

# Rose Roots Landscape Improvement Proposal 2021

West Side: A Rose Roots Community Garden/City of Arvada Partnership

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# Rose Roots Landscape Improvement Proposal 2021

West Side: A Rose Roots Community Garden/City of Arvada Partnership

# **Purpose**

- Provide weed and wind barriers around the perimeter of the Rose Roots Community Garden (Garden) to reduce weed mowing and maintenance needs
- Beautify open space city land surrounding the community garden for the community to enjoy while walking the local popular paved path between Five Parks Community and the Simms Street Community.

# Goals

- Complete the initial garden layout Master Plan (Appendix A) developed by the Community members and City of Arvada Partnership in a four-year phased approach detailed below and outlined here:
  - Phase One: West Side Trees (15 trees) Appendix A: West Side Concept Sketch 1.23.2021
  - Phase Two: South Side Trees (15 trees)
  - Phase Three: North Side Trees (15 trees)
  - Phase Four: East Side Trees (15 trees)
- Engage community in the planning and planting process through community meetings advertised on our website, Next Door, the City of Arvada website and publications, and other social media avenues (eg. Our garden Facebook and Instagram accounts).
- Partner with the City to have a Tree Dedication at the end of each phase honoring local leaders.
- Offer the opportunity to "Sponsor a Tree" to garden and community members. Offer recognition via our website, social media platforms and City of Arvada platforms.

# Background

The garden was established in 2011 by a local North West Arvada community group led by Gina Schley and John Chism in partnership with the City of Arvada who offered a \$270,000 grant and the land to build the 98 plots. The City also provided design services and the initial AutoCAD drawings included in Appendix A.

# Planned Orchards and Tree Wind Barrier

Orchards were planned to the East of the Garden in the City Master Plan, next to a llama farm and along the South side of the garden path while an Evergreen wind barrier was planned to the North side of the Garden, which borders a gravel space and several homes. There is a compacted area West of the Garden that is used for maintenance, compost deliveries, the portable toilet and is where several Evergreen trees donated by the city were planted and are thriving. Currently there are only a few trees on the 3.65-acre Agricultural lease.

The Master Plan layout developed by the City of Arvada appears to be approximately 75% complete, with an open play area to the East of the community garden and two shade structures, one within the gated garden plotted area, and the other to the South of the walking path, which many community members use for picnics. A community supported Agricultural plot offers CSA shares by new local managers to the south of the Garden bordering Alkire Street, and last year new greenhouses were installed. This group utilizes a farm stand on the east side of Alkire Street just to the south of the Garden.

# Red Barn Community Project

The building of the large Red Barn in 2016 on the Garden West Side, led by Theresa McKinney, and involved many local companies and gardeners who volunteered their services and labor to lay the foundation and put the barn up in 2016. The barn allows gardeners to store fresh produce in the refrigerator, share seeds and garden resources, share tools, and prep produce donations for local organizations in need.

# Pollinator Garden Legacy

A pollinator garden was completed in 2019 with an extensive labeled variety of local drought resistant species for the community to enjoy. The development and species selection were led by Rose Roots Gardener Jessie Standart, who mentored local gardeners as a Master Gardener herself. After her recent passing, the garden continues to thrive as a beautiful legacy and gift to the community. Nicole McCrorie currently leads the maintenance and upkeep of the pollinator garden.

# Garden Community Outreach

Garden Membership Lead Kendra Eliason built and stocks a little Library for local community at the garden entrance, a reading Teepee, leads the painting maintenance of the East shed, and maintains, along with other gardeners, two children's play areas and a children's garden that the local community enjoys. There is a shared herb garden, rose garden, and a community picking patch. Garden Leaders Gary Williams and Jim Richards along with Karel Hemler, the Garden Treasurer, lead weekly garden improvement days where gardeners can fulfill their required 12 service hours. During these work days, chairs and tables are re-stained, weed cloth and crusher fines are put over community spaces between plots to keep weeds at bay, and hoses and plot borders are replaced. The Leadership and members of the garden operate as 100% volunteers and local community is invited to participate in Garden Open Houses, music days and potlucks at the garden, farm to table harvest events, Llama Love Days, and gardening and food preparation workshops. "Learning" and "Helping" Scholarships are offered to anyone in the community experiencing financial or other hardships, and Service Hours may be donated to other community garden members who are struggling to fulfill their hours in the interest of supporting community connection. Several garden plots are used exclusively to grow food donations for local community in need and it is our goal to develop as a Teaching Plot. The Garden participates in local community events, such as Garden Education Days at the Library, Garden Appreciation Day at Snooze Breakfast Eatery, and the 100 Years of Arvada Parks festival.

# **Garden Statistics**

- Garden Founded: 2011
- Total Plots: 98
- Raised ADA Plots: 10
- Storage Barns/Sheds: 2
- Pricing for Plots: \$75/15x15 ft plots, \$45/7.5 x 15 ft half plots, \$35/raised ADA plots
- Insurance and Community Trainings: Through Denver Urban Gardens (DUG), a portion of each garden plot fee goes to DUG.
- Produce Donations to date: Over 13,000 lbs.

# **Proposed Plan**

# **Community Involvement**

We would invite community to our virtual March garden meeting to share our Phase One plans and invite community input in the planning process. We would partner with the City to offer a Community Dedication at the end of each Phase to celebrate the approach of a Decade of Rose Roots Gardening in 2021 and all the local contributors who have supported this grassroots effort. We would welcome the opportunity to offer Farm to Table community fundraisers and educational programs in the newly landscaped space.

# Proposed Phased Landscape Improvement Program

# Phase One Spring 2021: West Side Trees

Currently the Master Plan doesn't include a design for the West Side of the garden adjacent to Alkire Street, however due to the fact that the prevailing wind comes from the West and the open undeveloped lot is full of weeds, it is a priority area to landscape and add a wind barrier of trees. Two new Concept Sketches are provided for this West Side in Appendix A.

It is proposed that we add a loading service drive with a gate at the Alkire street entrance for delivery of gardening materials. Additionally, a gravel footpath will be added, starting from the current pathway to the South that begins at the parking lot. The new path, with a rose-covered entry archway, would lead to a circular sitting area for the community to enjoy the views. An "In Memorium Tribute Sculpture" for those we have lost could be placed here in this reflection area. The existing well could be preserved for historic purposes since the homesteaders last name on this site was Rose and this was presumably their well. We could build a mock Wishing Well over the current site and provide a plaque to share the history of the settlement of the area.

Trees from the City approved Plant List in Appendix C will be placed on a berm built up to shelter the East side of the sitting area and to help block the garden from weed spread. Shrubs and a variety of city approved ground covers will be used to keep back the weeds. We would aim to add berming to the South East section for added wind protection and habitat for local species. A gravel swath on the East side would separate the trees from the garden plots so they would not be shaded. It will also serve as a location for Farm-To-Table gatherings and fundraisers. A trellis with Hops to the North end of the gravel area would create a partition for the Farm-to-Table area. Grape vines will be grown on the existing garden's West fence line to further reduce blowing weed germination.

Currently a Portable toilet is located in the North East corner of this parcel of land. The City has visited in recent months and noted the toilet will likely be relocated to allow for ADA access. Rose Roots Leaders have proposed moving it to the South East side of the Farm Stand on the south side of the walking path if that location is agreeable to our CSA neighbors. A large dumpster in delivered by the city to this location at the end of each gardening season, though it is often only half full so we could downsize and have the dumpster delivered to the parking lot. We also have compost, landscaping materials and crusher fines delivered to this land parcel so the loading service area would meet these needs.

It is unclear if the historic well in the center of the parcel has been capped. A bucket currently covers the well, so that would be addressed when we converted it to a mock Wishing Well.

# Phase Two Spring 2022: South Side Trees

Phases Two, Three and Four would be contingent on the successful planting and establishment of the majority of the Phase One trees.

The Master Plan shows 15 trees planned for the South West side of the walking path and 20 trees planned for the South East Side of the walking path on either side paralleling the garden and on either side of the newly planted pollinator garden. Ideally, the trees would be planted in April by our gardeners concurrently with a City effort to install irrigation. A variety of tree Evergreen and deciduous tree types will be selected from a City approved list.

# Phase Three Spring 2023: East Side Trees

The North side offers service access halfway between the plots. The 16 planned Evergreens were intended to provide a wind and weed barrier for the Northern border trending East West of the Garden. This would greatly benefit the productivity of the garden plots, reduce weeds and maintenance needs in the common areas, and offer privacy for the gardeners and neighbors.

# Phase Four Spring 2024: North Side Trees

The trees on the East side of the Garden and on the Eastern border of the Llama Farm were planned in several North South Trending rows numbering 26 trees total. Fruiting trees have been discussed or flowering trees without fruit, and the tree varieties will be selected from the recommended City tree list.

As there is a play area and trails that would travel through the tree filled area, community would enjoy the shade and scenic recreational space offered, and the trees would provide more habitat for birds and local fauna.

# Phase One: West Side Budget Estimate

The Proposed Budget shown in Appendix B is presented in Four Phases starting in Spring 2021 and being completed in 2024.

The total estimated Budget for Phase One West Side Landscape Improvements is \$5,000 without including additional watering costs which would be estimated in conjunction with the City. If we went with Residential rates for water usage, the cost would be \$18.84 per 4,000 gallons. Assumptions are provided in the budget, and the conclusion is for 15 1" caliper trees, we would need about 266 gallons for the first year to get them established, so 4,000 gallons total (maybe less due to clay soils).

Additional options include soil inoculants coming to a total cost of \$1,125 for 15 new trees. Additionally a berm on the South East side would help with wind and weed control. Assumptions for a berm are provided. It is assumed we can move soil around on the site and create much of the berm or source top soil donations from the City, but if we were to pay for soil to create the berm, the cost is estimated to be \$4,655.

Implementation of Phases 2, 3 and 4 would be dependent on the success of Phase 1. The estimated totals shown in the budget include 4% inflation.

# Timeline: Phase One

- Wed Jan 20, 6:15 pm: Rose Roots Leadership Team planning meeting
- Thurs Jan 28, 2 pm: RR Leadership and City Brainstorming session
- February: Research and Planning (Checklist below)
- March 1, 6 pm: Rose Roots Meeting inviting Community Feedback, invite to Sponsor-a-Tree
- Early April 2021 (Date TBD): Work party to prepare top soil
- Late April 2021: Gardener Work Weekend. Dig Holes Sat, Plant Trees Sunday, concurrent with City installation of irrigation drip system extensions.

# **Responsibilities Checklist**

Below is a Checklist showing the overlapping Rose Roots and City responsibilities to achieve Phase One completion.

Partnership Responsibilities Checklist	Rose Roots	City
Draft layout for West Side and review design	x	х
Select Tree varieties and ground cover from City Plant Palette	Х	Х
Price out Compost, mulch, trees, and equipment rental	Х	Х
Schedule irrigation installation with City	Х	Х
Select, plan and Schedule mulched shrub areas and native seed	Х	Х
ground cover installation with City		
Overlay Master Plan maps with utility easements and be sure	X	Х
trees are not within 10' of wet utility lines		
Advertise Community Meeting and invite to Sponsor-a-Tree	Х	Х
Schedule Garden Tree Installation Work Day	X	
Review City Water Wise Standards-LDC 6.5.2.H to be in	X	Х
compliance and use rain sensors, drip and programmable		
irrigation controller.		
Review Drainage plans and including 1' contour intervals and	Х	Х
drain structures with spot elevations expressing positive		
drainage.		

# Appendix A

Masterplan Layout 2011

AutoCad Drawing Concept B

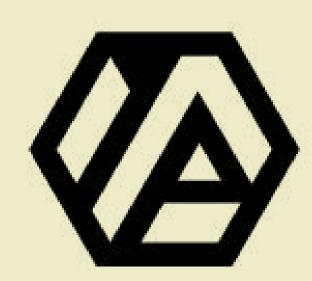
West Side Concept Sketch Jan 23, 2021

# MASTER



# "A Compelling Walking & Play Experience"



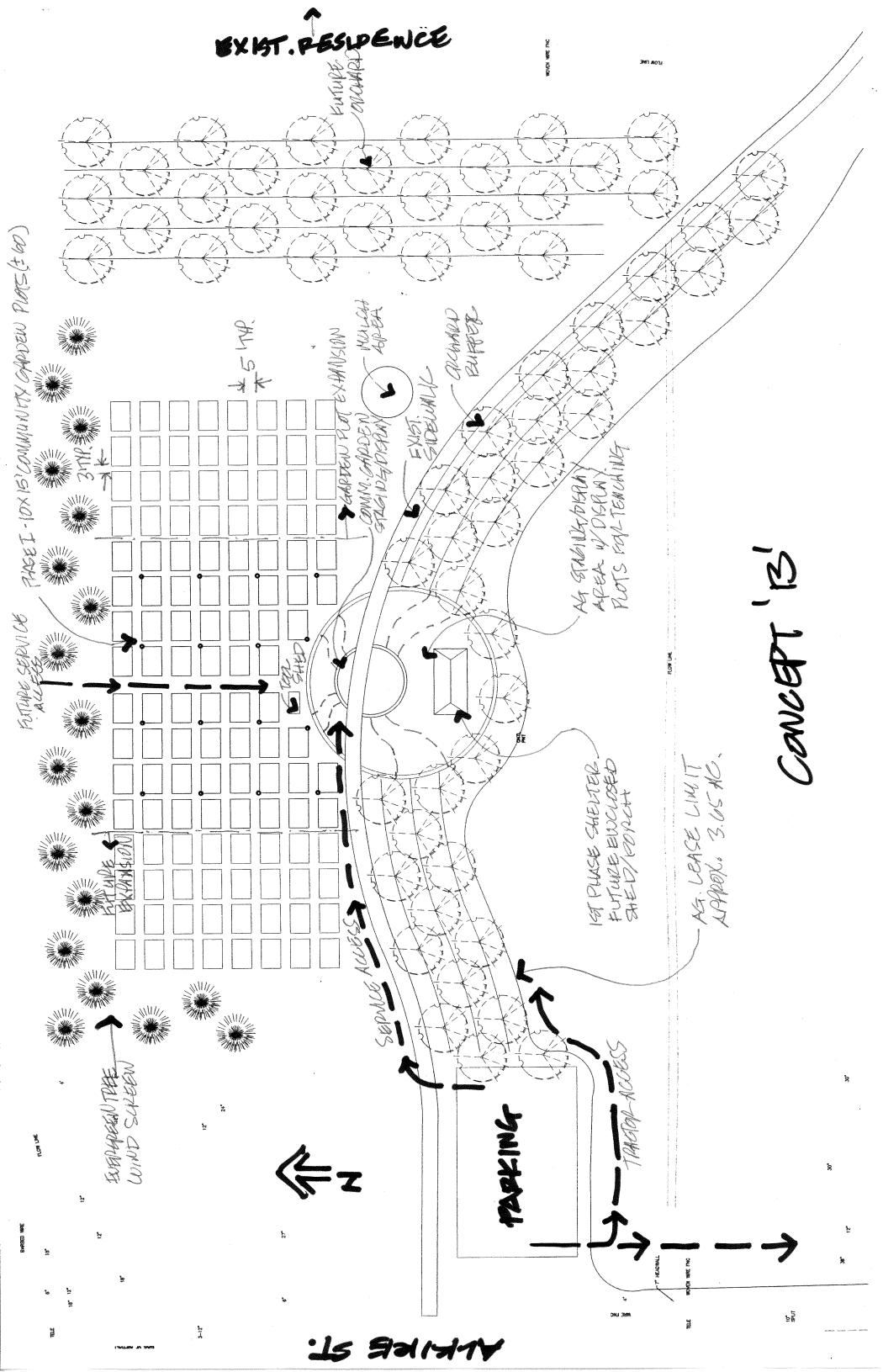


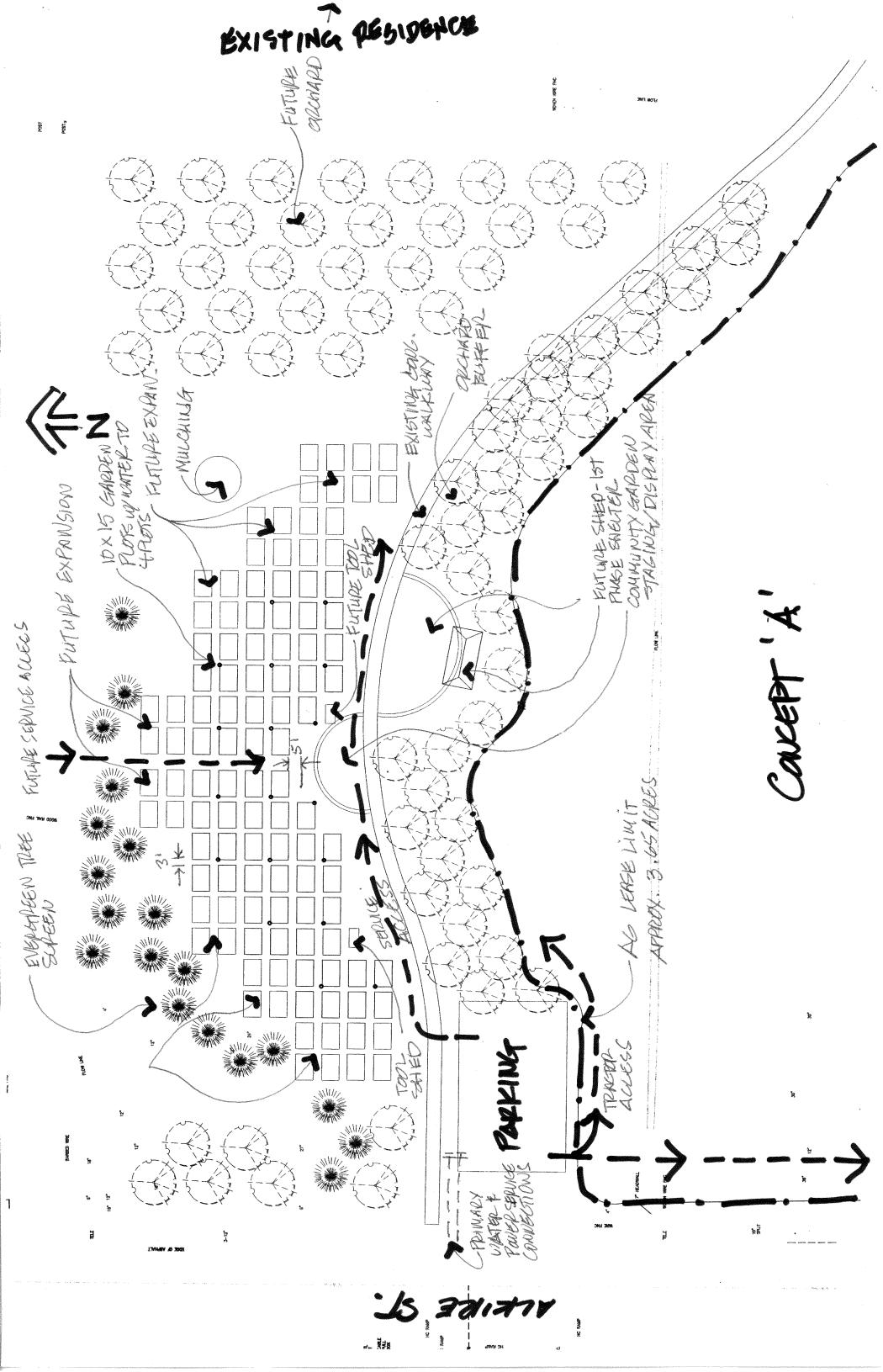
# CITY OF ARVADA

For project inquiries, please contact the City of Arvada: Parks, Golf and Hospitality Services at 720.898.7400









PRIVATE DRIVS GERVICE ALLESS DITCH MATERIAL STORAGE BING EXISTING SHED Rose Roots Communit CATED AUGS is HOPS TREUMS Same 2 SINSET GARDEN ALKIRE FARM TO TABLE TABLE WHEBLBARROW ACLESS BERMED AREA WITRES GRAPE EXISTING PUPPY PARKING PROPOSED FORTAPOTTY EXISTING PARKING

ROBE ROOTS GARDEN WEST SIDE IMPROVEMENTS LONCEPT SKETCH 1-23-2021

SLAUE OF FEET NORTH

PRIVATE DRIVE pirett. \_.. BEAMLE ALLESS / FLEXIBLE SPALE MATERIAL STORAGE BINK EXISTING BARN GATED ALLESS + 3 MULCH PILE COMMEMORATIVE CARDEN KIRG WISHING WELL WHEEL BARROW ALLESS J BERMED AREA WITREES F \* MARK PORAPES EXISTING PUPPY PARKING CARLEN GATE W/ ROSKSS PROPOSED PERT A POTTY EXISTING PARKING EXISTING BARN

ROSE ROOTS CARDEN WEST SIDE IMPROVEMENTS CONCEPT SKETCH-B 1-24-2021

60 SCALE OF FOST

# Appendix B

Proposed Budget in Four Phases 2021-2024

# Rose Roots Community Garden Phased Tree Planting Proposal 2021-2024

Project Budget: (Cost estimates based on 2021 estimated Wholesale prices, adjusted annually for Phase 2 and 3, assume 4% inflation rate over prior year)

	Number of Trees (C. 0.ft)	Cost Day Trees	Linte	Unit Coat		Total Cost	
	Number of Trees (6-8 ft)	Cost Per Tree	Unit	Unit Cost	450.00	Total Cost	
Phase 1	15	\$ 150.00	Each	\$	150.00	\$ 2,250.00	
Phase 2	15		Each	\$	150.00	\$ 2,250.00	
Phase 3	15		Each	\$	150.00	\$ 2,250.00	
Phase 4	15	\$ 150.00	Each	\$	150.00	\$ 2,250.00	
Amendments (City recommende	-	Quantita	11			Tatal Cast	
Compost (ordered in bulk)	No of Trees	Quantity	Unit	Unit Cost	25.00	Total Cost	
Phase 1	15		CY	\$	35.00	\$525	
Phase 1 staking materials	15		Ea	\$	15.00	\$225	
Phase 2	15		CY	\$	35.00	\$525	
Phase 2 staking materials	15		Ea	\$	15.00	\$225	
Phase 3	15		CY	\$	35.00	\$525	
Phase 3 staking materials	15		Ea	\$	15.00	\$225	
Phase 4	15		CY	\$	35.00	\$525	
Phase 4 staking materials	15	\$ 10.00	Ea	\$	15.00	\$225	
Mulch (shredded bark)			<b></b>				
Phase 1	15		СҮ	\$	65.00	\$975	
Phase 2	15		СҮ	\$	65.00	\$975	
Phase 3	15		СҮ	\$	65.00	\$975	
Phase 4	15	15	CY	\$	65.00	\$975	
Irrigation (City Installed, drip for	2-3 years)**		<b>F</b>			1	
		Quantity	Unit	Unit cost		Total Cost	
Hose extensions*** (assume 200	) feet per phase)						
Phase 1		200	LF	\$	1.00	\$ 200.00	
Phase 2		200	LF	\$	1.00	\$ 200.00	
Phase 3		200	LF	\$	1.00	\$ 200.00	
Phase 4		200	LF	\$	1.00	\$ 200.00	
Bubblers (4 GPH bubblers per tre	e x 10 trees)						
Phase 1		40	per 4 bubblers	\$	5.00	\$ 200.00	
Phase 2			per 4 bubblers	\$	5.00	\$ 200.00	
Phase 3			per 4 bubblers	\$	5.00	\$ 200.00	
Phase 4			per 4 bubblers	\$	5.00	\$ 200.00	
Installation Equipment Rental				17	5.00	+ 200.00	
Backhoe (city loan)						loan from City	
Irrigation Installation (City or Rose	Poots if drin assume 2 urs	to actablish 6 °' tracs)				· · · ·	oct
ingation installation (City of Rose	e Roots II unp - assume 2 yrs	to establish o-8 trees)		_		City to estimate o	.051

Labor		Cost	No of Plots	No of Hrs	Total Hrs	Total Cost	
Gardener Service Hours****		\$-	98	6	588		
Hired Labor (if needed) Phase 1		\$30		20		\$600.00	
Hired Labor (if needed) Phase 2		\$30		20		\$600.00	
Hired Labor (if needed) Phase 3		\$30		20		\$600.00	
Hired Labor (if needed) Phase 4		\$30		20		\$600.00	
Annual Maintenance (shared RR a	and City)						
Amendments	No of Trees		Times per Year		Inflation (0.04)	Total Cost	Inflation Added
Phase 1 Fertilizer	15		2			\$ 25.00	
Phase 2 Fertilizer	15		2			\$ 25.00	
Phase 3 fertilizer	15		2			\$ 25.00	
Phase 4 fertilizer	15		2			\$ 25.00	
Sub Totals							
Phase 1						\$ 5,000.00	
Phase 2				\$3,750	\$ 200.00	\$ 5,000.00	\$ 5,200.00
Phase 3				\$3,900	\$ 208.00	\$ 5,000.00	\$ 5,408.0
Phase 4				\$ 4,775.00	\$ 208.00	\$ 5,000.00	\$ 5,616.00

\*Trees varieties will be selected from the approved city list and will be a variety of Evergreen and flowering trees

\*\*Water useage costs based on City irrigation schedule

\*\*\*Hose extensions will be 1/2 inch polyethylene Tubing and will extend from existing City Water lines installed as a drip system, or as the City sees fit.

\*\*\*\*Gardeners will only be paid for labor if their annual service hours have been fulfilled and the task is physically demanding.

### **Additional Estimates**

Soil Inoculents/Mychorriza: \$15/lb and blend 5 lbs per CY, per tree appx \$75. \$75x15=**\$1,125** 

Berm as wind break and drainage contour: Topsoil for the landscape berms. \$12-\$55/CY, Assume appx. \$35/CY

Plant 15 trees at appx. 15' on center, 200 LF berm x 12 ft width x 1.5 foot height=3600 CF/27 CF=133 CY x \$35 per CY=\$4,655

## Water Cost Estimates (For a 1" caliper tree during first year)

Note: A 2" caliper tree takes twice as much water (Per CSU guidance)

1-2 gallons per inch trunk diameter for first two weeks

1-4 gallons every other day for 2 months

Weekly 2-4 gallons until established, figure 1 year for each inch caliper. Plan to install 1-2 inch caliper trees.

15-1" caliper trees would need about 266 gallons for the first year to get established, so 4,000 gallons total (maybe less due to clay soils)

Residential water in Arvada is 3.96 for first 1000 gallons and 4.96 for the additional 3,000 gallons, so roughly \$18.84 per 4,000 gallons.

# Appendix C

City of Arvada Plant List 9.1.2020

# **CITY OF ARVADA PLANT LIST**

Effective 9/1/2020

# **PROHIBITED PLANTS**

All plant listed listed as invasive/noxious by the Colorado Department of Agriculture shall not be planted within the city limits. https://www.colorado.gov/pacific/agconservation/noxious-weed-species#b

# **RECOMMENDED PLANT SPECIES**

The following plants are recommended within the city. For new development, other plants species may be proposed as long as they have a proven track record of not being invasive within the Front Range. Xeric species preferred.

# TREES

# **Deciduous Canopy Trees**

Common Name	Latin Name	Mature Ht.	Xeric	Street Tree
			Aeric	Tree
Autumn Blaze Maple	Acer x freemanii 'autumn blaze'	40-50'		
Silver Maple	Acer saccharinum	100'		
Bigtooth Maple	Acer grandidentatum	20-30'		
Deborah Norway Maple	Acer platanoides 'deborah'	40-50'		
Northwood Maple	Acer rubrum 'northwood'	40-50'		
Red Sunset Maple	Acer rubrum 'red sunset'	40-50'		
River Birch	Betula nigra	40-50'		
Western Catalpa	Catalpa speciosa	40-60'		
Western Hackberry	Celtis occidentalis	50-60'	х	
Yellowwood	Cladastrus kentukea	40'		
Imperial Honeylocust	Gleditsia triacanthos inermis 'Imperial'	35'	x	x
Shademaster Honeylocust	Gleditsia triacanthos inermis 'shademaster'	40-50'	х	x
Skyline Honeylocust	Gleditsia triacanthos inermis 'skyline'	40-50'	х	x
Sunburst Honeylocust	Gleditsia triacanthos inermis 'sunburst'	30-35'	х	х
Kentucky Coffeetree	Gymnocladus dioica	50-60'	х	
Goldenrain Tree	Koelreuteria paniculata	20-30'	х	
Redmond Linden	Tilia americana 'redmond'	40-50'		x
Greenspire Linden	Tilia cordata 'greenspire'	30-40'		x
White Oak	Quercus alba	60-100'	х	
Swamp White Oak	Quercus bicolor	40-60'	х	x
Scarlet Oak	Quercus coccinea	50-80'	х	
Bur Oak	Quercus macrocarpa	50-80'	х	x
Chinkapin Oak	Quercus muehlenbergii	40-50'	х	
Pin Oak	Quercus palustris	50-60'	х	
English Oak	Quercus robur	40-60'	х	x
Red Oak	Quercus rubra	40-60'	х	
Wavy Leaf / Scrub Oak	Quercus undulata	20-30'		
Peachleaf Willow	Salix amygdaloides	35-50'		
Frontier Elm	Ulmus x 'Frontier' (U. carpinifolia x U. parvifolia)	25'		

## **Ornamental Trees**

				Street
Common Name	Latin Name	Mature Ht.	Xeric	Tree
Rocky Mountain Maple	Acer glabrum	10-20'		
Amur Maple	Acer ginnala 'flame'	15-20'		
Tartarian Maple	Acer tataricum	15-25'	х	
Ohio Buckeye	Aesculus glabra	35'		
Autumn Brilliance Serviceberry	Amelanchier 'autumn brilliance'	20'		
Saskatoon Serviceberry	Amelanchier alnifolia	6-12'		
Shadblow Serviceberry	Amelanchier canadensis	15-25'		
Curl-leaf Mountain Mahogany	Cercocarpus ledifolius	10-25'	х	

Russian Hawthorn	Crataegus ambigua	15-25'	x	
Thornless Cockspur Hawthorn	Crataegus crus-galli inermus	15-25'	x	
Downy Hawthorn	Crataegus mollis	20-25'	х	
Washington Hawthorn	Crataegus phaenopyrum	20-25'	х	
Colorado Hawthorn	Crataegus succulenta	20-25'	х	
Toba Hawthorn	Crataegus x mordenensis 'Toba'	15-20'	х	
Winter King Hawthorn	Crataegus viridis 'Winter King'	15-20'	х	
Seven Son Flower	Heptacodium miconiodes	15'		
Crabapple	Malus species	varies		
Edible Apple	Malus species & cultivars (esp. Gala, Honeycrisp, Honeygold)	varies		
Edible Cherry	Prunus avium & varieties (esp. Lapins, Stella)	varies		
Edible Apricot	Prunus armeniaca	varies		
Newport Plum	Prunus cerasifera 'newport'	15-20'		
Montmorency Cherry	Prunus cerasus 'montmorency'	15-20'		
Amur Chokecherry	Prunus mackii	30'	х	
Mayday Tree	Prunus padus	20-30'		
Edible Peach	Prunus persica varieties	varies		
Edible Plum	Prunus species & cultivars (esp. Mt. Royal, Santa Rosa, Superior, Toka)	varies		
Princess Kay Plum	Prunus nigra 'Princess Kay'	18'		
Canada Red Cherry	Prunus virginiana 'canada Red'	20-30'		
Edible Pear	Pyrus / 'Summercrisp, P. x 'Bartlett'	15'		
Autumn Blaze Pear	Pyrus calleryana 'Autumn Blaze'	25-35'		
Aristocrat Pear	Pyrus calleryana 'Aristocrat'	20-30'		x
Chanticleer Pear	Pyrus calleryana 'Chanticleer'	20-30'		x
Korean Sun Pear	Pyrus fauriei 'Korean Sun'	10-12'		x
Ussurian Pear	Pyrus ussuriensis	40-50'		x
New Mexico Locust	Robinia neomexicana	10'	х	
Japanese Pagoda Tree	Sophora japonica	40'	х	
Japanese Tree Lilac	Syringa reticulata	15-25'		
Yellowhorn	Xanthoceras sorbifolium	20'		

# **Evergreen Trees**

				Street
Common Name	Latin Name	Mature Ht.	Xeric	Tree
White Fir	Abies concolor	40-60'		
One Seed Juniper	Juniperus monosperma	30-40'	х	
Utah Juniper	Juniperus osteosperma	15-20'	х	
Rocky Mountain Juniper	Juniperus scopulorum	20-30'	х	
Colorado Spruce	Picea pungens	40-80'		
Colorado Blue Spruce	Picea pungens 'Glauca'	40-80'		
Colorado Spruce varieties	Picea pungens varieties	varies		
Pinon Pine	Pinus edulis	20-30'	х	
Bosnian Pine	Pinus leucodermis	15-25'		
Singleleaf Pinion Pine	Pinus monophylla	8-15'	x	
Austrian Pine	Pinus nigra	40-60'	x	
Austrian Pine varieties	Pinus nigra varieties	varies		
Ponderosa Pine	Pinus ponderosa	60-80'		
Southwestern White Pine	Pinus strobiformus	60'		
Scotch Pine	Pinus sylvestris	30-50'		

# SHRUBS/ORNAMENTAL GRASSES

# Evergreen Shrubs

Common Name	Latin Name	Mature Ht.
Manzanita	Arctostaphylos x coloradensis and varieties	varies
Curlleaf Mountain Mahogany	Cercocarpus ledifolius	10-20'
Red Yucca	Hesperaloe parviflora	3-4'
Common Juniper and varieties	Juniperus communis and varieties	1-3'
Creeping Juniper and varieties	Juniperus horizontalis and varieties	4" - 18"
Green Mound Juniper	Juniperus procumbens 'Green Mound'	6" - 12"
Savin Juniper and varieties	Juniperus sabina and varieties	12"-6'
Rocky Mountain Juniper varieties	Juniperus scopulorum varieties	10'-20'
Eastern Red Cedar varieties	Juniperus virginiana 'Blue Arrow'	15'-20'
Creeping Colorado Holly	Mahonia repens	12-18"
Dwarf Alberta Spruce	Pinus glauca 'Conica'	5-7'
Blue Globe Spruce	Picea pungens 'Glauca Globosa'	3-4'
Mesa Verde Spruce	Picea pungens 'Mesa Verde'	1-2'
Mugo Pine	Pinus mugo	4-6'
Mugo Pine varieties	Pinus mugo varieties	varies
Banana Yucca	Yucca baccata	18-24"
Adam's Needle	Yucca filamentosa	2-3'
Soapweed	Yucca glauca	2-4'

# 3' Width Deciduous Shrubs

Common Name	Latin Name	Mature Ht.
Leadplant	Amorpha canescens	4'
Dwarf Leadplant	Amorpha nana	2'
Black Chokeberry	Aronia melanocarpa	4-6'
Fourwing Saltbush	Atriplex canescens	3-6'
Barberry	Berberis thunbergii varieties	1-2' / varies
Pygmy Peashrub	Caragana pygmaea / Caragana frutex 'Globosa'	3-4'
Blue Mist Spirea	Caryopteris x clandonensis 'Blue Mist'	3-4'
Little Leaf Mountain Mahogany	Cercocarpus intricatus	2-4'
Dwarf Rabbitbrush	Chrysothamnus var.	2'
Rabbit Brush	Chrysothamnus nauseosus	3-4'
Kelsey Dogwood	Cornus stolonifera 'kelseyi'	2-3'
Carol Mackie Daphne	Daphne x burkwoodii 'Carol Mackie'	3-5'
Mormon Tea	Ephedra viridis	2-3'
Nana Burning Bush	Euonymus nanus	2'
Lydia Woadwaxen	Genista 'Lydia'	2'
Royal Gold Woadwaxen	Genista tinctoria 'Royal Gold'	2'
Lodense Privet	Ligustrum vulgare 'lodense'	2-3'
Clavey's Dwarf Honeysuckle	Lonicera x xylosteoides 'Clavey's Dwarf'	5-6'
Dwarf Russian Sage	Perovskia atriplicifolia 'Little Spire'	2'
Littleleaf Mockorange	Philadelphus microphyllus	4'
Dwarf Minnesota Snowflake Mockorar	Philadelphus x virginalis 'Minnesota Dwarf Snowflake'	3-4'
Mountain Ninebark	Physocarpus monogynus	3'
Shrubby Cinquefoil	Potentilla fruticosa varieties	2-3' /varies
Dwarf Russian Almond	Prunus tenella	2-5'
Alpine Currant	Ribes alpinum & varieties	3-6'
Gooseberry	Ribes uva-crispa 'Pixwell / R. hirtellum 'Pixwell'	3-4'
Red Lake Currant	Ribes rubrum / R. ativum 'Red Lake'	4'
Rose	Rosa cultivars and varieties	varies
Japanese Spirea varieties	Spirea japonica varieties	varies
Miss Kim Dwarf Lilac	Syringa patula 'miss kim'	3-5'
Blue Muffin Viburnum	Viburnum dentatus 'Christom' / 'Blue Muffin'	3-4'
Weigela varieties	Weigela florida varieties	varies

# 5' Width Deciduous Shrubs

Common Name	Latin Name	Mature Ht.
Regent Serviceberry	Amalenchier alnifolia 'regent'	6-8'
Brilliant Red Chokeberry	Aronia arbutifolia 'brilliantissima'	6-8'
Barberry	Berberis thunbergii varieties	4-6' / varies
Butterfly Bush varieties & cultivars	Buddleja davidii; Buddleja alternifolia	varies
Mountain Lilac	Ceanothus fendleri	3'
Curl Leaf Mountain Mahogany	Cercocarpus ledifolius	8-10'
Mountain Mahogany	Cercocarpus montanus	8-10'
Red Flowering Quince	Chaenomeles japonica 'rubra'	4-6'
Fernbush	Chamaebatiaria millefolium	3-5'
Cranberry Cotoneaster	Cotoneaster apiculatus	18-24'
Coral Beauty Cotoneaster	Cotoneaster dammeri 'coral beauty'	1-2'
Cliffrose	Cowania mexicana	3-12'
Spanish Gold Broom	Cytisus purgans 'Spanish Gold'	2-4'
Dwarf Burning Bush	Euonymus alatus 'compacta'	6-8'
Apache Plume	Fallugia paradoxa	3-6'
Cliff fendlerbush	Fendlera rupicola	5-6'
Rock Spirea	Holodiscus dumosus	3-6'
Waxflower	Jamesia americana	4-5'
Beautybush	Kolkwitzia amabilis	6-8'
Cheyenne Privet	Ligustrum vulgare 'cheyenne'	6-8'
Tiny Trumpet Honeysuckle	Lonicera syrigantha 'wolfii'	3-4'
Russian Sage	Perovskia atriplicifolia	4'
Chevenne Mockorange	Philadelphus lewisii 'Cheyenne'	6-7'
Native Ninebark & varieties	Physocarpus opulifolius & varieties	varies
Western Sand Cherry	Prunus besseyi	4-6'
Creeping Western Sand Cherry	Prunus besseyi 'pawnee buttes'	15-18"
Antelope Brush	Purshia tridentata	6'
Columnar Buckthorn	Rhamnus frangula 'columnaris'	8-12'
Rocky Mountain Sumac	Rhus glabra cismontana	6'
Cutleaf Staghorn Sumac	Rhus typhina 'Laciniata'	
Three Leaf Sumac	Rhus trilobata	3-6'
Golden Currant	Ribes aureum	6'
Squaw Currant / Wax Currant	Ribes cereum	
Rose	Rosa cultivars and varieties	varies
Boulder Raspberry	Rubus deliciosus	8'
Elderberry	Sambucus nigra	6'
Snowberry	Symphoricarpos albus	4-6'
Red Coralberry	Symphoricarpos orbiculatus	
Mountain Snowberry	Symphoricarpos oreophilus	
Miss Kim Lilac	Syringa patula 'Miss Kim'	3-5'
Koreanspice Viburnum	Viburnum carlesii	6'
Mohican Viburnum	Viburnum lantana 'Mohican'	6'
Compact American Cranberrybush	Viburnum trilobum varieties	4-5'
Weigela varieties	Weigela florida varieties	varies

# 7' Width Deciduous Shrubs

Common Name	Latin Name	Mature Ht.
Dwarf Ginnala Maple	Acer ginnala 'compacta'	6-8'
False Indigo	Amorpha fruticosa	6-15'
Saskatoon Serviceberry	Amelanchier alnifolia	10'
Utah Serviceberry	Amelanchier utahensis	6-12'
Tall Western Sage	Artemisia tridentata	8'
Siberian Peashrub	Caragana arborescens	8-10
Royal Purple Smoke Tree	Cotinus coggygria 'royal purple'	6-8'
Red & Yellow Twig Dogwood	Cornus sericea	8'
Silverberry	Elaegnus commutata	6-12'
Burning Bush	Euonymus alatus	8-12'
New Mexican Privet	Forestiera neomexicana	8-12'
Northern Sun Forsythia	Forsythia x 'Northern Sun'	6-8'
Arnold's Red Honeysuckle	Lonicera tartarica 'Arnold's Red'	6-8'

Golden Ninebark	Physocarpus opulifolius 'luteus'	6-8'
American Plum	Prunus americana	10-20'
Cistena Plum	Prunus cistena	6-8'
Nanking Cherry	Prunus tomentosa	6-12'
Native Chokecherry	Prunus virginiana	8-20'
Gambel Oak	Quercus gambellii	4-20'
Fragrant Sumac	Rhus aromatica	6-12'
Gro-Lo Fragrant Sumac	Rhus aromatica 'grow low'	2-3'
Smooth Sumac	Rhus glabra	10'
Staghorn Sumac	Rhus typhina	10'
Rose	Rosa cultivars and varieties	varies
Woods Rose	Rosa woodsii	8'
Swamp Rose	Rosa Palustris	8'
Buffaloberry	Shepherdia argentea	8-15'
Early Lilac	Syringa x hyacinthiflora cultivars	6-12' / varies
Late Lilac	Syringa x prestoniae cultivars	6-12' / varies
Common & French Lilacs	Syringa vulgaris varieties	6-12' / varies
Judd / Fragrant Viburnum	Viburnum x juddii	6-8'
Alleghany Viburnum	Viburnum x rhytidophylloides 'Alleghany'	10'
Burkwood Viburnum	Viburnum burkwoodii	10-12'
Arrowwood Viburnum	Viburnum dentatum	6-10'
Wayfaring Tree	Viburnum lantana	10-12'
Nannyberry Viburnum	Viburnum lentago	8-15'
American Cranberrybush	Viburnum trilobum	10'

# Ornamental Grasses (those with an asterick may be counted toward required shrub counts)

Common Name	Latin Name	Mature Ht.
Big Bluestem Grass*	Andropogon gerardii	4-6'
Blue Gramma Grass	Bouteloua gracilis	1-2'
Karl Forester Feather Reed Grass*	Calamagrostis arundinacea 'karl forester'	4-5'
Sea Urchin Blue Fescue	Festuca ovina glauca 'sea urchin'	8"
Blue Avena Grass*	Helictotrichon sempervirens	4'
Japanese Blood Grass	Imperata cylindrica 'red baron'	1-2'
Maiden Hair Grass*	Miscanthus sinensis 'gracillimus'	5-6'
Yaku Jima Maiden Grass*	Miscanthus sinensis 'yaku jima'	3-4'
Variegated Moor Grass	Molina caerulea variegata	1-2'
Northern Indian Rice Grass	Oryzopsis hymenoides 'nezpar'	18"
Switchgrass*	Panicum virgatum 'heavy metal'	3-4'
Dwarf Fountain Grass	Pennisetum alopecuroides 'hamelin'	1-2'
Little Bunny Grass	Pennisetum alopecuroides 'little bunny'	10-12"
Ribbon Grass	Phalaris arundinacea 'picta'	2-3'
Ruby Grass	Rhynchelytrum nerviglume	2'
Plume Grass*	Saccharum ravannae	8-12'
Little Bluestem Grass*	Schizachyrium scoparium	3-5'
Indian Grass*	Sorghastrum nutans 'sioux blue'	5-7'

# PERENNIALS/GROUND COVERS

Perennials

Common Name	Latin Name	Mature Ht.
Tall Gold Yarrow	Achillea filipendula	36-48"
Double Bubblemint	Agastache cana	24-36"
Sunset Hyssop	Agastache rupestris	24-36"
Rocky Mountain Columbine	Aquilegia caerulea	18-24"
Butterfly Weed	Asclepias tuberosa	18"
False Spirea	Astilbe sp.	10-36"
Dwarf Lavender Fall Aster	Aster novi-belgii 'audrey'	18-24"
Basket-of-Gold	Aurina saxatilis 'gold ball'	8-12"
Snowbank Boltonia	Boltonia asteroides 'snowbank'	36-48"
Poppy Mallow	Callirhoe involucrata	4-12"
Loddon Anna Bellflower		4-12
	Campanula lactiflora 'loddon anna'	
Blue Harebell	Campanula rotundiflora 'olympica'	6-18"
White Valerian	Centranthus ruber 'albus'	24-36"
Moonbeam Coreopsis	Coreopsis verticillata 'moonbeam'	24-36"
Pacific Giant Delphinium	Delphinium ssp.	48-60"
Maiden Pinks	Dianthus deltoides	6-8"
Bleeding Heart	Dicentra spectabilis	24-36"
Purple Coneflower	Echinacea purpurea	36"
Globe Thistle	Echinops ritro	24-36"
Cut-Leaf Daisy	Erigeron compositus	4-6"
Sulfur Buckwheat	Eriogonum umbellatum	18-24"
Joe Pye Weed	Eupatorium sp.	60-72"
Dwarf Fleeceflower	Fallopia japonica compacta	12-18"
Native Blanket Flower	Gaillardia aristata	18-24"
Dazzler Blanket Flower	Gaillardia 'dazzler'	24-36"
Whirling Butterflies	Gaura lindheimeri	36-42"
Dwarf Globularia	Globularia hederacea	2-6"
Sunrose	Helianthemum	8-12"
Daylily	Hemerocallis sp.	36"
Coral Bells	Heuchera sp.	12"
Butterfly Iris	Iris spuria	36-40"
Deep Blue Lavender	Lavandula angustifolia 'hidcote'	8-12"
Shasta Daisy	Leucanthemum x superbum 'alaska'	24-30"
Gayfeather	Liatris sp.	18-48"
Yellow Flax	Linum flavum compactum	10-18"
Blue Flax	Linum perenne	12-24"
Cardinal Flower	Lobelia cardinalis	36-48"
Marshall's Delight Bee Balm	Monarda 'marshall's delight'	24-36"
Red Monkeyflower	Mumulus cardinalis	48"
Oxalis	Oxalis crassipes	10"
Lambert's Locoweed	Oxytropis lambertii	8-12"
		24-36"
Poppy	Papaver sp.	
Penstemon	Penstemon sp.	var.
Purple Prairie Clover	Petalostemon purpurea	18"
Prairie Coneflower	Ratibida columnifera 'mexican hat'	15-24"
Russian Sage	Perovskia atriplicifolia	24-48"
Gloriosa Daisy	Rudbeckia hirta 'indian summer'	36-40"
Salvia	Salvia sp.	varies
Woolly Cotton	Santolina chamaecyparissus	14"
Lavender Cotton	Santolina ericoides	8"
Pincushion Flower	Scabiosa sp.	varies
Redbirds	Scrophulora macrantha	36-48"
Sedum	Sedum telephinum	6-18"
Mexican Catchfly	Silene lancinata	15"
Dwarf Goldenrod	Solidago sphacelata	15"
Goldenrod	Solidago rugosa	36"
Hedgenettle, Lamb's Ears	Stachys coccinea	18"
Prince's Plume	Stanleya pinnata	36-60"

Wherry's Foam Flower	Tiarella wherryi	3-8"
Spiderwort	Tradescantia occidentalis	12-18"
Native Verbena	Verbena bipinnatifida	3-6"
Ironweed	Veronia noveborascens	72"
Red Fox Speedwell	Veronica spicata 'red fox'	12-18"
Bowles Periwinkle	Vinca minor 'bowles variety'	4-6"
Hummingbird Flower	Zauschneria californica latifolia	18-24"
Blue Mint Bush	Zizpohora clinopodioded	18"

# Groundcover

Common Name	Latin Name	Mature Ht.
Carpet Bugle	Ajuga reptans	4-6"
Pussytoes	Antennaria neglecta	1-4"
Rockcress	Arabis	4-6"
False Rockcress	Aubrieta	4-6"
Snow in Summer	Cerastium tomentosum	6-12"
Bunchberry Dogwood	Cornus canadensis	3-8"
Maiden Pink	Dianthus deltoides	6-8"
Sulfur Flower	Eriogonum umbellatum	8-12"
Wild Strawberry	Fragaria americana	2-6"
Candytuft	Iberis sempervirens	8-12"
White Nancy Nettle	Lamium maculatum 'white nancy'	6-12"
Moneywort	Lysimachia nummularia	2-4"
Running Mat Phlox	Phlox stolonifera 'sherwood purple'	4-6"
Emerald Pink Phlox	Phlox subulata 'emerald pink'	4-6"
Creeping Quinquefoil	Potentilla neumanniana	3"
Stonecrop	Sedum	1-2'
Pink Chintz Creeping Thyme	Thymus 'pink chintz'	1"
Reiter Creeping Thyme	Thymus 'reiter'	3"
Doone Valley Lemon Thyme	Thymus citriodorus 'doone valley'	3"
Turkish Veronica	Veronica liwanensis	1-2"
Woolly Veronica	Veronica pectinata	1-2"
Prostrate Veronica	Veronica prostrata	4-8"
Tufted Pansy	Viola cornuta	6"