# SUSTAINABLE LANDSCAPE TEMPLATES DESIGN GUIDE

Fall/Winter 2023

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# **Project Background**

Northern Water has partnered with Norris Design, municipal partners and the community affected by the December 2021 Marshall Fire to support landscape infrastructure recovery and reconstruction of private property landscapes with the creation of these implementation-ready sustainable landscape design templates. As part of this project, an Advisory Committee consisting of fire survivors and regional partners was formed to aid in the development of the templates. The committee was made up of City staff members from Louisville, Superior, Boulder, and Boulder County, as well as professionals from Colorado State University Extension.

These Sustainable Landscape Templates are meant to be utilized as resources for immediate recovery needs and longer-term options for developers, HOAs, cities and property owners. Key design goals include sustainable water use, as well as fire-smart, climate adaptive and pollinator friendly design, combined with consideration of cost of installation, and maintenance. The layouts are intended to be both inspirational and highly functional.

Templates are delivered as six (6) base plan sets (templates) addressing three single family residential lot types: two designs for cul-de-sac lots; one design for a corner lot; and three designs for a common rectangle shaped lot. Lot selection is based on actual lot conditions in the areas burned by the 2021 Marshall Fire.



Existing Colorado landscapes comprise of highly flammable evergreen trees.



Low water use, fire-smart landscape, courtesy of Idaho Firewise.

The plan drawings define certain backyard areas as **Flex Space**. These are areas within each design that are well suited for modification by homeowners to suit their desired outdoor use. Common uses for consideration include:

- Kids play area with a small play structure
- Fenced dog run (non-combustible fencing is recommended)
- Alternate outdoor storage location
- Alternate garden location (vegetable garden, pollinator garden)

# Landscape Design

Landscape design in the templates is defined by general application of turf grass (sod or seed), native grass (seeded), and planting beds categorized by water use. The color plans represent the designs in a format known as Hydrozone Plans showing landscape areas by relative water use. Additionally, full planting detail plans and material references are provided for each of the six templates. The drawings and details can help guide homeowners and the landscape professionals they may hire for site specific design on their home lot.

The templates include several turfgrass types suited to the areas of Louisville, Superior, Boulder County, CO. While the plans show particular landscape specifications, flexibility of choice is encouraged especially for turf grass types. Find the following general application recommendations.

TURFGRASS VARIETIES (INS	STALLED AS SOD UNLESS OTHERWISE NOTED)
BLUEGRASS (SOD OR SEED)	
	<ul> <li>Withstands heavy traffic and active use</li> <li>Has the highest water demand of the options identified</li> <li>Kentucky Bluegrass (Poa pratensis) is a widespread variety</li> <li>Texas Hybrid Bluegrass varieties can be more heat and drought tolerant than Kentucky Bluegrass. Some varieties include Bandera, Solar Green and Thermal Blue</li> </ul>
BUFFALOGRASS / BLUE GRAN	
Photo courtesy of the Horticulture Consultant, Loretta Mannix	<ul> <li>These warm season grasses, planted together, are sod forming and can establish to form turf. This mix is commonly installed as a seeded application.</li> <li>Will take more time to establish than sod varieties</li> <li>Best for passive use lawn space, prefers minimal foot traffic</li> <li>Is a lower maintenance turf alternative due to slower growth rates</li> <li>Can be mowed to uniform height of 2-3" or allowed to grow without mowing to a height of about 12-inches. Mowing minimizes potential fire fuel.</li> <li>Uses about 50% less water than Bluegrass</li> </ul>
DOG TUFF GRASS	
THE REAL PROPERTY OF THE PROPERTY OF THE REAL PROPE	<ul> <li>Warm season turf alternative will remain dormant in spring until summer heat warms soil.</li> <li>An aggressive spreader and should be contained with edger</li> <li>May exfoliate small pieces, however can repair quickly</li> <li>Thrives in full sun and is drought tolerant</li> <li>Tolerates dog urine, hence its name</li> <li>Uses about 50% less water than Bluegrass</li> </ul>
TAHOMA 31 BERMUDAGRAS	S
TAHOMA 31	<ul> <li>A good alternative to Bluegrass, also tolerates heavy activity/foottraffic.</li> <li>Requires significantly less water than Bluegrass</li> <li>Will tolerate up to 65% shade</li> <li>Uses about 50% less water than Bluegrass</li> </ul>

NATIVE GRASS SEED MIXES								
ENHANCED, LOW GROWING NATIVE MIX	<ul> <li>Seeded installation recommended for medium to large spaces (300sf min) where a naturalized approach is desired.</li> <li>Can work well as an irrigated buffer to naturalized landscape on large open lots</li> <li>After 2–3-year establishment period, can be maintained without supplemental irrigation unless mowed regularly.</li> <li>Left un-mowed this mix will grow to about 18" height</li> </ul>							
IRRIGATED NATIVE GRASS	<ul> <li>Alternative native grass mix for large areas (1000sf and greater)</li> <li>Seeded installation</li> <li>After 2–3-year establishment period, can be maintained without supplemental irrigation unless mowed regularly.</li> <li>Left un-mowed this mix will grow to 24-36" height</li> <li>Allowing grass to grow without mowing until seeded will improve coverage (plant density)</li> <li>Fire breaks such as irrigated landscape or paved areas are recommended between this grass mix and structures</li> </ul>							
	ative grass application in landscapes, reference the <b>Colorado Native and</b> radonativegrass.org) developed by Colorado municipalities and local experts in							
PLANTING BEDS								
LOW WATER USE	<ul> <li>Designed to be adaptable with minimal to no additional water after establishment</li> <li>Predominantly native plant selection</li> </ul>							
MODERATE WATER USE	<ul> <li>Plants watered to establish and supplemented during growing season</li> <li>Moderate bed areas will support many locally available climate adapted plant options</li> </ul>							
HIGH WATER USE	<ul> <li>High water beds should be limited to specific functional uses like vegetable gardening</li> <li>Can include annual flowers in planter pots or small in ground bed areas</li> <li>Used sparingly in the template designs</li> </ul>							



Planting bed



Double Bubblemint, Agastache cana

# **Irrigation Design**

The irrigation design templates outline the necessary components for establishing and maintaining the sustainable landscape templates including: local/state guidelines, general installation notes, best management practices and detailed equipment specifications correlating to the plans developed for each lot typical landscape. Each plan identifies the proposed locations for the water source point of connection equipment, pressurized mainline, and detailed equipment layout for each landscape/ hydrozone type. The general installation details of each specific piece of equipment will instruct homeowners on how all assemblies should be installed in order to build and maintain a fully functioning irrigation system.

The irrigation templates provide several approaches for irrigating the landscape types as applied on each lot. While the plans show particular equipment specifications, various methods can be utilized to achieve the best irrigation coverage. Find the following general application recommendations.



Pop-up rotary sprinklers can reduce runoff and save water



Pop-up spray nozzles irrigate small, narrow, irregular shaped landscapes



Rotors broadcast irrigate large open turf or native seed landscapes



Flow sensors track, monitor, and protect properties from leaks and breaks



Smart controllers take the headache out of programming

IRRIGATION DESIGN NOTE	ES
TURFGRASS VARIETIES	<ul> <li>Utilize pop-up turf spray equipment for small, narrow, and/or irregular shaped areas up to 15-20' wide.</li> <li>Utilize pop-up turf rotary equipment for medium and/or irregular shaped areas 20-40' wide.</li> <li>Utilize pop-up turf rotor equipment for larger areas.</li> <li>It is recommended for all turf equipment to meet industry standards/ municipal regulations for design specifications.</li> <li>Each equipment type shall be grouped independently from another to maintain similar watering applications.</li> </ul>
NATIVE GRASS SEED MIXES	<ul> <li>Utilize pop-up native spray equipment for small, narrow, and/or irregular shaped areas up to 15-20' wide.</li> <li>Utilize pop-up native rotary equipment for medium and/or irregular shaped areas 20-40' wide.</li> <li>Utilize pop-up native rotor equipment for larger areas.</li> <li>It is recommended for all native equipment to meet industry standards/ municipal regulations for design specifications.</li> <li>Equipment shall be installed at 125-150% of the manufacturers recommended spacing per equipment type.</li> <li>Each equipment type shall be grouped independently from one another to maintain similar watering applications. Following the establishment of native seed, isolation and/or removal of this equipment should be attainable.</li> </ul>
PLANTING BEDS (SHRUBS, GRASSES, AND PERENNIALS)	<ul> <li>Utilize flexible point source drip emitters at each root ball of the planting material (Emitter flow rate and quantity varies per plant type).</li> <li>Removable filter screens prevent debris from clogging emitters, and manual flush valves points provide ease for seasonal routine maintenance.</li> <li>Planting beds shall be grouped together to maintain similar watering applications.</li> </ul>

IRRIGATION DESIGN NOT	ES
TREES	<ul> <li>Utilize PVC laterals routed to each tree with concentric rings of inline drip emitter tubing (Quantity of rings varies per tree type</li> <li>Removable filter screens prevent debris from clogging emitters, and manual flush valves provide ease for seasonal routine maintenance.</li> <li>Trees shall be grouped together to maintain similar watering applications.</li> </ul>
POINT OF CONNECTION EQUIPMENT	<ul> <li>The irrigation controller is programmable to automatically operate independent watering schedules. The rain/freeze sensor provides a bypass for irrigation when inclement weather occurs during the season.</li> <li>A backflow prevention unit is required on all potable waterconnections to prevent the contamination of the domestic water supply</li> <li>Drain valves provide a passive drainage point for seasonal maintenance.</li> <li>Master valve &amp; flow sensor assemblies protect the irrigation system from breaks and leaks while also tracking real-time water use</li> <li>Isolation valves provide manual shut-off points if a portion or the entire system requires maintenance/repair.</li> <li>Quick coupling valves allow for a simple garden hose watering throughout the property, and also provide discharge point for winterization for the irrigation system.</li> </ul>





Point source drip irrigation for shrubs within a shrub bed

# **Permitting Standards**

Single-family residential landscape installation or retrofits generally do not trigger a City or County review or permit process, however, the following permitting requirements should be considered when re-designing landscapes within the City of Louisville, Superior or Boulder County. Your local planning and building departments will provide specific guidance if requested. Some HOA's require review and approval of landscape design, be sure to confirm your specific requirements if you are within an HOA.

## **DECKS:**

- Check to see when a deck requires a permit and if it is required to be engineered.
- Decks typically have to meet setbacks from property lines. These vary from neighborhood to neighborhood.
- See fire-smart guidelines for best practices to reduce your property's fire risk when building a deck.

## **SHEDS:**

- Accessory structures have setback and height requirements. Some neighborhoods may have a lot coverage maximum that also applies.
- See fire-smart guidelines for best practices to reduce your property's fire risk when building a shed.



Amenitized back patio space

#### **FENCES:**

- Fences do not need to follow setback requirements, however, the fence must be located on the owner's property.
- See fire-smart guidelines for best practices to reduce your property's fire risk when building a fence.
- Some neighborhoods have specific design requirements, including height, color, and/ or materials.
- Check to see if a permit is required to construct your fence.

# **COVERED PATIOS AND PERGOLAS:**

- Permits and setback requirements are triggered for patio covers.
- Check to see what permits and setback requirements apply for your pergola, these requirements may vary.

## **RETAINING WALLS:**

 Some retaining walls require building permits and may also require engineering.
 Smaller walls (3'-0" or less) may be exempt from these requirements.

## **PERMITTING LINKS:**

Additional permitting requirements and building information can be found here:

- Louisville: https://www.louisvilleco.gov/local-government/government/departments/buildingsafety/building-guides
- **Superior:** https://www.superiorcolorado.gov/departments/planning-and-building/permit-guidance
- Boulder County: https://bouldercounty.gov/property-and-land/land-use/building/building-permits/
- Additional Jurisdictions: https://bouldercounty.gov/disasters/wildfires/mitigation/wildfiremitigation-code-requirements/#other-jurisdictions

# **Fire-Smart Standards**

The following Best Management Practices (BMP) are to be considered for homes within the wildland-urban interface (WUI), or homes that are inherently at risk from a wildfire (Colorado State Forest Service).

# DEFENSIBLE SPACE ZONES (COLORADO STATE FOREST SERVICE)

Each template illustrates the Defensible Space Zones outlined by the Colorado State Forest Service, which are intended to provide a safeguard for the home to mitigate fire risk. See the link below. The following zones are identified:

**Zone 1** – 0-5 feet - area nearest the home and other structures. Requires the maximum hazard reduction.

- BMP:
  - No plants within the first 5' of the house.
  - If this zone does contain plants, maintain in a well-watered condition during the growing season.
  - No trees within this zone.
  - If this zone does contain trees, they should be considered part of the primary structure (defensible space extended from there).

**Zone 2** – 5-30 feet - transitional area, fuels reduction between Zones 1 and 3.

- BMP:
  - Zone to help diminish intensity of a fire approaching home.
  - Maintaining this area and irrigating well can reduce fire risk.
  - Keep 10' spacing between tree crowns.
  - Keep shrubs at least 10' from tree branches.
  - Emphasis on tree thinning/pruning

**Zone 3** – 30-100 feet - Outer edge of large properties.

- BMP:
  - Proactive forest management, including tree diversity, higher tree canopies, and tree pruning along trails and fire access roads.
  - Your property may end prior to 100 feet. In these instances, working collaboratively with your neighbor(s) is important to protect multiple properties

## "Home Ignition Zone" The home and area immediately surrounding the structure.

https://csfs.colostate.edu/wildfire-mitigation/protect-your-home-property- from-wildfire/ https://csfs.colostate.edu/wp-content/uploads/2021/04/2021\_CSFS\_HIZGuide\_Web.pdf



Colorado State Forest Service Home Ignition Zone Diagram Illustration: Bonnie Palmatory, Colorado State University

## FIRE-RESISTANT LANDSCAPING BEST PRACTICES

The plants near your home should be more widely spaced and lower growing than those farther away.

- Plant in small, irregular clusters or islands.
- Use decorative rock, gravel and stepping stone pathways between islands, which helps to break up vegetation and fuels.
- Use of natives or environmentally adapted plant types is highly encouraged.
- Use stone, pea gravel or squeegee mulch, do not use pine bark for mulch.
- A variety of design approaches is highly encouraged (ie containers, yard art, variety of surface materials).

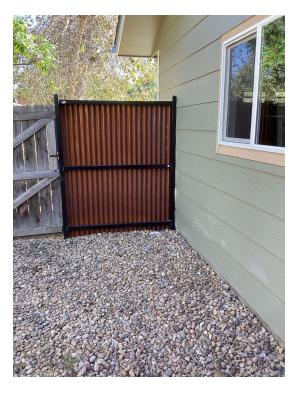


Landscape rock and mulch use.

Reference: https://extension.colostate.edu/topic-areas/natural-resources/fire-resistant-landscaping-6-303/

## **MATERIAL GUIDELINES FOR FENCES, DECKS AND SHEDS**

- Fire-resistant landscaping and defensible space best practices should be considered when constructing decks, sheds, and fences.
- Best practices would preclude the use of combustible fencing material in favor of metal or masonry fencing. If combustible material is used, at least the final section (5' or longer) that directly abuts the home should be noncombustible in order to prevent the fence drawing fire into direct contact with the house.
- Patios made of hardscape materials like concrete, flagstone, or pavers will be more fire-resilient than decks.
- Decks are most fire resilient when the framing material is noncombustible (steel, concrete) and the surface material have a higher (Class A or B) fire rating.
- Sheds should be made of a metal or steel siding, as well as a metal roof. Generally, plant material should not be within 5' of the shed.



Metal fence section

Reference: https://extension.colostate.edu/topic-areas/natural-resources/fire-resistant-landscaping-6-303/

# FIRE-SMART PLANTING BMP (COLORADO STATE UNIVERSITY EXTENSION – FIRE-RESISTANT LANDSCAPING)

#### **TREES:**

- Trees can be a significant source of fuel for a fire. Heat from burning trees can ignite nearby landscape and structures.
- Trees should be planted so that tree crowns at maturity should not be within 10' of the home. Typically, the best practice is to plant species that are already growing on or near your home site.
- Trees should be spaced at least 10 feet between the tree crowns at maturity.
- As the tree grows, prune the branches to a height of 10 feet off the ground.

#### **SHRUBS:**

- After trees, shrubs are considered the next level in the "fuel continuum" as the woody material in their stems creates potential source of fire brands.
- Plant varieties that are low-growing and widely separated.
- Do not plant shrubs directly near windows, vents, decks, under tree crowns, and do not use shrubs to screen flammable materials such as firewood piles and propane tanks.

#### **GRASSES:**

- Grasses can ignite easily and burn rapidly, especially during the warm months of the year.
- Tall grasses should be avoided near the home.
- Mow grasses low around the home, outbuildings, decks, shrubs, trees with lowgrowing branches, firewood piles and propane tanks.
- Tall grasses should be cut in the fall near fences and other wooded structures.

## **GROUND COVER PLANTS:**

- Ground cover plants can be a great substitute for grasses near the home, as they are typically succulents that have firesmart characteristics.
- Ground cover plants can be planted in beds with walkways and paths nearby, in raised beds or in rock gardens.
- The best ground cover plant will spread, which forms a dense root system, reducing soil erosion and the spread of weeds.
- Adding mulch to the plant bed, particularly inorganic mulch, can help conserve moisture and reduce weeds. Gravel, rock and squeegee mulch are encouraged.

## WILDFLOWERS:

- Wildflowers can provide a softer, more natural look in an otherwise manicured landscape resulting from defensible space.
- The primary concern is that wildflowers can form tall, dense areas of fuel, especially when dormant.
- Wildflowers should be planted in widely separated beds.
- Do not plant wildflowers by structures or decks.



Plants spaced from structure well.

Reference: https://extension.colostate.edu/topic-areas/natural-resources/fire-resistant-landscaping-6-303/

# Water Conservation Vision

# **NORTHERN WATER'S MISSION**

To provide water resource management leadership to the region while seeking a secure water future; and with a commitment to delivering a reliable, sustainable, high-quality water supply in an environmentally responsible manner.

## **NORTHERN WATER VALUES**

#### Stewardship

- Protect Northern Colorado's water supply for current and future generations.
- Ensure efficient and thoughtful use of our scarce water resources.
- Commit to environmental stewardship, sustainability and safeguarding natural resources.
- Invest in the communities we both serve and affect to protect the resources on which we collectively depend.

#### Collaboration

- Lead through partnerships to address water challenges throughout the region and the West.
- Build relationships and work with all stakeholders to achieve common goals.
- Work cross functionally, both internally and externally to leverage expertise and resources.
- Inform and educate our constituents and the public on water-related matters.

#### Excellence

- Ensure safety of our employees and of the community.
- Maintain transparency of operations and accountability to allottees and taxpayers.
- Provide a reliable and cost-effective water supply while maintaining financial strength and fiscal responsibility.
- Foster a culture and work environment that attracts and retains engaged and committed staff while promoting diversity and inclusivity.
- Embrace cutting-edge technology and innovative ideas.
- Invest in the maintenance and modernization of infrastructure and facilities to provide reliable and efficient water delivery.

# **Planting Preparation and Materials**

# **SOIL PREPARATION**

The makeup of soil at each home site is the foundation for healthy landscape establishment and growth. For proper plant growth, Colorado soils should be amended with organic material. Proper amendments will improve drainage and, as a result, conserve water.

Testing of site soil is a strongly recommended first step. This testing will provide the information needed to make decisions about soil amendment with organic compost and fertilizers. Common soil amendment rates recommended for new landscapes vary from none in native re-establishment up to five cubic yards per 1,000sf for soils starved of nutrients and organic matter. Find the following general recommendations to help determine what soil amendment will help create a healthy home landscape.



Grass alternatives for water conservation.

- Complete core sampling in 1-3 key yard locations and send individual samples in for testing by a recognized lab for each major landscape area.
- Fire impacted sites may necessitate further amendment and care due to potentially contaminated soils.
- See the General Landscape Notes section for amendment quantity recommendations by landscape type.
- Native and low water adapted plants often don't need amendments minimize amendment requirements.

#### **Preparing Your Low Water Planting Area:**

• https://www.botanicgardens.org/sites/default/files/file/2023-03/WesternBestPracticesFlyer\_1.pdf

#### **Colorado State University Soil Sampling Resource:**

- https://extension.colostate.edu/topic-areas/yard-garden/choosing-a-soil-amendment/
- https://agsci.colostate.edu/soiltestinglab/



Squeegee surrounded by river rock



Squeegee used in shrub planting pits

## PLANTING BEDS & MULCH

- Use only non-combustible mulch (rock mulch) within 30' of homes. Avoid wood mulch in this zone.
- Wood mulch near structures increases available fuel and is not used in the templates.
- Planting pits amended with squeegee (3/8" minus diameter gravel) helps prevent soil compaction, increases air availability to roots, and encourages greater rooting depth.

# **Plant Selection**

- The planting design is developed to be fire-smart and water saving, and beneficial for pollinators and birds.
- Northern Water seeks to demonstrate a new paradigm for what a yard looks like through these templates.
- The planting schedule has been developed with these goals in mind: they are designed to support pollinators, low water requirements, lower maintenance requirements, and fire-smart.
- Additionally, the plant selection is intended to consist of plants that are not difficult to find in local retail or wholesale nurseries. Refer to waterwiseplants.org for helpful plant selection resources.
- Additional Fire-Smart rating information available here:
  - https://idahofirewise.org/assets/library/Homeowner%20Information/ Firewise%20Landscaping/Fire%20Resistance%20of%20Plants%20 Master%20Database.pdf
  - https://plantselect.org/

# **PLANTING TO BENEFIT POLLINATORS & PEOPLE**

- Promoting pollinator habitat in residential landscapes is an opportunity to make a powerful impact by benefiting biodiversity, and sustainability, while supporting and safeguarding native pollinator populations.
- Even a 20' x 20' pollinator garden space planned in a yard can aid in this important effort. See the details included in the template drawings for a typical approach to planting to benefit pollinator habitat and activity.
- Pollinator friendly planting can require less maintenance, reduce water demand and connect pollinator habitats in the greater local landscape.
- Incorporating pollinator-focused design and plant materials improves habitat and creates aesthetically appealing spaces that play a huge role in supporting these crucial connectors in our environment.
- Residents are encouraged to visit Northern Water's Demonstration Garden to see examples of water-wise and pollinator plantings.
- Gardening for attraction of pollinators can strengthen ties to native ecosystems and grow our sense of place.



Western Sand Cherry, Prunus besseyi



CoNPS - A good resource for finding information on where to buy native plants and how to use them in your yard.



Broad-tailed Hummingbird



Pollinator Garden Example

## **GARDEN IN A BOX, RESOURCE CENTRAL**

The Garden In A Box program, offered by Resource Central, allows homeowners to obtain a DIY garden kit with water-wise plants to help retrofit landscapes to be more water efficient than traditional turf grass. These garden kits are available in the spring or fall and cover a 100 square-foot area per kit. Homeowners who take advantage of this program can incorporate these plants into their overall landscape design. These Sustainable Landscape Templates provide suggested locations on each template where these plants can be placed.

Reference: https://resourcecentral.org/gardens-2/marshallfire



Garden area for seasonal interest



Example of a mature garden bed



Example of a water-wise garden bed



Plant mixes suitable to sun exposure



Example of a water-wise garden bed



Example of a water-wise garden bed with rock mulch



Burr Oak Quercus macrocarpa



Northern Catalpa Catalpa speciosa



Ponderosa Pine Pinus ponderosa



**Fastigiate Spruce** Picea pungens 'Iseli Fastigiate'

	BOTANICAL	СОММОЛ	WATER USE	HEIGHT	SPREAD	SUN NEEDS	NATIVE	FLOWER COLOR/FEATURE	BLOOM MONTH	FLAMMABILITY RATING
DECIDU	JOUS CANOPY TREES									
AC SN	ACER NEGUNDO 'SENSATION'	SENSATION BOX ELDER	LOW	25`-30`	20`-25`	SUN	NATIVAR	RED-ORANGE -FALL		5
	CATALPA SPECIOSA	NORTHERN CATALPA	LOW		30`-40`	SUN	REGIONAL NATIVE	WHITE FLOWERS	LATE SPRING, EARLY SUMMER	5
	GYMNOCLADUS DIOICA `ESPRESSO`	KENTUCKY COFFEETREE	LOW	50`-80`	40`-60`	SUN	NATIVAR			4
	QUERCUS MACROCARPA	BUR OAK	LOW	50`-80`	60`-80`	SUN	REGIONAL NATIVE			4
EVERG	REEN TREES									
PI IS	PICEA PUNGENS `ISELI FASTIGIATE`	FASTIGIATE SPRUCE	MOD	10`-15`	4`-6`	SUN, PART SHADE	NATIVAR	STEEL BLUE	WINTER INTEREST	UNKNOWN
PI PO	PINUS PONDEROSA	PONDEROSA PINE	LOW	50`-80`	30`-40`	SUN	CO NATIVE	LIGHT GREEN		1
ORNAM	MENTAL TREES									
AC HW	ACER TATARICUM `HOT WINGS`	HOT WINGS TATARIAN MAPLE	LOW	15`-20`	15`-20`	SUN	NO	GREENISH WHITE	EARLY, MID, LATE SPRING	5
AM AB	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE`	AUTUMN BRILLIANCE SERVICEBERRY	LOW	15`-25`	15`-20`	SUN	NATIVAR	WHITE	EARLY, MID, LATE SPRING	5
CE PR	CELTIS OCCIDENTALIS 'JFS-KSU1'	PRAIRIE SENTINEL\U+00AE HACKBERRY	LOW	30`-40`	10`-15`	SUN	NATIVAR			6
MA AD	MALUS X `ADIRONDACK`	ADIRONDACK CRABAPPLE	MOD	15`-20`	10`-15`	SUN	NO	PINK/WHITE FLOWERS, RED/ORANGE FRUITS	EARLY-MID SPRING	8
MA SS	MALUS X `SPRING SNOW`	SPRING SNOW CRAB APPLE	LOW	15`-25`	20`-25`	SUN	NO	WHITE	EARLY-MID SPRING	8
PR CH	PRUNUS X VIGINIANA 'P002'	SUCKER PUNCH CANADA CHOKECHERRY	LOW	20'-30'	15'-25'	SUN	NATIVAR	WHITE	EARLY SPRING - LATE SPRING	6
CR IN	THORNLESS COCKSPUR HAWTHORN	CRATAEGUS CRUS-GALLLI INTERMIS	LOW	15'-25'	15'20'	SUN	US NATIVE	WHITE	EARLY SPRING - LATE SPRING	7

Native Plant - A plant is considered native if it has occurred naturally in a particular region, ecosystem, or habitat without human introduction Key CO Native - A plant that is native to Colorado Regional Native - A plant that is native to a bordering state, likely sharing some ecological characteristics with Colorado US Native - A plant that is native somewhere in the United States, though not Colorado or a bordering state



Regent Serviceberry Amelanchier alnifolia 'Regent'



Rock Spirea Holodiscus dumosus



Bayley's Red Twig Dogwood Cornus sericea 'Kelseyi'



Leadplant Amorpha canescens

	BOTANICAL	СОММОН	WATER USE	HEIGHT	SPREAD	SUN NEEDS	NATIVE	FLOWER COLOR/FEATURE	BLOOM MONTH	FLAMMABILITY RATING
DECIDU	IOUS SHRUBS									
AM RE	AMELANCHIER ALNIFOLIA 'REGENT'	REGENT SERVICEBERRY	LOW	7`-8`	7`-8`	SUN-PART SHADE	NATIVAR	WHITE	MID-LATE SPRING	6
AM CA	AMORPHA CANESCENS	LEADPLANT	LOW	3`-4`	3`-4`	SUN	CO NATIVE	PURPLE	SUMMER	UNKNOWN
AR MO	ARONIA MELANOCARPA 'MORTON'	IROQUOIS BEAUTY\U+2122 BLACK CHOKEBERRY	LOW	4`-5`	2`-3`	SUN	NATIVAR	WHITE	LATE SPRING	6
BE CP	BERBERIS THUNBERGII `ATROPURPUREA NANA'	DWARD RED LEAF JAPANESE BARBERRY	LOW	1`-2`	1`-3`	SUN	NO			8
CH MI	CHAMAEBATIARIA MILLEFOLIUM	FERNBUSH	VERY LOW	4`-5`	5`-6`	SUN	REGIONAL NATIVE	WHITE	MID-LATE SPRING	UNKNOWN
CH NN	CHRYSOTHAMNUS NAUSEOSUS NAUCEOSUS	BABY BLUE RABBITBRUSH	VERY LOW	1`-2`	2`-3`	SUN-PART SUN	CO NATIVE	YELLOW	EARLY-MID FALL	UNKNOWN
CO KE	CORNUS SERICEA `KELSEYI`	KELSEYI DOGWOOD	MOD	2`-3`	2`-3`	PART SHADE- SHADE	NATIVAR	WHITE	LATE SPRING-EARLY SPRING	6
CO BA	CORNUS SERICEA 'BAILEYI'	BAYLEY'S RED TWIG DOGWOOD	MOD	9`-12`	9`-10`	SUN-SHADE	NATIVAR	WHITE	LATE SPRING	5
CY SP	CYTISUS PURGANS `SPANISH GOLD`	SPANISH GOLD BROOM	LOW	3`-4`	5`-6`	SUN	NO	DEEP YELLOW	EARLY-LATE SPRING	UNKNOWN
CY LE	CYTISUS X 'LENA'	LENA BROOM	LOW	2`-3`	3`-4`	SUN	NO	RUST RED	LATE SPRING	UNKNOWN
EU AL	EUONYMUS ALATUS `COMPACTUS`	COMPACT BURNING BUSH	MOD	7`-8`	7`-8`	SUN	NO			UNKNOWN
FA PA	FALLUGIA PARADOXA	APACHE PLUME	VERY LOW	5`-6`	5`-6`	SUN	CO NATIVE	WHITE	EARLY-LATE SUMMER	UNKNOWN
HO DU	HOLODISCUS DUMOSUS	ROCK SPIREA	LOW	5`-6`	5`-6`	SUN-PART SHADE	CO NATIVE	CREAMY WHITE	EARLY-MID SUMMER	UNKNOWN
JA AM	JAMESIA AMERICANA	WAXFLOWER	LOW	7`-8`	5`-6`	PART SHADE- SHADE	CO NATIVE	WHITE	EARLY-LATE SPRING	UNKNOWN

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Common White Snowberry Symphoricarpos albus



Western Sandcherry Prunus besseyi



Dart's Gold Ninebark Physocarpus opulifolius 'Dart's Gold'



Silver Totem Buffaloberry Shepherdia argenta 'Totem'

	BOTANICAL	СОММОН	WATER USE	HEIGHT	SPREAD	SUN NEEDS	NATIVE	FLOWER COLOR/FEATURE	BLOOM MONTH	FLAMMABILITY RATING
DECIDU	JOUS SHRUBS									
LI LO	LIGUSTRUM VULGARE `LODENSE`	LODENSE PRIVET	LOW	2`-3`	3`-4`	SUN-PART SHADE	NO	WHITE	EARLY SUMMER	6
PH CH	PHILADELPHUS LEWISII `CHEYENNE`	LEWIS MOCK ORANGE	LOW	6`-7`	5`-6`	SUN	NATIVAR	WHITE	EARLY SUMMER	8
PH LI	PHILADELPHUS MICROPHYLLUS	LITTLELEAF MOCKORANGE	LOW	5`-6`	4`-5`	SUN	CO NATIVE	WHITE	EARLY-LATE SUMMER	UNKNOWN
PH OP	PHYSOCARPUS OPULIFOLIUS 'DART'S GOLD'	DART'S GOLD NINEBARK	LOW	4`-5`	4`-5`	SUN	NATIVAR	WHITE	EARLY-LATE SPRING	5
PO FR	POTENTILLA FRUTICOSA	BUSH CINQUEFOIL	LOW	2`-3`	2`-3`	SUN	NATIVAR	YELLOW	EARLY-LATE SUMMER	5
PR BE	PRUNUS BESSEYI	WESTERN SAND CHERRY	LOW	6`-7`	5`-6`	SUN	CO NATIVE	WHITE	LATE SPRING	6
PR PB	PRUNUS BESSEYI PAWNEE BUTTES	CREEPING WESTERN SAND CHERRY	LOW	2`-3`	5`-6`	SUN	NATIVAR	WHITE	EARLY-LATE SPRING	7
PH GR	GRO-LOW FRAGRANT SUMAC	RHUS AROMATICA 'GRO-LOW'	LOW	2'-3'	6'-8'	SUN	NATIVAR	YELLOW	EARLY SPRING	7
RH AU	RHUS TRILOBATA `AUTUMN AMBER`	AUTUMN AMBER SUMAC	VERY LOW	1`-2`	5`-6`	SUN	NATIVAR	YELLOW	EARLY SPRING	8
RI AU	RIBES AUREUM	GOLDEN CURRANT	LOW	5`-6`	5`-6`	SUN-PART SHADE	CO NATIVE	YELLOW	MID-LATE SPRING	6
RO NE	ROSA FLORIBUNDA 'NEARLY WILD'	NEARLY WILD ROSE	LOW	2`-3`	2`-3`	SUN	NO	PINK/WHITE FLOWERS, RED/ORANGE FRUITS	EARLY-LATE SUMMER	6
SH AG	SHEPHERDIA ARGENTEA 'TOTEM'	SILVER TOTEM BUFFALOBERRY	VERY LOW	10'-15'	2'-3'	SUN	NATIVAR	WHITE	LATE SPRING	6
SA PU	SALIX PURPUREA `NANA`	DWARF ARCTIC WILLOW	MOD	5`-6`	5`-6`	SUN-PART SHADE	NO	YELLOW-GREEN/GRAY CATKINS	EARLY SPRING	6
SY AL	SYMPHORICARPOS ALBUS	COMMON WHITE SNOWBERRY				SUN-PART SHADE	CO NATIVE	WHITE-PINK	EARLY SUMMER	8
VI AL	VIBURNUM X RHYTIDOPHYLLOIDES `ALLEGHANY`	ALLEGHANY VIBURNUM	LOW	9`-12`	9`-10`	PART SHADE- SHADE	NO	CREAMY WHITE		UNKNOWN

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Red Yucca Hesperaloe parviflora



Emerald Gaiety Euonymus Euonymus fortunei 'Emerald Gaiety'



Mugo Pine Pinus mugo 'Mops'



Adam's Needle Yucca filamentosa

	BOTANICAL	СОММОН	WATER USE	HEIGHT	SPREAD	SUN NEEDS	NATIVE	FLOWER COLOR/FEATURE	BLOOM MONTH	FLAMMABILITY RATING
EVERG	REEN SHRUBS									
AR PA	ARCTOSTAPHYLOS X COLORADOENSIS `PANCHITO`	PANCHITO MANZANITA	LOW	2`-3`	5`-6`	SUN-PART SUN	NATIVAR	PINK	EARLY SPRING	3
AR CO	ARCTOSTAPHYLOS X COLORADOENSIS `CHIEFTAIN`	CHIEFTAIN MOCKBERRTY MANZANITA	LOW	1'-2'	5'-6'	SUN-PART SUN	NATIVAR	PINK	EARLY SPRING	3
EU EG	EUONYMUS FORTUNEI `EMERALD GAIETY` TM	EMERALD GAIETY EUONYMUS	MOD	1`-2`		PART SHADE- SHADE	NO		EARLY SUMMER	8
HE PA	HESPERALOE PARVIFLORA	RED YUCCA	VERY LOW	3`-4`	3`-4`	SUN	REGIONAL NATIVE	RED TO ORANGE RED	EARLY SUMMER-LATE SUMMER	7
PI MO	PINUS MUGO `MOPS`	MUGO PINE	LOW	2`-3`	2`-3`	SUN-PART SUN	NO			UNKNOWN
YU FL	YUCCA FILAMENTOSA	ADAM'S NEEDLE	LOW	2`-3`	3`-4`	SUN	US NATIVE	WHITE	EARLY SUMMER-LATE SUMMER	7

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 Nativar - A cultivar derived from native parents and bred for a particular trait



Blonde Ambition Blue Grama Grass Bouteloua gracilis 'Blonde Ambition'



Standing Ovation Bluestem Grass Schizachyrium scoparium 'Standing Ovation'



Prairie Dropseed Sporobolus heterolepis



Smooth Aster Aster laevis

	BOTANICAL	СОММОН	WATER USE	HEIGHT	SPREAD	SUN NEEDS	NATIVE	FLOWER COLOR/FEATURE	BLOOM MONTH	FLAMMABILITY RATING
ORNAM	/IENTAL GRASSES									
BO BA	BOUTELOUA GRACILIS `BLONDE AMBITION`	BLONDE AMBITION BLUE GRAMA GRASS	VERY LOW	2`-3`	1`-2`	SUN	CO NATIVE	LIGHT TAN	EARLY SUMMER-LATE FALL	UNKNOWN
FE EB	FESTUCA GLAUCA `ELIJAH BLUE`	BLUE FESCUE	LOW	<1`	<1`	SUN		TAN	EARLY SUMMER-LATE SUMMER	6
MIVA	MISCANTHUS SINENSIS 'VARIEGATUS'	VARIEGATED MAIDEN GRASS	MOD	1'-2'	1-2'	PART SHADE	NO	TAN	MID SUMMER	UNKNOWN
MU RE	MUHLENBERGIA REVERCHONI 'UNDAUNTED'	UNDAUNTED MUHLY	LOW	1'-2'	1'-2'	SUN	NATIVAR	RUBY-PINK	EARLY-LATE FALL	UNKNOWN
PA SH	PANICUM VIRGATUM 'SHENANDOAH'	SWITCH GRASS	LOW	3'-4'	1'-2'	FULL-PART SUN	NATIVAR	RED/BURGUNDY	SPRING-FALL	UNKNOWN
SC SC	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	LOW	2`-3'	2`-3`	SUN	CO NATIVE	GREEISH BLUE	MID SUMMER-MID FAL	UNKNOWN
SC ST	SCHIZACHYRIUM SCOPARIUM `STANDING OVATION`	STANDING OVATION BLUESTEM GRASS	LOW	3`-4`	1`-2`	SUN	NATIVAR	SILVER	LATE SUMMER-EARLY WINTER	UNKNOWN
SP HE	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	LOW	18"-24"	18"-24"	SUN-PART SHADE	CO NATIVE	GOLDEN-ORANGE	LATE SUMMER-LATE FALL	UNKNOWN
PEREN	NIALS									
AG RU	AGASTACHE RUPESTRIS	SUNSET HYSSOP	LOW	1'-2'	1'-2'	SUN. PART SUN	REGIONAL NATIVE	PINK	MID SUMMER - LATE FALL	UNKNOWN
AL MO	ALCHEMILLA MOLLIS	LADY`S MANTLE	MOD	1`-2`	1`-2`	PART SHADE,SHADE	NO	YELLOW	LATE SUMMER	8
AQ CA	AQUILEGIA CAERULEA	ROCKY MOUNTAIN COLUMBINE	MOD	1`-2`	1`-2`	SHADE, PART SHADE	CO NATIVE	BLUE AND WHITE	LATE SPRING-EARLY SUMMER	8
AR FRI	ARTEMISIA FRIGIDA	FRINGED SAGE	VERY LOW	1`-2`	1`-2`	SUN	CO NATIVE	YELLOW	LATE SUMMER	5
AS TU	BUTTERFLY MILKWEED	ASCLEPIAS TUBEROSA	LOW	2'-3'	1'-2'	SUN	CO NATIVE	YELLOW	LATE SUMMER-LATE FALL	8
AS LA	ASTER LAEVIS	SMOOTH ASTER	LOW	3`-4`	1`-2`	SUN	US NATIVE	BLUE	LATE SUMMER-LATE FALL	8

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Engelmann's Daisy Engelmannia peristenia



Native Blanket Flower Gaillardia aristata



Sticky Geranium Geranium viscosissimum



Meadow Blazing Star Liatris ligulistylis

	BOTANICAL	соммон	WATER USE	HEIGHT	SPREAD	SUN NEEDS	NATIVE	FLOWER COLOR/FEATURE	BLOOM MONTH	FLAMMABILITY RATING
PERENN	NIALS									
BA AU	BAPTISIA AUSTRALIS	BLUE WILD INDIGO	LOW	3`-4`	2`-3`	SUN-PART SHADE	US NATIVE	INDIGO	EARLY SUMMER-LATE SUMMER	7
CE TO	CERASTIUM TOMENTOSUM	SNOW IN SUMMER	LOW	1`-2`	1`-2`	SUN	NO	WHITE	LATE SPRING-EARLY SUMMER	8
CE PL	CERATOSTIGMA PLUMBAGINOIDES	DWARF PLUMBAGO	LOW	1`-2`	1`-2`	SUN-PART SUN- SHADE	NO	BLUE	SUMMER-MID SUMMER	8
DE NC	DELOSPERMA BASUTICUM	ICE PLANT	LOW	<1`	1`-2`	SUN	NO	YELLOW	EARLY SUMMER-MID SUMMER	10
DI CR	DIASCIA INTEGERRIMA 'P009S'	CORAL CANYON\U+00AE TWINSPUR	LOW	1`-2`	1`-2`	SUN,PART-SUN	NO	SOFT PINK	LATE SPRING-LATE SUMER	9
EC PU	ECHINACEA PURPUREA	PURPLE CONEFLOWER	LOW	2`-3`	1`-2`	SUN	US NATIVE	PURPLE	EARLY SUMMER-LATE SUMMER	7
EN PE	ENGELMANNIA PERISTENIA	ENGELMANN'S DAISY	LOW	1'-2'	2'-3'	SUN	CO NATIVE	YELLOW	EARLY SPRING-LATE SUMMER	UNKNOWN
ER SU	ERIOGONUM EMBELLATUM	SULPHUR FLOWER	VERY LOW	1'-2'	1'-2'	SUN	CO NATIVE	YELLOW	EARLY SUMMER - EARLY FALL	7
GA AR	GAILLARDIA ARISTATA	NATIVE BLANKET FLOWER	LOW	1`-2`	1`-2`	SUN	CO NATIVE	YELLOW W/ RED	MID SUMMER	7
GE ST	GERANIUM VISCOSISSIMUM	STICKY GERANIUM	LOW	2`-3`	1`-2`	SUN,SHADE	CO NATIVE	ROSE, PURPLE	LATE SPRING-LATE SUMMER	8
HE SA	HEUCHERA X `SNOW ANGEL`	SNOW ANGEL CORAL BELLS	MOD	1`-2`	1`-2`	SUN, SHADE	NO	PINKISH-RED	EARLY SPRING-LATE SUMMER	7
LI LI	LIATRIS LIGULISTYLIS	MEADOW BLAZING STAR	LOW	2'-3'	1'-2'	SUN	CO NATIVE	ROSE PURPLE	EARLY SUMMER-LATE FALL	7

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Desert Four O'Clock Mirabilis multiflora



Native Beebalm Monarda fistulosa



Golden Baby Goldenrod Solidago X 'Goldkind'



Rocky Mountain Penstemon Penstemon strictus

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PEREN	NIALS									
MI MU	MIRABILIS MULTIFLORA	DESERT FOUR O'CLOCK	LOW	1'-3'	2'-4'	SUN	CO NATIVE	PURPLISH-RED	MID - LATE SUMMER	7
MO BE	MONARDA FISTULOSA	NATIVE BEEBALM	LOW	2`-3`	1`-2`	SUN	CO NATIVE	LAVENDER	MID SUMMER	UNKNOWN
PE DI	PENSTEMON DIGITALIS 'HUSKER RED'	HUSKER RED BEARDSTONGUE	LOW	2'-3'	1'-2'	SUN TO SHADE	NATIVAR	CREAMY WHITE	LATE SPRING-EARLY SUMMER	8
PE PP	PENSTEMON MEXICALI `PIKE`S PEAK PURPLE`	PIKES PEAK PURPLE PENSTEMON	LOW	1`-2`	<1`	SUN	NATIVAR	VIOLET PURPLE	EARLY SPRING-LATE SUMMER	8
PE ST	PENSTEMON STRICTUS	ROCKY MOUNTAIN PENSTEMON	LOW	1'-2'	<1'	SUN	CO NATIVE	BLUE	EARLY SPRING-LATE SUMMER	8
RU FU	RUDBECKIA FULGIDA `GOLDSTRUM`	BLACK-EYED SUSAN	LOW	1`-2`	1`-2`	SUN	NATIVAR	GOLDEN YELLOW	MID SUMMER	7
SA RE	SALVIA REPTANS 'P016S'	AUTUMN SAPPHIRE SAGE	LOW	2'-3'	1'-2'	SUN	NATIVAR	SAPPHIRE-BLUE	LATE SUMMER-EARLY FALL	UNKNOWN
SA SP	SAPONARIA OCYMOIDES `SPLENDENS`	ROCK SOAPWORT	LOW	<1`	1`-2`	SUN	NO	WHITE PINK	LATE SPRING-EARLY SPRING	10
SE AJ	SEDUM X `AUTUMN JOY`	AUTUMN JOY SEDUM	LOW	1`-2`	1`-2`	SUN	NO	DUSTY PINK	LATE SUMMER-LATE FALL	10
SE RU	SEDUM RUPESTRE 'ANGELINA'	ANGELINA STONECROP	LOW	<1'	2'-3'	SUN	NO	YELLOW	EARLY SUMMER-LATE SUMMER	10
SO BA	SOLIDAGO X 'GOLDKIND'	GOLDEN BABY GOLDENROD	LOW	1`-2`	1`-2`	SUN, PART SHADE	NATIVAR	GOLDEN YELLOW	EARLY SUMMER-LATE SUMMER	7
VE SN	VERONICA SNOWMASS	SNOWMASS BLUE-EYED SPEEDWELL	LOW	<1`	1`-2`	SUN	NO	WHITE/BLUE	EARLY SPRING - LATE SUMMER	8
ZA GA	ZAUSCHNERIA GARRETTII 'PWWG01S'	ORANGE CARPET\U+00AE HUMMINGBIRD TRUMPET	LOW	1`-2`	1`-2`	SUN	NATIVAR	ORANGE	MID SUMMER-LATE FALL	7
ZI GR	ROCKY MOUNTAIN ZINNIA	ZINNIA GRANDIFLORA	VERY LOW	<1	1'-2'	SUN	CO NATIVE	GOLDEN YELLOW	MID-LATE FALL	UNKNOWN

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# **Project Credits**

The following organizations and individuals played an integral role in the development of these materials.

#### **Community Liaison**

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#### Louisville Neighborhood Preparedness Roundtable

Lisa Hughes Ann Brennan

#### **City of Louisville**

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#### **Town of Superior**

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#### Norris Design

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