Section 1  General Provisions
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Section 3  Sample Landscape Tables and Figures
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Section 1: General Provisions

1.0 INTRODUCTION

This Landscape Reference Manual contains the necessary guidelines, criteria, procedures, standards, maps, plant lists and other provisions essential for the effective implementation of the Landscape Requirements of Chapter 17-70 in the Broomfield Municipal Code (B.M.C). All new or qualifying redevelopment within the City and County of Broomfield shall comply with these requirements. It is the purpose and intent of these Landscape Requirements to:

Promote water conservation
● Assist in decreasing the overall per capita use of water within Broomfield
● Reduce or eliminate outdoor water waste

Encourage appropriate use of materials
● Promote the values and benefits of xeric and native landscapes for new and renovated landscapes
● Promote biodiversity and pollinator habitats through planting a variety of native trees, shrubs, perennials and grasses

Improve compatibility between uses
● Demonstrate how landscaping can affect visual quality between developments and differing lands uses while not impacting or obstructing pedestrian or vehicular traffic

1.1 DEVELOPMENT REVIEW STAFF

Staff from multiple departments will comment on landscape design. If you have questions, please contact:

For general questions regarding the development review process, planning@broomfield.org.

Technical questions regarding landscaping may be directed to Kate Mack, PLA, Broomfield Landscape Architect at landscape@broomfield.org

Questions related to water budgets should be directed to Broomfield Water Resources at waterresources@broomfield.org

Note this list is subject to change without notice.
Section 2: Landscape Submittal Requirements

2.0 INTRODUCTION

The requirements presented in this section shall be used to aid the applicant, designer, installer and maintenance contract in the analysis, design, installation and maintenance of landscape. The requirements presented herein are the minimum necessary for landscape plan submittals and should be considered in conjunction with the requirements set forth by the City and County of Broomfield’s Community Development Division.

2.1 REVIEW PROCESS

2.1.1 PRE-APPLICATION MEETING

As part of the pre-application process, designated landscape areas should be shown on the preliminary site plan.

2.1.2 LANDSCAPE PLAN

The approved landscape plan is a legally binding document on the developer or owner, their successors and assigns. The landscape plan is a commitment to quality and is a long-term maintenance agreement therefore, the plans must be complete and legible. City staff will not accept the application if the landscape plan is incomplete or information is illegible or missing. The landscape plan shall be prepared and stamped by a Colorado licensed landscape architect, except for plans for a single-family dwelling detached or manufactured home. See Chapter 17-70-020 Applicability for additional information.

The landscape plan is to be submitted as a PDF concurrently with the Site Development Plan (SDP) or Urban Renewal Site Plan (URSP) application and will be reviewed for compliance with the landscape code during review. A combined site plan and landscape plan in color is required at SDP submittal. If the property did not require an SDP or URSP, then the landscape plan must be submitted concurrent with the building permit application. Upon approval, construction drawing level landscape and irrigation plans are required as part of the construction drawing set.

2.1.3 LANDSCAPE SUBMITTAL REQUIREMENTS

The following items describe the landscape plan and the information that shall be provided on the plan:

Sheet Size:
Broomfield Standards state the plan set should be 22”x34” or 11”x17”. Broomfield will return a signed 11”x17” set. If you submit a 24”x36” set, it will be resized and may not be to scale. Each sheet shall include a title block, north arrow, graphic scale, and key map. The plans are to be drawn at a scale no greater than 1”=40’-0” and shall include all pertinent information as further described in the bullet points that follow. The cover sheet is to include a vicinity map.

Title Block:
Show project name, developer name, consultant name, designer’s name and state license number, revisions table, sheet description, and sheet number. Subdivision name/filing, legal description, or other identifying information to be centered at the top of each page.

Key Map:
To facilitate reviewing sets of plans consisting of two or more sheets, staff recommends providing a key map that shows the overall site and the area covered by each sheet.

North Arrow/Graphic Scale:
Show a numeric and graphic scale for all plans and details, and include a north arrow. Shall have sheet orientated with north generally up and/or to the right.
Section 2: Landscape Submittal Requirements, cont.

Phase Lines:
Phase lines are required on all phased development. Include phase lines in the symbol legend. Buffers next to residential development, arterial and collector street frontages and perimeter buffers, should be included in phase one construction whenever feasible.

Standard Landscape Notes:
The following notes are required on all landscape plans. Statements should describe the information requested and notes shown in quotation marks “ ” should be provided as written without revisions or additions. Modified statements and notes will be rejected unless previously discussed with the case planner.

a. Provide a statement committing to soil preparation, listing type and quantity of amendment(s) to be applied. Three (3) cubic yards of organic material per 1,000 SF of area is the minimum amount.

b. Provide a statement generally describing any free standing lights.

c. Provide a statement generally describing the surface material of walks, vehicular drives, parking lots, plazas, etc.

d. Show this note, “All utility easements shall remain unobstructed and fully accessible along their entire length for maintenance equipment entry.”

e. Show this note, “The developer, their successors and assigns, shall be responsible for installation, maintenance and replacement of all landscaping materials shown or indicated on the approved site plan or landscape plan on file in the Planning Division. All landscaping will be installed as delineated on the plan, prior to issuance of certificates of occupancy, unless otherwise agreed upon.”

f. Show this note, “All landscaped areas and plant material, with the exception of non-irrigated native, restorative, and dryland grass areas must be watered by an automatic underground irrigation system. Irrigation system design, installation, operation, and maintenance shall conform to requirements found in CCOB 2022 Standards and Specs, Section 161.”

General Landscape Notes:
In addition to the required standard landscape notes to be provided above, the applicant may include notes that describe landscape materials such as mulches, pavers, and decorative pavement. Notes that describe tree lawn and residential single-family detached lot landscape responsibilities may be included. Notes giving contractors freedom to make substitutions and field changes without prior case planner approval are not permitted. This does not apply to minor landscaping changes, ie. plant species substitutions due to availability.

Landscape Plan Legend:
Show property lines; utilities; lighting fixtures; fire hydrants; fences; walls; curb and gutter; concrete and asphalt pavement; decorative pavement; existing and proposed contours and elevations, and top of wall (T.O.W.) and bottom of wall (B.O.W.) elevations; 100 year floodplain boundaries; sightline triangles based on street speed limits (CCOB 2022 Standards and Specs, Section 700); and all other site improvements that are shown on the site plan should match those shown on the landscape plan and be included in the legend.

Utility Easements and Utility Hardware Locations:
Show and label all existing and proposed utility easements and utility hardware such as fire hydrants, standpipes, transformers, enclosures, etc. since they will impact plant material locations. Include these items in a legend.
Section 2: Landscape Submittal Requirements, cont.

Plant Material Symbol Legend:
Include a separate legend showing deciduous, evergreen and ornamental trees, perennials, ornamental grasses, groundcovers, plant beds; irrigated cool and warm season sod or seed; irrigated and non-irrigated native, restorative, and dryland grasses. Show required sizes at time of installation.

Detailed Plant List:
Provide a plant list including representative plant symbols, labels, quantities, sizes, common and botanical names, special notes/or planting requirements i.e. spacing and water usage requirements for each species.

Plant Material Symbol Scale:
Draw all plant material at the corresponding sizes.

a. Deciduous shade and street tree species. 25’ diameter canopy.

b. Deciduous ornamental trees. 12’-15’ diameter canopy.

c. Evergreen trees. 15’ diameter canopy.

d. Large shrubs/Small trees. 6’-8’ diameter size at maturity.

e. Medium shrubs. 4’-5’ diameter size at maturity.

f. Small shrubs, perennials, and ornamental grasses. 3’-4’ diameter size at maturity.

g. Annuals and Groundcovers. Cross-hatching, stippling, and shading are acceptable when accompanied by spacing and planting pattern notations. e.g. (Annuals 8” o.c. triangular spacing.)

h. Existing Plant Material. Special symbols should be provided for existing trees, shrubs, and plant beds that will be protected in place, or when existing trees will be relocated. Symbols should show existing trees and shrubs at their size or tree canopy extent.

Water Hydrozones:
Show water usage requirements for each turf and plant species listed in the Water-Wise Plant List. Usage requirements should be shown as follows:

i. **High Hydrozone** means any turf or plant using high amounts of water through automatic irrigation connected to a permanent tap to survive in normal weather conditions. A high hydrozone area is an area predominantly consisting of cool season turfgrass and should not use more than 24.9 gallons per square foot of water per season in an average year.

ii. **Moderate Hydrozone** means any turf or plant using moderate amounts of water through automatic irrigation connected to a permanent tap to survive in normal weather conditions. Any area that will include plant material generally requiring 11.4 gallons per square foot per season or more of supplemental water in an average year will be considered a moderate hydrozone area. Moderate hydrozones do not contain any areas of cool season turfgrass.

iii. **Low Hydrozone** means any turf or plant using low amounts of water through automatic irrigation connected to a permanent tap to survive in normal weather conditions. Any areas that do not generally require more than 3.5 gallons per square foot per season of supplemental water in an average year will be considered a low hydrozone area. Low hydrozones do not contain any areas of cool season turfgrass.

iv. **Xeric Hydrozone** means any turf or plant species needing no water through automatic irrigation connected to a permanent tap to survive or only needing temporary water for
Section 2: Landscape Submittal Requirements, cont.

re-establishment in normal weather conditions. This includes hardscaped, mulched (organic and inorganic) and artificial turf areas not containing plant material.

Irrigation Plans:
Following approval of the Landscape Plans, Irrigation Plans following Broomfield’s Water Resources Division requirements (CCOB 2022 Standards and Specs, Section 161.14) are to be submitted. Approved Landscape Plans will be required as part of the Irrigation Plan submittal documents along with the irrigation plan submittal.

Contours:
Show existing and proposed one or two foot contours and label.

404 Permit:
Provide a copy of the Wetlands application and mitigation plan when necessary.

Detention, Retention, and Water Quality Ponds:
Show pond type, area boundary, 100 year flood line, maximum depth below 100 yr. flood line, and show retaining walls and details if applicable.

Surface Treatments:
Including each turf type, decorative pavement, concrete, asphalt, pavers, concrete curb and gutter, and include details.

Fences, Walls and Retaining Walls:
Retaining walls and fence materials, height, and placement are regulated by B.M.C; therefore, always provide design details including dimensions, materials, finishes, color and top and bottom of wall elevations. Graphically show the location of each fence style. The City will not issue fence or wall permits if this information is not shown on the Construction Drawings or if the plans are incomplete. For more information, please see Chapter 17-32-140, Fences, hedges, and walls in the B.M.C. or as established in an approved/associated Site Development Plan. Fences, wall and retaining walls are not allowed to be located within utility easements, please see CCOB 2022 Standards and Specs, Section 161.12 for additional information. Separate fence permit applications must be submitted and issued by the Planning Division prior to installation of any fence. A separate permit for retaining walls is required through the Building Division prior to installation.

Monumentation Signs and Community Design Elements:
Show the locations of proposed or existing monuments and signs. Include design details with dimensions, materials, finishes, and colors. Reference all details. For more information, please see Chapter 17-44, Sign Code in the B.M.C. or as established in an approved/associated Site Development Plan. Separate sign permits through the Building Division are required prior to installation of any new signage.

Parking Lot Landscaping:
Include all islands, interior landscape and perimeter screening.

Service Areas and Trash Enclosures:
Show location, label and include design details. Show dimensions, materials, finishes, and colors.

2.1.4 LANDSCAPE TABLE REQUIREMENTS

Examples of the following tables are provided in Section 3.

Standard Tables:
Standard tables shall be provided on all landscape plan submissions to demonstrate compliance with landscape code requirements. Provide tables for right of way and curbside, detached and attached
Section 2: Landscape Submittal Requirements, cont.

sidewalk lawns, parking lot islands, internal and perimeter screening, urban street frontages and detention and water quality

Curbside Table:
Provide a table listing each street individually and the required street tree requirements. Street trees are required at a ratio of one tree per 40 linear feet. Detached and attached sidewalk lawns over three feet in width additionally require one shrub per 40 square feet of lawn area. Have columns for required versus provided street trees.

Urban Street Frontage Table:
Provide a table listing each zone and the material or landscape requirements. Street trees are required at a ratio of one tree per 35 linear feet in the Furnishings Zone. Street tree openings shall be at least five feet by 15 feet in size. Additional landscape plantings and/or non-living materials such as rock and wood mulch shall accompany street trees. Have columns for required versus provided.

Parking Lot Table:
Provide a table listing each category individually and the required minimum size requirements i.e. 9’ x 18’ single parking island required, size provided, trees and shrubs required versus provided trees and shrubs. Areas are measured inward from back of curb or edge of walk to back of curb or edge of walk. Landscaping shall consist of one tree and six shrubs per single parking island, two trees and 12 shrubs per double parking island, one tree per 30 linear feet and six shrubs per 36 linear feet of internal parking medians, one tree per 40 linear feet of parking lot perimeter in addition to an approved screening method — three to four foot height berm, three to four foot height double row of shrubs to form a hedge, or a three foot high decorative masonry wall. Have columns for required versus provided. These are in addition to right of way and curbside requirements.

Detention and Water Quality Ponds Table:
Provide a table for the area within the tract surrounding a pond. Landscaping shall consist of a minimum of one tree and 10 shrubs per 4,000 square feet above the 100-year water surface elevation. Have columns for required versus provided.

Single-Family on Individual Lot Landscape Table:
Provide a landscape table showing the total lot square footage, landscape area square footage, lawn area square footage, and living vegetation coverage.

Water Usage Table:
A water usage table is required whenever common area landscape tracts are proposed.

a. The table should include the square footage of each tract, and the water usage categories within each tract as follows:

i. High Hydrozone: 24.9 gallons/SF/season

ii. Moderate Hydrozone: 11.4 gallons/SF/season

iii. Low Hydrozone: 3.5 gallons/SF/season

iv. Xeric Hydrozone: 0 gallons/SF/season

b. A Water Budget Chart that shows the total annual water use, which shall not exceed twelve (12) gallons per square foot over the site, including all hydrozones used on the landscape plan. (See Section 3.6: Single-Family on Individual Lots for sample hydrozone plan, See Section 4: Water Budget Chart)
Section 3: Sample Landscape Tables and Figures

3.0 GENERAL

Landscape tables, when properly prepared, provide staff, citizens, and City Council with an important tool when determining compliance with standards, assessing quality, justifying waivers, or comparing similar developments. Sample tables have been shown to assist with their completion. Included are:

- Landscape Area Table
- Curbside Landscape Table
- Urban Street Frontage Landscaping Table
- Parking Lot Landscape Table
- Detention and Water Quality Ponds Landscape Table
- Single-Family on Individual Lots Landscape Table

3.1 LANDSCAPE AREA TABLE

Landscape Area Table.

<table>
<thead>
<tr>
<th>Area in SF</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Site Area: (7.5 ac)</td>
<td>326,700 SF</td>
</tr>
<tr>
<td>Building Coverage:</td>
<td>81,675 SF</td>
</tr>
<tr>
<td>Hard Surface Area: (parking lot, sidewalks, etc.)</td>
<td>173,151 SF</td>
</tr>
<tr>
<td>Total Landscape Area:</td>
<td>71,874 SF</td>
</tr>
<tr>
<td>Maximum % of cool season grasses allowed:</td>
<td>21,562 SF</td>
</tr>
<tr>
<td>% of cool season grasses provided:</td>
<td>30,187 SF</td>
</tr>
</tbody>
</table>

In this example, at 42% the amount of cool season grasses provided is more than the maximum 30% that is allowed for non-residential development. Therefore, the landscape plan does not comply with Chapter 17-70-050.C Turfgrass Requirements. To bring the plan into compliance, at least 8,625 SF of cool season turfgrass (Kentucky bluegrass) making up at least 12% of the total landscape area, must be converted to alternative grasses or additional plant beds. This example has been included to show applicants how to use the table to verify compliance prior to submittal.

Landscaped area coverage:

- 25% max.: Non-living materials including river rock, crushed rock, organic mulches such as shredded bark, pole shaving, pine needles, etc., gravel, aggregate, cobbles, walks, decorative pavement, and artificial turf or other non-living materials.
- 75% min.: Living materials including shrubs, perennials, ornamental grasses, groundcover plants, and turf grasses. The total coverage of cool season grasses (Bluegrass sod) may not exceed 30% of a non-residential development site's landscape area.

When replacing Bluegrass with xeriscape plant beds refer to Chapter 17-70-050.A.5 Living Material Requirements to determine the number of plants required at installation.
Section 3: Sample Landscape Tables and Figures, cont.

3.2 CURBSIDE LANDSCAPE TABLES

Curbside Table.

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Length</th>
<th>Width</th>
<th>Trees 1/40LF</th>
<th>Shrubs 1/40SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Detached Sidewalk (less than 3’ wide: rock mulch only)</td>
<td>100’</td>
<td>2’</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>Curbside 3’-6’ (minimum shrubs, ornamental grasses optional)</td>
<td>120’</td>
<td>6’</td>
<td>0/3</td>
<td>18/18</td>
</tr>
<tr>
<td>C</td>
<td>Curbside 6’-10’ (trees and shrubs required, ornamental grasses optional)</td>
<td>400’</td>
<td>10’</td>
<td>10/10</td>
<td>100/100</td>
</tr>
<tr>
<td>D</td>
<td>Curbside over 10’ (trees and xeric vegetation required, include landscape beds with shrubs and ornamental grasses)</td>
<td>600’</td>
<td>15’</td>
<td>15/15</td>
<td>80/80</td>
</tr>
</tbody>
</table>

Cool-season turfgrass is prohibited within any size of detached curbside landscape areas.

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Length</th>
<th>Notes</th>
<th>Trees Req. (1/20LF)</th>
<th>Trees Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Attached Sidewalk</td>
<td>120LF</td>
<td>Street trees to be located 4’ or 5’ from back of curb or edge of sidewalk</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

See Chapter 17-70-070.A for additional Curbside Landscaping requirements.
3.3 URBAN STREET FRONTAGE LANDSCAPE TABLE

Urban street frontages include widened sidewalks to accommodate outdoor cafes and pedestrian walkways, site amenities such as benches, lighting and wayfinding as well as landscaping to strengthen the urban tree canopy, plant containers and raised planters to enhance the pedestrian realm and minimize the appearance of hardscape. Urban street frontages consist of the following zones:

Urban Street Frontage Table.

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Width Required</th>
<th>Width Provided</th>
<th>Plant Materials/Surface Treatment Required</th>
<th>Plant Materials/Surface Treatment Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Edge Zone</td>
<td>1.5’</td>
<td>1.5’</td>
<td>Unobstructed hard surface</td>
<td>Stamped Concrete</td>
</tr>
<tr>
<td>B</td>
<td>Furnishings Zone</td>
<td>5’</td>
<td>5’</td>
<td>pmr Street Tree/ 35 LF Landscape planting, decorative pavement, site furnishings, bus shelters, and lighting</td>
<td>215 LF @ 5’ Width six Trees Req/six Trees Pro</td>
</tr>
<tr>
<td>C</td>
<td>Pedestrian Zone</td>
<td>6’</td>
<td>6’</td>
<td>Unobstructed hard surface</td>
<td>Concrete</td>
</tr>
<tr>
<td>D</td>
<td>Frontage Zone</td>
<td>3.5’</td>
<td>3.5’</td>
<td>Open hard surface, landscape planting, or outdoor seating</td>
<td>Concrete, landscape planters, outdoor seating</td>
</tr>
</tbody>
</table>

See Chapter 17-70-070.B for additional Urban Street Frontages requirements.

Figure 1.
Section 3: Sample Landscape Tables and Figures, cont.

3.4 PARKING LOT LANDSCAPE TABLES

The following tables provide examples of landscape island requirements for surface Parking Lots with internal parking of more than 10 parking spaces. This example is for a small parking lot with 40 spaces and two double parking islands.

Parking Island Planting Table.

<table>
<thead>
<tr>
<th>Island Size</th>
<th>Number</th>
<th>Trees/1/9’x19’ island</th>
<th>Shrub 6/9’x19’ Island</th>
<th>Ornamental Grasses (max. 30%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Island (9’x19’ min)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double Island (9’x 38’ min)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9’x38’ Double Island</td>
<td>2</td>
<td>4/4</td>
<td>24/24</td>
<td>0/0</td>
</tr>
</tbody>
</table>

Parking Lot Perimeter Planting Table.

<table>
<thead>
<tr>
<th>Area / Description</th>
<th>Length</th>
<th>Landscape Buffer Width Provided (min. 4’ wide)</th>
<th>Trees 1/40LF of Perimeter</th>
<th>Buffer Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Perimeter</td>
<td>159’</td>
<td>7’</td>
<td>4/4</td>
<td>Double row of shrubs</td>
</tr>
<tr>
<td>South Perimeter</td>
<td>159’</td>
<td>7’</td>
<td>4/4</td>
<td>Double row of shrubs</td>
</tr>
<tr>
<td>East Perimeter</td>
<td>86’</td>
<td>varies</td>
<td>2/3</td>
<td>Double row of shrubs</td>
</tr>
<tr>
<td>West Perimeter</td>
<td>86’</td>
<td>varies</td>
<td>2/3</td>
<td>Double row of shrubs</td>
</tr>
</tbody>
</table>

See Chapter 17-70-080 for additional Parking Lot Landscaping requirements.
Section 3: Sample Landscape Tables and Figures, cont.

3.5 DETENTION AND WATER QUALITY PONDS LANDSCAPE TABLE

Provide a table for the area within the tract surrounding a pond above the 100-year water surface elevation.

<table>
<thead>
<tr>
<th>Detention and Water Quality Ponds Landscape Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detention Pond</td>
</tr>
<tr>
<td>Area</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>A</td>
</tr>
</tbody>
</table>

In addition to the table above, the bottom of ponds shall be seeded and/or planted with water tolerant seed or plant materials that are capable of surviving occasional water inundation. Plantings of willows and other wetland plant materials shall be included to the maximum extent practicable. Designated areas shall be maintained free of weeds at all times throughout the year. See Chapter 17-70-090 for additional Detention and Water Quality Ponds Landscaping requirements.
3.6 SINGLE-FAMILY ON INDIVIDUAL LOTS LANDSCAPE TABLE

In this example, a residential unit is on a 7,000 SF lot. The following table and calculations show the landscape requirement and breakdown. See Chapter 17-70-100 for additional requirements.

**Calculations:**
Lot Size = 7,000 SF
Building, Driveway, Sidewalk = 4,000 SF
Landscape Material Requirement = 75% of remaining area

\[(7,000-4,000) \times 0.75 = 2,250\] SF landscape area

1,222 SF in of landscape area in the visible front & side yards

**Breakdown:**
1,222 SF required landscape area
30% max turf grass = 367 SF
25% max non-living plant materials = 306 SF

Minimum 549 SF of required landscape area to be covered with living plant material that does not exceed the moderate water demand landscape standards.

**Figure 3** shows the full 30% turf across the visible side and front yards with the remaining open areas to be landscaped and their proposed hydrozones. See Water Hydrozones under Section 2 and the Water Budget Chart under Section 4 for additional information.

**Figure 4** shows how a homeowner may apply the landscape code using the square footages provided above. The front yard contains 30% turf, more than 549 SF of landscape beds with living vegetative cover, and paver steppers surrounded by groundcover to the backyard.

**Legend**
- High Hydrozone
- Moderate Hydrozone
- Low Hydrozone
- Xeric Hydrozone
- Deciduous Trees
- Evergreen Shrubs
- Deciduous Shrubs
- Perennials & Grasses
- Groundcover
- Boulder
- Stepper
**Section 4: Water Budget Chart**

A Water Budget is the target amount of water that should be applied during a typical watering season, post-establishment.

**Instructions:**

1. Divide the plan into hydrozones: specific areas or grouping of plants together based on their similar water needs — xeric, low, moderate or high. Check the City and County of Broomfield [Water-Wise Plant List](#) to determine the appropriate hydrozones for plants in your design.

2. Calculate the area (in square feet) for each hydrozone and enter the square feet in the green shaded cells in the first table below. Add the square feet together for all the areas that have the same hydrozone designation, even if they are in separate areas within the landscape plan. For example, if there are three Moderate hydrozone areas, add the areas together for a total and use that total in the table below.

3. Calculate the total area for the landscape plan (the sum of all hydrozones) and enter that value in the orange cell below.

4. Calculate a total water use (in gallons) for each type of hydrozone by multiplying the area by the gallons per square foot shown below. Enter the result for each hydrozone in the blue cells below.

5. Add the water use for all the hydrozones together to determine a total annual water use for the site and enter that value in the purple cell below.

6. Divide the total annual water use by the total square footage to determine the overall average water use per square foot for the entire site. The overall site should use no more than 12 gallons per square foot per watering season.

### Water Budget Chart

<table>
<thead>
<tr>
<th>Hydrozone</th>
<th>Area (square feet)</th>
<th>Water Need (gallons per square foot)</th>
<th>equals</th>
<th>Annual Water Use (gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High (H)</td>
<td></td>
<td>X</td>
<td>24.9</td>
<td></td>
</tr>
<tr>
<td>Moderate (M)</td>
<td></td>
<td>X</td>
<td>11.4</td>
<td></td>
</tr>
<tr>
<td>Low (L)</td>
<td></td>
<td>X</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>Xeric (Z)</td>
<td></td>
<td>X</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>(sum)</td>
<td>N/A</td>
<td>(sum)</td>
<td></td>
</tr>
</tbody>
</table>

Average water use calculation. Enter numbers where shaded gray below.

\[
\text{Average water use per square foot} = \frac{\text{Total Annual Water Use}}{\text{Total Area of Landscape}}
\]
Section 5: Legends, Plant Lists, Index Maps

5.0 LANDSCAPE MATERIAL AND SITE FEATURE LEGENDS

1. Symbols shown on the landscape plan should correspond exactly as to what is shown on the site plan or in the plant list.

2. Whenever possible legends, index maps, and in some cases plant lists should be shown on each sheet.

5.1 INDEX MAPS

The following information should be included on all index maps:

a. Scale and North Arrow
b. Current sheet highlighted and numbered, match sheet numbers
c. Tract Labels
d. Collector and Arterial street names

5.2 PLANT LIST

1. The following information is required for all plant lists:

   a. Symbols. Provide distinctive symbols for proposed and existing plant materials.
   b. Quantities. Are required for each species proposed.
   c. Common Name. To be included.
   d. Botanic Name. To be included.
   e. Size. At installation. Minimum plant material sizes including caliper, height and container size are regulated by code.
   f. Description. Show when applicable.
   g. Water Usage. Include either high, moderate, low, or xeric designations, per City and County of Broomfield Water-Wise Plant List.

   Typical Plant List Format:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Quantity</th>
<th>Common Name</th>
<th>Botanical Name</th>
<th>Size</th>
<th>Description</th>
<th>Water Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

2. Typical plant material categories should include:

   a. Deciduous Canopy Trees - Highlight (*) Recommended Street Trees
   b. Evergreen Trees
   c. Ornamental Trees
   d. Evergreen Shrubs
   e. Deciduous Shrubs
   f. Perennials
   g. Ornamental Grasses
   h. Vines and Groundcovers
   i. Seed Mixes, Show Grass Species and Note if Irrigated or Not Irrigated
   j. Sod, Show Grass Species
### 5.3 DIVERSITY REQUIREMENT

#### Tree Diversity Scale.

<table>
<thead>
<tr>
<th># of Trees</th>
<th>Diversity Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4</td>
<td>Can have 100% of one genus</td>
</tr>
<tr>
<td>5-8</td>
<td>Maximum of 50% of any one genus</td>
</tr>
<tr>
<td>9-15</td>
<td>Maximum of 33% of any one genus</td>
</tr>
<tr>
<td>16-50</td>
<td>Maximum of 20% of any one species, 30% genus, 40% family</td>
</tr>
<tr>
<td>50+</td>
<td>Maximum of 10% of any one species, 20% genus, 30% family</td>
</tr>
</tbody>
</table>

#### Plant Diversity Scale.

<table>
<thead>
<tr>
<th># of Plants (shrubs, ornamental grasses, perennials)</th>
<th>Diversity Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>Can have 100% of one genus</td>
</tr>
<tr>
<td>11-25</td>
<td>Maximum of 50% of any one genus</td>
</tr>
<tr>
<td>26-75</td>
<td>Maximum of 33% of any one genus</td>
</tr>
<tr>
<td>76-100</td>
<td>Maximum of 20% of any one species, 30% genus, 40% family</td>
</tr>
<tr>
<td>101+</td>
<td>Maximum of 10% of any one species, 20% genus, 30% family</td>
</tr>
</tbody>
</table>

Additional plant material information can be found in [CCOB Standards and Specs., Section 1060](#).
## 6.0 STREET TREE PLANTING

**Recommended Street Tree Planting Criteria:**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Recommended Distance/Spacing*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Tree Species</td>
<td>Large Deciduous Species - 2 1/2 inch caliper min.</td>
</tr>
<tr>
<td>Spacing</td>
<td>40 feet on center, centered within tree lawn, or 5 ft from back of curb when no detached walk is present.</td>
</tr>
</tbody>
</table>
| Distance from Intersecting Flowline   | Local Streets - 54’  
Collect Streets - 68’  
Arterial Streets - 87’ |
| Distance from Stop Sign               | May Vary; See Distance from Intersecting Flowline                                            |
| Distance from Traffic Signal          |                                                                                             |
| Street Light                          |                                                                                             |
| Electric Power or Utility Pole        | 8 ft.                                                                                       |
| Existing Trees                        | May vary depending on species and location.                                                   |
| Water and Gas Meters                  | 8 ft.                                                                                       |
| Utility Enclosures and Transformers   |                                                                                             |
| **Intersecting:**                     |                                                                                             |
| Driveways                             | 5 ft.                                                                                       |
| Sidewalk                              |                                                                                             |
| Curb                                  |                                                                                             |
| Trail                                 |                                                                                             |
| Bike Path                             |                                                                                             |
| Alley Entrances                       | 5 ft.                                                                                       |
| Railroad Track Crossing               | 5 ft. from the edge of Railroad R.O.W.                                                     |

*Distances are always measured from face of object nearest to tree to center of tree; or at a 90 degree angle from a line to center of tree; or from center of tree to center of tree.*
## Section 6: Landscape Material Placement Criteria, cont.

### 6.1 PLANT MATERIAL SEPARATIONS

Recommendations for plant material separations at time of installation:

<table>
<thead>
<tr>
<th>FROM:</th>
<th>Recommended Plant Material Separations*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trees</td>
</tr>
<tr>
<td>Transformers and Utility Enclosures</td>
<td>10 ft.</td>
</tr>
<tr>
<td>Fire Hydrants</td>
<td>10 ft.</td>
</tr>
<tr>
<td>Sidewalks, trails, bicycle paths</td>
<td>5 ft.</td>
</tr>
<tr>
<td>Building Foundations</td>
<td>10 ft.</td>
</tr>
<tr>
<td>Utility Easements</td>
<td>Outside of easement</td>
</tr>
<tr>
<td>Other Structures</td>
<td>10 ft.</td>
</tr>
</tbody>
</table>

*Locate *thorny trees* and *shrubs* a minimum of 20 ft. and 4 ft. respectively, from public walks.

*Distances are always measured from face of object nearest to tree or plant bed to center of tree or edge of plant bed; or at a 90 degree angle from a property line, easement line, public or private right-of-way line, curb, or edge of pavement to center of tree or edge of plant bed.*
Attached are lists of xeriscape plants recommended for planting in Broomfield. These lists were developed by compiling information from the following sources:

- **Xeriscape Plant Guide** by Denver Water
- **Plant Select Program** at Colorado State University
- **Fact Sheets #6.305, 7.229, 7.230, 7.231, 7.234, 7.421, 7.422** from CSU Cooperative Extension
- **Little Valley Wholesale Nursery**, Brighton, CO
- **Colorado Native Plant Society**, Denver, CO

Indications of water usage for various plants were determined by utilizing the recommendations from the sources above, as follows:

<table>
<thead>
<tr>
<th>Hydrozone</th>
<th>Water Usage (gallons/SF/season)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High (H)</td>
<td>24.9</td>
</tr>
<tr>
<td>Moderate (M)</td>
<td>11.4</td>
</tr>
<tr>
<td>Low (L)</td>
<td>3.5</td>
</tr>
<tr>
<td>Xeric (Z)</td>
<td>0</td>
</tr>
</tbody>
</table>

These watering recommendations are for plants that have been established for at least one growing season. Newly installed plants will require more water than indicated on the following lists.

Find the City and County of Broomfield [Water-Wise Plant List](#). This is not an all inclusive list, trees and shrubs specified from another source other than the Water-Wise Plant List will be considered if the source for the Water-wise designation is listed on the plan. See Chapter 17-70-030 for additional information.
Section 8: Appendix B: Landscape Details

8.0 GENERAL

The following are a series of standard landscape planting details for reference only. Landscape and irrigation details are not required until the Construction Drawings, they are not to be included within Site Development Plan sets. Additional information and CCOB standard details can be found in CCOB 2022 Standards and Specs., Section 1000.

8.1 DECIDUOUS TREE PLANTING DETAIL

NOTE:
1. Central, dominant leader, evenly spaced branches with trunk taper from a solid base gradually becoming more slender at the top. Do not cut leader. Prune all broken, diseased or dead wood prior to planting.
2. Cleanly prune all damaged root ends. With container grown trees: Cut all circling roots on perimeter of rootball.
3. Do not allow roots to dry out during installation process. Any broken or crumbling rootballs will be rejected.
4. Deep water after planting. Do not allow air pockets to form when backfilling.
5. Wrap deciduous trees per specifications (excludes cottonwood trees).
6. Apply specified mulch 3” above sod grade.
7. For bed trees: The wire basket, all twine and burlap are to be completely removed from the tree’s rootball at planting. All twine, protective sleeves, bamboo stakes, horticultural tape, flagging and/or other material used during transport or at the nursery shall be removed at planting.
8. The tree identification tag with tree species information shall be left on the tree for forestry or horticulture staff to remove.
9. Steel T-posts to be removed at end of warranty period.
8.2 EVERGREEN TREE PLANTING DETAIL

NOTES:
1. DO NOT CUT OR DAMAGE LEADER. PRUNE ALL BROKE, DISEASED OR DEAD WOOD IMMEDIATELY PRIOR TO PLANTING.
2. CLEANLY PRUNE ALL DAMAGED ROOT ENDS. WITH CONTAINER GROWN TREES: CUT ALL CIRCLING ROOTS ON PERIMETER OF ROOTBALL.
3. DO NOT ALLOW ROOTS TO DRY OUT DURING INSTALLATION PROCESS. ANY BROKEN OR CRUMBING ROOTBALLS WILL BE REJECTED. REMOVING THE WIRE WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.
4. DEEP WATER AFTER PLANTING. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING.
5. APPLY SPECIFIED MULCH 3" ABOVE SOD GRADE.
6. FOR BB&B TREES: THE WIRE BASKET, ALL TWINE AND BURLAP ARE TO BE COMPLETELY REMOVED FROM THE TREE'S ROOTBALL AT PLANTING. ALL TWINE, PROTECTIVE SLEEVES, HORTICULTURAL TAPE, FLAGGING AND/OR OTHER MATERIAL USED DURING TRANSPORT OR AT THE NURSERY SHALL BE REMOVED AT PLANTING.
7. THE TREE IDENTIFICATION TAG WITH TREE SPECIES INFORMATION SHALL BE LEFT ON THE TREE FOR FORESTRY OR HORTICULTURE STAFF TO REMOVE.
8. STEEL T-POSTS TO BE REMOVED AT END OF WARRANTY PERIOD.

EVERGREEN TREE PLANTING
SECTION
8.3 TREE PLANTING ON A SLOPE DETAIL

NOTES:
1. PRUNE ALL BROKEN, DISEASED OR CROSSING LIMBS.
2. CLEANLY PRUNE ALL DAMAGED ROOT ENDS.
3. DO NOT ALLOW ROOTS TO DRY OUT DURING INSTALLATION PROCESS.
4. DEEP WATER AFTER PLANTING.
5. REFER TO DECIDUOUS AND EVERGREEN TREE PLANTING DETAILS FOR GUING, MULCHING, ETC.
6. THIS INSTALLATION SHALL APPLY TO ALL TREE TYPES AND SIZES PLANTED ON SLOPES 4:1 OF GREATER.
7. FOR B&B TREES THE WIRE BASKET, ALL TWINE AND ALL BURLAP ARE TO BE COMPLETELY REMOVED FROM THE TREE'S ROOT BALL AT PLANTING. ALL TWINE, PROTECTIVE SLEEVE, FLARGING AND/OR OTHER MATERIAL USED DURING TRANSPORT OR AT THE NURSERY SHALL BE REMOVED AT PLANTING.
8. THE TREE IDENTIFICATION TAG WITH TREE SPECIES INFORMATION SHALL BE LEFT ON THE TREE FOR FORESTRY OR HORTICULTURE STAFF TO REMOVE.
9. STEEL T-POSTS AND GUY WIRES TO BE REMOVED AT END OF WARRANTY PERIOD.

DECIDUOUS AND EVERGREEN TREE PLANTING ON A SLOPE

Scale: NOT TO SCALE
Section 8: Appendix B: Landscape Details, cont.

8.4 ROOT FLARE DETAIL

NOTES:
1. PROBE ROOTBALL TO FIND THE FIRST MAIN ORDER ROOT TO DETERMINE THE DEPTH OF THE ROOT FLARE IN THE ROOTBALL. THE ROOT FLARE MAY BE 2’-3’ OR DEEPER IN THE ROOTBALL. REMOVE EXCESS SOIL DOWN TO THE TOP OF THE ROOT FLARE ONCE THE TREE IS IN THE PLANTING PIT.
2. VERIFY PLANTING HEIGHT WITH PROJECT MANAGER BEFORE PLANTING THE TREE.

ROOT FLARE
SECTION
NTS
8.5 SHRUB PLANTING DETAIL

**NOTES:**
1. BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED. CLEANLY PRUNE ALL DAMAGED ROOT ENDS.
2. CARE SHOULD BE TAKEN NOT TO DAMAGE THE SHRUB OR ROOTBALL WHEN REMOVING FROM ITS CONTAINER.
3. DO NOT ALLOW ROOTS TO DRY OUT DURING INSTALLATION PROCESS.
4. DIG PLANT PIT TWICE AS WIDE AND HIGH AS THE CONTAINER.
5. DEEP WATER AFTER PLANTING.

**SHRUB PLANTING SECTION**

City and County of Broomfield Landscape Reference Manual
Section 8: Appendix B: Landscape Details, cont.

8.6 SPECIAL SECTION AREA DETAILS

A. NATIVE SEEDING AREAS

B. TURF SODDED AREAS

C. TURF SEEDING AREA

D. ORNAMENTAL GRASSES/PERENNIAL/ANNUAL BED AREAS

E. SHRUB BED AREAS

NOTE: EXCLUDE MULCH LAYER IN ALL ANNUAL AREAS.
8.7 RAISED PLANTING BED DETAIL

RAISED PLANTING BED

EXISTING SUBGRADE OR UNAMENDED TOP SOIL

MINIMUM 6’ AMENDED SOIL

GROUNDCOVER

PERENNIAL

SHRUB

3’ DEPTH SETTLED WOOD MULCH

FINISHED GRADE OF RAISED BED OR PLANTER BOX 3’ BELOW LIP OR APRON

NTS
Section 8: Appendix B: Landscape Details, cont.

8.8 PLANT SPACING DETAIL

NOTE: ALL PLANTS SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING (EXCEPT AS SHOWN ON PLAN AS INFORMAL GROUPINGS). REFER TO PLANT LEGEND FOR SPACING DISTANCE BETWEEN PLANTS.

<table>
<thead>
<tr>
<th>PLANT SPACING</th>
<th>AREA DIVIDER TO DETERMINE NO. OF PLANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot;</td>
<td>0.25</td>
</tr>
<tr>
<td>8&quot;</td>
<td>0.45</td>
</tr>
<tr>
<td>10&quot;</td>
<td>0.69</td>
</tr>
<tr>
<td>12&quot;</td>
<td>1</td>
</tr>
<tr>
<td>15&quot;</td>
<td>1.56</td>
</tr>
<tr>
<td>18&quot;</td>
<td>2.25</td>
</tr>
<tr>
<td>24&quot;</td>
<td>4</td>
</tr>
<tr>
<td>30&quot;</td>
<td>6.25</td>
</tr>
<tr>
<td>36&quot;</td>
<td>9</td>
</tr>
</tbody>
</table>

EXAMPLE: PLANTS AT 18" OC IN 100SF OF PLANTING AREA - 100/2.25 = 44 PLANTS

PLANT SPACING

NTS