

1. Follow pruning practices recommended for the type of tree or shrub.
2. Eliminate dead and sick plant material.
3. Encourage naturalistic habit of plant, while controlling size of plant material related to landscape design and safety parameters (applicable in streetscapes related to site distances, etc.).
4. Reduce crowding to allow for passage of light and air.
5. Do not remove more than one third of the branch growth.

#### D. Weeding/Top Dressing

The following criteria apply to weed control and mulch top dressing:

1. Vegetation shall be maintained so as to inhibit the spread of noxious weeds.
2. Vegetation shall be maintained to ensure original design parameters.
3. Organic mulch areas should be maintained at a level of 4 inches or more.

#### E. Aeration

Thatch build-up can be attributed to several factors, including environmental factors, soil conditions and management practices, and plant material. Spring and fall aeration is recommended.

#### F. Fertilization

The following criteria apply to fertilization

1. Composition of fertilizer should be consistent with soil condition and plant material demands.

2. Fertilizer should be applied on an as-needed basis. Excess application should be avoided.
3. The fertilization program that is to be followed for large landscaped areas where Maintenance Assurance is required shall be submitted.

#### G. Irrigation System Maintenance

1. Maintenance of system must be consistent with the Water Use Management Program.
2. Inspection, testing and repair of system should occur on a consistent basis, and should include cleaning of filters and strainers, flushing of irrigation lines, adjusting sprinkler patterns to maintain design application uniformity, calibration of sensing and recording equipment, adjustment of controller schedule for establishment, and seasonal plant material demands.
3. Repair irrigation system leaks and breaks to prevent water loss and Water Use Management Plan non-compliance.
4. System winterization should occur each fall. Proper draining procedure for each irrigation system is based on individual system design. Backflow prevention assembly valving must not be used as a blowout.

## 2.1 INTENT OF REGULATIONS

The Town of Castle Rock Landscape Regulations and Principles is a document that addresses policies and procedures, design criteria, and construction methods and materials for landscaping in the Town of Castle Rock.

The Town of Castle Rock has identified goals to:

- Move away from the need for implementation of seasonal demand management measures,
- Reduce peak season and average annual water consumption in conformance with the Town of Castle Rock Water Conservation Plan,
- Create conservation of water through water conserving design, installation and maintenance of landscapes,
- Maintain and enhance the unique characteristics of Castle Rock through incorporation of water conserving landscaping principles,
- Promote water conservation through public education and incentive based programs related to landscape installation and retrofit.

The Landscape Regulations and Principles provide comprehensive water-efficient design standards, installation procedures and maintenance standards for residential and non-residential landscaping within the Town of Castle Rock in a manner that balances quality of life with the overall responsibilities of the Town as a water provider.

Therefore, Landscape Regulations provide the following:

- Conservation of water resources through the use of water conserving landscape principles and techniques,
- Enhancement of the regional characteristics of the Town that benefit the unique quality of life and landscape character in Castle Rock,
- Environmentally friendly, and site compatible landscaping that utilizes plant materials

complementary to the surrounding landscape and fulfills the needs of property owners,

- Enhancement of land values by creating beautiful and functional landscapes,
- Practical procedures for administration of these Regulations providing efficient, timely and consistent review of plans and enforcement of requirements.

## 2.2 DEFINITIONS

**American Society of Landscape Architects:** A national membership organization formed to advance the professional practice of landscape architecture.

**As-built drawings/plans:** Shall mean original mylar design, construction plans, with information depicting the final disposition of installed landscape or irrigation system installation.

**Bachelor or higher degree:** A four-year degree or master or doctorate degree from an accredited college or university.

**Certified Irrigation Designer:** A person who has completed the Certified Irrigation Designer Program of the Irrigation Association.

**Dwelling, multifamily:** Multifamily dwelling means a building, or portion thereof, designed for or occupied by three (3) or more families living independently of each other, which may include condominiums or townhouse units.

**Dwelling, one-family:** One-family dwelling means a building designed exclusively for occupancy by one (1) family, including attached residences.

**Dwelling, two-family:** Two-family dwelling means a detached building designed exclusively for occupancy by two (2) families living independently of each other.

**Easement:** Shall mean the right of the Town to use lands owned by other parties for the purposes of maintenance, access, drainage or other use, as specified in an agreement between the parties.



**Evapotranspiration (ET):** A measure of water depletion from the soil due to evaporation from the soil surface and transpiration through plant foliage.

**Final Planned Development (PD) Site Plan:**

The final PD site plan is the detailed development plan for a property which generally indicates the final planned use of the property, building and parking locations, building elevations, service connections, landscape and other important site improvements.

**Ground cover:** Plants, other than turf grass, normally reaching an average height of not more than thirty inches (30") at maturity.

**Hardscape:** Non-living, ornamental landscape material, such as concrete, brick, flagstone or exposed aggregate concrete.

**High-water-use turf:** Turf grass that requires fifty to eighty percent (50%-80%) of reference evapotranspiration to maintain optimum appearance; or turf grass that has an exceptionally high water requirement to prevent dormancy, typically twenty-five (25") of supplemental irrigation during each annual growing season.

**Hydrozone:** A portion of a landscape area having plants with similar water needs that are either not irrigated or irrigated by a circuit or circuits with the same schedule.

**Inorganic matter:** As related to soil improvement, is a non-natural occurring and/or manufactured product such as perlite, used to enhance soil texture and/or water holding capacity of soils.

**Irrigated Public Area:** Irrigated public area means a land area that is not native or natural open space and in which healthy vegetative growth is maintained by the application of water through an irrigation system. Irrigated public areas shall include, but are not limited to, any and all irrigated areas associated with irrigated public lands and easements owned by the Town and/or any metropolitan district within the Town. Irrigated public areas include public street entrances, medians, parking lots and

rights-of-way, public parks and recreation areas, and all areas whether owned, maintained or irrigated at public expense by the Town or a metropolitan district.

**Irrigation Association:** A non-profit North American organization formed to improve the products and practices used to manage water resources and to help shape the business environment of the irrigation industry.

**Irrigation plan:** A two-dimensional plan drawn to scale that shows the layout of irrigation components, component specifications, and hydrozones. Layout of pipes may be depicted diagrammatically, but location of irrigation heads and irrigations schedules shall be specified in the plan.

**Irrigation system:** A permanent, artificial watering system designed to transport and distribute water to landscape plants.

**Landscape grading plan:** A plan drawn to scale that shows the designed landscape gradient and elevation using two-foot contour lines with numeric notation of elevations.

**Landscape:** Any combination of living plants, such as trees, shrubs, vines, ground covers, flowers or grass; natural features such as land and water forms, rock, stone, bark chips or shavings; and structural features including but not limited to fountains, pools, outdoor art work, walls, fences or benches.

**Landscape plan:** A landscape plan shall include a site plan, grading plan, and irrigation system plan. It is a plan drawn to scale that shows the layout of all landscape components and their specifications for a site. Plans shall be prepared on a base of the proposed two-foot contour topography for the site, and shall include all landscaped areas, existing and proposed; grading detail; location and identity of all elements including trees and shrubs drawn at mature size, turf areas and other ground covers, and ornamental nonliving materials; include dimension and total square footage of each area by type of landscape cover; significant vegetative areas,

specimen trees, wildlife habitat and landscape features to be preserved or improved, including location, dimension and identification of all such areas and features; landscape structures including fences, signs, lighting, water features, etc. and recreational facilities including structures, equipment, courts and parking areas, including location, dimension and identity of all such features and facilities; planting details and notes, including soil analysis, methods of soil preparation and establishment fertilization, erosion control (temporary and permanent), soil and vegetation removal, stockpiling and reuse; list of quantities, types and sizes of landscaping material to be utilized, listing by both common and botanical name; irrigation system type and schematic drawing; typical cross-section of proposed berm areas; sidewalks and other pedestrian-oriented areas, existing and proposed, dimensioned with materials and type of surface finish noted; identification of sight triangles at corners and intersections which must be kept free of visually obstructing (thirty inches or higher) landscaping features; all irrigation system features, methods and equipment.

**Landscape Professional:** A landscape and/or irrigation plan designer, and /or installer that possesses the qualifications associated with plan development and installation of landscaping and irrigation systems.

**Licensed Landscape Architect:** A person who is currently licensed by any state government of the United States to practice the profession of landscape architecture.

**Low-water use plants:** Plants that require less than thirty percent (30%) of reference evapotranspiration to maintain optimum appearance.

**Mulch:** Nonliving organic and synthetic materials customarily used in landscape designed to retard erosion and retain moisture, and that provide a protective covering around plants to reduce weed growth and to maintain even temperatures around plant roots.

**Native plant:** A species that is indigenous within the Castle Rock area

**Organic matter:** Include aged compost (minimum 2 years), wood humus from soft/non-toxic trees, sphagnum moss (excluding that of Colorado origin), or aged/treated manures (minimum of 2 years)

**Ornamental tree:** Deciduous tree that has a mature maximum height of less than thirty (30) feet.

**Practical turf areas:** A landscape design and management concept promoting turf only in those areas of the landscape that are functional, and the efficient management of supplemental irrigation required in those areas.

**Rain sensor:** A device connected to an irrigation controller that overrides scheduled irrigation when significant precipitation has been detected.

**Registered Landscape Professional:** Landscape professionals that develop landscape, grading and irrigation system plans, and/or conduct landscape and irrigation system installations associated with non-residential, multi-family and developer/builder residential landscapes shall be registered with the Town of Castle Rock.

**Right-of-way:** Also “Public Right-of –Way” shall mean a public street, way, alley, sidewalk, easement, park, square, plaza, tract, and Town-owned lands, or any other public property owned and controlled by the Town, or dedicated to public use.

**Semi-arid climate:** A climate characterized by ten to twenty inches (10” – 20”) of annual precipitation.

**Shade tree:** Deciduous tree that has a mature growth size of thirty (30) or more feet in height.

**Shrub:** A self-supporting woody perennial plant, either evergreen or deciduous, of low to medium height characterized by multiples stems and branches continuous from the base, usually not more than twelve feet (12’) in height at its maturity.



**Site plan:** A two-dimensional representation, drawn to scale, of the total area of a development project, including building footprints, roadways, and parking areas.

**Soil amendment:** Organic and inorganic materials added to soil to improve texture, nutrients, moisture holding capacity, and infiltration rates.

**Street tree:** A tree planted within a right-of-way between the curb or edge of road and the adjoining property line.

**Streetscape:** Pedestrian and landscape improvements in the right-of-way, generally occurring between the curb and the right-of-way line. Streetscape generally includes sidewalks, street trees, pedestrian lighting, fencing, furnishing and landscaped areas, (within the right-of-way), including medians and irrigation.

**Topsoil:** Native and/or imported soil material used in landscaped areas, not considered organic component for soil preparation.

**Town:** Shall mean the Town of Castle Rock, Colorado.

**Town home:** Single-family attached residential housing.

**Tree:** A large, woody plant, either evergreen or deciduous, having one or several self-supporting stems or trunks and numerous branches.

**Turf/Turf grass:** Continuous plant coverage consisting of hybridized grasses that, when regularly mowed, form a dense growth of leaf blades and roots.

**Vegetation:** Plants in general or the sum total of plant life in an area.

**Xeriscape™:** A water efficient landscape adapted to the local environment.

**Xeriscape™ principles:** Sound horticultural and landscaping methods of professional landscaping that

include: planning and design, soil analysis/improvement, efficient irrigation, appropriate plant selection, practical turf areas, use of mulches, and proper maintenance.

## 2.3 APPLICATION OF REGULATIONS

These Regulations shall apply to all land, public, institutional and private, located within the Town of Castle Rock. These requirements shall specifically apply to:

- New construction,
- Currently approved development plans that are changed by a major amendment subsequent to the effective date of this document,
- Construction projects, including renovation, relocation, and redevelopment, which impact existing landscaping and/or irrigation system,
- Any change of land use and conversion of land, whether residential or non-residential,
- When conditions exist for joint or multiple land uses concurrent on a single site or development property, landscaping criteria that is most consistent with the primary, prescriptive land use shall apply,
- These Regulations shall govern over privately developed and/or enforced guidelines or requirements related to landscaping installed following adoption of these Regulations.

## 2.4 VIOLATIONS AND PENALTIES

Any person who violates any of the provisions of these Regulations shall be punished by a fine of not more than one thousand dollars (\$1,000.00) or by imprisonment not to exceed one (1) year, or by both such fine and imprisonment. Each such person shall be guilty of a separate offense for each and every day during any portion of which any violation is committed, continued or permitted by any such person. The Town may seek enforcement of these Regulations, recover all present and future damages, costs and other relief to which the Town is entitled and obtain any available judicial remedies related to any violation of the provisions of this Chapter.



## Section 3 - Landscape Regulations

### 3.1 LANDSCAPE PLAN GENERAL REQUIREMENTS

#### 3.1.1 Description

A final PD site plan shall be prepared for a single commercial/nonresidential site, or for a large residential plat. A PD-zoned property must obtain a final PD site plan and final plat approval prior to the issuance of a building permit. A final PD site plan shall include a landscape plan.

Building permit applications, for Public Works or private improvements, shall include a landscape plan.

#### 3.1.2 General Submittal Requirements

##### A. Format and Content Requirements

**Format:** Plans must be submitted as twenty-four-inch by thirty-six-inch (24"x36") blue or black line prints showing all required information accurately, neatly and discernibly at a scale requiring the fewest number of sheets, with a maximum scale of 60'. Recommended scale is 20'.

**Title:** The planned development or property name (e.g., commercial property title or residential builder name) and type (e.g., final PD site plan, or construction drawings) and brief legal description in large letters must be placed at the top center of the sheet. The PD or property name and application type must also be placed in smaller letters in the lower right hand corner of each sheet.

**Names and Addresses:** Names and addresses must be provided for all owners, mortgages, lien holders, plan preparer, land planner, engineer and land surveyor.

**Sheet Index:** For multiple sheets, a sheet index must be provided on the first sheet. Key maps must be provided where needed.

**Vicinity Map:** A vicinity map must be provided, including north arrow, bar and graphic scales and roads.

**Legal Description:** A full written legal description must be included.

**Directions:** A north arrow, along with graphic and written scales, must be provided.

**Property Lines:** The boundary line of the site must be shown in a heavy solid line with dimension, bearings and control points indicated along all exterior property lines.

**Phasing:** All phase lines must be shown and labeled.

**Zoning and Land Use:** Show existing zoning and existing land use for property and for adjacent properties.

**Grading:** Show existing and proposed grading at two-foot contour intervals extending twenty (20) feet beyond the property line.

**Utilities:** Show location and size of all existing and proposed utility (water, sanitary, stormwater, gas, electric, telephone, cable) lines and equipment.

**Meter Locations:** Plans must show location of existing and proposed fire hydrants, meters and backflow prevention assemblies.

**Drainage and Floodplain:** Show boundary of the one-hundred-year floodplain. Dashed lines must be used to show any proposed modification to drainage channels and floodplains.

**Natural Features:** Show drainage channels, wooded areas and other significant natural features within the property boundary and within one-hundred (100) feet adjacent thereto.

**Registration Credentials:** Include Town of Castle Rock Registration of Landscape Professional credentials for design for final PD site plans. Include Town of Castle Rock Registration of Landscape Professional credentials for design and installation for construction permit applications.

**Signature Blocks:** The following signature blocks are required:

**Ownership certification**

THE UNDERSIGNED ARE ALL OF THE OWNERS OF CERTAIN LANDS KNOWN HEREIN AS THE (NAME) IN THE TOWN OF CASTLE ROCK.

\_\_\_\_\_  
LANDOWNER (NOTARIZED SIGNATURE)

SIGNED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 200\_\_\_\_.

**Lien holder subordination certificate**  
(for as many mortgages and lien holders that exist)

THE UNDERSIGNED ARE ALL THE MORTGAGEES AND LIENHOLDERS OF CERTAIN LANDS KNOWN HEREIN AS THE (NAME) IN THE TOWN OF CASTLE ROCK.

THE UNDERSIGNED BENEFICIARY OF THE LIEN CREATED BY INSTRUMENT RECORDED ON \_\_\_\_\_ IN BOOK \_\_\_\_\_ AT PAGE \_\_\_\_\_, DOUGLAS COUNTY, COLORADO, SUBORDINATE THE SUBJECT LIEN TO THE TERMS, CONDITIONS AND RESTRICTIONS OF THIS DOCUMENT:

\_\_\_\_\_  
MORTGAGEE/LANDOWNER (NOTARIZED SIGNATURE)

SIGNED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 200\_\_\_\_.

**Title certification**

I, \_\_\_\_\_, AN AUTHORIZED REPRESENTATIVE OF \_\_\_\_\_, A TITLE INSURANCE COMPANY LICENSED TO DO BUSINESS IN THE STATE OF COLORADO, HAVE MADE AN EXAMINATION OF THE PUBLIC RECORDS AND STATE THAT ALL OWNERS, MORTGAGEES AND LIENHOLDERS OF THE PROPERTY ARE LISTED IN THE CERTIFICATE OF OWNERSHIP AND LIENHOLDER SUBORDINATION CERTIFICATE.

\_\_\_\_\_  
AUTHORIZED REPRESENTATIVE (NOTARIZED SIGNATURE)

SIGNED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 200\_\_\_\_.

**Surveyor's certificate**

I, \_\_\_\_\_, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE SURVEY AND LEGAL DESCRIPTION REPRESENTED BY THE (NAME) WAS MADE UNDER MY SUPERVISION AND THE MONUMENTS SHOWN THEREON ACTUALLY EXIST AND THIS SITE PLAN ACCURATELY REPRESENTS THAT SURVEY.

\_\_\_\_\_  
REGISTERED LAND SURVEYOR DATE

**Town certificate**

Planning Commission recommendation:

THE SITE PLAN AND ZONING REGULATIONS FOR THE (NAME) WERE RECOMMENDED FOR APPROVAL BY THE PLANNING COMMISSION OF THE TOWN OF CASTLE ROCK, COLORADO, ON THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 200\_\_\_\_.

\_\_\_\_\_  
CHAIRMAN DATE

ATTEST:

\_\_\_\_\_  
PLANNING DIRECTOR DATE

Town Council approval:

THE SITE PLAN AND ZONING REGULATIONS FOR THE (NAME) WERE APPROVED BY THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO, ON THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 200\_\_\_\_.

\_\_\_\_\_  
MAYOR DATE

ATTEST:

\_\_\_\_\_  
TOWN CLERK DATE

**Variances/Substitutions:** All requested variances shall be detailed on a plan submittal cover sheet.



### 3.2 RESIDENTIAL PROPERTIES

Landscaping for residential properties shall include front, back and side yard installations, common areas, and parking areas, accomplished by developer/builder, landscaping contractors, and residential customers, for single-family, two-family, and multi-family land uses.

#### 3.2.1 Multi-Family Properties

Multi-family residential dwellings shall include apartment complexes and attached single-family residences with more than 2 units. See Section 3.2.1 (Mobile Home dwellings) for minimum requirements.

##### A. Administrative Process – Multi-Family Properties

This section applies to the plan review, permitting, inspection and approval of multi-family property landscapes.

##### I. Plan Submittal and Review

a. A landscape plan is required for final planned development (PD) site plans, standard zoned projects, public right-of-way construction, and installation of landscaping on private property.

Landscaping is required to be installed in accordance with the approved site plan element of the building permit issued by the Town for that development, or part of the approved final PD site plan if the property is zoned planned development.

b. A landscape plan shall include:

- Registration of Professional Qualifications
- Landscape Site Plan
- Landscape Grading Plan
- Irrigation Plan

See Section 3.1 for general plan format and content requirements.

Applicants shall submit the following documentation along with their applications according to the designated step in the submittal process:

Type of Application/Action	Submittal Requirement
Final PD Site Plan (Development Plans)	<ol style="list-style-type: none"> <li>1. Town of Castle Rock Landscape Professional Registration – Design*</li> <li>2. Landscape Plan (includes landscape, grading &amp; erosion control, and <i>preliminary</i> irrigation plans)</li> </ol>
Public Works Permit (Construction)	<ol style="list-style-type: none"> <li>1. Town of Castle Rock Landscape Professional Registration – Design*</li> <li>2. Landscape Plan (includes landscape, grading &amp; erosion control, and <i>final</i> irrigation plans)</li> </ol>
Building Permit and/or Plumbing (Irrigation System Installation) Permit Or Landscape Permit (Construction)	<ol style="list-style-type: none"> <li>1. Town of Castle Rock Landscape Professional Registration – Design*</li> <li>2. Town of Castle Rock Landscape Professional Registration – Installation*</li> <li>3. Town of Castle Rock Landscape Professional Registration – Maintenance*</li> <li>4. Landscape Plan (includes landscape, grading &amp; erosion control, and <i>final</i> irrigation plans)</li> </ol>
Certificate of Occupancy (Required for building/plumbing/irrigation permits)	<ol style="list-style-type: none"> <li>1. Landscape Inspection Affidavit*</li> <li>2. Irrigation Inspection Affidavits*</li> <li>3. Passing Irrigation System Backflow Prevention Assembly Test(s)</li> </ol>
Inspection Sign-Off (Required for Public Works permits)	<ol style="list-style-type: none"> <li>1. Landscape Inspection Affidavit*</li> <li>2. Irrigation Inspection Affidavit*</li> <li>3. Passing Irrigation System Backflow Prevention Assembly Test(s)</li> </ol>

\*Note: See Section 5 for information related to landscape professional registration and inspection affidavits.





2. Permitting/Installation/Inspection
- a. Permit Acquisition – Applicant shall obtain the following permits before installation of any landscaping or irrigation equipment:
- Landscape Permit (required for landscape installation), and
  - Irrigation System (Plumbing) Permit (required for irrigation system installation), and
  - Irrigation Exemption Permit (required for plant establishment irrigation outside of the regular irrigation schedule as identified in the Water Use Management Program).
- b. Installation - All landscaping, irrigation system and other site work shall be installed as shown on the approved landscape and irrigation plans. The Town shall not issue a Certificate of Occupancy until applicant has demonstrated that landscaping as installed conforms to the approved landscape plan.
- c. Inspection - Compliance with approved plans and compliance with applicable design criteria shall be verified by the following:
- Town of Castle Rock Landscape Inspection Affidavit (to be completed by Town of Castle Rock Registered Landscape Professional – Design. See Section 5 for registration criteria), and
  - Town of Castle Rock Irrigation Inspection Affidavit (to be completed by Town of Castle Rock Registered Landscape Professional – Design and Installation. See Section 5 for registration criteria), and
  - Passing Irrigation System Backflow Prevention Assembly/Assemblies Test(s).
- d. Deferral of Installation - The Town may issue a Certificate of Occupancy (CO) prior to installation of landscaping and/or irrigation systems in such even as:
- Seasonal conditions that jeopardize the health of plant materials (including temperatures above 90 and below 32

- degrees Fahrenheit) or prohibit the installation of the irrigation system, or
  - Unavailable plant material, or
  - Construction activities that preclude installation, as determined by the Director of Utilities. The applicant shall have six months from the date of CO issuance to install landscaping and irrigation systems.
3. Maintenance Assurance
- The Town reserves the right to conduct compliance inspections to verify compliance with code requirements.
4. Variances
- The Landscape Regulations are to facilitate landscape design, installation and maintenance that is consistent with Town objectives. Should requirements create hardship, where compliance is not practical or not possible, the Director of Utilities may grant a variance to the Regulations upon finding of the following:
- a. Intent - Intent of the Landscape Regulations is met through an alternative design, related to a site specific plan, and
- b. Variance - An application for variance has been submitted requesting administrative relief and meeting one or more of the following criteria:
- Site conditions, including topography, soils, issues related to environmental quality, or wildlife habitat, may be better addressed through the alternative proposal, or
  - Landscaped areas are prone to hazardous limitations to health or growth patterns of plants, safety and/or visibility, and/or alternative construction and installation methods must be used, or
  - Neighborhood or historical character of the site will be better served by an alternative design, or



- The alternative design better meets the objectives of the Regulations than compliance with the specific criteria contained in the Regulations.

Variances may be granted for a specific application and shall not establish a precedent for any other or future alternative compliance requests.

Appeal of Variance Decisions - Upon review and denial of variance request(s) by the Director of Utilities, the applicant may appeal to the Public Works and Utilities Commission by signing notice of appeal within thirty (30) days of denial of the variance application by the Director of Utilities. Upon review and denial of variance request(s) by the Public Works and Utilities Commission, the applicant may choose to appeal to the Town Council by giving notice of appeal within thirty (30) days of denial of the variance application by the Public Works and Utilities Commission. Notice of appeal shall be in writing to the Director of Utilities, and must be received by the Director within the time specified for notice herein. Appeals shall be reviewed in accordance with the criteria set forth in this section.

### B. Minimum Design Requirements

1. A site analysis, in accordance with Section 4.2.1, is required.
2. A use analysis, in accordance with Section 4.2.1, is required.
3. Site plan development shall be accomplished, in accordance with Section 4.2.1.
4. Application of all water conserving landscape/Xeriscape™ principles for design, installation and maintenance as identified in Section 4.2 shall apply.
5. Water service for landscape irrigation shall be supplied by a tap used solely for the purpose of irrigation.
6. Parking lot landscaping shall be included in part of the overall site requirement.

Landscaped parking lot islands shall have a minimum six-foot horizontal dimension.

7. Plan review/approval as required.

### C. Minimum Landscape Material Requirements

#### 1. Irrigated Turf Areas

- a. Where turf areas are allowed as defined in Section 4, native and/or drought tolerant turf grasses shall be used for all turf areas, unless use specifically requires more resilient turf species, as dictated by approved plans. Uses requiring more resilient turf species could include recreational areas such as play areas, sport fields and other such high traffic uses.
- b. Irrigated turf is not allowed on slopes with a 3:1 grade or steeper.
- c. No more than sixty percent (60%) of the total site landscape area shall include irrigated turf.

#### 2. Other Plant Materials

All trees, shrubs, and groundcovers shall be drought tolerant/water conserving plant materials. Section 6 identifies approved plant materials for this land use. Upon variance request, the Director of Utilities may approve plant material substitutions.

#### 3. Parking

- a. An area or combination of areas equal to ten percent (10%) of the total parking lot area shall be landscaped.
- b. Any parking area within a multifamily use area larger than forty (40) spaces must provide interior landscape islands. Islands must contain a minimum of one (1) tree and four (4) shrubs per island. One (1) additional tree may be provided in lieu of each four (4) shrubs required.



- c. Overall, parking lot landscaped areas shall contain a minimum of two (2) shade trees and four (4) shrubs (or additional trees in lieu thereof as provided for above) per one thousand (1,000) square feet of landscaped area.
  - d. Parking lot landscaping shall be included in part of the overall site requirement. Landscaped parking lot islands shall have a minimum six-foot horizontal dimension.
  - e. Section 3.3.4 Streetscapes shall apply to parking area design and installation.
4. Other Minimum Landscape Requirements
- a. A minimum of twenty percent (20%) of the gross site area shall be landscaped. This landscaped area shall include all perimeter property setbacks and buffer areas.
  - b. The ornamental use of rock mulch shall be discouraged. Where it is used, it shall include living material such as trees and shrubs that will tolerate heat and evaporation caused by rock mulch.
  - c. A minimum of two (2) trees and four (4) shrubs for each one thousand (1,000) square feet of landscaped area. One (1) additional tree may be substituted in lieu of each four (4) shrubs required.
  - d. Deciduous trees shall be at least two (2) inch caliper measured four (4) inches above the ground except ornamental and flowering trees shall be at least one and one half inch caliper measured four (4) inches above the ground; multi-trunk trees shall be three (3) or more canes starting from the ground, six (6) inches measured four (4) inches above the ground, with a minimum height of five (5) feet.
  - e. Coniferous trees shall be at least six (6) feet tall.
  - f. Shrubs shall be five-gallon container size.
  - g. Perennials shall be one-gallon container size.

- h. Groundcovers/vines shall be spaced to provide eighty percent (80%) ground plane coverage within two (2) to three (3) years.
- i. Organic mulches shall be applied at a level of one cubic yard per 80 square foot area at a depth of four (4) inches, depending on specific application and site characteristics. See Section 4 for additional requirements.

**D. Minimum Soil Preparation Requirements**

- 1. Soil preparation shall be in compliance with Section 4.2.3.
- 2. A soil analysis shall be conducted by a professional soil scientist for the property to determine existing soil conditions, including texture and structure, as well as to define the necessary organic amendments and top-dress fertilizers appropriate for the specific type of plant materials that are to be installed, including turf, trees, shrubs and ground covers. Analysis results, soil amendment, and fertilizer recommendations for each plant material shall be included in the landscape plan submittal for final PD site plan and/or building/landscape permit application, as per Section 4.2.3. Minimum soil amendment for turf areas shall be three (3) cubic yards of organic matter per one thousand (1000) square feet of landscape planting areas, and shall be tilled to a minimum depth of four (4) inches. Depths of six (6) inches or more is encouraged. Tillage shall incorporate organic material to optimize availability of nutrients to plants, increase soil oxygenation, optimize water retention/drainage (based on soil type), and provide for optimum root establishment and plant maturation. Acceptable organic matters include aged compost, wood humus from soft/non-toxic trees, sphagnum moss (excluding that of Colorado origin), or aged/treated manures (minimum two years aged).



July 23, 2003

3. Upon inspection for Public Works permits, or upon CO issuance, and for issuance of an irrigation exemption permit for establishment of new plant material, verification of purchase and incorporation of organic material, i.e. receipts and inspection affidavits shall be required.
4. Site shall be raked to within two-tenths (2/10) of a foot and finish graded along sidewalks and edging to encourage positive drainage away from structures and sidewalks. Rocks and debris shall be removed.

**E. Minimum Irrigation System Requirements**

1. Required landscape areas in excess of five thousand (5,000) square feet shall have a water efficient automatic irrigation system providing full coverage to all plant materials.
2. For irrigated areas of 10,000 square feet and larger, dedicated irrigation service connections are required, and shall not be combined with domestic service connections. Service connections shall not be manifolded. Booster systems are prohibited.
3. Irrigation systems shall:
  - a. Be designed according to the principles outlined in, and meet all requirements of Section 4.2.4,
  - b. Meet all Town of Castle Rock Water Use Management Program watering restriction criteria,
  - c. Meet all 3-Day Timer/Power Back-up System criteria,
  - d. Meet all Town of Castle Rock Cross Connection Control Program requirements, including, but not limited to:
    - Appropriate for degree of hazard, and
    - Meet installation criteria, and
    - Approved by Town of Castle Rock Cross-Connection Control Technician, and

- Passing initial test(s) shall be submitted within ten (10) days of system initiation.

**F. Mobile Home Dwellings**

Minimum Landscape Requirements:

1. Two (2) trees and four (4) shrubs for each one thousand (1,000) square feet of landscape area. One (1) additional tree may be substituted in lieu of four (4) shrubs.
2. All other minimum criteria for multi-family uses shall apply to mobile home dwellings.



**3.2.2 Developer/Builder Single and Two-Family Residential Properties**

This section applies to single and two-family attached residential land uses controlled and constructed by a developer or residential homebuilding group, organization, or individual. Design, plant selection, soil preparation, irrigation system installation and maintenance of developer/builder single/two-family residential lots shall be consistent with Section 4 of these Regulations.

**A. Administrative Process**

This section applies to the plan review, permitting, inspection and approval of landscape plans for one and two-family attached dwelling residential landscapes whose design and installation are the responsibility of the property developer and/or home builder.

- I. Plan Submittal and Review
  - a. A landscape plan is required for final planned development (PD) site plans, standard zoned

projects, public right-of-way construction, and installation of landscaping on private property.

Landscaping is required to be installed in accordance with the approved site plan element of the building permit issued by the Town for that development, or part of the approved final PD site plan if the property is zoned planned development.

- b. A landscape plan shall include:
  - Registration of Professional Qualifications
  - Landscape Site Plan
  - Landscape Grading Plan
  - Irrigation Plan

See Section 3.1 for general plan format and content requirements.

Applicants shall submit the following documentation along with their applications according to the designated step in the submittal process:

Type of Application/Action	Submittal Requirement
Final PD Site Plan (Development Plans)	<ol style="list-style-type: none"> <li>1. Town of Castle Rock Landscape Professional Registration - Design*</li> <li>2. Landscape Plan (includes landscape, grading &amp; erosion control, and preliminary irrigation plans)</li> </ol>
Public Works Permit (Construction)	<ol style="list-style-type: none"> <li>1. Town of Castle Rock Landscape Professional Registration - Design*</li> <li>2. Landscape Plan (includes landscape, grading &amp; erosion control, and <i>final</i> irrigation plans)</li> </ol>
Building Permit and/or Plumbing (Irrigation System Installation) Permit or Landscape Permit (Construction)	<ol style="list-style-type: none"> <li>1. Town of Castle Rock Landscape Professional Registration - Design*</li> <li>2. Town of Castle Rock Landscape Professional Registration - Installation*</li> <li>3. Town of Castle Rock Landscape Professional Registration - Maintenance*</li> <li>4. Landscape Plan (includes landscape, grading &amp; erosion control, and <i>final</i> irrigation plans)</li> </ol>
Certificate of Occupancy (Required for building/plumbing/irrigation permits)	<ol style="list-style-type: none"> <li>1. Landscape Inspection Affidavit*</li> <li>2. Irrigation Inspection Affidavits*</li> <li>3. Passing Irrigation System Backflow Prevention Assembly Test(s)</li> </ol>
Inspection Sign-Off (Required for Public Works permits)	<ol style="list-style-type: none"> <li>1. Landscape Inspection Affidavit*</li> <li>2. Irrigation Inspection Affidavit*</li> <li>3. Passing Irrigation System Backflow Prevention Assembly Test(s)</li> </ol>

\*Note: See Section 5 for information related to landscape professional registration and inspection affidavits.



2. Permitting/Installation/Inspection
- a. Permit Acquisition - Applicant shall obtain the following permits before installing any landscaping or irrigation material:
- Landscape Permit (required for landscape installation), and
  - Irrigation System (Plumbing) Permit (required or irrigation system installation), and
  - Irrigation Exemption Permit (required for plant establishment irrigation outside of regular irrigation schedule as identified in the Water Use Management Program).
- b. Installation - All landscaping, irrigation system and other site work shall be installed as shown on the approved landscape and irrigation plans.
- c. Inspection - Compliance with approved plans and compliance with applicable design criteria shall be verified by the following:
- Town of Castle Rock Landscape Inspection Affidavit (to be completed by Town of Castle Rock Registered Landscape Professional – Design. See Section 5 for registration criteria), and
  - Town of Castle Rock Landscape Irrigation Inspection Affidavit (to be completed by Town of Castle Rock Registered Landscape Professional – Design and Installation. See Section 5 for registration criteria), and
  - Passing Backflow Prevention Assembly Test(s).
- d. Deferral of Installation - The Town may issue a Certificate of Occupancy (CO) prior to installation of landscaping and/or irrigation systems in such event as:
- Seasonal conditions that jeopardize the health of plant materials (including temperatures above 90 and below 32 degrees Fahrenheit) or prohibit the installation of the irrigation system, or

- Unavailable plant material, or
  - Construction activities that preclude installation, as determined by the Director of Utilities. The applicant shall have six months from the date of CO issuance to install landscaping and irrigation systems.
- e. Maintenance Assurance - The Town reserves the right to conduct compliance inspections to verify compliance with code requirements.

3. Variances

The Landscape Regulations are to facilitate landscape design, installation and maintenance that is consistent with Town objectives. Should requirements create an inordinate hardship, where compliance is not practical or not possible, the Director of Utilities may grant alternative compliance to the Regulations upon a finding of the following:

- a. Intent of the Landscape Regulations is met through an alternative design, related to a site specific plan, and
- b. An application for variance must be submitted requesting administrative relief and must meet one or more of the following criteria:
- Site conditions, including topography, soils, issues related to environmental quality, or wildlife habitat, may be better addressed through the alternative proposal, or
  - Landscaped areas are prone to hazardous limitations to health or growth patterns of plants, safety and/or visibility, and/or alternative construction and installation methods must be used, or
  - Neighborhood or historical character of the site will be better served by an alternative design, or
  - The alternative design better meets the objectives of the Regulations than



compliance with the specific criteria contained in the Regulations.

Variations may be granted for a specific application and shall not establish a precedent for any other or future alternative compliance requests.

Appeal of Variance Decisions - Upon review and denial of variance request(s) by the Director of Utilities, the applicant may appeal to the Public Works and Utilities Commission by signing notice of appeal within thirty (30) days of denial of the variance application by the Director of Utilities. Upon review and denial of variance request(s) by the Public Works and Utilities Commission, the applicant may choose to appeal to the Town Council by giving notice of appeal within thirty (30) days of denial of the variance application by the Public Works and Utilities Commission. Notice of appeal shall be in writing to the Director of Utilities and must be received by the Director within the time specified for notice herein. Appeals shall be reviewed in accordance with the criteria set forth in this section.

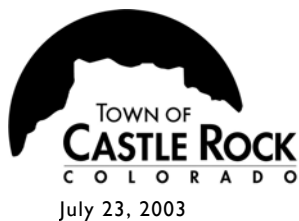
**B. Minimum Design Requirements**

- 1. A site analysis in accordance with Section 4.2.1 is required.
- 2. All landscaping shall comply with the design principles as identified in Section 4.2.
- 3. Plan review/approval as required.

**C. Minimum Landscape Material Requirements**

- 1. Landscaping materials shall be in compliance with Section 4.2.2 of these Regulations.
- 2. **Minimum Mulch Installation Requirements**  
Organic mulches shall be applied at a level of one cubic yard per 80 square foot area at a depth of 4 inches, dependent on specific application and site characteristics. See Section 4 for further recommendations.

- 3. **Irrigated Turf Area Requirements**
  - a. Residential lot sizes of 7000 square feet or less shall have a maximum amount of turf equaling 2000 square feet, plus 30% of the increment exceeding 2000 square feet,
  - b. Residential lot sizes of 7001 through 17000 square feet shall have a maximum amount of turf equaling 3500 square feet, plus 15% of the increment exceeding 3500 square feet,
  - c. Residential lot sizes of over 17000 square feet shall have a maximum amount of turf equaling 50% of the area not occupied by water impervious improvements,
  - d. Areas devoted to the cultivation of native and/or drought tolerant/resistant grasses shall be exempt from installation square footage limitations.
- 4. **Other Plant Materials**  
All trees, shrubs, and groundcovers shall be drought tolerant/water conserving plant materials. Section 6 identifies approved plant materials for this land use. Upon a variance request, the Director of Utilities may approve plant material substitutions.
- 5. **Other Minimum Landscape Requirements - Single-family dwellings shall have:**
  - a. At least one (1) tree in the front yard setback,
  - b. First deciduous trees shall be at least two-inch caliper measured four (4) inches above the ground, except ornamental and flowering trees shall be at least one and one half inch caliper measured four (4) inches above the ground,
  - c. Coniferous trees shall be at least six (6) feet tall,
  - d. Multi-trunk trees shall have three (3) or more canes, and be six (6) inches measured four (4) inches above the ground, with a minimum height of five (5) feet,



- e. Landscaping, including visual screens and noise buffers shall not interfere with site distances related to street frontages,
- f. Organic mulches shall be applied at a level of one cubic yard per 80 square foot area at a depth of 4 inches, depending on specific application and site characteristics. See Section 4 for additional requirements.

**D. Minimum Soil Preparation Requirements**

Soil preparation shall be in compliance with Section 4.2.3.

**1. Soil Analysis**

A soil analysis shall be conducted by a professional soil scientist for the property to determine existing soil conditions, including texture and structure, as well as to define the necessary organic amendments and top-dress fertilizers appropriate for the specific type of plant materials that are to be installed, including turf, trees, shrubs and ground covers. Analysis results and soil amendment and fertilizer recommendations for each plat material shall be included in the landscape plant submittal for final PD site plan and/or building permit/landscape permit application. Minimum soil amendment for turf areas shall be three (3) cubic yards of organic matter per 1000 square feet of landscape planting areas, and shall be tilled to a minimum depth of four (4) inches. Depth of six (6) inches or more is encouraged. Tillage shall incorporate organic material to optimize availability of nutrients to plants, increase soil oxygenation, optimize water retention/drainage (based on soil type), and provide for optimum root establishment and plant maturation.

**2. Organic Matter**

Acceptable organic matters include aged compost, wood humus from soft/non-toxic trees, sphagnum moss (excluding that of Colorado origin), or aged/treated (minimum of two years aged) manures.

**3. Irrigation Permit**

Upon inspection for Public Works permits, or upon CO issuance, and for issuance of an irrigation exemption permit for establishment of new plat material, verification of purchase and incorporation of organic material, i.e. receipts and inspection affidavits.

**4. Site Preparation**

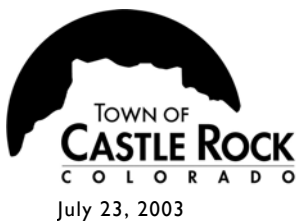
Site shall be raked to within two-tenths (2/10) of a foot and finish graded along sidewalks and edging to encourage positive drainage away from structures and sidewalks. Rocks and debris shall be removed.

**5. See Section 4 for further recommendations.**

**E. Minimum Irrigation System Requirements**

Irrigation systems shall:

- 1. Be in compliance with Section 4.2.4,
- 2. Meet all Town of Castle Rock Water Use Management Program watering restriction criteria,
- 3. Meet all 3-day Timer/Power Back-up system criteria,
- 4. Meet all Town of Castle Rock Cross-Connection Control Requirements, including, but not limited to:
  - a. Appropriate for degree of hazard,
  - b. Meet installation criteria,
  - c. Approved by Town of Castle Rock Cross-Connection Control Technician,
  - d. Passing initial test(s) shall be submitted within ten (10) days of system initiation.
- 5. Booster systems are prohibited.





**3.2.3 Residential Properties - Homeowner Installations**

This section applies to landscape and irrigation system installations accomplished by the owner/residents of a single and two-family dwelling.

**A. Administrative Process – Homeowner Installation**

- 1. Permitting and Inspections  
Applicant shall obtain:

- a. Irrigation System Permit - An irrigation system (plumbing) permit is required for installation, expansion, or modification of an automatic irrigation system.
- b. Irrigation Exemption Permit - For exemption from Water Use Management Program regularly scheduled irrigation for establishment of new plant material.

Applicants shall submit the following documentation along with their applications according to the designated step in the submittal process:

Type of Application/Action	Submittal Requirement
Plumbing/Irrigation System Permit <i>(Construction)</i>	1. Irrigation System Plan (includes schematic of irrigation system, location and type of backflow prevention assembly, type of controller- must be 3 day programmable, grading-if available) *
Irrigation Exemption Permit	1. Irrigation System/Plumbing Permit copy or permit number 2. Proof of adequate soil preparation (receipts for organic material purchase and incorporation) 3. Completed Irrigation Exemption Permit application
Certificate of Occupancy Inspection Sign-Off	1. Passing Irrigation System Backflow Prevention Assembly Test(s)

\*Note: All irrigation must take place in compliance with the Water Use Management Plan.

- 2. Installation  
Applicant shall comply with:
  - a. Soil amendment requirements per Section 4.2.3, and
  - b. Requirements for the allowable amount of turf limitations per Section 3.1.2C.
- 3. Variances  
The Landscape Regulations are to facilitate landscape design, installation and maintenance that is consistent with Town objectives. Should requirements create hardship, where compliance is not practical or not possible, the Director of Utilities may grant variance to the Regulations upon a finding of the following:

- c. Intent of the Landscape Regulations is met through an alternative design, related to a site specific plan, and
- d. An application for variance has been submitted meeting one or more of the following criteria:
  - Site conditions, including topography, soils, issues related to environmental quality, or wildlife habitat, may be better addressed through the alternative proposal, or
  - Landscaped areas are prone to hazardous limitations to health or growth patterns of plants, safety and/or visibility, and/or alternative construction and installation methods must be used, or



- Neighborhood or historical character of the site will be better served by an alternative design, or
- The alternative design better meets the objectives of the Regulations than compliance with the specific criteria contained in the Regulations.

A variance may be granted for a specific application and shall not establish a precedent for any other or future alternative compliance requests.

Appeal of Variance Decisions - Upon review and denial of variance request(s) by the Director of Utilities, the applicant may choose to appeal to the Public Works and Utilities Commission. Upon review and denial of variance request(s) by the Public Works and Utilities Commission, the applicant may choose to appeal to the Town Council.

### B. Design Recommendations

Homeowners should consider the planning and design criteria outlined in Section 4.2.1.

### C. Landscape Material Recommendations

Homeowners should consider the plant materials and organic/inorganic mulch criteria outlined in Section 4.2.2.

### D. Minimum Soil Preparation Requirements

Minimum soil preparation requirements for homeowner installations are as follows:

1. Three (3) cubic yards of organic matter per 1,000 square feet of landscape planting area; equals approximately one (1) inch on top of ground prior to tilling. Organic material should be tilled to a minimum depth of four (4) inches. Depth of six (6) inches or more is encouraged. Acceptable organic matters include aged compost, wood humus from soft/non-toxic trees, sphagnum moss (excluding that of Colorado origin), or aged/treated (minimum of two years aged) manures.

2. For verification of adequate soil preparation, receipts for purchase of organic material are required to be submitted for issuance of irrigation exemption permit.

See Section 4 for additional soil preparation information and recommendations.

### E. Irrigation System Requirements

Irrigation systems shall:

1. Meet all Town of Castle Rock Water Use Management Program watering restriction criteria,
2. Meet all 3-Day Timer/Power Back-up System criteria,
3. Meet all Town of Castle Rock Cross Connection Control Program requirements.

See Section 4 for additional irrigation system information and recommendations.



### 3.3 NON-RESIDENTIAL PROPERTIES

Landscaping for non-residential properties shall include front, back and side lot installations, commercial areas, parking areas, and Town facilities accomplished for all non-residential land uses.

#### 3.3.1 Non-Residential Properties

This section applies to the plan review, permitting, inspection and approval process for non-residential properties.

#### A. Administrative Process – Non-Residential Properties

- I. Plan Submittal and Review
  - a. A landscape plan is required for final planned development (PD) site plans, standard zoned projects, public right-of-way construction, and installation of landscaping on private property.

Landscaping is required to be installed in accordance with the approved site plan element of the building permit issued by the Town for that development, or part of the approved final PD site plan if the property is zoned planned development (PD).

- b. A landscape plan shall include:
  - Registration of Landscape Professional Qualifications, and
  - Landscape Site Plan, and
  - Landscape Grading Plan, and
  - Irrigation Plan.

See Section 3.1 for general plan format and content requirements.

Applicants shall submit the following documentation along with their applications according to the designated step in the submittal process:

Type of Application/Action	Submittal Requirement
Final PD Site Plan (Development Plans)	<ol style="list-style-type: none"> <li>1. Town of Castle Rock Landscape Professional Registration – Design*</li> <li>2. Landscape Plan (includes landscape, grading &amp; erosion control, and preliminary irrigation plans)</li> </ol>
Public Works Permit (Construction)	<ol style="list-style-type: none"> <li>1. Town of Castle Rock Landscape Professional Registration – Design*</li> <li>2. Landscape Plan (includes landscape, grading &amp; erosion control, and final irrigation plans)</li> </ol>
Building Permit and/or Plumbing (Irrigation System Installation) Permit Or Landscape Permit (Construction)	<ol style="list-style-type: none"> <li>1. Town of Castle Rock Landscape Professional Registration – Design*</li> <li>2. Town of Castle Rock Landscape Professional Registration – Installation*</li> <li>3. Town of Castle Rock Landscape Professional Registration – Maintenance*</li> <li>4. Landscape Plan (includes landscape, grading &amp; erosion control, and final irrigation plans)</li> </ol>
Certificate of Occupancy (Required for building/plumbing/irrigation permits)	<ol style="list-style-type: none"> <li>1. Landscape Inspection Affidavit*</li> <li>2. Irrigation Inspection Affidavits*</li> <li>3. Passing Irrigation System Backflow Prevention Assembly Test(s)</li> </ol>
Inspection Sign-Off (Required for Public Works permits)	<ol style="list-style-type: none"> <li>1. Landscape Inspection Affidavit*</li> <li>2. Irrigation Inspection Affidavit*</li> <li>3. Passing Irrigation System Backflow Prevention Assembly Test(s)</li> </ol>

\*Note: See Section 5 for information related to landscape professional registration and inspection affidavits.

2. Permitting/Installation/Inspection
  - a. Permit Acquisition – Applicant shall obtain the following permits before installing any landscaping or irrigation system materials/equipment:
    - Landscape Permit (required for landscape installation), and
    - Irrigation System (Plumbing) Permit (required for irrigation system installation), and
    - Irrigation Exemption Permit (required for irrigation outside of the regular irrigation schedule as identified in the Water Use Management Program).
  - b. Installation - All landscaping, irrigation system and other site work shall be installed as shown on the approved landscape and irrigation plans. The Town shall not issue a Certificate of Occupancy until applicant has demonstrated that landscaping and irrigation as installed conforms to the approved landscape and irrigation plan.
  - c. Inspection - Compliance with approved plans and compliance with applicable design criteria shall be verified by the following:
    - Town of Castle Rock Landscape Inspection Affidavit (to be completed by Town of Castle Rock Registered Landscape Professional – Design. See Section 5 for registration criteria), and
    - Town of Castle Rock Irrigation Inspection Affidavit (to be completed by Town of Castle Rock Registered Landscape Professional – Design and Installation. See Section 5 for registration criteria), and
    - Passing Backflow Prevention Assembly/Assemblies Test(s).
  - d. Deferral of Installation - The Town may issue a Certificate of Occupancy prior to installation of landscaping and irrigation systems in such event as:

- Seasonal conditions jeopardize the health of plant materials or prohibit the installation of the irrigation system, or
- Unavailable plant material, or
- Construction activities preclude installation as determined by the Director of Utilities; the applicant shall have six (6) months from the date of CO issuance to install landscaping and irrigation systems.

3. Maintenance Assurance

The Town reserves the right to conduct compliance inspections to verify compliance with code requirements.

4. Variances

The Landscape Regulations are to facilitate landscape design, installation and maintenance that is consistent with Town objectives. Should requirements create an inordinate hardship, where compliance is not practical or not possible, the Director of Utilities may grant variance to these Regulations upon a finding of the following:

- a. Intent - Intent of the Landscape Regulations is met through an alternative design, related to a site specific plan, and
- b. Variance - An application for variance has been submitted requesting administrative relief and meeting one or more of the following criteria:
  - Site conditions, including topography, soils, issues related to environmental quality, or wildlife habitat, may be better addressed through the alternative proposal, or
  - Landscaped areas are prone to hazardous limitations to health or growth patterns of plants, safety and/or visibility, and/or



alternative construction and installation methods must be used, or

- Neighborhood or historical character of the site will be better served by an alternative design, or The alternative design better meets the objectives of the Regulations than compliance with the specific criteria contained in the Regulations.

Variance may be granted for a specific application and shall not establish a precedent for any other or future alternative compliance requests.

Appeal of Variance Decisions - Upon review and denial of variance request(s) by the Director of Utilities, the applicant may choose to appeal to the Public Works and Utilities Commission by signing notice of appeal within thirty (30) days of denial of the variance application by the Director of Utilities. Upon review and denial of variance request(s) by the Public Works and Utilities Commission, the applicant may choose to appeal to the Town Council by giving notice of appeal within thirty (30) days of denial of the variance application by the Public Works and Utilities Commission. Notice of appeal shall be in writing to the Director of Utilities, and must be received by the Director within the time specified for notice herein. Appeals shall be reviewed in accordance with the criteria set forth in this section.



### 3.3.2 Commercial Properties

This section applies to commercial, business, or industrial land use areas. Section 3.1.1 outlines submittal requirements. Design, plant selection, irrigation system installation and maintenance of commercial shall be consistent with Section 4 of these Regulations.

#### A. Minimum Design Criteria

1. A site analysis, in accordance with Section 4.2.1, is required.
2. A use analysis, in accordance with Section 4.2.1, is required.
3. Site Plan development shall be accomplished in accordance with Section 4.2.1.
4. Application of all water conserving landscape/Xeriscape principles as identified in Section 4.2 shall apply.
5. Parking lot landscaping shall be included in part of the overall site requirement. Landscaped parking lot islands shall have a minimum six-foot horizontal dimension.
6. Plan review/approval as required.

#### B. Minimum Landscape Material Criteria

##### 1. Irrigated Turf Areas

Where turf areas are allowed, native and/or drought tolerant turf grasses shall be used for all turf areas, unless use specifically requires more resilient turf species, as dictated by approved plans. Uses requiring more resilient turf species could include recreational areas such as play areas, sport fields and other such high traffic uses. Irrigated turf is not allowed on slopes 3:1 or steeper. No more than sixty percent (60%) of the total site landscape area shall include irrigated turf.

##### 2. Other Plant Materials

All trees, shrubs, and groundcovers shall be drought tolerant/water conserving plant materials. Section 6 identifies approved plant materials for this land use. Upon a variance request, the Director of Utilities may approve plant material substitutions.

### 3. Parking

- a. An area or a combination of areas equal to ten percent (10%) of the total parking lot area shall be landscaped.
- b. Any parking area in business, commercial or industrial use areas in excess of seventy-five (75) spaces or four (4) parking rows shall require interior landscape islands featuring raised curbs. Islands must contain a minimum of one (1) tree and four (4) shrubs per island. One (1) additional tree may be provided in lieu of each four (4) shrubs required.
- c. Overall parking lot landscaped areas shall contain a minimum of two (2) shade trees and four (4) shrubs (or additional trees in lieu thereof as provided for above) per one thousand (1,000) square feet of landscaped area.
- d. Parking lot landscaping shall be included in part of the overall site requirement.
- e. Landscaped parking lot islands shall have a minimum six-foot horizontal dimension.
- f. Section 3.3.4 shall apply to parking area design and installation.

### 4. Other Minimum Landscape Requirements

Commercial properties shall have:

- a. A minimum of ten percent (10%) of the gross site area shall be landscaped. This landscaped area shall include all perimeter property setbacks and buffer areas,



- b. No more than 25% of the total ground area of a landscape area shall be comprised on non-living ornamental materials,
- c. A minimum of two (2) trees and four (4) shrubs for each one thousand (1,000) square feet of landscaped area shall be provided. (One (1) additional tree may be substituted in lieu of each four (4) shrubs required),
- d. Deciduous trees shall be at least two-inch caliper measured four (4) inches above the ground except ornamental and flowering trees shall be at least one and one half inch caliper measured four (4) inches above the ground; multi-trunk trees shall have at least three (3) canes, and shall be six (6) inches measured four (4) inches above the ground, with a minimum height of five (5) feet,
- e. Coniferous trees shall be at least six (6) feet tall,
- f. Shrubs shall be five-gallon container size,
- g. Perennials shall be one-gallon container size,
- h. Groundcovers/vines shall be spaced to provide eighty percent (80%) ground plane coverage within two (2) to three (3) years.

**C. Minimum Soil Preparation Criteria**

- 1. Soil preparation shall be in compliance with Section 4.2.3.
- 2. A soil analysis shall be conducted by a professional soil scientist for the property to determine existing soil conditions, including texture and structure, as well as to define the necessary organic amendments and top-dress fertilizers appropriate for the specific type of plant materials that are to be installed, including turf, trees, shrubs and ground covers. Analysis results and soil amendment and fertilizer recommendations for each plant material shall be included in the landscape plan submittal for final PD site plan and/or building/landscape permit application, as per

Section 4.2.3. Minimum soil amendment for turf areas shall be three (3) cubic yards of organic matter per 1000 square feet of landscape planting areas, and shall be tilled to a minimum depth of four (4) inches. Depth of six (6) inches or more is encouraged. Tillage shall incorporate organic material to optimize availability of nutrients to plants, increase soil oxygenation, optimize water retention/drainage (based on soil type), and provide for optimum root establishment and plant maturation. Acceptable organic matters include aged compost, wood humus from soft/non-toxic trees, sphagnum moss (excluding that of Colorado origin), or aged/treated manures (minimum two years aged).

- 3. Upon inspection for Public Works permits, or upon CO issuance, and for issuance of an irrigation exemption permit for establishment of new plant material, verification of purchase and incorporation of organic material i.e. receipts and inspection affidavits shall be required.
- 4. Site shall be raked to within two-tenths (2/10) of a foot and finish graded along sidewalks and edging to encourage positive drainage away from structures and sidewalks. Rocks and debris shall be removed.

**D. Minimum Irrigation System Criteria**

- 1. Required landscape areas in excess of five thousand (5,000) square feet shall have a water efficient irrigation system providing full coverage to all plant materials.
- 2. Separate irrigation service connections are required, and shall not be combined with domestic service connections. Service connections shall not be manifolded. Booster systems are prohibited.
- 3. Irrigation systems must:



- a. Be designed according to the principles outlined in, and meet all requirements of Section 4.2.4, and
- b. Meet all Town of Castle Rock Water Use Management Program watering restriction criteria, and
- c. Meet all 3-Day Timer/Power Back-up System criteria, and
- d. Meet all Town of Castle Rock Cross Connection Control Program requirements, including but not limited to:
  - Appropriate for degree of hazard, and
  - Meet installation criteria, and
  - Approved by Town of Castle Rock Cross-Connection Control Technician, and
  - Passing initial test(s) shall be submitted within ten (10) days of system initiation.





### 3.3.3 Public Buildings

#### A. Public Buildings

Public buildings shall include properties owned, operated, and maintained by the Town of Castle Rock, such as administrative public buildings, police and fire stations, recreation centers, service centers, utilities facilities (including well buildings, water treatment facilities, pump stations, water storage reservoirs, and lift stations). Public buildings shall not include designated parks, open space and other such public irrigated areas. Park facility requirements are identified in Section 3.3.4 of these Regulations.

#### B. Commercial Property

Town of Castle Rock public buildings shall comply with commercial property requirements.

#### C. Landscaping

Landscaping for all water, sanitary sewer and storm water facilities and utility easements shall be consistent with the Town of Castle Rock Public Works and Utilities Regulations.

##### I. Utilities Easements

- a. No trees or permanent structures may be placed in the easements, and
- b. All easements shall provide vehicular access, and
- c. Maximum cross slope of 4% and a maximum longitudinal slope of 10%, and
- d. No easements may straddle property lines, but shall be placed adjacent to the property line, wholly within one of the properties.

**3.3.4 Large/Common/Public Irrigated Areas**

Large, common and irrigated public areas shall be considered as any property that is managed or owned by the same group or individual, and irrigates over 20,000 total square feet of landscape for that property, including streetscapes, medians, common areas, or private areas.

Definition of irrigated public area shall be consistent with Chapter 13.20 of Municipal Code, which specifies *“Irrigated public area means a land area that is not native or natural open space and in which healthy vegetative growth is maintained by the application of water through an irrigation system. Irrigated public areas shall include, but are not necessarily limited to, any and all irrigated areas associated with all irrigated public lands and easements owned by the Town and/or any metropolitan district within the Town. Irrigated public areas include public street entrances, medians, parking lots and rights-of-way, public parks and recreation areas, and all areas whether owned, maintained or irrigated at public expense by the Town or a metropolitan district...”*

Design and irrigation requirements shall be contingent on the intended land use of the specified property, including streetscape, irrigated open space, park areas, and recreation sites.

**A. Minimum Design Requirements**

1. A site analysis, in accordance with Section 4.2.1, is required.
2. A use analysis, in accordance with Section 4.2.1, is required.
3. Site Plan development shall be accomplished in accordance with Section 4.2.1.
4. Application of all water conserving landscape/Xeriscape principles as identified in Section 4.2 shall apply.
5. A tap used solely for the purpose of irrigation shall supply water service for landscape irrigation.

6. Plan review/approval as required.

**B. Minimum Landscape Material Requirements**

**1. Irrigated Turf Areas**

- a. Where turf areas are allowed as defined in Section 4, native and/or drought tolerant turf grass shall be used for all turf areas, unless use specifically requires more resilient turf species, as dictated by approved plans. Such uses would include recreational areas such as play areas, sport fields and other such high traffic uses.
- b. Irrigated turf is not allowed on slopes 3:1 grade or steeper.
- c. Unless land use is for play areas, sport fields or other such high traffic uses, no more than sixty percent (60%) of the total site landscape area shall include irrigated turf.

**2. Other Plant Materials**

All trees, shrubs, and ground covers shall be drought tolerant/water conserving plant materials. Section 6 identifies approved plant materials for this land use. Upon variance request, the Director of Utilities may approve plant material substitutions.

**3. Other Minimum Landscape Requirements**

- a. The ornamental use of rock mulch shall be discouraged. Where it is used, it shall include living material such as trees and shrubs that will tolerate heat and evaporation caused by rock mulch.
- b. Organic mulches shall be applied at a level of one cubic yard per 80 square foot area at a depth of four (4) inches, depending on specific application and site characteristics. See Section 4 for additional requirements.
- c. Deciduous trees shall be at least two (2) inch caliper measured four (4) inches above the ground except ornamental and flowering



trees shall be at least one and one half inch caliper measures four (4) inches above the ground; multi-trunk trees shall have at least three (3) canes, and shall be six (6) inches measures four (4) inches above the ground, with a minimum height of five (5) feet.

d. Coniferous trees shall be at least six (6) feet tall.

e. Shrubs shall be five-gallon container size.

f. Perennials shall be one-gallon container size.

g. Ground covers/vines shall be spaced to provide eighty percent (80%) ground plane coverage within two (2) to three (3) years.

**C. Minimum Soil Preparation**

1. Soil analysis is required, as per Section 3.2.3.
2. A soil analysis shall be conducted for the property by a professional soil scientist to determine soil conditions, including texture and structure, as well as to define the necessary organic amendments and top-dress fertilizers appropriate for the specific type of plant materials that are to be installed, including turf, trees, shrubs, and ground covers. Analysis results and soil amendment and fertilizer recommendations for each plant material shall be included in the landscape plan submittal for final PD site plan and/or building/landscape permit applications. Minimum soil amendment for turf areas shall be three (3) cubic yards of organic matter per 1000 square feet of landscape planting areas, and shall be tilled to a minimum depth of four (4) inches. Depth of six (6) inches or more is encouraged. Tillage shall incorporate organic material to optimize availability of nutrients to plants, increase soil oxygenation, optimize water retention/drainage (based on soil type), and provide for optimum root establishment and plant maturation. Acceptable organic matters include aged compost, wood humus from soft/non-toxic trees, sphagnum moss (excluding that of Colorado origin), or

aged/treated manures (minimum two years aged.)

3. Upon inspection for Public Works permits, or upon CO issuance, and for issuance of an irrigation exemption permit for establishment of new plant material, verification of purchase and incorporation of organic material, i.e. receipts and inspection affidavits, shall be required.
4. Site shall be raked to within two-tenths (2.10) of a foot and finish graded along sidewalks and edging to encourage positive drainage away from structures and sidewalks. Rocks and debris shall be removed.

**D. Minimum Irrigation System Criteria**

1. Required landscape areas shall have a water efficient irrigation system providing full coverage to all plant materials.
2. For irrigated areas of 10,000 square feet and larger, separate irrigation service connections are required, and shall not be combined with domestic service connections. Service connections shall not be manifolded. Booster systems are prohibited.
3. Irrigation systems shall:
  - a. Be designed according to the principles outlined in, and meet all requirements of Section 4.2.4,
  - b. Meet all Town of Castle Rock Water Use Management Program watering restriction criteria,
  - c. Meet all 3-Day Timer/Power Back-up System criteria,
  - d. Meet all Town of Castle Rock Cross Connection Control Program requirements, including, but not limited to:
    - Appropriate for degree of hazard, and



- Meet all installation criteria, and
- Approved by Town of Castle Rock Cross-Connection Control Technician, and Passing initial backflow prevention assembly test(s) shall be submitted within ten (10) days of system installation.

E. Streetscapes

1. Streetscape design criteria shall be consistent with zoning, as well as with the Town of Castle Rock Public Works Regulations, including Chapter 8. See Section 4 for design, installation and maintenance criteria. See Section 3.3.1 for submittal requirements.
2. In general, streetscape design and installation shall comply with the following:
  - a. Section 4.2 of these Regulations.
  - b. Avoid design that may cause snow/ice problems, i.e. north facing areas.
  - c. Not negatively impact street/road base and/or sub-base by application of irrigation.
  - d. Not compromise site distances and safe public use of such streetscapes, sight triangles at corners and intersections must be kept free of visually obstructing (thirty inches or higher) landscaping features.
  - e. Plant materials shall tolerate street environment, including high levels of pollution, salt, snow, or automobile or pedestrian damage.
  - f. Streetscape landscaped sections that are less than four (4) feet wide must be completed in a hardscape, including stamped concrete, brick, flagstone or exposed aggregate concrete.
  - g. No plant material will be allowed in areas that are narrower than four (4) feet.
  - h. Site design and Town discretion shall dictate whether areas between 4' – 10' will be hardscaped, or irrigated and landscaped.

- i. Landscaped areas of a width of less than ten (10) feet shall not be planted in turf of any type.
- j. Allowable turf shall not include bluegrass, or bluegrass blends, and shall be drought tolerant, drought resistant, and resilient to the impacts of sand, salt and other roadway maintenance materials.
- k. Irrigated turf, whether by sod or seed, will not be installed on slopes equal to or greater than 3:1.
- l. Only drip irrigation systems will be allowed in areas less than ten (10) feet in width or smaller.
- m. No fences or structures shall be allowed without a revocable encroachment permit.

3. Design and location

The following items are required in the design of trees and their location:

- a. Trees shall not be planted closer than thirty (30) feet from the curb face at intersections and street corners within the site distance triangle,
- b. Within the sight distance triangle, no material over thirty (30) inches high is permitted.
- c. Maintain the minimum sight distance triangle and corner triangle distances for safe view of oncoming traffic and pedestrians,
- d. Trees must not interfere with visibility of traffic control devices especially at intersections,
- e. Trees should be located a minimum forty-two (42) inches from the face of the curb,
- f. For commercial areas, the minimum distance from streetlights is twenty (20) feet,
- g. Trees shall be designed to ensure the driver's visibility of all regulatory signs,



- h. Create a clear walking zone between trees and fences or buildings. In the downtown area, this distance shall be a minimum of ten (10) feet,
- i. No tree shall be planted within five (5) feet of any utility.

4. Tree Size

Trees should be large enough when planted to add substantial shade and to reach a height appropriate to the surrounding vicinity.

- a. Street trees in grates shall be three (3) inch caliper.
- b. Trees planted in tree lawns shall be two (2) inch caliper.
- c. The branching height of a tree on the traffic side of the street shall be no less than thirteen (13) feet six (6) inches above the street.
- d. The branching height of mature trees on the pedestrian side of the street shall be no less than eight (8) feet above the sidewalk.
- e. Small varieties of thornless and fruitless trees may be used only in median areas or traffic islands where lower branching habits will not interfere with pedestrians, vehicles or driver visibility.
- f. Smaller trees shall be used where power lines overhead would not allow a large street tree to reach maturity without severe pruning.

5. Local Streets (Residential)

For all residential local streets, the adjacent homeowner shall be responsible for planting and maintaining the right-of-way behind the curb. The homeowner shall install plantings and irrigation in compliance with the planned development site landscape plan, and shall apply the design, installation, irrigation and maintenance principles and standards identified within these Regulations.

6. Local Streets (Commercial)

For all commercial local streets, the adjacent property owner shall be responsible for designing, planting and maintaining the right-of-way behind the curb. The property owner shall install plantings and irrigation consistent with the planned development site landscape plan, and shall apply the design, installation, irrigation and maintenance principles and standards identified within these Regulations.

7. Arterials, Collectors, and Entry Streets

For all arterials, collectors and entry streets within the Town of Castle Rock, including medians, the Developer shall be responsible for plans and construction of streetscape. Landscaping and irrigation system design and installation shall comply with the design, installation, irrigation and maintenance principles and standards identified within these Regulations.

8. Medians

The applicant party shall install plantings and irrigation consistent with the planned development site landscape plan, and shall apply the design, installation, irrigation and maintenance principles and standards identified within these Regulations.

Only drip irrigation systems will be allowed in medians.

F. Irrigated Public Areas

Installations such as parks and recreation areas shall be designed and installed according to function and safety criteria, per approved plan.



### 3.4 PRE-EXISTING LANDSCAPED AREAS

Any section of existing landscapes that is renovated that requires an irrigation exemption or a plumbing (irrigation system) permit shall comply with these Regulations. Renovations include expansions and rehabilitation of landscape materials and components installed prior to the adoptions of these Regulations.



## Section 4 - Landscape Principles

### 4.1 POLICY INFORMATION

The Town of Castle Rock recognizes:

- Colorado is a semi-arid state, averaging only 13 inches of precipitation a year, and that currently approximately 50% of average annual water production is used for landscape irrigation,
- The unique natural identity and environment that exists in Castle Rock, and the ecological and aesthetic contribution of landscape design, installation, and maintenance,
- Conserved water is a viable water resource, and demonstrates that water conservation is a core value of the organization.

The Town of Castle Rock will implement positive programs that:

- Complement environmental qualities and enhance the quality of life of its residents and business owners, and
- Are practical and customer-friendly.

### 4.2 LANDSCAPE PRINCIPLES

Landscaping design, installation and maintenance shall promote the following:

- Water conservation,
- Compatibility with the surrounding indigenous setting,
- Promotion of horticultural and maintenance practices best suited to the specific local conditions,
- Creative design solutions that contribute to the unique local character of the community.

Steps to a water wise landscape include:

#### 1. Planning and Design

Developing a plan that addresses the physical site characteristics, the needs of those using the property, and the best water conserving

methods is the most important step in creating a successful landscape.

#### 2. Soil Evaluation and Improvement

Good soil is the basis for all successful water conserving landscapes. Both short and long-term, landscapes benefit from incorporating organic matter.

#### 3. Creation of Practical Turf Areas

Turf grasses are high water consuming plants. Limiting turf grass to areas where it serves a purpose can substantially reduce water consumption.

#### 4. Appropriate Plant Selection

Selection of plants that are better adapted to Castle Rock's climate and soils, grouping them according to their water needs, and then placing them in locations favorable to their growth results in healthier, easier-to-maintain landscapes that use less water.

#### 5. Efficient Irrigation

Grouping plants according to water needs, choosing irrigation methods that water each plant efficiently, and regulating irrigation systems to water adequately is a major component of water conserving landscaping.

#### 6. Use of Mulches

Mulching of planting beds reduces water evaporation from the soil, buffers daily soil temperature fluctuations and discourages weed growth.

#### 7. Proper Maintenance

Proper fertilization, weeding, watering and other maintenance encourage a beautiful landscape that is disease resistant, survives drought conditions, and saves water.



## 4.2.1 Planning and Design

The landscape plan shall be designed to minimize water use through the use of water efficient landscape principles and plant materials while continuing to provide for an attractive site appearance. The landscape plan shall provide adequate buffering between the more intensive development (commercial, industrial, multi-family or similar use and any associated off-street parking areas) and any adjacent lower intensity use. The landscape plan shall be compatible with and/or enhance the landscaping of adjacent properties and public rights-of-way, existing or planned.

Design of all landscaped areas includes the following water-efficient landscaping principles.

### A. Planning & Design

Planning and design of landscaped areas includes:

#### 1. Site Analysis

Site analysis consists of an inventory and analysis of all existing features that may influence landscape design. This includes direction of prevailing winds, exposures, topography (slopes and swales), drainage areas, existing features (utilities, trees, shrubs, walkways, and structures), and views.

Site analysis must consider local zoning and construction codes related to utility easement and site distance requirements.

#### 2. Use Analysis

Use analysis consists of identifying the typical functions and activities that occur on the site. This will assist with landscaping material selection. This includes the overall theme of the site and neighborhood, identifying future building projects, on-site traffic patterns, activity areas, service areas, and any other use that will affect the landscape design.

#### 3. Site Plan Development

The site and use analysis are considered along with the overall development goals for a property. The installation should be accomplished according to the logical progression of events, including grading, irrigation layout, hardscape installation, soil preparation, plant material installation, mulching, etc.

a. Design elements include:

- Plant materials (trees, shrubs, living groundcovers, grasses, vines, annuals, and perennial flowers),
- Structures (buildings, fences, retaining walls, gazebos/patios, surfaces-pavements, decks, sidewalks, parking, sculptures, and other structural visual features),
- Turf alternatives (organic mulches including bark or shavings, and the limited use of decorative rock),
- Irrigation (irrigation demand zoning, creation of hydrozones, compliance with the Water Use Management Plan watering criteria, 3-day programmable irrigation controllers),
- Grading and contouring – To enhance existing topography, increase land use functionality, address drainage issues, plant selection conducive to exposures, address slopes, depressions and swales, etc. (Irrigated turf shall not be allowed on 3:1 slopes or greater.) (Not applicable to erosion control measures. Erosion blankets are required to reduce plant loss.),
- Soil – Soil improvement is required. Site soil analysis is required for specific land uses and soil preparation shall be consistent with the soil types present on site. For minimum requirements, refer to appropriate specific land use section,
- Special features - Lighting, water features, when used, they must use re-circulating systems, and the design should minimize evaporation losses.

b. Landscaping shall be designed as an important integral part of the overall site design. The landscaped areas shall enhance the building design, enhance public views, provide buffers and transitions between adjacent land uses and provide screening.

c. Where a site abuts a natural amenity such as a floodplain, trail corridor, park or other open space, the landscape plan should complement the natural character and integrity of the amenity.





## 4.2.2 Landscaping Material

### A. Plant Material

The use of plant material should be consistent with planning and design criteria as identified in Section 3 as designated by land use. Additional considerations include:

- Mature height, spread, shape and form of plant
- Attraction of wildlife
- Soil moisture requirements
- Sun tolerance
- Aesthetic elements
- Proper plant care and maintenance

See Section 6 for recommended water conserving plant materials.

*\*Note:* Non-native species and other typically “non-xeric” plant material may be practical for some landscape designs, dependent on land use and individual site characteristics.

Plant material quality parameters shall be consistent with Colorado Nursery Act and American Standard of Nursery Stock standards.

### B. Non-Living Landscape Material

This section refers to materials used to protect the soil from moisture loss and/or improve the soil condition. Concreted areas, walkways, and structures are not discussed in this section.

- I. Organic Mulches
  - a. Reduce surface evaporation,
  - b. Improve water penetration and air movement,
  - c. Control soil temperature fluctuations,
  - d. Protect shallow-rooted plants from freeze damage and frost-heave,
  - e. Discourage weed growth,
  - f. Improve soil structure and nutrient availability.

Types of organic mulch include wood and bark chips, pine needles, cones, sticks, straw, leaves or grass clippings.

2. Minimum Installation Criteria  
Organic mulches shall be applied at a level of one cubic yard per 80 square foot area at a depth of 4”, dependent on specific application and site characteristics.
3. Installation/Maintenance Recommendations  
Apply mulch to bare soil with an edging around the area (landscape fabric is not recommended, plastic is not allowed).
  - a. Due to the breakdown of organic mulches over time, it is recommended to top-dress organic mulches every other year,
  - b. If metal edging is used, edges should be rolled, or at a minimum, capped.
4. Non-organic Mulch/Decorative Rock
  - a. Do not decompose, for all practical purposes,
  - b. Convey a more formal effect,
  - c. May tend to draw and maintain heat, dependent on type and coloration.
5. Inorganic mulches include gravel, boulders and other types of decorative rock.
  - a. Installation/Maintenance Recommendations
    - Minimize use of plant material that may be negatively impacted by exposure related to inorganic mulch,
    - Use as an ornamental feature in localized area, with edging around the area.



### 4.2.3 Soil Preparation

Soil composition, texture and fertility vary throughout Castle Rock. Primary constituents include sand, silt and clay. Soil preparation is a necessary element to the proper design and installation of any landscaped area.

Proper soil amendment and incorporation yields the following benefits:

- Loosens clay soils,
- Allows air and water to circulate within soil,
- Allows organic matter to retain water in sandy soils,
- Stores nutrients for plants.

Soil amendment materials shall be based on the specific needs of the soil that is present and on the needs of the specific plant species in each landscaped area. Soil amendment shall be thoroughly incorporated into the soil, according to the requirements listed below.

#### A. Developer/Builder/Public Area Installations

1. Topsoil shall be stockpiled during construction for use in landscape areas prior to planting. Topsoil shall not be considered a soil amendment.
2. A soil analysis shall be conducted, prior to addition of soil amendment, by an established soil analysis laboratory, and shall contain at a minimum the soil texture, percentage of organic matter, pH, total soluble salts, and recommended amendments. A copy of the report shall be submitted as part of the landscape plan review.
3. Soil amendments to improve water drainage, moisture penetration or retention, nutrient availability and aeration for each type of plant material shall be provided as determined by the soil analysis.

4. Soil preparation and top-dress fertilization shall be consistent with the cultural needs of the plant species proposed for each category. Minimum incorporation requirements are 3 cubic yards of organic matter per 1,000 square feet in landscape planting areas. Acceptable organic matters include aged compost, wood humus from soft/non-toxic trees, sphagnum moss (excluding that of Colorado origin), or aged/treated (minimum two years aged) manures. Fertilizer should be consistent with soil analysis requirements and cultural plant needs.
5. Soil amendments shall be properly prepared (composted manures processed 3-5 years, with carbon to nitrogen ratio of 11-15% to 1.)
6. Tilling of soil to incorporate amendments and counter any compaction or soil consolidation shall be required for all landscape planting areas. Recommended tilling depths are 6-12". Minimum required depth is 4".

#### B. Homeowner Installations

While proper soil preparation promotes the health of plant material, it also reduces the amount of water a plant requires to remain healthy.

1. Minimum requirements
  - a. Three (3) cubic yards of organic matter per 1,000 square feet of landscape planting areas. Acceptable organic matters include aged compost, wood humus from soft/non-toxic trees, sphagnum moss (excluding that of Colorado origin), or aged/treated manures. Receipts for purchase of organic material are required to be submitted. See Section 3.2.3.
  - b. Organic material shall be tilled to a minimum depth of 4".
2. Soil Analysis Recommendations  
The following soil preparation criteria are recommended for homeowner installations:



- a. Perform a formal soil analysis through a professional soil scientist to determine proper soil amendment composition (for organic material and fertilizer),
- b. Purchase a soil test kit to determine the pH and salt content of the soil,
- c. If a soil analysis is not performed, soil texture and drainage may be determined by:
  - Texture - Roll slightly moistened soil between thumb and forefinger. If it forms a firm ball, feels smooth and becomes sticky when moistened, it is too high in clay. The soil will require deep aeration, and addition of organic matter to aggregate the finer particles, allowing for larger pores, thus increasing air circulation and drainage.
  - If it will not form a ball, and won't stay together and feels grainy, it is of a better texture and will require less aeration.
  - If the soil feels coarse, it may be too sandy and will require additional organic matter to hold moisture and nutrients.
  - Drainage - Dig a 12" deep hole, the diameter of spade. Pour water in the hole to the rim. Refill the hole a day later and observe how long it takes for all the water to soak in.
  - If the water soaks in within a few minutes, drainage is high. The soil will require organic material to hold moisture and nutrients.
  - If the water does not soak in within a 24-hour period, drainage is low. The soil will require deep aeration, and addition of organic matter to allow for larger pores, increasing air circulation and drainage.
- d. Purchase soil amendment that is conducive to improving existing soil structure and is consistent with the requirements of the specific plant material being installed. Be sure soil amendments have been properly prepared.

(For manures, processed for 2 year minimum, with a carbon to nitrogen ratio of 11-15% to 1).

- e. If inorganic fertilizers are used, they should be consistent with soil and plant needs. Inorganic fertilizers commonly have ratings for nitrogen (N), phosphorus (P), and potassium (K). Colorado soils are naturally high in potassium, therefore little of this ingredient is needed at installation. Nitrogen aids in plant top growth, phosphorous aids in root establishment, and potassium aids in overall general health.
- f. Rough grade should be graded to at least within two tenths of a foot and finish graded along sidewalks and edging. Make sure drainage is away from house, sidewalks and driveways.



#### 4.2.4 Irrigation Systems

Irrigation has perhaps the greatest potential to affect water savings than any other component of the water conserving landscape. According to front-range experts, over-watering actually creates more problems than under-watering, and wastes up to 40% of the water being applied.

Three principles apply to water efficient irrigation of landscapes. Application of these principles is required for irrigation system design and management:

- Different plants have different water requirements.
- Specific types of plants will have varying water needs depending on age, size and location in the landscape.
- Plant or lawn areas will have water requirements that change with the season, weather, the age of the plant and the previous watering methods.

##### A. General Plan Criteria

All non-residential, multi-family residential, and developer/builder single and two-family land uses shall comply with irrigation system criteria. Unless otherwise specified, irrigation system criteria are recommended for homeowner installations.

1. The irrigation plan shall be submitted and approved prior to the approval of final development plans, or issuance of a building permit.
2. The irrigation plan shall depict a water-efficient design consistent with the landscape, grading and design criteria outlined in Section 3 of the Landscape Regulations.
3. The irrigation plan shall note hydrozones, and shall take into account like water demand plants, slopes, microclimates, environmental factors, and water pressure.
4. Irrigation system standards shall:
  - a. Include site-specific conditions including soil type, slope, winds, ambient temperatures, and humidity,

- b. Provide all information related to Irrigation Plan Checklist (see below), and any additional information needed to sufficiently describe the system,
- c. Ensure that service connection, whether combined with domestic or irrigation only (see applicable Regulation sections to determine whether dedicated irrigation services are required), can meet irrigation demand requirements, consistent with the Town of Castle Rock Landscape Regulations, Water Use Management Program, and other applicable codes and policies through inclusion of projected water demand for each of the following:
  - Plant establishment period (30 day minimum),
  - Monthly water during the typical growing season (April – October), based on typical ET and precipitation data for each month,
  - Winter watering after establishment,
  - Temporary or manual irrigation.

##### 5. Irrigation Plan Check List:

- a. Define every third day watering day symbol (according to last digit of address, as defined by Water Use Management Program).
- b. Size and location of water meter (include meter pit detail where appropriate).
- c. Irrigation system tap-in location.
- d. Static water pressure at point of connection.
- e. Irrigation system design pressure.
- f. System controller (shall comply with Town of Castle Rock requirements including meeting Water Use Management Plan program criteria, every-third day programmable, for specific time periods).
- g. Battery back-up system.
- h. Backflow prevention assembly(s) shall comply with Town of Castle Rock requirements including meeting Cross-Connection Control



Program criteria, and Public Works Regulations specifications. Include backflow prevention assembly detail where appropriate.

- i. Shut-off valves and zone control valves.
  - j. Frequency and duration of cycle for each control valve.
  - k. Main line and lateral piping.
  - l. Sprinkler heads, bubblers, and drip irrigation tubing runs.
  - m. Type, size and graphic of the locations of irrigation system components.
  - n. Irrigation component detail sheet shall be provided.
  - o. Manufacturer stated precipitation rates.
  - p. Winterization equipment and location - use of backflow prevention valve assembly components as part of system winterization equipment is not allowed. (See appropriate Public Works Regulation Specification Details.)
6. Irrigation design shall address:
- a. Date and time of watering, consistent with Water Use Management Plan criteria,
  - b. Separate zones for different equipment or water requirements based on exposure, plant selection and slope,
  - c. Drainage and/or runoff related to irrigation system design and use shall not negatively impact surrounding property owners,
  - d. Existing non-irrigated plant communities to be retained are not irrigated,
  - e. Temporary irrigation provided for newly established native plant areas,
  - f. High water-use turf areas zoned separately from landscape beds,
  - g. Sprinkler heads shall be consistent with the type of plant material being irrigated, and will

consistently reduce over spray, waste and runoff,

- h. Temporary irrigation provided where natural rainfall is not adequate to ensure germination and establishment of hydro seeded areas,
- i. Total application rate per zone shall be provided, shall not exceed 1.5 inches per week precipitation, and shall not exceed one (1) inch per day,
- j. Eliminate over-spray and application of water to impervious surfaces,
- k. Low volume, underground and low trajectory spray nozzles used where appropriate,
- l. Method of irrigation matched to size and shape of area and plant material, and for uniformity of coverage,
- m. System designed in conformance with manufacturer's recommendation for efficiency,
- n. Water pressure regulated with valves,
- o. Water hammer and line and head drainage prevented where possible,
- p. Pressure compensating outlets used where appropriate,
- q. Moisture/rain-sensing device installed for automatically controlled system,
- r. Controller has accurate timer, and multiple program capability, and multiple repeat cycle, capable of meeting irrigation day and time criteria as identified in the Water Use Management program, including, but not limited to every third day irrigation with the specific watering hours, and shall have battery back-up system,
- s. Irrigation tap sized to irrigate site in the maximum time allowed for operation of zones,
- t. Irrigation tap size and system design shall allow for irrigation to be accomplished within Water Use Management Plan requirements.

## 4.2.5 Maintenance

Landscaping shall be planted and maintained in a neat, clean and healthy condition by the owner. This includes proper pruning, mowing, weeding and irrigation. Violation of these parameters is considered a violation of primary code. Upon written notice by the Town, an owner will have six (6) months to cure or replace damaged or dead landscape material. In the case of diseased landscape material, a shorter compliance period may be specified in said notice.

### A. Maintenance Principles

All landscaping requires maintenance, including water-efficient landscapes. Ongoing maintenance assists with not only maintaining pleasing aesthetics and functionality of landscapes, but also with maintaining water savings.

Formal maintenance requirements are required for Maintenance Assurance dependent on land use. See Section 2 to determine for which land uses Maintenance Assurance is required. Where applicable, Maintenance Assurance programs shall include the elements that follow.

The major components of landscape maintenance include:

- Watering
- Mowing
- Proper Pruning
- Weeding/Top Dressing
- Aeration
- Fertilization
- Irrigation System Maintenance

### B. Watering

The following criteria apply to landscape watering

1. Watering shall occur according to the requirements of the Water Use Management Program. (Irrigation shall occur on an every-third day basis, according to the last digit of a property address, within required hours.)

2. Precipitation shall not exceed 1.5 inches per week, whether applied through rainfall and/or irrigation. (See Water Use Management Plan criteria for specific user category.) Irrigation shall be discontinued during rain events once soil moisture requirements have been met.
3. Water shall be applied in a manner that allows for maximum penetration, and minimum runoff. Water shall also be applied in a manner that minimizes evaporation through delivery.
4. Water application shall be consistent with soil analysis results.
5. Water application shall be applied at the most efficient time of day (within the allowed hours defined by the Water Use Management Program), to reduce evaporation losses and allow optimal distribution patterns.
6. Water waste is not allowed.

### B. Mowing

The following criteria apply to turf mowing

1. A minimum height recommendation for any turf is 3 inches.
2. Preferred mowing height for Colorado species is above 3 inches.
3. Recommended frequency is so that no more than 1/3 of the grass height is removed at a single mowing.
4. Maintain mowing equipment by sharpening mower blades, or checking reel-type mowers for proper blade-to-bed knife adjustment.

### C. Pruning

The following criteria apply to pruning of trees and shrubs:

