

Groundwork Rhode Island Proposal

J.H. Lynch & Sons, Inc. Supplemental Environmental Project (SEP)

Cumberland, RI Tree Planting

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Groundwork RI (GWRI) developed this proposal at the request of J.H. Lynch & Sons, Inc. to fulfill the requirements of a Supplemental Environmental Project (SEP) with the RI Department of Environmental Management (DEM) in the town of Cumberland.

We appreciate the decision by J.H. Lynch & Sons to ask GWRI to outline a project proposal.

We understand the priorities for this SEP, as discussed via email with J.H. Lynch, the RI Department of Environmental Management (RIDEM), and other stakeholders, to be: 1) utilizing tree planting as a method to improve air quality in Cumberland; and 2) addressing equity concerns by planting trees in Cumberland neighborhoods with the lowest tree canopy.

Based on these goals and GWRI's current tree planting work happening in Cumberland this year, we will focus our attention on two lower-canopy neighborhoods: 1) Valley Falls, and 2) Berkeley. We determined that both neighborhoods are lower-canopy by using the Tree Equity Score Analyzer (TESA) developed by American Forests.

We will develop our final planting plan in consultation with the Town of Cumberland, RIDEM, and J.H. Lynch. GWRI has a good relationship with Jonathan Stevens, Cumberland's Town Planner, who will assist us with any permitting processes that are needed, for example on public property within our focus areas.

Planting Locations

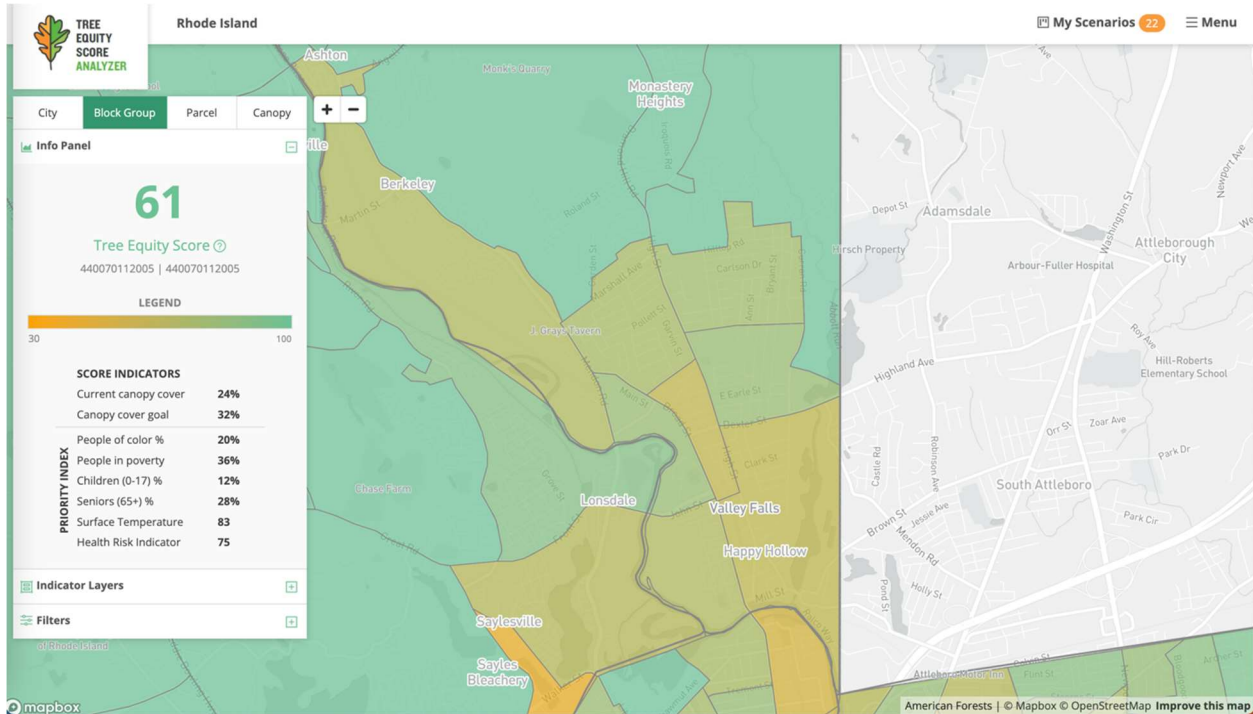
The map of Cumberland on the following page was generated using the [Tree Equity Score Analyzer \(TESA\)](#),¹ a mapping tool developed by American Forests and utilized by the State of Rhode Island to help determine areas of the state that should be prioritized for tree planting. TESA creates a numerical score based on publicly available environmental and demographic data that can be used to compare different neighborhoods' need for increased tree canopy. In addition, TESA helps quantify and measure the environmental improvements realized by tree planting. TESA only includes mapping tools for urban/more densely populated areas.

GWRI has been utilizing TESA for other tree planting projects over the past two years to help prioritize outreach, support educational and communication efforts, and more. For tree planting projects, GWRI typically prioritizes those block groups that have tree equity scores of 85 or lower. The areas shaded in yellow or lighter yellow/green have lower tree equity

¹ <https://rhode-island.treeequityscore.org/login>

scores, with yellow being the lowest.

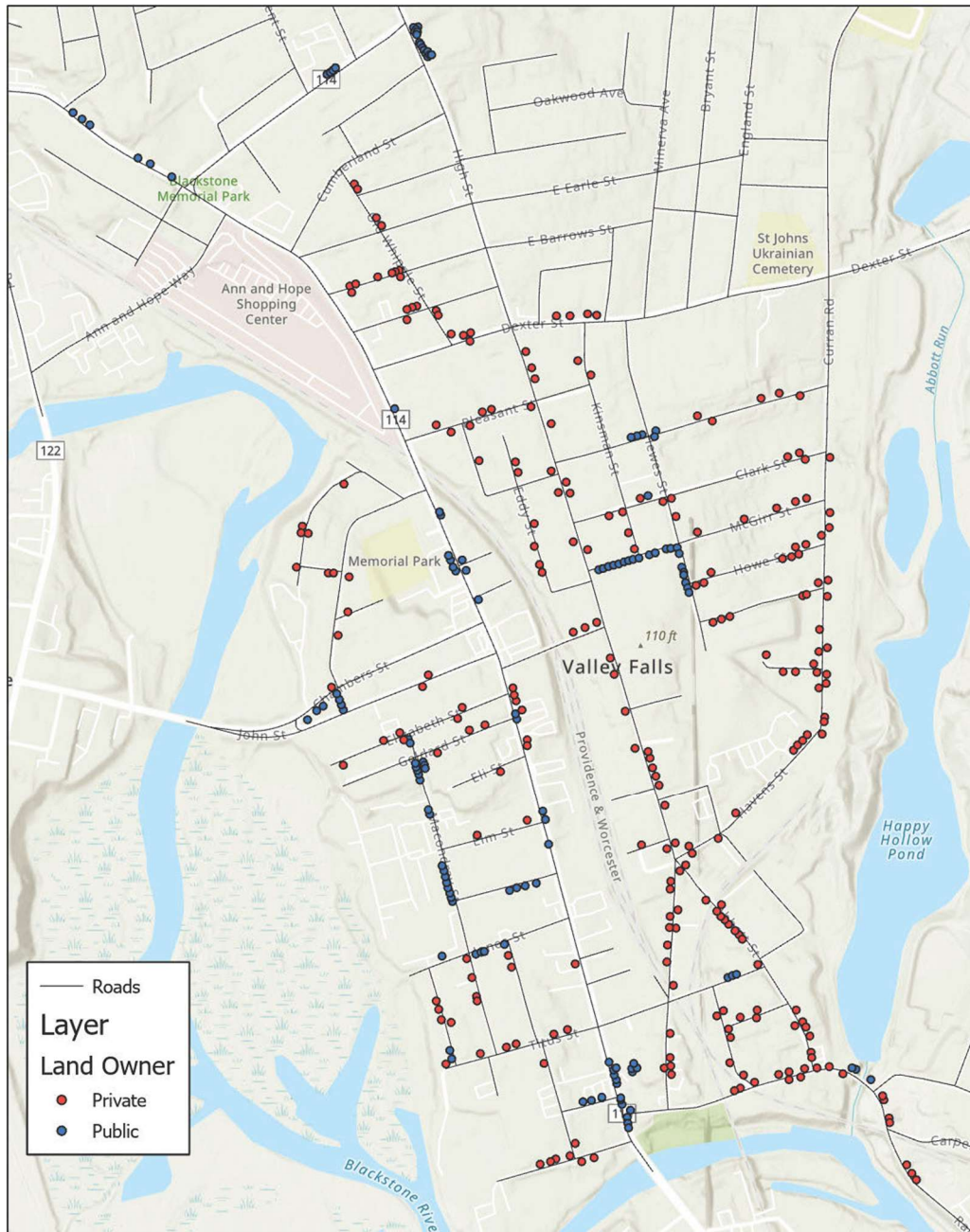
The map below shows the boundary between Central Falls and Cumberland on the southern end, and the boundary between Lincoln and Cumberland on the western edge. Valley Falls, north along Broad Street to Mendon Road, and Berkeley on the southwestern side of Mendon Road all have tree equity scores of 80 or lower, meeting our eligibility criteria.



GWRI will further refine exact planting locations by ground-truthing these neighborhoods and determining actual tree canopy needs. In consultation with the Town of Cumberland and other partners, we will explore the possibility of planting on both private property (residential and possibly commercial) and public property (primarily the street/right of way and schools). We anticipate planting primarily on private property, but some public property locations may be suitable. One location that stands out is the Boys and Girls Club of Cumberland-Lincoln at the intersection of Mendon Road and Martin Street in the Berkeley neighborhood. This is an example of a public-serving location that may be a great fit for this project and is located within a half-mile of the J.H. Lynch facility. Research and plan creation will be done in full consultation with the Town of Cumberland, J.H. Lynch, and other key players such as other community stakeholders.

GWRI is currently spearheading a tree planting project in four northern RI communities including Cumberland, which is funded by a U.S. Forest Service Landscape Scale Restoration (LSR) grant. Our staff has already begun outreach work in Valley Falls to sign residents up for private property tree plantings. In addition, the Town of Cumberland has a Municipal Resilience Program (MRP) grant from the RI Infrastructure Bank. They are focusing on public property

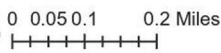
plantings in Valley Falls. The map below shows potential planting locations in Valley Falls on both public and private property. This map was developed by a landscape architect hired by the Town of Cumberland for their MRP project. The Town is planning their public property plantings and leaving the private property plantings for GWRI to conduct outreach to homeowners, residents, and businesses.



VALLEY FALLS - TREE LOCATIONS

TOWN OF CUMBERLAND, RI
TREE PLANTING AND MANAGEMENT

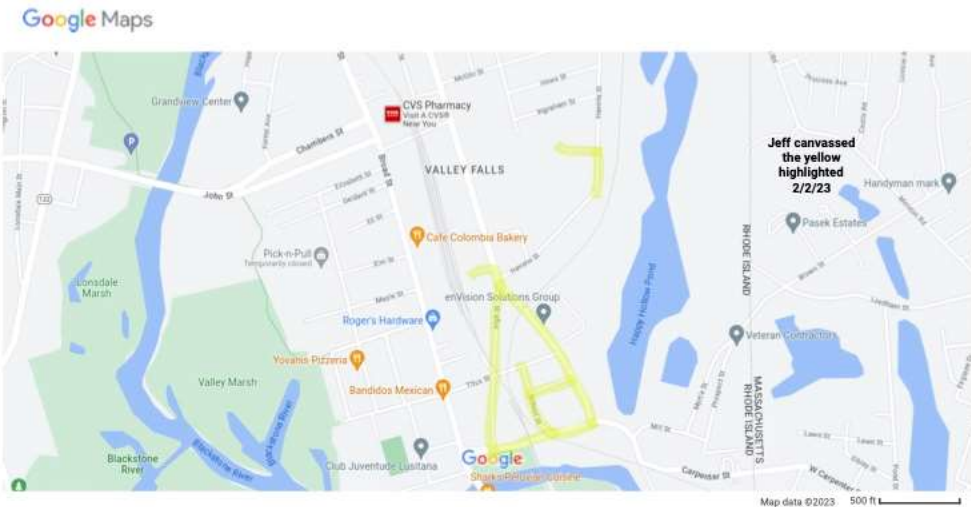
JANUARY 9, 2023



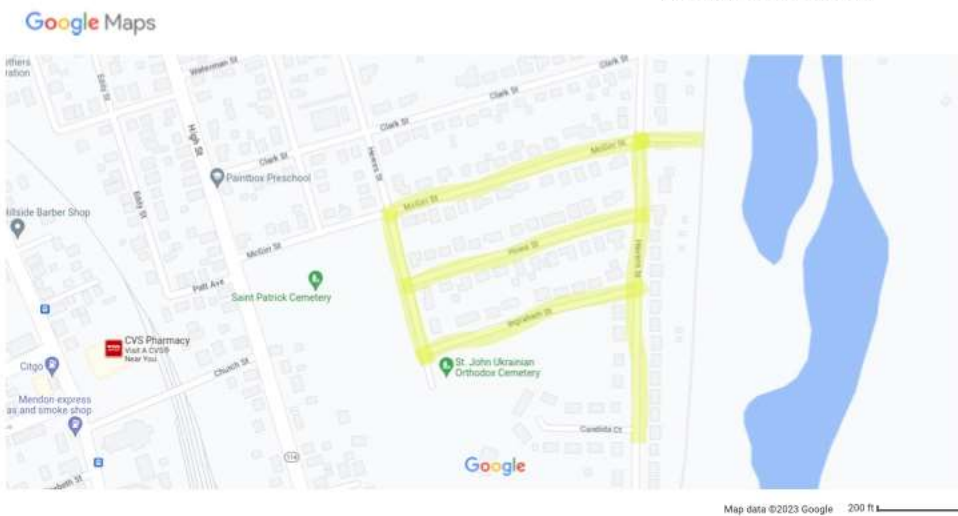
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We propose utilizing this SEP as match for our Forest Service LSR grant as detailed in the budget section of this proposal. The match funds will be used to purchase trees and pay for some stewardship costs related to maintaining the trees for three years after planting. The Forest Service grant will pay for labor costs including those related to outreach, planning/coordination, and planting.

These three maps below show the specific streets in Valley Falls where GWRI has already canvassed residents and businesses for private property plantings:



Jeff canvassed 2/15/23





We will continue our canvassing in these areas and expand to other low tree canopy areas such as the Berkeley neighborhood for our LSR grant. The LSR grant has a three-year project period. The SEP funds will be used to purchase trees for lower canopy areas only, with a priority for lower/moderate-income households, public-serving institutions, and more densely populated areas of the community.

Tree Species Selection

GWRI has led many community-based tree planting programs and has extensive experience in tree species selection for the urban environment. Tree species best suited for street trees and urban environments must be hearty trees that can withstand extreme heat, road salt, and other challenging conditions. Trees for residential yards can be less hearty and more ornamental. However, in order to maximize environmental benefits for this project, GWRI will encourage potential partners we engage with to select larger trees such as tulips and oaks, rather than smaller trees such as cherries and dogwoods. Oak trees, in particular, turn out to [provide the most environmental benefits of any tree species](#).² The Town may also have species priorities for public property, which we will take into account as well. We emphasize native species as much as possible as well as species diversity. For a recent project we completed in Pawtucket and Central Falls, we planted 38 different tree species.

We typically rely on the [City of Providence's approved street tree species list](#)³ for any right-of-way or other public property plantings. GWRI will also consult with Jonathan Stevens and the consultants hired by the Town of Cumberland for their MRP grant on species selection. Based on our experience with the species that we typically have been able to plant with our other tree planting projects – ones that residents want and have good outcomes/survival rates, etc. – we

² <https://www.nytimes.com/2021/03/31/realestate/oak-trees-why-you-should-plant.html>

³ https://www.providenceri.gov/wp-content/uploads/2017/05/Providence_Tree_List.pdf

have already pre-ordered the following trees from our typical supplier, Central Nurseries, for planting in spring 2023:

LSR SPRING 2023 TREE ORDER, 11/21/22

Genus	Species	Common Name	Size	preferred varieties	Number to order
Amelanchier	arborea	Serviceberry*	s		7
Carpinus	carolinia	American hornbeam*	s		
Cercis	canadensis	Redbud, Eastern*	s		10
Chionanthus	virginicus	Fringetree*	s		2
Cornus	florida	Flowering Dogwood*	s		4
Cornus	alternifolia	Pagoda Dogwood*	s		4
Crataegus	crus-galli	Cock-Spur Hawthorn*	s		2
Oxydendrum	arboreum	Sourwood*	s		
Prunus	virginiana 'schubert'	Schubert Cherry*	s		4
Prunus	americana	American Plum*	s		2
Prunus	sargentii	Cherry, Sargent	s		3
Prunus	cerasifera	Plum, 'Krauter Vesuvius'	s		
Prunus	serrulata	Cherry, 'Kwanzan'	s		3
Prunus	padus	European Birdcherry	s		2
Prunus	cerasifera	Flowering Plum 'Thundercloud	s		
Prunus x 'Snofozam'		Snow Fountain Cherry	s		
Prunus	persica	Peach	s		
Syringa	reticulata	Japanese Tree Lilac	s		2
Parrotia	persica	Persian Ironwood	s		

Magnolia	virginiana	Sweetbay Magnolia*	s		5
Stewartia	pseudocamemllia	Stewartia	s		2
Malus spp		Crabapple*	s		2
Malus spp	domestica	Apple	s		2
Asimina	triloba	Pawpaw	s		2
Abies	balsamea	Fir, Balsam*	m		2
Aesculus x carnea		Red Horsechestnut	m		4
Betula	utilis	Birch, Himalayan	m		
Betula	populifolia	Birch, Grey*	s/m		4
Ilex	opaca	American Holly	m		2
Juniperus	virginiana	Eastern Red Cedar*	m		2
Koelreuteria	paniculata	Golden Raintree	m		
Ostrya	virginiana	Hophornbeam*	m		2
Pinus	sylvestris	Pine, Scots	m		
Prunus	pensylvanica	Pin Cherry	m		2
Acer	x freemani	Maple. Freeman*	m/l		3
Acer	rubrum	Maple, Red *	m/l		5
Cercidiphyllum	japonicum	Katsura	m/l		2
Cladrastis	kentukea	Yellowwood	m/l		2
Nyssa	sylvatica	Black Tupelo*	m/l		5
Pinus	rigida	Pitch Pine	m/l		2
Platanus	x acerifolia	Planetree, London 'Exclamation'	m/l		
Quercus	bicolor	Oak, Swamp White*	m/l		
Quercus	stellata	Oak, Post	m/l		
Sassafras	albidum	Sassafras	m/l		2
Styphnolobium	japonicum	Sophora	m/l		2
Acer	saccharinum	Maple, silver*	l		
Betula	nigra	River Birch*	l		2

Chamaecyparis	thyoides	Cedar, Atlantic White*			2
Fagus	sylvatica	Beech, European		purpurea' or 'riversii'	2
Ginkgo	biloba	Ginkgo			
Gleditsia	triacanthos	Honeylocust*			
Gymnocladus	dioicus	Kentucky Coffee Tree*			
Liquidambar	styraciflua	Sweetgum *			
Liriodendron	tulipifera	Tulip Tree*			7
Pinus	strobus	Pine, White*			
Prunus	serotina	Black Cherry			
Quercus	palustris	Oak, Pin*			
Quercus	rubra	Oak, Red*			2
Quercus	coccinea	Oak, Scarlet*			
Quercus	velutina	Oak, Black*			
Quercus	macrocarpa	Oak, Bur*			2
Quercus	falcata	Oak, Southern Red*			
Quercus	alba	Oak, White*			
Tilia	americana	Linden, American*			2
Tilia	tomentosa	Linden, Silver			
Tilia	cordata	Linden, Littleleaf			
Ulmus	americana	Elm*			2
Taxodium	distichum	Baldcypress*			2
Celtis	occidentalis	Hackberry*			3
Zelkova	serrata	Japanese Zelkova			
					125

Further consideration of tree species best suited for SEP purposes will also be incorporated into the final planning and selections. We will also cross-reference the approved City of Providence list with the [Climate and Health Species List for Rhode Island Urban Trees](#) that the U.S. Forest Services' Northern Institute of Applied Climate Science (NIACS) developed as part of a recent

RIDEM project, funded by the Doris Duke Charitable Foundation.⁴ Ultimately, we will determine the best species to meet this project’s goals based on final planting locations and the specific needs and requirements of each site. Priority will be given to tree species that grow into large shade trees with a broad, waxy leaf structure to support air quality goals, but all selections must be based on a variety of considerations such as available planting space, presence of overhead power lines, whether planting on public property, as well as availability of stock in local nurseries.

Project Timeline

GWRI anticipates utilizing these SEP funds for up to two planting cycles, as match for our LSR grant. Depending on the response to the outreach we do in Cumberland this winter and spring, we may be able to plant all SEP-funded trees this spring 2023, or we will also need fall 2023 to complete the plantings.

<u>Task</u>	<u>Involved Parties</u>	<u>Timeframe</u>
Finalize Agreement	J.H. Lynch, State, GWRI	March 2023
Conduct site visits to identify specific planting locations	GWRI	Beginning March 2023, throughout project
As needed, seek/gain permissions from private property owners	GWRI	Beginning April 2023, throughout project
Finalize planting plan and tree species selection with additional site visits	GWRI, Arborist Consultant or Town Official	April/August 2023
Order trees	GWRI	April/August 2023
Schedule plantings	GWRI	April/August 2023
Call DigSafe, Do utility scan, mark planting locations	GWRI	April/May and August/September 2023
Prep tree pits – depave/dig	GWRI with job training students (Building Futures)	April/May and September/October 2023
Plant trees	GWRI with job training students (Building Futures, Garden Time)	Spring and Fall 2023

⁴ https://www.vibrantcitieslab.com/wordpress/wp-content/uploads/2020/09/RI_UrbanTreeSpecies_Handout_09302020.pdf

Distribute tree posters to households/businesses	GWRI	December 2023/January 2024
Begin maintenance for three years - watering, pruning, mulching, root aeration, litter pickup, replacement for any trees that do not survive within three-year timeframe – residents or businesses will be responsible for watering of private property plantings, GWRI staff will provide reminders to tree recipients; GWRI’s youth program may be able to support tree watering in Valley Falls during the summer	GWRI	Summer/Fall 2023, 2024, 2025

Project Budget

We will purchase 75 trees at an average of \$200/each and use the remainder of the SEP to support maintenance costs. Our LSR grant will pay for the planning, outreach, planting, and stewardship labor.

GWRI will prioritize planting on private property where residents or businesses will be required to commit to watering their newly-planted trees immediately after planting as well as during the three following growing seasons based on the amount of rainfall received. GWRI will provide additional maintenance support as needed such as biannual check-ins and some summertime watering if needed for public property that may be included in the planting project. GWRI staff will send reminders to tree recipients and conduct a biannual survey of all trees planted to determine survival rates and any interventions that are needed. This surveying will be supported by student interns from Clark University. For any public property plantings that occur as part of this SEP project, GWRI will determine the best course of action for maintenance with the Town of Cumberland and may be able to provide watering services through our GroundCorp landscape crew and/or Green Team youth program in the summer months.

GroundCorp, our adult landscaping team, along with job training students that GWRI works with, and potentially our Green Team youth team, will perform biannual maintenance as needed including visual monitoring to determine conditions of newly-planted and young trees, mulching, soil/root aeration, pruning, and litter pickup. GWRI commits to replacing any trees that die within the three years after planting. We estimate we will need to replace up to

5 trees during the three-year period. This is a high estimate for private property plantings, as, in our experience, tree fatalities are more likely to occur among public property plantings.

Mid-size 2"-2.5" caliper trees are the best option for this proposal, unless we plan any volunteer planting events where smaller caliper trees (1.5") may be utilized. The 2"-2.5" caliper trees are better suited for high-traffic areas where there is more risk of vandalism or accidents, but are still small enough to be efficiently moved by hand rather than machine, which accommodates the capacity of GWRI's GroundCorp landscape crew. We expect that there will be a mix of planting locations, some of which would require depaving, and others that would only require sod/soil removal. GWRI may subcontract depaving services, if needed, but will most likely utilize our job training program structure for depaving purposes, which has worked well in recent seasons. The average per tree cost estimate, including the tree and pit prep labor, is:

- 2"-2.5" cal 8-10' tree planted in good soil, no depaving needed -----\$ 450.00**
- 2"-2.5" cal 8-10' tree planted in soil needing amendment, no depaving needed -----\$ 575.00**
- 2"-2.5" cal 8-10' tree installed, asphalt depaving required -----\$ 675.00**
- 2"-2.5" cal 8-10' tree installed, concrete depaving required -----\$ 775.00**

No maintenance is included in the prices above.

Our SEP budget is as follows:

- 75 trees @ average \$200/each = \$15,000
- GWRI staff support for maintenance and watering @ \$1,666.50 x 3 years = \$5,000
- Total Project Budget = \$20,000

As discussed above, this SEP will serve as match for GWRI's U.S. Forest Service LSR grant. The LSR grant will cover the additional labor costs associated with planting each of the 75 trees, outreach and education, and some of the ongoing maintenance costs.