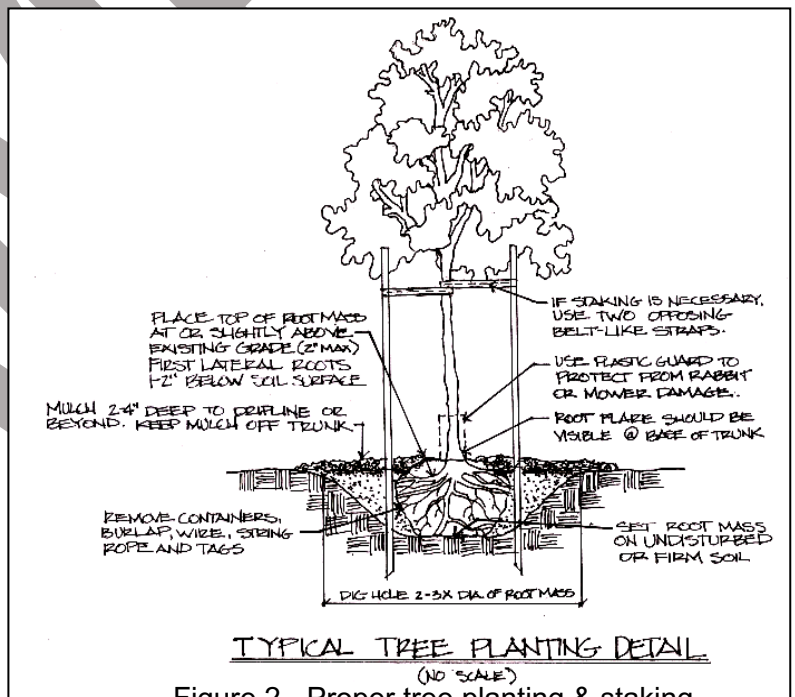

Figure 2 - Proper tree planting & staking.

For container-grown or containerized plants, examine the roots after removing the pot. Plants shall not be pot bound. Plants with masses of circling roots are not acceptable for planting. Minimally encircled roots shall be straightened out in the planting hole as much as possible. For plants grown in fabric bags, the bag should be cut away and completely removed before planting.

The planting hole should be significantly wider than the root system or root ball and no deeper than the depth of the root system. Score the sides of the hole with shovel, especially in clay soils. Once the plant is in place, use the soil removed from the hole as the back-fill around the roots. When back-filling, water occasionally to remove air pockets. Be careful not to tamp or compact the soil, this can lead to excessive soil compaction and possible root damage. Do not incorporate organic matter,

sand, or other material into the back-fill since differences in soil-pore sizes are created which can restrict water movement and root growth between the root ball, planting hole, and surrounding soil.

Mulching: Research has shown that wood chip mulch contributes to the healthy establishment of landscape plants. Mulching conserves moisture, reduces weed competition, insulates roots from heat and cold extremes, helps prevent mower and trimmer damage, and aids in long-term development of good soil structure. Mulching should be considered an ongoing practice that is a part of each year's maintenance routine. Depending on the type of mulch used and weather conditions, most tree and shrub beds shall need to be re-mulched every two to three years. Later applications should not increase the total mulch depth.

Mulch trees and shrubs with a 2-3" deep layer over the root zone. A tree of 1 1/2" caliper should have a mulch ring of 5' diameter or greater. Evergreens should be mulched to beyond the spread of the lowest branches. Mulch shall not be piled up against tree trunks and shall be kept a few inches from the base of the trunk. Mulch plants in massed groupings when possible. Avoid deep layers of mulch which could result in the tree being planted too deep.

Wood chips, shredded or chipped, serve as the best mulches. Be careful with lighter materials such as bark nuggets since they have a tendency to float out of the chip bed during heavy rains. Avoid cypress mulch as it tends to form dense mats and poor growing conditions, and is often harvested from endangered trees. Do not use rock mulches. Rock does not insulate against temperature extremes, and rock absorbs and radiates heat, which can lead to plant desiccation. Do not use black plastic or landscape fabric under the mulch layer. They inhibit proper air and water exchange by the roots.

Staking and Guying of Trees: The purpose of most staking and guying is to prevent a newly planted tree from tipping over in the wind. In Nebraska this practice is often necessary. Excessive movement can dislodge the small, fibrous roots in the soil before they are firmly established. However, many trees are lost because guying materials are not removed or are improperly installed.

Staking is especially important on open, windy, and exposed sites, and sites with high use by people. Staking and guying materials shall be strong enough to provide support, but flexible enough to allow some movement. Guying materials shall have a broad surface at the point of contact with the tree to prevent damage from rubbing. Commercial tree ties and cloth or canvas webbing or straps that are at least 1.5" wide are examples of good guying materials. **Do not use garden hose.** All staking and guying shall be monitored and adjusted as needed to prevent tree damage and girdling. **It shall be removed within one year of installation**. Stakes without guying may be left in the place longer in high use areas if needed to prevent damage from humans, mowers, and other equipment or vehicles.

Wraps and Guards: Tree wraps can be used to protect the tree from damage while it is being transported and planted. Otherwise, trunks should not be wrapped during the growing season. Trunk wrapping may be desirable on some thin-barked trees such as red maple to prevent winter injury. Consult with NSAf staff for recommendations.

Tree trunk damage from rodents, deer, mowers, and weed trimmers can be prevented by using plastic trunk guards. Guards should be monitored regularly and removed before rubbing or girdling problems

occur. It is preferable to use guards that allow for air movement. A variety of wire mesh/netting cages can be used to protect shrubs from rabbits in winter.

Watering: All plants should be thoroughly watered at the time of planting. This shall be done by the nursery contracted to do the installation. Supplemental watering is often needed for 1-2 years or more after planting. The amount of watering required will vary with the type of plant, type of soil, time of year, and weather conditions. Avoid over-watering, especially in poorly drained soils.

Newly planted trees and shrubs should receive the equivalent of one inch of rainfall per week during the growing season. It is best to water trees thoroughly and slowly with enough water to fully moisten the root ball. In general, container and B&B plantings require more water at application than do bare root plantings. If rainfall is adequate during the growing season (1 inch per week) supplemental water is not required.

Newly perennials should receive the equivalent of one inch of rainfall per week during the growing season; during the first several weeks after planting watering may be required more frequently. Small perennials have a smaller root space than trees and shrubs and are best established by watering directly at the plant's base. This may be done by hand with a watering wand or by soaker hose. Sprinklers are less effective at delivering the required water to the roots of each plant; if using a sprinkler be diligent about observing plants for signs of stress.

Fertilizing: Most topsoils contain sufficient levels of available nutrients to supply the requirements of newly planted landscape plants, thus fertilization is not needed. Planting species that are tolerant of existing soil conditions will provide the greatest success. In situations where construction has altered the soil, the addition of good topsoil and organic material such as compost may be necessary. Future determination of additional nutrient needs shall be made based on the condition and vitality of the plants and soil sample analysis. The addition of compost to perennial beds, rather than fertilizer, is also best.

Roadside Planting Considerations:

Permission from the proper authority is required before any plant material can be placed on a highway or street right-of-way. The Nebraska Department of Roads recommends that the following general rules be considered when planting along roadways.

1. A lateral obstacle clearance, or clear zone, exists along all roadways. No woody plants or fixed objects can be located in this zone. The clear zone varies depending on the road design and speed limit. Setbacks for some common situations are:
    - Highway in town with curb, speed limit 40 mph or below - all woody plants shall be at least 6 feet from back of curb.
    - Highways in town without curb; speed limit of 40 mph or below - all woody plants shall be at least 10 feet from edge of driving lane.
    - Rural highways without curb; any speed limit - all woody plants shall be at least 30 feet from edge of driving lanes.
2. All tree and shrub planting shall allow 10 feet on either side of fire hydrants.
3. Allow 15 feet from trunk of shade trees to light poles (10 feet for ornamentals).
4. Trees shall be located at least 20 feet on either side of any overhead utility line unless their natural

habit shall keep them under the line.

5. Shade trees shall be at least 5 feet and ornamentals 10 feet from either side of drives.
6. Shade trees shall be pruned up to at least 8 feet over sidewalks, more over roadways.
7. Trees with an appropriate habit shall be selected to reduce branching in driving and walking areas.
8. Locate all above and below ground utilities before planting. Stay away from buried utility lines. When planting where storm sewers are located, verify that there is enough depth above the sewer to allow successful planting over them.
9. Plants shall not interfere with the visibility of any signs.
10. Shrubs and herbaceous perennials shall be less than 30 inches tall in medians.
11. Sight triangles, in which nothing over 30 inches tall can be planted, exist at all roadway intersections (including major driveways - see diagram below). The area of the site triangle varies depending on the adjacent highway speed. The diagram below shows a street intersecting a 30 mph highway. Shade trees can be planted with the trunks at the outside edge of the triangle. Ornamental trees shall be planted so no branching extends into the site triangle. Other plant material can be planted in this area but shall be less than 30 inches tall. In general, trees at most street/roadway intersections are to be located 25-30 feet from the adjacent street/ roadway edge (contact your local, county or state governmental agency for specific guidelines).