

My name is Jeanie Vetter and I am a licensed landscape architect in both Wyoming and Colorado. I have a landscape architecture and land use planning consulting business, High Plains Design LLC. I hold a Bachelor's of Science degree in Landscape Horticulture with an emphasis in Landscape Design and Contracting from Colorado State University and a Masters' degree in Landscape Architecture from the University of Colorado, Denver. I have been working in the green industry for almost 30 years now doing everything from landscape maintenance, florist and retail nursery management, landscape contracting and more than a few landscape designs, both residential and commercial.

Congratulations to all of you on being a part of one of the coolest, most awesome industries around! What you do makes a significant difference in the Cheyenne area and in general for the world. Carefully considered, designed and installed landscaping is, in my opinion, one of the most valuable and least expensive efforts that a developer/land owner can make toward mitigating the impacts of development, especially when you consider its good effects on the environment in general.

Unlike some regulatory requirements, landscaping provides **very significant** long term benefits to cities and regions:

- It provides temperature control via shade, windbreaks and evaporative cooling
- It prevents soil erosion and helps to clean water of sediments and pollutants
- It filters the air of carbon and dust
- It improves aesthetics and positive impressions
- It creates habitat for wildlife
- It adds economic value to development projects

I have been wrangling landscape plans and projects through our local regulatory systems in the last 4 or 5 years and realize that, generally, most people have a good impression of landscaping, but not everyone has a particularly positive perception of the Green Industry. We probably can't change everyone's mind but I think we can change some.

It's important to keep in mind that there are problems that our industry **MAY** perpetuate, which can create negative impressions about us and what we do. We, as an industry, need to do a better job in addressing reasons that some people fight landscape requirements. I have heard many arguments during my career;

“Landscaping is not native to the Cheyenne area”

My Answer: Miles and miles of paved roads, 10's of thousands of people and cars and thousands of rooftops are **NOT** native to the Cheyenne area either.

“Landscaping requires maintenance”

My Answer: So do our homes, our cars, our kids and pets. Everything good that we have in life requires maintenance. **We can do a better job creating landscapes that require less maintenance by doing things right!!**

“Landscaping won’t survive here”

We all know that this is not true but we can use better construction techniques, use hardier and/or native plants, incorporate soil improvement methods, utilize good planting methods, and provide better maintenance practices to improve long term outcomes.

“Landscaping uses too much water”

This does not have to be the case. We can incorporate soil amendment. We can encourage the use of native and drought tolerant grasses and plants and use drip irrigation wherever possible. We can use less turf grass in general. We can carefully design and place sprinkler systems.

“Landscaping is too expensive”

Think we need to do a reality check here, what is the cost of landscaping in comparison to the total cost of a development project?

When the full cost of a development is considered, generally the landscaping is 1-3% of the complete cost of development.

And what is the outcome of good landscaping? I think most people would enjoy a large shade tree to sit under occasionally?

Economically speaking, well designed and carefully installed landscaping can increase property and resale values, lower energy costs, improve business and sales, and create positive perceptions for businesses. In addition to economic benefits, plants and landscaping provide environmental and social benefits. As an investment, landscaping can increase the value of your property by as much as 20 percent--if it is done right.

The public has more positive perceptions about businesses that have trees and green space and for commercial enterprises; the advantages of a professionally installed and maintained landscape go beyond "curb appeal" right to the bottom line. A well-designed landscape invites everyone — employees, customers, vendors in, resulting in higher occupancy rates, increased rentals, and lower vacancies. The benefits of good landscaping goes beyond occupancy when you consider that the proper selection and placement of plant material can lower heating and cooling costs by as much as 20 percent while creating a healthier environment. There are a lot of studies confirming these outcomes;

- Thoughtful, well designed landscaping can add between 7% and 15% to the value of a home. (Source: The Gallup Organization)
- Properly designed landscaping can reduce air conditioning costs by up to 50%, by shading the windows and walls of a home. (Source: American Public Power Association)

- Attractive landscaping can bring a recovery value of 100-200% at selling time. Kitchen remodeling brings a 75-125% recovery rate, bathroom remodeling a 20-120% recovery rate. (Source: Money Magazine)
- Parks and tree canopies help **reduce noise**.
- A study by the U.S. Forest Service found that neighborhoods with tree-lined streets and larger yard trees actually have **reduced crime rates**.
- Other studies show that just looking at plants and trees, even through a window, can **reduce stress** and lower **blood pressure** (Housley and Wolf, NatureSacred.org).
- Walking in a natural environment with plants and trees, even when located in the middle of a city, has been shown to **improve attention and memory**., according to a study by Marc Berman of the University of Michigan.
- Neighborhoods that incorporate community green spaces have lower incidences of stress, have lower health care costs, and have an **improved quality of life**. (Housley and Wolf, NatureSacred.org).

Unfortunately, your services are typically performed at the end of a developer's budget, budgets which are fraught with the likelihood of cost overruns on other work. We often have to work within the constraints of the remaining budget.

Finally “Tree roots cause sewer pipes to break and foundations to crack. Trees roots damage sidewalks.”

First of all, is this really true???

Choose the right species of trees, respect separation distances for utilities and carefully design sprinkler systems.

Just so you know, the negative impressions are coming from a lot of divergent sources, to include not only developers and land owners but well-meaning engineers and architects and local water utilities like the Board of Public Utilities. They are perhaps a bit misinformed but all are legitimately protecting their interests and the infrastructure they are responsible for. (Waterlines, sewer lines, building foundations, streets and sidewalks.) We need to be informed and respectful of their concerns. Maybe we need to take the time to explain to them some landscape realities?

MYTH: The root system of a tree is a mirror image of the top.

Fact: Many people envision a large, branching taproot growing deep into the soil. Actually, taproots are very uncommon in mature trees and especially rare in our western soils. If taproots do develop, they usually will be forced into horizontal growth when they encounter hard subsoils beneath the surface. The entire root systems of most trees can be found within the top three feet of soil or less. The spread of the root system however, can be very extensive, often extending two to three times the spread of the crown. Fibrous, absorbing roots are in the top eight inches of soil.

Tree roots don't exert enough pressure to crack foundations or newer PVC sewer pipe. Even compacted soils tend to cause tree roots to go elsewhere. They have however, been

known to infiltrate existing cracks and opening in pipes and foundations. The most common example would be roots penetrating old, clay sewer pipe. Tree roots require air, water and nutrients to thrive. These requirements tend to keep roots pretty shallow, especially in our arid soils but, an old, cracked, clay sewer pipe is a **VERY** attractive situation for a Cottonwood. (Lots of Air/Water/Nutrients)

Don't place trees with likely large, shallow buttress roots too close to sidewalks and foundations. (Cottonwoods and Maples)

Don't place turf grass and associated irrigation systems near building foundations. The irrigation requirements for turf grass represents pretty heavy water in these areas. This is why all of my designs typically include a shrub border (with limited drip irrigation) along the perimeter of buildings.

Respect separation distances required by utility companies.

By the way. If any of the photos and or plans I show today look familiar (Perhaps you worked on them) please know that the intent here is **NOT** to expose or embarrass anyone. They are just good examples for purposes of my presentation.

Plans and Specifications:

As Landscape Contractors it is important to understand best practices, regulations and behind the scenes negotiations that take place during the design approval process. These issues result in the landscape plans you are presented with, bidding on and ultimately constructing. Don't just go out and change them without checking first! There is likely a reason they are the way they are. This example shows no trees in a tree lawn and was based on utility conflicts, specifically a water line, requiring separation distance from the Board of Public Utilities. The trees were planted here anyway!! **(I can understand this happening this since that is a typical design standard and perhaps I should have placed a note on the plan? Probably not a big deal but the local water utility thinks so, especially if they ever have to dig them up in the future to repair the waterline and therefore offend the owner/developer when they don't replace them)** Also evergreens shown here and never planted, were intended **AND** negotiated with the City to ultimately hide trash containment on site.

Plans with specifications are intended to provide specific instructions for **ALL** bidders to propose on. Home Owners and General Contractors should expect bids that are all based on the same quantities, sizes and efforts as other bidders. "Apples to Apples" bids if you will. Specifically removing items like soil amendment from a bid to reduce your bid price is a **BIG NO NO** in my opinion! Please don't do this until you are specifically asked to do so.

Provide line item proposals, for example, 30 ton moss rock boulders, placed in landscape. Or, place 40 cy compost, tilled to a depth of 6-8" inches across all landscape areas. Or, 15 ton, 1-1 1/2 river rock underlain with landscape fabric, etc. This allows an Owner/Owner

Representative to see what he or she is getting for their money and to best determine how to proceed with awarding a contract.

Landscape Plans

With my projects you will typically see one of two types of plan sets:

The first type is a full set of plans, often 2-3 sheets, to include the location of landscape elements, plant list, construction specifications and details.

The second type is typically a single sheet, sometimes two, which is intended as a review plan for the City or County. These have only general specifications and don't typically include a lot of detail regarding best practices for construction. They are however, a promise made to the reviewing entity so they need to be built as promised where ever possible. **Best practices, such as soil amendment, should be used regardless of how specific the plans are. Good outcomes and longevity of landscape projects are good for not only owners and developers but for the Green Industry in general.**

Performance Standards:

The City has specific performance standards for replacement of diseased and/or dead plant material. You are responsible for this performance for the length of your warranty which is usually 1-2 years. There is also a performance standard for seeded areas; Seeded areas shall have no bare areas larger than one square foot after germination.

At least some of you may be responsible for a contractors SWPPP or Storm Water Pollution Prevention Plan. These have specific performance standards for final stabilization of a site.

According to Wyoming DEQ rules and regulations, Final Stabilization of a site means that all soil disturbing activities at the site have been completed and a uniform perennial vegetative cover with a density of 70% of the typical or native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures. Final stabilization using vegetation must be accomplished using plants or seed mixtures of forbs, grasses and/or woody vegetation that are adapted to the conditions of the site.

Termination of Permit –

1. Final stabilization has been achieved on all parts of the site.
2. All temporary synthetic and structural erosion and sediment controls (e.g. silt fence, temporary rock check dams) have been removed.

As stated in the specifications, warranties are generally for 1 to 2 years. To me, this means that **YOU (the Landscape Contractor)** are responsible for your work and for plant health for the length of the warranty no matter if an irrigation line has been cut or turned off by someone else. You should be charging enough in your bids to perform regular inspections/ provide added/supplemental watering as needed for the full length of the warranty and/or replacing dead plant material in a timely manner. Just wondering, how many of you, after placing your plants, go in with a hose and give everything a good,

solid drink, soaking both the newly planted root ball and surrounding ground with water as opposed to relying on your drip system to do this?? This is a **VERY GOOD** practice to start.

Also, **when replacing plants in an established landscape**, remember, these newly planted trees and shrubs will require more water than the established landscape surrounding them. This will require either turning up the existing irrigation system to provide additional water **OR** providing supplemental watering by hand. **(Tell the Owner about this necessity and put this in your bid)**

Landscape Details:

Proper installation of;

Soil Amendments:

For sites in the urban area, amend the whole landscape area with compost and tilling, not just the planting holes. Amending just the planting holes will result in plant roots that do not spread properly and often circle in the amended area, why would they want to leave such a healthy, moist and nutrient filled environment for areas that are compacted, dry and lacking in moisture and nutrients?

For larger sites on the periphery of town, where the native prairie has **NOT** been overly disturbed, native topsoil has been **PRESERVED** and where tough plant material and native seeding is proposed no soil amendment is recommended.

Edging- the **DREADED** steel edging, wish we could do away with it all together because it is often installed so poorly and is sometimes just impossible to install correctly in a sloped area.

- **You are NOT supposed to see the edging when you are done.** What you should see is a nice, clean separation between turf and other materials. Start by setting edging at the same grade as hard surface such as driveway or sidewalk then grade 1" below for turf installation. On the other side of edging you will need to cut the grade further to receive the mulch or rock.
- The purpose of edging is to keep grass from creeping into shrub and garden areas. So, use edging between grass and other materials such as rock or mulch.
- Don't use edging between rock and rock or rock and mulch.
- Don't use edging around turf and tree mulch, tree roots eventually push edging out of the ground (better to carefully use a little round up here or hand pull grasses and weeds that creep in).
- **DEFINITELY** do not use edging between sidewalks/driveways/curbs and grass areas. The sidewalk/curb should serve as the edge.
- Grade the areas near edging/sidewalks/other hardscapes to 1" below grade to receive turf, 2" to receive mulch and 3" to receive rock.

Specimen Boulders:

Size - A specimen boulder should be distinctive and stand out in the landscape so this is definitely a case where “**SIZE MATTERS**”. Sometimes, the use of specimen boulders is **SPECIFICALLY NEGOTIATED** with a reviewing agency and used in lieu of plant material. The “**trip rocks**” as I affectionately describe those seen in the photo don’t count toward an alternative to plant requirements and will be cause a hold up your project when inspection time rolls around.

Placement- Place specimen boulders so they don’t look like you just backed up your truck and rolled them off into the landscape. They need to be tucked into the ground by digging a shallow hole for them or they look **VERY PRECARIOUS AND WEIRD. Properly set boulders should not look like they are about to roll away!!!** For harvested moss rock, you will usually see the line where the boulder once sat below grade. This is a good place to start.

Dry Stream Beds: CREATING A DRY STREAM BED IS AN ART!!!

Dig a shallow, meandering stream with variation in width

Lay in landscape fabric

Set bigger rocks at the curves, (think about a natural streambed and what it looks like, the big rocks cause the water to move around them and change direction thereby changing the direction of the streambed a bit)

Use multiple sizes of river cobble

Cover areas where water would flow more with smaller rock, like 1” river rock.

Don’t make dry stream beds with rip rap, there is **NOTHING IN NATURE** that resembles this “Dry Stream Bed”. Let’s save the rip rap for the engineers.

Plants material

Proper planting techniques will make a huge difference in the long term outcome of a landscape project. Healthy plants roots are the most important aspect of a long lasting, healthy landscape, **LOOK FOR ROOT FLARE AND REMOVE ROOTS SUSPECT FOR EVENTUAL GIRDLING OF THE TREE TRUNK**

Planting depth and root flare, **PLANT AT GRADE OR ABOVE, NEVER BELOW GRADE**

Removal of wire, twine and containers **REMOVE IT ALL, FOR B&B I RECOMMEND PLACING THE TREE IN THE PLANTING HOLE PRIOR TO REMOVAL OF WIRE BASKET TO PROTECT THE ROOT BALL FROM DAMAGE, REMOVE TOP ¾ OR MORE OF WIRE BASKET ONCE IN THE**

HOLE AND CUT OFF AS MUCH BURLAP AS POSSIBLE , REMOVE ALL TWINE (remember, tree roots grow horizontal, not downward)

Water requirements, GIVE THE ROOT BALL AND SURROUNDING SOIL A GOOD DRINK, EVEN SEVERAL DRINKS IN THE COMING DAYS WHILE YOU ARE STILL WORKING ON THE PROJECT.

Tree Staking: **MYTH: When a tree is planted it should be securely staked.**

Fact: Although it is sometimes necessary to stake trees to keep them upright and allow establishment, there are some adverse effects of staking. Allowing a small amount of movement helps root and trunk development. The worst effect of staking is the possibility of trunk damage from the staking wires or ties. Staking materials should be removed after one year to avoid “girdling” the tree.

Planting Root Bound Potted Trees

Potted trees can be a great buy and are definitely easier to work with than heavier balled and bur lapped trees. Since regulations usually specify a minimum caliper size be careful that you match this requirements as much as possible.

Potted trees can come with challenges though, with root flares buried too deeply in the pot and excessive and circling roots being the case more often than not.

Not dealing with these issues at the time of planting will mean certain death of trees sometime in the future, **remember, we want to have landscapes that withstand the test of time and not just the warranty period.**

When you pull the tree out of the pot, find the root flare/collar and remove all excess soil and roots growing above it. Then, remove defects, such as a structural roots that might eventually girdle a tree. Finally, shave the outer edge if necessary to remove all circling roots. Since this type of situation requires substantial root pruning, extra watering will be necessary to keep the plant healthy.

Landscape Fabric

First of all, let’s stop calling it weed fabric because it **DOES NOT** keep weeds from growing for very long. After time, the rock you place over it catches dust and dirt and weeds will eventually grow here. So....let’s call it **LANDSCAPE FABRIC**

Don’t use landscape fabric under wood mulch. It only creates a slick surface for mulch to blow off of. Also, wood mulch breaks down over time improving the soil. This is a good thing although additional mulch will need to be added

over the years to accommodate this. **Be careful on this.** Adding too much mulch can drown your plants too!

Using a fibrous type mulch such as cedar or redwood is much preferred to using bark or wood chips. **Especially in windy Wyoming.** Fibrous type wood mulches kind of knit together and compact somewhat so it won't blow away as easily. It also offers better moisture retention and ability to breakdown into the soil than bark chips.

Use landscape fabric as a separation under rock because it will keep the rock from sinking into the soil over time and simply creating a planting area full of mixed soil and landscape rock.

FINALLY, and this is a rhetorical question so please, don't raise your hand or admit to doing this!!

Does anyone know the “**Edward Scissorhands**” that was going all over town last summer turning shrubs into little balls, mickey mouse and/or poodles shapes????

I don't know about you all but I think this practice is **kinda crazy**, looks bad and is ultimately not a very good plan for the health and longevity of shrubs in general.

Carefully choosing plants or placing “**the right plant in the right place**” according to their ultimate size and/or shape should be the intent of good landscape design and construction.

Shrubs have so many interesting aspects to them such as form, leaf color, flowers or fruits. Why would anyone (**other than Walt Disney**) want to shape them all into little balls thereby removing their individual and interesting features? Especially their flowers? I understand pruning when a plant has grown out of bounds but perhaps a better answer is either rejuvenation pruning, selective thinning or literally replacing that less than carefully chosen plant with one that better fits the area it's placed in. I've cut old lilacs to the ground for this purpose **BUT, to just do it for the goal of well....I'm not sure what the goal is?** Pruning like this ultimately creates an unhealthy and oddly shaped plant. Ultimately, the shrub ends up looking very bushy at the top and leafless at the bottom.

Pruning recommendations for most deciduous shrubs consist of thinning out, gradual renewal and rejuvenation pruning. In thinning out, a branch or twig is cut off at its point of origin from either the parent stem or ground level. This pruning method results in a more open plant; it does not stimulate excessive new growth, but does allow room for growth of side branches. Considerable growth can be cut off without changing the plant's natural appearance or growth habit. Plants can be maintained at a given height and width for years by thinning out. This method is best done with hand pruning shears, loppers or a saw, but **NOT WITH HEDGE SHEERS**. Thin out the oldest and tallest stems first. In gradual renewal pruning, a few of the oldest and tallest branches are removed at or slightly above ground level on an annual basis. Some thinning may be necessary to

shorten long branches or maintain a symmetrical shape. To rejuvenate an old, overgrown shrub, remove one-third of the oldest, tallest branches at or slightly above ground level before new growth starts.

If a formal hedge is what you're after, **(I don't recommend formal hedges as they require substantial, ongoing upkeep)** use the right shrub like a privet or currant, plant them closer to each other than you would normally space them and prune them so that light can reach the lower areas of the shrub as shown in this diagram on the left. Hedges pruned incorrectly will ultimately look like the diagram you see on the right with heavy growth on the top which reduces light availability to the lower branches and therefore few if any leaves in the lower area of the shrub.

Finally, and you thought I would never finish this presentation didn't you??? The goal, in my opinion, of landscaping should be to bring some nature back into our developed cities and regions and thereby mitigate some of the potentially negative effects development has on people's lives and the environment. Landscaping should be done for all the good reasons I stated at the beginning of my presentation.

- To provide temperature control via shade, windbreaks and evaporative cooling
- To clean water of sediments and pollutants
- To cleans air of carbon and dust
- To improve aesthetics and positive impressions
- To creates habitat for wildlife.
- Adds economic value to development projects

We need to work with nature and not against it.

Let's design and build landscapes that mimic natural systems

Let's use less water and chemical fertilizers in landscapes (Use soil amendment procedures with compost, less turf in general, hardier and native plants)

Let's create long lasting landscapes (use soil amendments, proper planting techniques, use more natives and hardier plant species)

Let's create more sustainable landscapes (Use more local material when possible)

SELL IT BY DOING IT RIGHT! THIS SHOULD MAKE EVERYONE IN THE LANDSCAPE INDUSTRY LOOK GOOD AND RESULT IN MORE POSITIVE ATTITUDES TOWARDS LANDSCAPING IN THE CHEYENNE AREA. THIS SHOULD BE GOOD FOR EVERYONES BOTTOM LINE!

Thanks for allowing me to speak today!

Questions? Comments?