

Outdoor Heritage Fund Grant Application



Project Name: Enhancing State Parks Through Strategic Tree and Shrub Plantings

Name of Organization: North Dakota Parks and Recreation Department

Federal Tax ID#: 45-0433249

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List names of co-applicants if this is a joint proposal: N/A

MAJOR Directive:

Choose only one response

Directive A. Providing access to private and public lands for sportsmen, including projects that create fish and wildlife habitat and provide access for sportsmen.

Directive B. Improving, maintaining, and restoring water quality, soil conditions, plant diversity, animal systems and by supporting other practices of stewardship to enhance farming and ranching.

Directive C. Developing, enhancing, conserving, and restoring wildlife and fish habitat on private and public lands; and

Directive D. Conserving natural areas and creating other areas for recreation through the establishment and development of parks and other recreation areas.

Additional Directive:

Choose all that apply

Directive A.

Directive B.

Directive C.

Directive D.

Type of organization:

State Agency

Political Subdivision

Tribal Entity

Tax-exempt, nonprofit corporation.

Abstract/Executive Summary (500 words)

This grant request represents North Dakota Parks and Recreation’s most ambitious statewide tree planting initiative to date. The requested funding will support a strategic and comprehensive tree and shrub planting program across all North Dakota State Parks.

The **North Dakota Century Code (Chapter 55-08)** mandates that the Parks and Recreation Department “*plan and coordinate government programs encouraging the full development and preservation of existing and future parks, outdoor recreation areas, and nature preserves.*”

Similarly, the **Outdoor Heritage Fund (Chapter 54-17.8-03)** is mandated “*to provide grants to state agencies, tribal governments, political subdivisions, and nonprofit organizations*” to enhance conservation efforts across the state, prioritizing projects that improve natural resources, wildlife habitat, and outdoor recreation.

Together, these statutes align seamlessly, making this project an ideal fit for Outdoor Heritage Fund support. This initiative not only fulfills North Dakota Parks and Recreation’s statutory responsibility to sustain and enhance public lands but also directly meets the conservation priorities outlined in the Outdoor Heritage Fund’s purpose.

Over the past five years, North Dakota State Parks have seen record visitation, with annual numbers exceeding 1.2 million visitors and 95,000 overnight stays which equates to nearly 315,000 overnight guests with visitors coming from as far away as Mexico, Canada, and Europe. Our state parks offer a diverse array of outdoor recreation opportunities to both citizens and tourists, from day use recreation and education to extended camping experiences, all within publicly accessible lands.

As the utilization of our state parks continues to rise, there is a growing need to prioritize conservation and specifically focus on our natural resources. Trees are integral to the visitor experience. They provide shade, shelter, delineation of spaces, habitat, erosion control and an aural and visual aesthetic. However, many of the trees in our parks are aging out, victims of pests or disease, or simply not at optimal locations. Our initial focus will be to obtain and plant larger containerized trees in high-priority (Tier I) areas where they can quickly establish and have a positive impact on the visitor experience.

This grant application seeks to address this need by strategically planting and mapping containerized stock of shade trees and large shrubs. These plantings are intended to establish quickly and provide enduring benefits to citizens and tourists for decades to come. Through this request of \$1,292,715 we aim to enhance the ecological health and recreational value of North Dakota's state parks by executing a project with a total cost of \$1,742,715 that will enhance our parks' tree inventory to help foster a sustainable environment for present and future generations to enjoy.

Project Duration: 2025 - 2028

Schedule for drawing down OHF funds: November 30, 2025,
 June 15, 2026,
 November 30, 2026,
 June 15, 2027,
 November 30, 2027,
 June 15, 2028

Amount of Grant Request: \$ 1,292,715
Amount of Matching Funds: \$ 450,000
Total Project Costs: \$ 1,742,715

Table 1 Matching Funds

Amount of Match	Funding Source	Type of Match (Cash, In-kind or Indirect)
\$177,190	State Special Funds	Cash
\$247,810	State Special Funds	In-Kind, Labor
\$25,000	Federal or Other Sponsor	Cash
\$450,000		

Certifications

X I certify that this application has been made with the support of the governing body and chief executive of my organization.

X I certify that if awarded grant funding, none of the funding will be used for any of the exemptions noted in the back of this application.

Narrative

History: In 1921, North Dakota began the process of establishing state parks. By 1963, North Dakota had six parks, seven recreation areas, and fifty-three state historical monuments. In 1965, a North Dakota Park Service was established. In 1977 the Park Service was changed to North Dakota Parks and Recreation Department. Today there are 14 parks, 28 natural and recreational areas totaling over 20,000 owned and leased acres.

Mission Statement: Enrich generations through experiences that connect people and places.

Organization: ND Parks and Recreation is comprised of the following major divisions: Business Services, Strategic Communications, Education and Programs, Planning and Projects, Natural Resources, Field Operations (East & West), Outreach and Engagement, and Recreation.

Purpose of Grant

Goal: The goal is to create and maintain healthy, diverse ecosystems anchored by appropriate native tree and shrub plantings within state parks that support wildlife, provide recreational opportunities, contribute to broader conservation efforts, and enhance the visitor experience. North Dakota Parks and Recreation intends to undertake its most extensive statewide tree planting initiative to date. The requested funding will allow the department to execute a strategic and concerted tree and shrub planting program in Tier I A visitor centric areas in every North Dakota State Park.

Strategy: To assess, categorize, develop landscape planting templates, install, evaluate, and manage comprehensive tree and shrub plantings in high-priority state park landscapes starting with Tier I A priority areas.

Background - Strategic Planning: In late 2023, the North Dakota Parks & Recreation Department (NDPRD) identified the need to scope out the potential magnitude of a state-wide, concerted program to increase tree and large shrub plantings at state parks. With the department's mission being to "Enrich generations through experiences that connect people and places", increasing attention is being placed on the visitor experience, from

provision of shade to enhancement of wildlife viewing through habitat enhancements. Thoughtful plantings of trees and large shrubs provide many of these enhancements.

Planting efforts to date have been of relatively small volume with small stock and primarily aimed at replacing or supplementing existing trees. Landscape architects from the firm Short Elliott Hendrickson, Inc (SEH) were retained to bring third party eyes to a set of representative parks to develop typical model planting design templates, assist in establishing priorities and in preparing cost estimates.

Areas were calculated and the degree of existing tree cover applicable to the ideal templates estimated, generating tree numbers and sizes required. Applied against cost factors for supply, contracted planting and related costs, costs generated for each of the representative parks for a long term, complete program. Per acre averages of these planting program costs were then applied to the remaining parks in the NDPRD system and divided into manageable 3-year program increments for a statewide planting program.

Once funding is approved, detailed planting plans can be generated for both contracting purposes and future in-house installations. Plans that can reflect specific nuances of regional stock availability at the time of installation, contracting strategy, most recent tree removals, other infrastructure initiatives and plant grouping for efficient maintenance resource allocation

Comprehensive Tree Planting Strategy

Landscape architects from the firm Short Elliott Hendrickson, Inc initiated the first steps of NDPRD's Comprehensive Tree Planting Strategy, including inventory maps, land-use category maps, and a landscape matrix database.

In person site review, discussions with NDPRD staff and aerial imagery review and analysis allowed for use area types to be identified and classified into four priority tiers. Tier I and Tier II areas were identified as the areas having most impact on the visitor experience and the priority for first phases of a planting program.

The site inventory map highlights existing infrastructure and larger plantings. The purpose of the map is to document areas of use and planned use areas. Areas on the maps include Cabin sites, campgrounds, cultural areas, hay lands, maintenance areas, native grasslands, RV and boat storage, sewer lagoon/pond, shelterbelts, shops, and tree rows.

From the site inventory map a site category map was created which is a visual representation of the Landscape matrix. (Refer to Figure 1 Grahams Island State Park Category Map.)

- Built Environment (entrance, visitor and activity centers, cabins, amphitheaters)
- Campground (dense, dispersed, and primitive camping sites)
- Corridors (roadways and trails)

- Cultural Resources (Native American cultural and sacred places)
- Facilities (maintenance buildings and areas, storage areas)
- Historical Resources (structures, elements and interpretive)
- Open Space (wooded areas unprogrammed, cultivated, programmed i.e., playgrounds)
- Shorelines (boat launches, beaches, and fishing area)

Each subcategory e.g., Dispersed campgrounds, cabins, trails was then assigned a tier level from I-IV with I being highest priority for tree plantings. Tiers levels categorized planting site priorities to allow for strategic planning, resource allocation, and decision-making in tree and shrub planting initiatives within state park landscapes. Refer to Table 3 for an example of a landscape matrix database for Grahams Island State Park.

- Tier I A areas include visitor centric areas such as campgrounds, visitor centers, activity centers, concessions, and marina approaches.
- Tier I B areas include additional plantings in visitor centric areas such as campgrounds, visitor centers, activity centers, concessions, and marina approaches.
- Tier II areas include visitor facing facilities such as entry roadways, trails, and primitive camp sites.
- Tier III areas include maintenance areas requiring shade or screening, areas that have experienced significant removals, programmed open spaces and waterfront activity areas such as beaches, fishing areas, boat launches and areas anticipated for future development where early, planned tree planting could enhance the finished product.
- Tier IV areas include unprogrammed open space, shelterbelts, existing tree stands, treatment lagoon areas and areas which may have a high likelihood of sensitive cultural sites and artifacts or paleontological features.

Aerial photo interpretation was used for approximating dimensions of all sub-categories. Based on dimensions and acres, tree counts were estimated for each tree type such as canopy trees, understory and small trees, conifers, and shrubs. Values in the landscape database matrix can then be manipulated based on years, funds available or percentage of tree count goal to meet. A summary of all parks with estimated park use areas identified for proposed planting has also been generated. This table provides projected tree planting costs within 5 years and projected 5+ years.

Individual Park planting cost estimates are easily extrapolated from the Landscape Matrix database. For this project we are looking at three-year plant cost estimates in Tier I A Priority areas (campgrounds, visitor centers, activity centers, concessions, and marina approach areas). Refer to Table 3 for an example of Grahams Island State Park planting estimate: Tier I A priority. Landscape Matrix data can also be manipulated to select multiple Tier priority areas.

The landscape matrix database will guide allocation of resources for future tree and shrub planting efforts within state parks, facilitate strategic decision-making, maximize tree planting program outcomes, and promote sustainable management practices. In addition to the database, landscape template infographics includes category planting goals, suggested canopy, understory and conifer trees and shrubs, and a visual representation of ideal planting layouts.

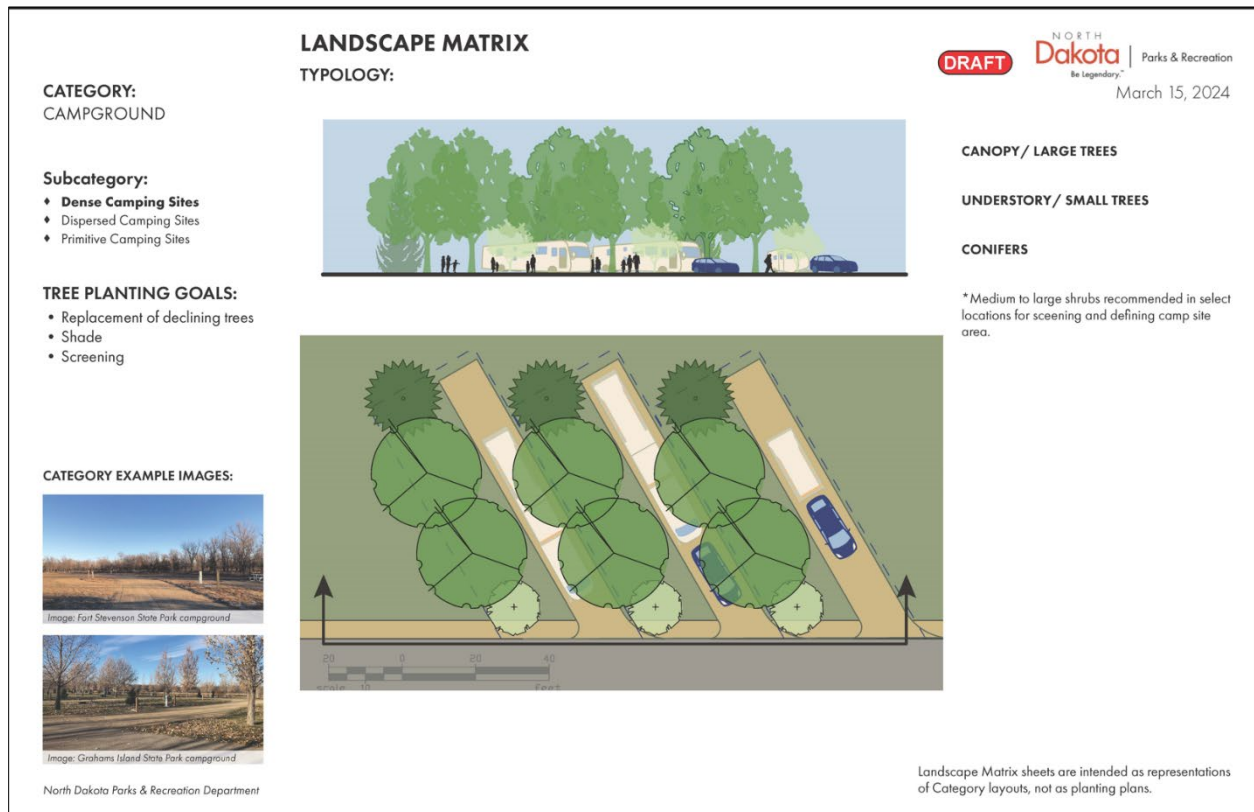


Figure 1 Example of a Landscape Matrix for Category Campground

Grahams Island State Park Category Map

The Category Map visually shows the categories of the Landscape Matrix.

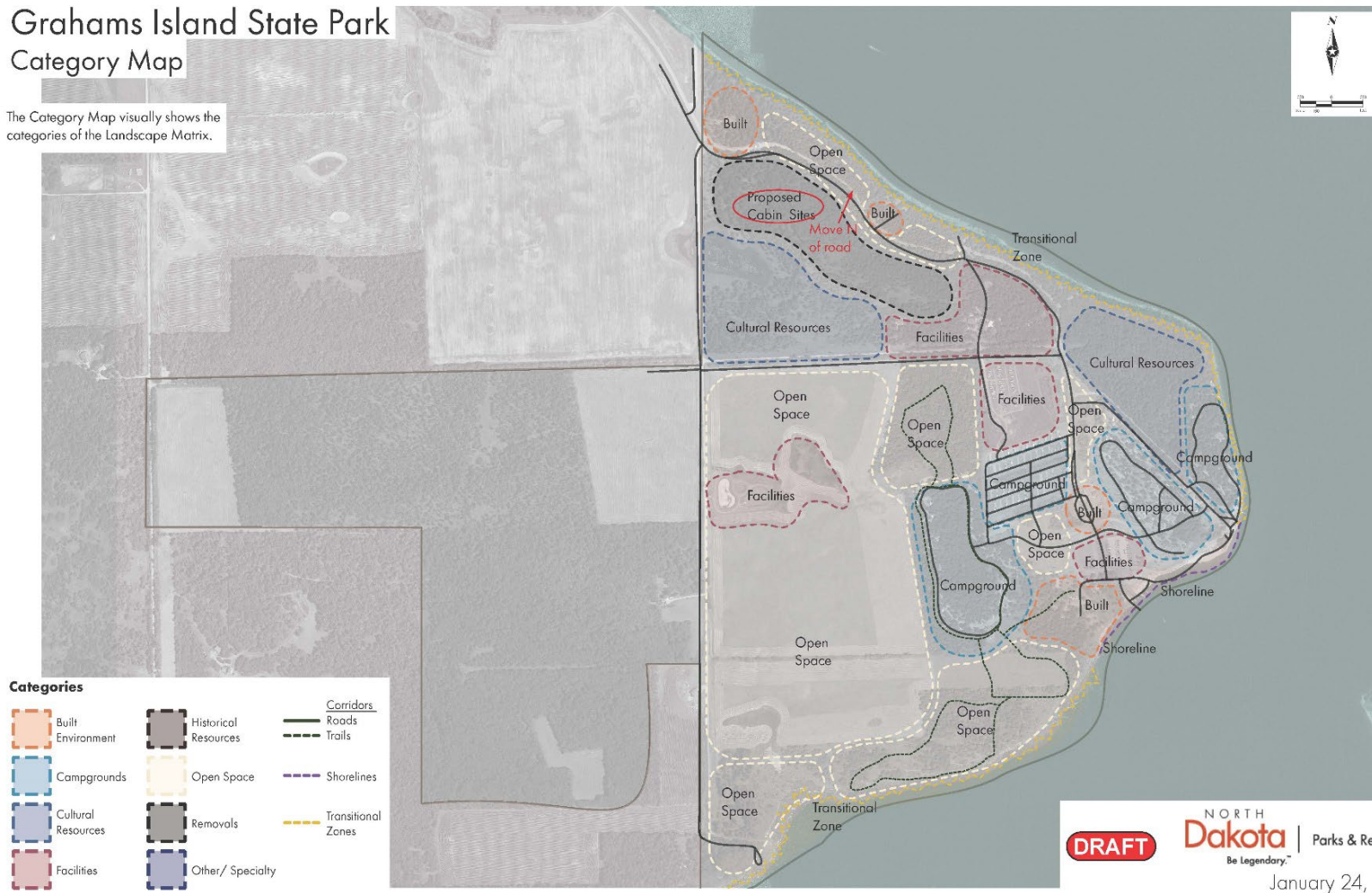


Figure 2 Example of a Park Category Map

Table 2 Itemized Plant Materials and Supplies: Tier 1 Priority – 3 Years

ITEM	GISP	FSSP	LSSP	TRSP	RRSP	LMOSP	LCSP	LMSP	ISP	FRSP	FALSP	CRSP	BLSP	TOTAL
PLANTS														
CANOPY TREES	105	452	327	150	38	15	204	60	75	68	124	79	65	1762
UNDERSTORY TREES	10	10	10	21	15	12	82	24	30	28	51	32	26	351
CONIFER TREES	17	17	17	25	12	4	6	18	24	22	9	9	21	201
SHRUBS	7	107	85	10	0	0	74	18	21	20	40	40	19	441
Sub Totals	139	586	439	206	65	31	366	120	150	138	224	160	131	
PLANT ACCESSORIES														
TUBES/ STAKES	74	400	292	74	38	15	174	53	68	64	111	68	56	1487
FENCING (DEER PROTECTION)	49	305	220	49	23	8	90	38	51	48	60	60	40	1041
MATERIALS														
MULCH	48	301	49	50	22	10	126	42	51	48	77	77	45	946

Table 3 Example of Individual Park Tree Planting Cost Estimates

TIER I TOTAL COST - GRAHAMS ISLAND STATE PARK					PLANTING COST ESTIMATE: TIER I PRIORITY Within 3 Years		
ITEM	ESTIMATED TOTAL ITEM COUNT ALL TIER 1 SITES	UNIT	UNIT COST	ESTIMATED PLANTING COST FOR TIER 1 SITES	PROJECTED PLANTING PERCENTAGE WITHIN 3 YRS	ESTIMATED ITEM COUNT FOR TIER 1 WITHIN 3 YRS	PROJECTED PLANTING COST TIER 1 WITHIN 3 YEARS
PLANTS							
CANOPY TREES	300	EACH	\$225	\$67,500	35%	105	\$23,625
UNDERSTORY TREES	30	EACH	\$170	\$5,100	35%	10	\$1,785
CONIFER TREES	50	EACH	\$240	\$12,000	35%	17	\$4,200
SHRUBS	20	EACH	\$80	\$1,600	35%	7	\$560
PLANT ACCESSORIES							
TUBES/ STAKES	210	TREE	\$60	\$12,600	35%	74	\$4,410
FENCING (DEER PROTECTION)	140	TREE	\$100	\$14,000	35%	49	\$4,900
MATERIALS							
MULCH	138	CUBIC YARD	\$120	\$16,560	35%	48	\$5,796
CONTRACTOR SERVICES							
PLANT, TRANSPORT & INSTALLATION	1	LUMP SUM	\$94,000	\$94,000	35%	3	\$32,900
MAINTENANCE							
3-YEAR PLANT ESTABLISHMENT	3	YEAR	\$10,000	\$30,000	100%	3	\$30,000
TOTALS	400			\$253,360		139	\$108,176

Tree Stock Size

Containerized nursery stock refers to plants that are grown and sold in containers rather than being directly planted in the ground. These containers can vary in size and material, ranging from small pots to larger containers such as nursery cans or fabric grow bags. Cost estimates are based #10 (10 gallons) and #20 container (20 gallons). Both #10 and #20 containers are popular choices for nurseries and garden centers because they provide adequate space for plants to grow and develop healthy root systems.

A tree in a #20 container could range from a few feet tall for younger or smaller species to several feet tall for larger or more mature trees. It's not uncommon to find trees in #20 containers that are 6 feet or taller. In addition to height, the caliper of the tree's trunk is also an important consideration. Trees in #20 containers may have trunk diameters ranging from a few inches to several inches, depending on the species and age of the tree.

Containerized nursery stock offers several advantages over traditional bare-root plants. They typically have well-established root systems, which can lead to faster establishment and growth after transplanting. Additionally, containerized plants are easier to handle and transport, making them popular choices for both home gardeners and commercial landscapers. Containerized stock also allows for planting outside of the narrow spring window required for bare-root stock. Given the volume of trees and shrubs to be planted in this initiative, having maximum flexibility for planting windows will be important.

Species Selection

Species selection includes a diverse mix of native tree and shrub species well-suited to each planting site's ecological conditions and management objectives. Selection of tree and shrub species will be based on their suitability to the planting site's soil, water availability, climate, general growing conditions, and the design objectives. Consideration and incorporation of tree and shrub species not native to North Dakota will include species that have proven resilient, adaptable, and ecologically valuable within state park settings. Tree and shrub species lists have been developed for each park. See Table 3 for Grahams Island State Tree and Shrub List as an example.

North Dakota State Park Tree and Shrub Planting
Suggested Native Trees and Shrubs

The following is a list of native tree and shrub species currently growing at the most state parks and other species (noted with *) that are currently not native to the park but suitable for plantings. Primary criteria for additional species selection based on soils and species ability to withstand moisture stress and limited maintenance. Y = best, well adapted M= Moderately well adapted and N= Not well adapted, generally not recommended for new plantings at the park.

Moisture Stress/low maint.	Mature Height'	Common Name	Latin Name
Y	45-65	American elm	<i>Ulmus americana</i>
Y	18-20	Boxelder	<i>Acer negundo</i>
Y	6-14	Buffaloberry	<i>Shepherdia argentea</i>
Y	40-70	Bur oak	<i>Quercus macrocarpa</i>
Y	12-25	Chokecherry	<i>Prunus virginiana</i>
Y	50-100	Cottonwood	<i>Populus deltoides</i>
M	3-6	Black currant	<i>Ribes americanum</i>
M	3-6	Golden currant	<i>Ribes odoratum</i>
Y	35-65	Green ash	<i>Fraxinus pennsylvanica</i>
M	40-60	Common hackberry	<i>Celtis occidentalis</i>
Y	15-20	Hawthorn	<i>Crataegus chrysocarpa</i>
Y	6-15	Juneberry	<i>Amelanchia alnifolia</i>
Y	45	Peach-leaved willow	<i>Salix amygdaloides</i>
Y	50-70	Ponderosa pine	<i>Pinus ponderosa</i>
Y	20-40	Rocky Mountain juniper	<i>Juniperus scopulorum</i>
Y	5-9	Silverberry	<i>Elaeagnus commutata</i>
Y	3-8	Skunk bush sumac	<i>Rhus trilobata</i>
Y	2-4	Tall cinquefoil	<i>Potentilla arguta</i>
Y	8-10	American plum	<i>Prunus americana</i>
Y	4-6	Wild rose	<i>Rosa arkansana</i>
Y	15-20	Amur maple*	<i>Acer ginnala</i>
Y	60-80	Silver maple*	<i>Acer saccharinum</i>
Y	30-60	Black hills spruce	<i>Picea glauca var densata</i>
Y	30-65	Colorado blue spruce*	<i>Picea pungens</i>
M	12-25	Canada red chokecherry*	<i>Prunus virginiana 'Canada Red'</i>
Y	40-50	Siouxland cottonwood*	<i>Populus deltoides' siouxland'</i>
Y	40-50	Hybrid poplar*	<i>Populus hybrids</i>
Y	4-6	Woods Rose	<i>Rosa woodsii</i>

Sources: North Dakota Tree Handbook <https://www.ag.ndsu.edu/trees/handbook/ndhand-1.htm>
 Web Soil Survey <https://websoilsurvey.nrcs.usda.gov/app/>
 North Dakota Tree Selector <https://www.ag.ndsu.edu/tree-selector>
 NDDOT ND Native Woody Vegetation List
https://www.dot.nd.gov/manuals/design/designmanual/wordfiles_design/environmental/Appendix%20E10%20Native%20Woody%20Vegetation%20List.pdf

Figure 3 ND State Park Tree and Shrub Planting Suggested Species List

Table 4 Example of Specific Park Tree and Shrub List

GRAHAMS ISLAND STATE PARK - TREE PLANT LIST		Tree Info				
COMMON NAME	SCIENTIFIC NAME	Spread (ft)	Height (ft)	Sun	Zone	Soil Preference
CANOPY/ LARGE TREES (Heights >35 feet)						
BOX ELDER	<i>Acer negundo</i>	30-50	35-80	full	3	Moist, wide-range
RED MAPLE	<i>Acer rubrum</i>	30-50	40-70	full/part	3	Moist, slightly acidic
SILVER MAPLE	<i>Acer saccharinum</i>	35-50	50-80	full/part	3	Moist, acidic
BALSAM POPLAR	<i>Populus balsamifera</i>	25-40	50-80	full	1	Moist to wet
HACKBERRY	<i>Celtis occidentalis</i>	50	70	full	3	Wide-range
COTTONWOOD	<i>Populus deltoides</i>	40-70	65-100	full	2	Moist
QUAKING ASPEN	<i>Populus tremuloides</i>	30	50	full	1	Wide-range
BUR OAK	<i>Quercus macrocarpa</i>	80	80	full	2	Dry to moist
AMERICAN LINDEN	<i>Tilia americana</i>	30-50	50-80	full to shade	2	Moist, well-drained
AMERICAN ELM 'PRAIRIE EXHIBITION'	<i>Ulmus americana 'Lewis & Clark'</i>					
AMERICAN ELM 'PRINCETON'	<i>Ulmus americana 'Princeton'</i>					
ELM 'NEW HORIZON'	<i>Ulmus 'New Horizon'</i>					
GREEN ASH	<i>Fraxinus pennsylvanica</i>		50-70			
HOP-HORNBEAM (IRONWOOD)	<i>Ostrya virginiana</i>		25-40			
UNDERSTORY TREES (Height <35 feet)						
AMERICAN PLUM	<i>Prunus americana</i>	12-20	12-20	full/part	4	Wide-range
CHOKECHERRY	<i>Prunus virginiana</i>	20	25-45	full/ part	2	mid-range
PEACH-LEAF WILLOW	<i>Salix amygdaloides</i>	25-35	35-40	full/part	2	Moist, well-drained
PIN CHERRY	<i>Prunus pensylvanica</i>		25-35			
SMALL TREES/ LARGE SHRUBS (Height <20 feet or Shrub-like Quality)						
AMUR MAPLE	<i>Acer ginnala</i>	15-20	15-20		2	
BUFFALOBERRY	<i>Shepherdia argentea</i>	8-12	6-20		2	
SMOOTH SUMAC	<i>Rhus glabra</i>		10-20			
JUNEBERRY	<i>Amelanchia alnifolia</i>		6-15			
CURRRANT	<i>Ribes sp.</i>		3-6			
NANNYBERRY	<i>Viburnum lentago</i>		10-18			
HAWTHORN	<i>Crataegus rotundifolia</i>		15-20			
SILVERBERRY	<i>Elaeagnus commutata</i>		5-9			
SKUNKBUSH SUMAC	<i>Rhus trilobata</i>		3-8			
WOOD'S ROSE	<i>Rosa woddsii</i>		4-6			
TALL CINQUEFOIL	<i>Potentilla arguta</i>		2-4			
CANADA RED CHOKECHERRY	<i>Prunus virginiana 'Canada Red'</i>		12-25			
WILD ROSE	<i>Rosa arkansana</i>		4-6			
RED OISER DOGWOOD	<i>Cornus sericea</i>		6-12			
SANDCHERRY	<i>Prunus besseyi</i>		4-6			
CONIFERS						
ROCKY MOUNTAIN JUNIPER	<i>Juniperus scopulorum</i>	10-15	15-45	full	3	Well-drained
BLACK HILLS SPRUCE	<i>Picea glauca var. densata</i>	15	40	full	2	Dry to moist
PONDEROSA PINE	<i>Pinus ponderosa</i>	25	80	full	3	Dry to average
COLORADO BLUE SPRUCE	<i>Picea pungens</i>		30-65			

Green Ash Note: Planting green ash trees can be problematic due to the presence of the emerald ash borer (EAB), an invasive insect species that has devastated ash tree populations in North America. To mitigate the impact of the emerald ash borer, it has been recommended to avoid planting new ash trees, especially those that are susceptible to infestation. Instead, it's advisable to diversify tree species in landscapes and focus on planting species that are resistant to EAB or less susceptible to its damage.

Tree and Shrub Installation

The tree planting project aims to plant a total of 1/3 of all trees and shrubs each year, with a target of planting all trees and shrubs by the end of the third planting season. This approach ensures a steady progression toward the overall goal.

Tree planting contractors will play a crucial role in installing tree and shrub planting projects, ensuring that the planting process is carried out efficiently and effectively and that project specifications are followed.

- Standard planting details and accompanying specifications relevant to the various planting conditions found at our state park properties, as well as planting layout diagrams will be completed for each bid package.
- Contractors/vendors awarded contracts will, before commencing delivery and installation, review provided project plans and planting designs, specifications and contract conditions with the project manager and field inspection staff.
- Contractors will procure the necessary equipment, tools, and materials for planting, such as soil amendments, planting stakes and mulch.
- Contractors will document installation activities, including plant quantities, species planted, planting techniques used, and any challenges encountered during the process. NDPRD project manager and field inspection staff will also document activities, review materials and plant stock prior to or at delivery on site, conduct quality control inspections and approve payments.
- Contractors may also be asked to assist NDPRD staff in conducting post-installation inspections or evaluations to assess the success of planting efforts, identify any warranty actions and identify opportunities for improvement or follow-up maintenance, typically at the end of the 1st. Growing season.

Post Planting Assessments and Evaluations

Post-planting assessments and evaluations are crucial steps in ensuring the success and effectiveness of a tree planting project. Annual tree and shrub planting assessments will be conducted to track survival and evaluation of post-planting maintenance. All new tree and shrub plantings will be mapped using ArcGIS Online ESRI Field maps. Tree planting assessment reports will be distributed to all parks.

Post-Installation Management

Managing post-tree planting maintenance involving full-time and seasonal employees and volunteers requires careful planning and coordination. Task allocation, supervision, oversight, and work schedules will be done at the park level and with overall coordination and quality control undertaken by the Natural Resources Division. All seasonal and volunteer time and activity will be closely tracked and recorded.

- **Year 1:** Establishment and Initial Growth Phase includes regular watering, weed control, monitoring for pests or diseases, staking and support, and installing fence and bark protectors.
- **Year 2:** Growth and Development Phase includes supplemental watering as needed, weed control, monitoring for pest and disease, light pruning to remove any dead or damaged branches, fertilization only after soil test, and replenishing mulch.
- **Year 3+:** Maturation and Maintenance Phase includes supplemental watering as needed, monitoring for pests and disease, light pruning to remove any dead or damaged branches, fertilization but only after soil test, and replenishing mulch.

Benefits

By strategically incorporating tree and shrub plantings, state parks can not only enhance their natural beauty but also improve the overall experience for visitors by creating more visually appealing, tranquil, and environmentally sustainable spaces. Tree and shrub planting in state parks offers numerous environmental and recreational benefits:

- **Recreation and Education:** Trees and shrubs provide recreational activities such as hiking, birdwatching, and nature photography opportunities. State parks often use native vegetation for educational purposes, teaching visitors about local ecosystems and the importance of conservation.
- **Shade and Cooling:** In state parks, shaded areas offer visitors a comfortable environment for recreation and relaxation during the hot summer months. During cooler shoulder seasons, strategically located plantings can provide favorable microclimates and modify strong winds.
- **Privacy:** In areas where campsites are in close proximity to one another or park facilities, strategically planted trees and shrubs can provide privacy for park users and residents alike. Trees can also help to delineate public, semi-private and private spaces.
- **Soil Conservation and Erosion Mitigation:** Tree roots help stabilize soil, reducing erosion and preventing sedimentation in streams and rivers. This helps to protect water quality and maintain healthy aquatic ecosystems. Tree and shrub roots can also provide direct resistance to highwater erosive forces along streambanks in our parks.
- **Biodiversity:** Planting diverse species of trees and shrubs increases habitat diversity, supporting a wide range of wildlife, including birds, insects, and mammals. This promotes biodiversity and contributes to the overall health of the ecosystem.
- **Aesthetic Value:** Planting trees and shrubs enhances the visual appeal of state parks, making them more attractive destinations for visitors. Well-landscaped areas create scenic vistas, enhance local soundscapes, and contribute to a sense of tranquility and natural beauty. Spring and fall colors can attract additional visitation, especially in the eastern parks and recreation areas.

Table 5 Project Timeline and Tasks

Tasks	Jul 2025- Nov 2025	Dec 2025- June 2026	Jul 2026- Nov 2026	Dec 2026- June 2027	Jul 2027- Nov 2027	Dec 2027- June 2028	July 2028- Nov 2028
Parks site Inventory map updates							
Parks site category map updates							
Parks Tier I updates							
Tree planting assessments							
Landscape Matrices Updates/Planting Designs							
Species Selection per park							
Bid and Procurement							
Tree & Shrub Site Prep & Installation							
Post Planting Assessments							
Post Installation Management							
Status Reports							
Planning	Field Work		Financial			Status Report	

Project Need: State parks play a vital role in preserving natural landscapes, providing recreational opportunities, and safeguarding biodiversity. The challenges facing state park tree plantings and native woodlands, especially regarding mature and dying cottonwood forests, insect pests, disease, flooding, and funding for replacement trees and shrubs, as well as the development of new tree and shrub plantings in new development areas, are indeed multifaceted:

- Funding Constraints – limited budgets and competing priorities.
- Replacement Trees and Shrubs – cost of replacement, native species selection for containerized sock is limited
- Maintenance Needs - watering, mulching and protection from pests and wildlife
- Development Area -integrating tree and shrub plantings into new development plans

Addressing these needs and challenges requires a combination of strategic planning, collaborative partnerships, and innovative funding mechanisms.

Project Urgency: Given that since 2020, North Dakota Parks and Recreation has seen record visitation and usage, there is an urgent need to address tree replacement and management goals. Prioritizing and accelerating tree planting initiatives in state parks and native woodlands is essential. By taking immediate action to plant trees and restore degraded tree plantings and woodlands we can make meaningful progress towards conserving biodiversity, enhancing the resilience of our natural ecosystems, and enhance the visitor experience at our State Parks.

Project Innovative Features: ArcGIS Online and Field Maps offer innovative tools for conducting tree planting assessments and tree risk assessments, enhancing efficiency, accuracy, and data-driven decision-making in forestry. Here are some ways these technologies are being used in ND state parks:

Tree and Shrub Planting Mapping and Inventory: ArcGIS – Field Maps are being used to create detailed maps and inventory databases of existing tree populations, including species, size, condition, management needs and location. Data included trees and shrubs that have failed and need to be replaced. Refer to the sample tree planting assessment report map filtering out replants for 2024.

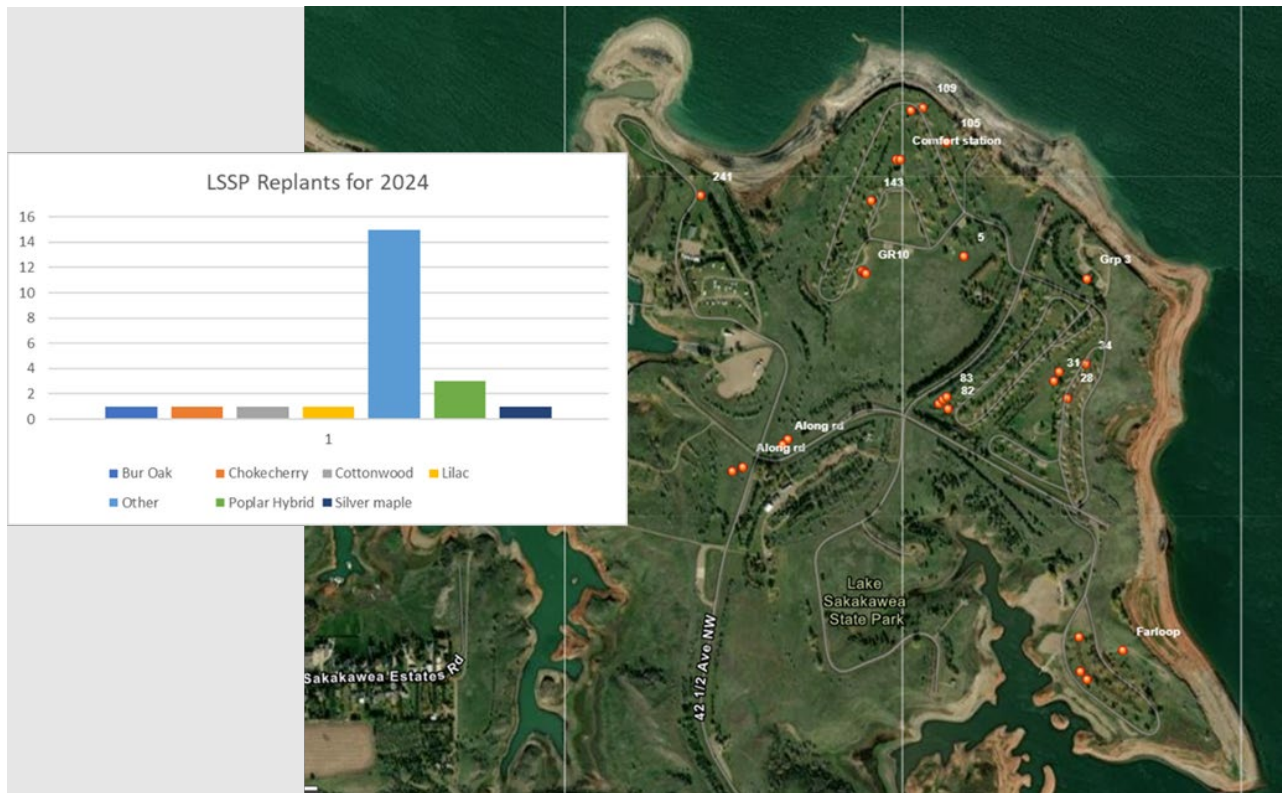


Figure 4 Sample Tree Planting Assessment Report Filtering out Replants for 2024.

Tree Risk Assessment and Management: Arc GIS – Field Maps are currently being used to conduct annual tree risk assessments which rely on identifying and assessing structural conditions to assess failure potential. Defect is the term commonly used to identify a condition or characteristic that is structurally weak or contributes to a structural weakness. All trees with 6” or greater diameters with potential targets are mapped using ArcGIS Online Field Map software, GNSS receiver, antennae, and iPad. Tree risk mitigation recommendations are made for each tree, such as Critical Removals, Critical Prunes, Removal, pruning, or annual inspection. All attempts are made to replace tree in high use area at a 2: 1 ratio and a 1:1 ratio for all other areas.

By leveraging ArcGIS and Field Maps in tree planting assessments and tree risk assessments, natural resources team can streamline data collection, improve decision-making, and enhance collaboration across project teams, leading to more effective and sustainable management of urban and natural tree populations.

Project Process

The tree planting process involves several key steps, from initial assessment and species selection, purchase, installation, and maintenance:

1. Parks site Inventory and category map updates
2. Parks Tier I A updates
3. Annual Tree and shrub planting assessments
4. Annual Tree Risk Assessments
5. Landscape Matrices Updates/Planting Designs
6. Species Selection – native species preference
7. Tree and shrub bids and procurement – plant sourcing, where possible, from local nurseries
8. Post-planting care – Follow ND Forest Service 3-year maintenance plan

By following a systematic approach to tree and shrub planting, from assessment and species selection to purchase and installation, the Department can ensure the success and sustainability of tree-planting projects while enhancing the ecological, aesthetic, and social value of state parks and natural landscapes.

Is this project part of a Comprehensive Conservation Plan? X Yes No

We have a system wide process for recurring assessment, removal and planting as well as park specific natural resources management plans of which, this project will play a significant role in executing.

Management of Project

The management of this project will span multiple divisions of North Dakota Parks and Recreation. The Outreach and Engagement Division will oversee the grant administration process. The Business Services Division will carry out the procurement process in accordance

with North Dakota Century Code Chapter 48-01.2. And finally, the Natural Resources Division along with the Parks Operation Division will oversee the timeline and implementation of this project, with both Divisions working with Planning and Projects during planning phases.

Natural Resources Division: The Natural Resources Division Chief will serve as both the project and task content manager.

The Division also conducts all tree planting assessments and conducts all tree planting spatial and tabular data updates. Staff are responsible for compiling all data in Tree Planting Assessments Reports. Natural resources staff will also assist in the selection of trees and shrubs to be purchased as well as post delivery inspection. The Natural Resources Division Chief will work with Business Services Division in the procurement of materials and contracted services.

Field Operations: Seasonal Park Rangers and Groundskeepers will assist with tree planting and post installation tasks. Natural Resources Division seasonal Natural Resource Technicians and Specialists will assist park staff in site preparation, tree plantings and maintenance tasks.

A tree service contractor's primary responsibility will be to execute tree planting operations efficiently and effectively. This involves delivery of stock, planting trees according to industry standards, and ensuring proper spacing and alignment.

Volunteers will play a crucial role in maintaining tree plantings in various way including planting and watering, mulching, and weeding and the installation of deer fence, tree tubs and bark protectors.



Evaluation

Post-planting tree assessments are conducted after trees have been planted to evaluate their health, growth, and overall performance. These assessments are essential for determining the success of the tree planting project and identifying any issues that may need to be addressed.

Annual tree and shrub planting assessments will be conducted to track survival and evaluation of post-planting maintenance. All new tree and shrub plantings will be mapped using ArcGIS Online ESRI Field maps. Tree planting assessment reports will be distributed to all parks. Key aspects typically covered in post-planting tree assessments include survival rate, environmental stressors, pest and disease incidence, and maintenance needs.

Budget Narrative

Overall, volunteers contribute significantly to the maintenance of tree plantings by providing labor, expertise, and community engagement, ultimately contributing to the health and vitality of urban forests and green spaces. For budget purposes volunteer hours have been listed under in-kind match. It is estimated that over 150 volunteers will participate in this tree planting project. Accumulating over 800 hours, resulting in approximately \$12,000 sponsor match.

Seasonal and long-term temporary staff are paid through special fund revenue dollars. It is estimated that over 9000 hours of seasonal time will be dedicated to post tree and shrub establishment tasks over the three-year project. This is equivalent to approximately \$138, 375 which is to be used as the in-kind match.

In 2024 North Dakota Parks and Recreation received \$25,000.00 from the ND Forest Service American the Beautiful Tree planting grant. It is anticipated that the Department will apply for this grant at least once during the life of this Outdoor Heritage grant. Grant amount is capped at \$25,000.

Table 6 Project Costs

EXPENSE ITEM	ESTIMATED TOTAL COUNT:TIER 1 PRIORITY	UNIT	UNIT COST	PROJECTED PLANTING COST: TIER 1 PRIORITY WITHIN 3 YEARS
CANOPY TREES	1762	EACH	\$225	\$396,450
UNDERSTORY TREES	351	EACH	\$170	\$59,670
CONIFER TREES	201	EACH	\$240	\$48,240
SHRUBS	441	EACH	\$80	\$35,280
PLANT ACCESSORIES				
TUBES/ STAKES	1487	TREE	\$60	\$89,220
FENCING (DEER PROTECTION)	1041	TREE	\$100	\$104,100
MATERIALS				
MULCH	946	CUBIC YARD	\$120	\$113,520
SERVICES				
PLANT, TRANSPORT & INSTALLATION	1	LUMP SUM	\$745,860	\$745,860
MAINTENANCE				
3-YEAR PLANT ESTABLISHMENT	1	LUMP SUM	\$150,375	\$150,375
TOTAL				\$1,742,715

Table 7 Project Budget and Match

Project Expense	OHF Request	Applicant Match Share (Cash)	Applicant Match (In-kind)	Applicant Match Share (Indirect)	Other Project Sponsor's Share	Total Each Project Expense
CANOPY TREES	\$ 371,450				\$ 25,000	\$ 396,450
UNDERSTORY TREES	\$ 59,670					\$ 59,670
CONIFER TREES	\$ 48,240					\$ 48,240
SHRUBS	\$ 35,280					\$ 35,280
TUBES/ STAKES	\$ 89,220					\$ 89,220
FENCING (DEER PROTECTION)	\$ 104,100					\$ 104,100
MULCH	\$ 113,520					\$ 113,520
PLANT TRANSPORT & INSTALLATION	\$ 471,235	\$ 177,190	\$ 97,435			\$ 745,860
3-YEAR PLANT ESTABLISHMENT	\$ -	\$ -	\$ 150,375			\$ 150,375
Total Costs	\$ 1,292,715	\$ 177,190	\$ 247,810	\$ -	\$ 25,000	\$ 1,742,715

Sustainability & Partnerships

North Dakota Parks and Recreation recently established the Outreach and Engagement Division which is dedicated to engaging stakeholders and seeking funding from various channels such as grants, donations, sponsorships, partnerships, and revenue-generating activities. The Outreach and Engagement Division is dedicated to seeking funds for the long-term sustainability of the department tree planting and subsequent maintenance projects.

This project is strengthened by a network of dedicated partners who share our commitment to conservation and public access:

- The North Dakota Forest Service has provided vital support and expertise to advance our planting efforts.
- Our Donate a Tree program engages the public directly in park stewardship,
- Volunteers from the University of Mary's Day of Caring contribute valuable in-kind labor on planting days.
- STIHL has supported our efforts with resources that enhance our capacity in the field of tree management.

Together, these partnerships expand our impact and help bring this statewide initiative to life.

Partial Funding

If this grant proposal is partially funded, the Department can administer the project through a proportional reduction in the number of trees planted. Despite the potential for a decrease in the project scope, the Department remains committed to maximizing the impact of the project within

the revised scope while still including all park properties but scaling back the number of trees and shrubs. Project administrators will diligently prioritize activities, and leverage resources efficiently to achieve our objectives and deliver meaningful outcomes. A partial funding still represents a valuable opportunity to continue our work towards tree and shrub plantings in ND State Parks and we are confident that with careful planning and strategic execution, we will make significant strides towards our goal albeit with a longer time horizon.

Partnership Recognition

The department will continue to strengthen tree planting partnership recognition strategies acknowledging the contributions of the Outdoor Heritage Fund who have supported ND state park tree plantings efforts for over 10 years. Strategies include:

- **Create Branded Materials:** Develop branded materials such as certificates and plaques, to formally recognize OHF for their contributions to tree planting efforts.
- **Share Success Stories:** Share success stories and impact metrics to showcase the collective achievements of the partnership.
- **Engage Media and Public Relations:** Leverage media and public relations channels to amplify the partnership's visibility and contributions to tree-planting initiatives.
- **Provide Regular Updates:** Keep partners informed and engaged by providing regular updates on project progress, milestones reached, and upcoming opportunities for involvement.

Procurement of Plant Materials, Appurtenances, and Installation

The procurement bid process will follow the requirements outlined in North Dakota Century Code Chapter 48-01.2 (Public Improvement Bids and Contracts). The procurement bid process will accept bids from reputable nurseries that prioritize disease resistance and suitability for local environmental conditions and can ensure that tree and shrub planting stock are of high-quality plant materials that contribute to planting success and sustainability. Bid packages will be prepared with consideration to the contracting and material availability climates in the areas of the state where the parks are located. Depending on the circumstances of the bidding climate at the time of implementation, the potential of grouping parks with similar planting scenarios and the on-site constraints of each park, supply and installation might be bid separately or together, and with the opportunity for multiple, regionally based vendors. Vendors will be required to be bonded and meet state requirements for liability insurance.

Can you meet all the provisions of the sample contract? Yes No