tree and shrub guide

- Problems & Challenges in Western Colorado
- Purchasing A High Quality Tree
- Summer & Winter Watering Tips
- Best Time to Plant
- Tree Planting Steps
- Plant Suggestions for Grand Valley Landscapes

City of Grand Junction Colorado
Parks & Recreation

Grand Junction Forestry Board

Welcome Tree and Shrub Planters

The Grand Junction Forestry Board has assembled the following packet to assist you in overcoming planting problems and challenges in the Grand Valley. How to choose a high quality tree, watering tips, proper planting techniques and tree species selection will be covered in this guide. We encourage you to further research any unknown variables or questions that may arise when the answers are not found in this guide.

Trees play an important role in Grand Junction by improving our environment and our enjoyment of the outdoors. We hope this material will encourage you to plant more trees in a healthy, sustainable manner that will benefit our future generations.

If you have any questions please contact the City of Grand Junction Forestry Department at 254-3821.

Sincerely,

The Grand Junction Forestry Board

Problems & Challenges in Western Colorado

Most Common Problems

- Plan before you plant – Know the characteristics such as mature height and width of the tree you are going to plant. Make sure the mature plant will fit into the space.
- Call before digging - Call the Utility Notification Center of Colorado at 800-922-1987.
- Look up – Avoid planting trees that will grow into power lines, other wires, or buildings.
- Do a soil test - Soils in Western Colorado are challenging and difficult for some plants to grow in. Make sure you select a plant that will thrive in your planting site.
    - Soil test should be performed to check for organic matter and salt levels. Call CSU Extension at 244-1834 for instructions.
- Course composted organic material should be amended into existing soil to improve the overall soil quality when necessary. Amending the entire planting site has long-term advantages.

Purchasing a High Quality Tree

Tree selection is extremely important, planting trees with insects, disease, or other damage will result in an inferior, unhealthy tree. Therefore, trees and shrubs should be inspected prior to purchase. The following are things to look for at the nursery:

- Injuries to trunk
    - Gouges, abrasions or cuts into the trunk bark
- Loose or torn bark
    - Bark that is no longer attached to the trunk
- Cankers, bleeding, sunken or diseased tissue
    - Any bark that is discolored compared to other trees of the same species
    - Bark that is oozing any color liquid
    - Bark that is not firm to the touch or has a sunken appearance on the trunk
- Evidence of insects, leaf damage or borer holes
    - A tree should have no holes anywhere on it, no sawdust at the base of the tree, or leaves that show any sign of being chewed
- Poorly structured trees with weak branch attachments
    - Learn about the branching habit of your tree species to avoid branches that are growing out of character. Wind should be able to move through the crown of the tree easily without causing damage
- Root bound plant material in containers
    - When plants have been in pots too long their roots can start to circle around the edge of the pot. The circling roots can be hard to correct and it is best to choose a plant that has not been in the pot too long. This can be looked for at the nursery by pulling the pot off and looking at the roots

Important Information

- Turf should be established prior to planting trees since trees have different post-planting water needs.
- Soil should be removed from top of the root ball to expose root flare or collar. *For more information refer to the Tree Planting Steps by CSU Extension Office on page 4 of this packet.*
- Fertilizers are not necessary at the time of planting unless the soil test indicates alack of specific nutrients.
- Proper watering is essential for healthy trees. Plan on supplemental watering until the tree becomes established.

For further details please refer to Dr. Swift's Planting Specifications by calling CSU Extension at 244-1834

Summer & Winter Watering Tips

Summer Watering

- Need to learn what makes the tree happy in your soil.
  - The goal is to water the soil profile down to a depth of 14 inches.
  - After watering, test the wetness depth by sticking a long screwdriver into the ground to see how deep it goes. The depth the screwdriver reaches is the depth the water reached in the soil profile.
  - Water with the purpose of getting the soil profile wet and not allowing it to dry out completely.
  - Starting September 1st, cut back watering by half to allow the plants to get ready for winter.
    - Winter water is critical to the newly planted.
  - On October 1st, cut watering back to once per month until the leaves turn color and begin to drop off.

Winter Watering

- Goal is to water the plants 2-3 times in the winter.
  - Do not water if the ground is frozen.
- Start your regular watering schedule in March so the soil is moist when the plant becomes active again.

Best Time To Plant

- It is best to plant trees in the early spring when frost has left the soil. Although planting can be performed throughout the year, early spring is most favorable.

Other Resources

- City of Grand Junction Parks Department, Forestry Division
  (Licensed arborist list available).....970-254-3821, www.gjcity.org
- Colorado State University Extension.....970-491-6281, www.ext.colostate.edu
- Colorado State Forest Service, Grand Junction.....970-248-7325, csfs.colostate.edu
- Associated Landscape Contractors of Colorado.....www. alcc.com
- Excel Energy.....1-800-895-4999, xcelenergy.com
- Rocky Mountain Chapter- International Society of Arboriculture.....303-756-1815, www.isarmc.org

CMG GardenNotes #636

Tree Planting Steps

This publication summarizes the tree planting process. For an in-depth discussion on tree planting, refer to CMG GardenNotes #633, *The Science of Planting Trees*.

The *Science of Planting Trees* is promoting rapid root growth (regeneration) to quickly reduce the water stress imposed by the harvest and planting process. *Post-planting stress* (transplant shock) is the stress factors induced by the reduced root system.

Planting trees too deep has become an epidemic leading to the decline and death of landscape trees. In the landscape, trunk girdling roots accounts for 57% of all tree deaths. Trunk girdling roots develop when a tree is planted too deep in the root ball and/or the root ball is planted too deep in the planting hole. Trunk girdling roots may lead to decline and death some 12 to 20 years after planting. Trunk girdling roots may be below ground.

Step 1.
Determine depth of planting hole

Depth of root ball in planting hole

To deal with the *soil texture interface* (differences in soil pore space) between the root ball soil and backfill soil, it is imperative that the root ball rise slightly above grade with no backfill soil over top of the root ball. For small (one-inch caliper) trees, the top of the root ball should be about one inch above grade. For larger (2-4 inch caliper) trees, the top of the root ball should be about two inches above grade. Backfill soil should cover the "knees" tapering down to grade. [Figure 6]

Depth of tree in the root ball

- Generally, at least two structural roots should be within the top 1-3 inches of the root ball, measured 3-4 inches from the trunk.
- On species prone to trunk circling roots (Crabapples, Green Ash, Hackberry, Littleleaf Linden, Poplar, Red Maple, and other species with aggressive root systems), the top structural root should be within the top one inch of the root ball.

Checking depth of tree in root ball – Check depth of the tree in the root ball. Do not assume that it was planted correctly at the nursery.

- The presence of the root flare is an indication of good planting depth. However, small trees may have minimal root flare development making it difficult to determine. Be careful not to mistake swelling of the trunk below the graft as the root flare.
- A good way to evaluate planting depth in the root ball is with a slender implement like a slender screwdriver, knitting needle, or barbeque skewer. Systematically probe the root ball 3-4 inches out from the trunk to locate structural roots and determine depth. [Figure 1]

Figure 1. Systematically probe the root ball with a slender screwdriver. Generally, at least two structural roots should be found in the top 1-3 inches of soil, 3-4 inches out from the trunk. On species prone to trunk circling roots, the top structural root should be within the top one inch of the root ball.

If the tree is planted too deep in the root ball, excess soil should be removed from the top in the backfill step of the planting process. Adjust the depth of the planting hole to compensate. [Figure 2]

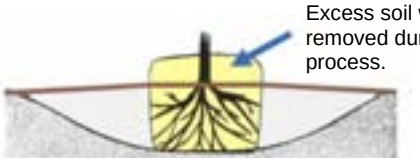


Figure 2. Adjust the depth of the planting hole to bring the root flare to the correct depth.

Depth of the planting hole should be 1-2 inches less than the height of the root ball. However, planting hole depth may need to be adjusted to correct the depth of the tree in the root ball.

Step 2. Dig saucer-shaped planting hole three-times root ball diameter

- To maximize soil oxygen levels the top of the root ball rises 1-2 inches above grade (adjusted for proper rooting depth as determined in step 1).
- Root ball sits on un-dug soil, stabilizing the tree, and preventing sinking and tilting.
- A saucer-shaped planting hole three times the root ball diameter with sloping sides allows the root system to grow rapidly to 400% of the root ball volume before being slowed by the lower oxygen levels in the site soil. This is enough to minimize *post-planting stress* in normal planting situations.
- The wide saucer-shaped planting hole gives the tree more tolerance to over-watering problems and waterlogged soils.
- The wide planting hole allows for root ball wrappings to be removed after the tree is situated in the planting hole.
- A labor saving technique is to dig the planting hole about 2 times root ball diameter with somewhat vertical side, then widen the hole into the desired saucer shape with the shovel during the backfill process. [Figure 3]

Figure 3. A labor saving technique is to wide the planting hole into the desired saucer shape, three times root ball diameter during the during backfill process.

Step 3. Set tree in place, removing container/wrappings

In setting the tree in the planting hole, if the tree has a "dogleg" (a slight curve in the trunk just above the graft) the inside curve must go to the north to avoid winter bark injury. [Figure 4].

Figure 4. The inside curve of the graft crook or "dogleg" must go to the north to avoid winter bark injury.

Vertically align the tree with the top centered above the root ball. Due to curves along the trunk, the trunk may not necessarily look straight. It will appear straighter with growth.

In this step, techniques vary for *Container Grown Trees* and *Balled And Burlaped (B&B) Trees*.

Container Grown Nursery Stock

"Container grown nursery stock" includes a variety of production methods where the trees or shrubs are grown in the container (limiting root spread to the size of the container). In some systems, like "pot-in-pot" and "grow-bags", the container is in the ground. An advantage of the container stock is that it can be planted spring, summer or fall.

Actual planting techniques in this step vary with the type of container and extent of root development. Generic steps include:

a) Lay tree on side in the planting hole or near the planting hole.
b) Wiggle off or cut off the container and shave off the outer 1-1½ inches of the root ball with a pruning saw or purners. This is to deal with circling roots.
c) Tilt tree into place with the inside curve of any graft crook to the north.
d) Check depth of root ball in planting hole. If needed, remove tree and correct hole depth.
e) Align vertically.
f) For stability, firm a shallow ring of soil around the bottom of the root ball. [Figure 5]

- The ideal container grown tree has a nice network of roots holding the root ball together. After the container is removed, the tree is gently tilted into place.
- If most of the soil falls off the roots, the tree is planted as a bare-root tree.
- If some of the soil falls off (often on the bottom), it may be necessary to adjust the depth of the planting hole. Backfill and pack the bottom of the planting hole to the correct depth.
- Fabric grow bags must be removed from the sides. They are generally cut away after setting the tree in place.
- Generally, paper/pulp type container should be removed. Most are slow to decompose and will complicate soil texture interface issues. Pulp containers often need to be cut off, as they may not slide off readily.

- In handling large trees (3-inch caliper and greater) it may be necessary to set the tree in place before removing the container.

Field Grown, B&B Nursery Stock

Field grown, balled and burlaped (B&B) type trees and shrubs are dug from the growing field with the root ball soil intact. In the harvest process, only 5-20% of the feeder roots are retained in the root ball. B&B nursery stock is best transplanted in the cooler spring or fall season.

To prevent the root ball from breaking, the roots are balled and wrapped with burlap (or other fabrics) and twine (hence the name B&B). In nurseries today, there are many variations to B&B techniques. Some are also wrapped in plastic shrink-wrap, placed in a wire basket, or placed in a pot.

An advantage of the wider planting hole is that it gives room for the planter to remove root ball wrappings AFTER the tree is situated in the hole.

Based on research, **standard procedures are to remove root ball wrapping materials (burlap, fabric, grow bags, twine, ties, wire basket, etc.) from the upper 12 inches or 2/3 of the root ball, whichever is greater AFTER the tree is set in place.** Materials under the root ball are not a concern since roots grow outward, not downward.

Actual planting techniques in this step vary with the type of wrapping on the root ball. Generic steps include:

a) Remove extra root ball wrapping added for convenience in marketing (like a shrink-wrap and a container). However, do NOT remove the burlap (or fabric), wire basket and twine that hold the root ball together until the tree is set in place.
b) Set tree in place with the inside curve of any graft crook to the north.
c) Check depth of root ball in planting hole. If needed, removed tree and correct hole depth.
d) Align vertically.
e) For stability, firm a shallow ring of soil around the bottom of the root ball. [Figure 5]

Figure 5. Stabilize the tree by firming a small ring of backfill soil around the base of the root ball

f) Removed all the wrapping (burlap, fabric, twine, wire basket, etc.) on the upper 12 inches or upper 2/3 of the root ball, which ever is greater.
g) If root are found circling the root ball, shave off the outer 1-1½" of the root ball with a pruning saw or pruners.

Consensus from research is clear that leaving burlap, twine, and wire baskets on the sides of the root ball are not acceptable planting techniques.

- Burlap may be slow to decompose and will complicate soil texture interface issues.
- Burlap that comes to the surface wicks moisture from the root ball, leading to dry soils.
- Jute twine left around the trunk will be slow to decompose, often girdling the tree.
- Nylon twine never decomposes in the soil, often girdling trees several years after planting.
- Wire baskets take 30 plus years to decompose and do interfere with long-term root growth.
- With tapered wire baskets, some planters find it easier to cut off the bottom of the basket before setting the tree in the hole. The basket can still be used to help move the tree and is then easy to remove by simply cutting the rings on the side.

Optional Step 4. Underground stabilization

When properly planted with the tree set on un-dug soil, most trees in the landscape do not require staking or underground stabilization. Staking or underground stabilization may be needed in windy areas. For additional information on staking, refer CMG GardenNotes #634, *Tree Staking and Underground Stabilization*.

Step 5. Backfill

When backfilling, be careful not to over-pack the soil reducing large pore space (soil oxygen levels). A good method is to simply return soil and allow water to settle it when irrigated.

Soil "peds" (dirt clods) up to the size of a small fist are acceptable in tree planting. In clayey soils, it is undesirable to pulverize the soil, as this destroys large pore space.

Changes in soil texture (actually changes in pore space) between the root ball soil and the backfill soil

create a *soil texture interfaces* that impede water and air movement across the interface. To deal with the interface, it is imperative that the top of the root ball comes to the surface (that is no backfill soil covers the top of the root ball). Backfill soil covers the root ball knees, gradually tapering down.

Optional Step 6. Staking

When properly planted with the tree set on un-dug soil, most trees in the landscape do not require staking or underground stabilization. Staking may be desirable to protect the tree from people activities. Staking or underground stabilization may be needed in windy areas.

Install staking before watering so the planting crew does not pack down the wet soil. For additional information on staking, refer to *CMG GardenNotes #634, Tree Staking and Underground Stabilization.*

Step 7. Water to settle soil

Step 8. Final grade

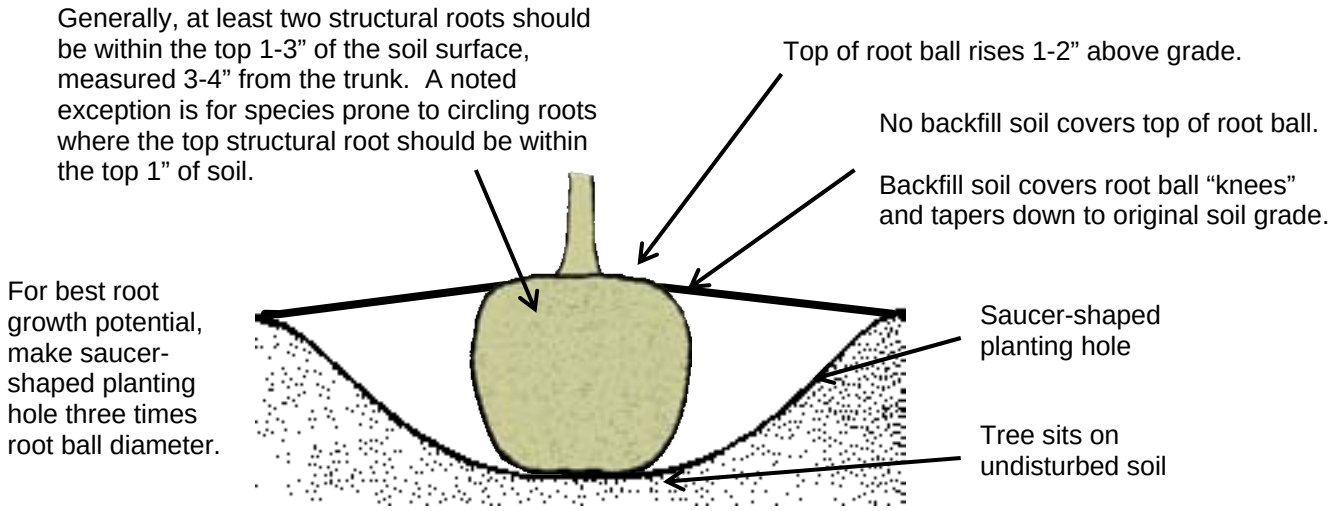
With the wide planting hole, the backfill soil may settle in watering. Final grading may be needed after watering.

Step 9. Mulch

Do not place mulch directly over the root ball on newly planted trees. As a rule of thumb, 3-4 inches of wood/bark chips gives better weed control and prevents soil compaction from foot traffic when place over the backfill area and beyond. Additional amounts may reduce soil oxygen.

Do not place wood/bark chips up against the trunk. Do not make mulch volcanoes. On wet soils, mulch may help hold excessive moisture, being undesirable. Wood/bark chips are not suitable in open windy areas.

Figure 6. Planting Summary



Author: David Whiting, Extension Consumer Horticulture Specialist, Dept. of Horticulture & LA, Colorado State Univ.

Revised August 2009

Plant Suggestions For Grand Valley Landscapes

VERY LOW WATER ZONE:

Once established, little irrigation required

COMMON NAME	BOTANICAL NAME	SALT TOLERANCE in MMHOS Higher MMHOS = More Salt Tolerance
SHADE TREES – Height x Width		
Bur Oak – 55x45	*Quercus macrocarpa*	8
Hackberry – 55x35	*Celtis occidentalis*	4
Bigtooth Maple – 30x20	*Acer grandidentatum*	
ORNAMENTAL TREES – Height x Width		
Desert Willow – 20x15	*Chilopsis linearis*	
Gambel Oak – 20x15	*Quercus gambelii*	
Wavyleaf Oak – 15x10	*Quercus undulata*	
EVERGREEN TREES: Height x Width		
Pinyon Pine – 20x15	*Pinus edulis*	
Rocky Mountain Juniper – 20x15	*Juniperus scopulorum*	
Utah Juniper – 20x15	*Juniperus osteosperma*	
SHRUBS – Large, 6+ feet:		
Big Sagebrush	*Artemisia tridentata*	6
Bitterbrush Antelope / Desert	*Purshia tridentata / glandulosa*	6
Mexican Cliff Rose	*Purshia mexicana*	
Shrub Live Oak	*Quercus turbinella*	
Smith's Buckthorn	*Rhamnus smithii*	
SHRUBS – Medium, 3 to 6 feet:		
Apache Plume	*Fallugia paradoxa*	
Fernbush (*Desert Sweet)	*Chamaebatiaria millefolium*	
Fourwing Saltbush	*Atriplex canescens*	10
Leadplant	*Amorpha canescens*	
Little Leaf Mountain Mahogany	*Cercocarpus intricatus*	
Littleleaf Mockorange	*Philadelphus microphyllus*	6
Mormon Tea	*Ephedra viridis*	10
Squaw Apple	*Peraphyllum ramosissimum*	
Tall Blue Rabbitbrush (*White Stemmed Rabbitbrush)	*Chrysothamnus nauseosus* spp. *albicaulis*	6
Wax Currant	*Ribes cereum*	
Yucca	*Yucca* spp.	
SHRUBS – Low Growing, 1 to 3 feet:		
Broom Snakeweed	*Gutierrezia sarothrae*	
Dwarf Leadplant (*Dwarf Wild Indigo)	*Amorpha nana*	
Fringed Sagebrush	*Artemisia frigida*	6
Sea Foam Sage	*Artemisia versicolor* 'Sea Foam'	
Shadscale Saltbush	*Atriplex confertifolia*	10

NOTE: This is not an exclusive plant list. These are plants that the City of Grand Jct, Forestry Dept. believes will grow well in the valley. If known, the salt tolerance is listed for tree and shrub species.

LOW WATER ZONE:

Once established, water during hot and dry periods

COMMON NAME	BOTANICAL NAME	SALT TOLERANCE in MMHOS Higher MMHOS = More Salt Tolerance
SHADE TREES – Height x Width		
Baldcypress – 35x30	*Taxodium distichum*	
Chinese Pistache – 25x20	*Pistacia chinensis*	
Fruitless White Mulberry – 40x40	*Morus alba* – fruitless cultivars	
Kentucky Coffeetree – 55x45	*Gymnocladus dioicus*	
Netleaf Hackberry – 20x15	*Celtis reticulata*	4
Singleleaf Ash – 25x15	*Fraxinus anomala*	4
ORNAMENTAL TREES – Height x Width		
Golden Rain Tree – 35x35	*Koelreuteria paniculata*	4
EVERGREEN TREES – Height x Width		
Arizona Cypress – 25x20	*Cupressus arizonica* 'Arizonica'	
Black Hills Spruce – 25x20	*Picea glauca* 'Densata'	
Eastern Redcedar – 20x15	*Juniperus virginiana*	
Juniper		
Cologreen (20x12) / Grey Gleam (15x10)	*Juniperus scopulorum* - cultivars	
Wichita Blue (20x12)		
SHRUBS – Large, 6+ feet:		
Caragana	*Caragana arborescens*	
Common Purple Lilac	*Syringa vulgaris*	8
Curl Leaf Mountain Mahogany	*Cercocarpus ledifolius*	
Juniper		
Sea Green / Table Top	*Juniperus chinensis / scopulorum* – cultivars	8 - chinensis
Mugo Pine	*Pinus mugo* - cultivars	8
New Mexican Privet	*Foresteria neo*-mexicana	6
Serviceberry		
Saskatoon / Utah	*Amelanchier alnifolia / utahensis*	
Siberian Peashrub	*Caragana arborescens*	8
Smoke Tree	*Cotinus obovatus*	
Three-Leaf Sumac	*Rhus trilobata*	6
SHRUBS – Medium, 3 to 6 feet:		
Mountain Ninebark	*Physocarpus monogynus*	
Red Coralberry	*Symphoricarpos orbiculatus*	
Rock Spirea	*Holodiscus dumosus*	
Rocky Mountain Sumac	*Rhus glabra* 'Cismontana'	6
Russian Sage	*Perovskia atriplicifolia*	
True Mountain Mahogany	*Cercocarpus montanus*	
Western Sandcherry	*Prunus besseyi*	
SHRUBS – Low Growing, 1 to 3 feet:		
Mentor Barberry	*Berberis x mentorensis*	
Greenleaf Manzanita	*Arctostaphylos patula*	
Juniper		
Hughes / Broadmoor / Buffalo / Wilton Carpet	*Juniperus horizontalis / sabina* – cultivars	

MODERATE WATER ZONE:

Water plants monthly after establishment, may require more frequent water depending on weather

COMMON NAME	BOTANICAL NAME	SALT TOLERANCE in MMHOS Higher MMHOS = More Salt Tolerance
SHADE TREES – Height x Width		
Ash	**Ash Trees No Longer are Recommended due to the Emerald Ash Borer**	
Autumn Purple (55x40) / Marshall Seedless (60x35) Patmore (60x35) / Summit (55x30)	*Fraxinus americana / pennsylvanica – cultivars*	4 – americana
Callery Pear Aristocrat (40x30) / Autumn Blaze (35x20) Cleveland Select (40x15) / Redspire (40x15)	*Pyrus calleryana* – cultivars	4
Dawn Redwood – 55x30	*Metasequoia glyptostroboides*	
Elm Frontier (40x35) / Pioneer (40x35)	*Ulmus x'Frontier', x'Pioneer'*	6
Honeylocust Imperial (35x35) / Shademaster (50x40) Skyline (50x40)	*Gleditsia tricanthos inermis* – cultivars	8
Japanese Pagoda Tree – 45x40	*Sophora japonica*	6
Linden American (55x30) / Littleleaf (45x30) Glenleven (55x30) / Greenspire (45x30)	*Tilia americana / cordata* – cultivars of *cordata*	Intolerant
London Planetree – 60x45	*Platanus x acerifolia*	Intolerant
Oak English (55x40) / Swamp White (45x40)	*Quercus robur / bicolor*	
Sensation Boxelder (*Sensation Maple) – 45x35	*Acer negundo 'Sensation'*	
Western Catalpa – 55x35	*Catalpa speciosa*	4
ORNAMENTAL TREES – Height x Width		
Canada Red Chokecherry	*Prunus virginiana* 'Canada Red'	6
Crabapple Adams (pink flowers, 20x20) / Radiant (pink, 25x25) Indian Summer (red, 20x20) / Red Barron (red, 20x10) Snow Drift (white, 20x20) / Spring Snow (white, 25x20)	*Malus* spp.	2
Eastern Redbud – 30x25	*Cercis canadensis*	
Hawthorne Paul's Scarlett (25x25) / Russian (20x20) Thornless Cockspur (20x20) / Washington (20x20) Winter King (20x20)	*Crataegus* spp.	
Hotwings Tatarian Maple – 20x15	*Acer tataricum* 'GarAnn'	
Japanese Tree Lilac – 30x20	*Syringa reticulata*	8
Native Chokecherry – 20x20	*Prunus virginiana*	6
Newport Plum – 20x20	*Prunus cerasifera* 'Newport'	
Oklahoma Redbud – 25x20	*Cercis reniformis* 'Oklahoma'	
EVERGREEN TREES – Height x Width		
Austrian Pine – 35x30	*Pinus nigra*	8
Scotch Pine – 45x25	*Pinus sylvestris*	2
Southwestern White Pine – 45x25	*Pinus strobiformis*	2
SHRUBS – Large, 6+ feet:		
Burning Bush	*Euonymus alatus*	
Butterfly Bush	*Buddleia davidii*	
Cotoneaster	*Cotoneaster acutifolia*	

MODERATE WATER ZONE continued:

Water plants monthly after establishment, may require more frequent water depending on weather

COMMON NAME	BOTANICAL NAME	SALT TOLERANCE in MMHOS Higher MMHOS = More Salt Tolerance
SHRUBS – Large, 6+ feet:		
Firethorn	*Pyracantha* spp.	
Forsythia	*Forsythia* spp.	
Holly		
Blue Prince / Blue Princess	*Ilex x meserveae*	
Honeysuckle	*Lonicera* spp.	8
Hybrid Lilacs	*Syringa hybrids*	
Nanking Cherry	*Prunus tomentosa*	
Rose of Sharon	*Hibiscus syriacus*	
Royal Purple Smokebush	*Cotinus coggygria* 'Royal Purple'	
Silver Buffaloberry	*Shepherdia argentea*	6
Viburnum	*Viburnum* spp.	
SHRUBS – Medium, 3 to 6 feet:		
Alpine Current	*Ribes alpinum*	
Austrian Copper Rose	*Rosa foetida*	
Barberry	*Berberis*	
Blue Mist Spirea	*Caryopteris x clandonensis*	
Cheyenne Privet	*Ligustrum vulgare* 'Cheyenne'	2
Cistena Plum	*Prunus cistena*	
Double Flowering Plum	*Prunus triloba*	6
Flowering Quince	*Chaenomeles japonica*	2
Golden Current	*Ribes aureum*	
Golden Vicary Privet	*Ligustrum x vicaryi*	2
Cranberry Cotoneaster	*Cotoneaster apiculatus*	
Dark Knight Spirea	*Caryopteris x clandonensis* 'Dark Knight'	
Japanese Yew	*Taxus cuspidata*	
Oregon Grape Holly	*Mahonia aquifolium*	
Rose Glow Barberry	*Berberis thunbergii* 'Rose Glow'	4
Snowmound Spirea	*Spiraea nipponica* 'Snowmound'	6
Weigela	*Weigela* spp.	
White Snowberry	*Symphoricarpos albus*	
Woods' Rose	*Rosa woodsii*	4
SHRUBS – Low Growing, 1 to 3 feet:		
Barberry		
Concorde / Crimson Pygmy	*Berberis thunbergii* – cultivars	
Dwarf European Cranberry Bush	*Viburnum opulus* 'Nanum'	
Emerald Mound Honeysuckle	*Lonicera xylosteum* 'Emerald Mound'	8
Euonymus		
Emerald Gaiety / Emerald n' Gold	*Euonymus fortunei* – cultivars	
Potentilla	*Potentilla fruticosa* – cultivars	

NOTE: This is not an exclusive plant list. These are plants that the City of Grand Jct, Forestry Dept. believes will grow well in the valley. If known, the salt tolerance are listed for tree and shrub species.

HIGH WATER ZONE:

Requires regular waterings, 1-2 X per week until establishment/ will do best with bi-monthly watering

COMMON NAME	BOTANICAL NAME	SALT TOLERANCE in MMHOS Higher MMHOS = More Salt Tolerance
SHADE TREES – Height x Width		
Lanceleaf Cottonwood – 60x50	*Populus x acuminata*	
Golden Willow – 40x40	*Salix alba vitellina*	
Rio Grande Cottonwood – 55x50	*Populus deltoides* ssp. *wislizeni*	
Weeping Willow – 60x55	*Salix alba* 'Tristis'	
Weeping Birch – 35x30	*Betula pendula* 'Youngii'	
ORNAMENTAL TREES – Height x Width		
Cornelian Cherry Dogwood – 20x15	*Cornus mas*	
SHRUBS – Large, 6+ feet:		
Bluestem Willow	*Salix irrorata*	
Coyote Willow	*Salix exigua*	
Golden Elderberry	*Sambucus canadensis* 'Aurea'	
Pussy Willow	*Salix caprea*	
Red-osier Dogwood	*Cornus sericea*	
SHRUBS – Medium, 3 to 6 feet:		
Dogwood		
Isanti / Ivory Halo	*Cornus alba / sericea* – cultivars	
SHRUBS – Low Growing, 1 to 3 feet:		
Creeping Willow	*Salix arenaria*	
Kelsey Dogwood	*Cornus sericea* 'Kelseyi'	

Problematic Plants for the Grand Valley-

they have or create problems for homeowners

Aspen –
Prone to insects and diseases. Short lived. Intolerant of clay soils and salty irrigation water.

Boxelder –
Female Boxelder trees attract Boxelder bugs and are prolific seeders. Also prone to decay and diseases.

Ginnala Maple –
Can become chlorotic (leaves turn yellow instead of green) if planted in salty soils.

Globe Willow –
Fast growing but has weak branch structure, prone to insects and diseases.

Siberian Elm –
Brittle wood and prone to branch breakage. Produces high quantity of seed which leads to unwanted seedlings.

Silver Maple –
Can become chlorotic. Intolerant of clay soil and salty irrigation water.

Unsuitable Trees for the Grand Valley

Russian Olive –
On Colorado Department of Agriculture Noxious Weed List B
-Counties are trying to stop the spread of this species

Tamarisk or Salt Cedar –
On Colorado Department of Agriculture Noxious Weed List B
-Counties are trying to stop the spread of this species