Streetscape Standards Fort Collins

LARIMER COUNTY URBAN AREA STREET STANDARDS | APPENDIX C

City of Fort Collins

LARIMER COUNTY
COMMITTED TO EXCELLENCE

Streetscape Standards

Larimer County Urban Area Street Standards Appendix C: City of Fort Collins Streetscape Design Standards and Guidelines
Updated 2025

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SECTION 1

Purpose and Intent

Based on the City of Fort Collins's vision to foster a thriving and engaged community through operational excellence and a culture of innovation and mission to deliver exceptional service for an exceptional community, these standards set forth a coordinated approach to the design and management of streets as visually appealing public spaces that contribute to Fort Collins's distinct identity. These standards intend to further one or more of the following City policies:

- Strategic Plan, Transportation and Mobility Objective #1 to make significant progress toward the City's Vision Zero goal to have no serious injury or fatal crashes for people walking, biking, rolling or driving in Fort Collins

- Our Climate Future, Big Move #3 for a climate resilient community

- Water Efficiency Plan goal to improve efficiency and resilience on public landscapes

The plans and policies set forth in this Section are not intended to be interpreted or applied as binding standards, terms, conditions, requirements, or procedures. These plans and policies are solely intended to provide guidance in the interpretation and application of the Streetscape Standards that have been adopted to implement the plans and policies referred to herein.

The term "streetscape" generally encompasses the visual and pedestrian environment of a street. These streetscape standards involve parameters for tree-lined streets and sidewalks, parkways, other landscaping along street edges, and landscaped medians in streets.

In addition to plantings, streetscapes may also encompass various urban design elements in certain settings. Examples include special curb treatments and median edges, low planter and landscape walls, railings, bollards, planter pots, stone features, public art, pylons, specialty lighting, signal and light pole treatments, specialty paving, transit stops and furnishings, and the like.

Streetscape elements such as parkways and medians offer solutions to many engineering challenges of the urban environment. Tree-lined parkways provide a buffer between pedestrians and vehicular traffic, increasing pedestrian safety and comfort. Parkways also provide space for streetlights, signs, underground utilities, and snow storage. Medians create opportunities for pedestrian refuge islands at crossing locations, and they also provide access control by limiting the number of full-movement driveways and intersections along a street. Parkways and medians both provide physical barriers along travel lanes, which encourages drivers to slow down. While serving many functional purposes, parkways and medians also provide opportunities to cultivate a particular aesthetic through landscaping and other visual features. The utilitarian and aesthetic purposes of these public spaces should coexist harmoniously.

Every streetscape project involves its own context and constraints. Still, there

is a need for standards to set the bar for level of quality and investment. These standards provide a framework for programming, budgeting, designing, maintaining, and renovating various incremental projects as part of a whole approach.

Exact details must then be adapted to fit and function with the unique context and constraints which exist in every project. The context and constraints include existing conditions that are expected to remain for the long term, and future change planned or envisioned by the City.

SECTION 2

Applicability and Use

These standards apply to all projects involving streetscapes in the City right-of-way including:

- Private development projects for which an application is submitted on or after January 1, 2026.
- City capital projects installed on and after January 1, 2026.
- Any other renovation projects and efforts for which an application is submitted on or after January 1, 2026.

Private development and public capital projects may involve construction of new streets, and/or changes to existing streets.

The standards are intended to be used by:

- Staff, in the design and management of city streetscapes over time.
- Landscape architects and designers.
- Developers and decision makers in the development review process.
- Property owners, where plans and activities involve streetscapes.
- Citizens, City Councils, and staff, in discussions involving streetscape issues.

SECTION 3

Project Plan Submittal and Review

Streetscape projects that are part of development applications follow a standard City development review process, which will include collaboration with staff on streetscape design.

City capital projects involving streetscapes are reviewed administratively by interested City departments in an internal process of collaboration and routing of plans.

3.1 SAFETY PROCEDURES

In addition to public safety, streetscape projects must consider safety concerns for people working within the right-of-way in the design, installation, and maintenance of streetscapes. Safety plans are created on a case-by-case basis for streetscapes, and design teams are encouraged to coordinate directly with the City Parks Department to discuss safety issues and strategies for minimizing potential hazards.

General safety procedures include:

- Strategic vehicular pullout area(s) for maintenance vehicles to park directly within a median
- Locations for vehicles to temporarily park directly within lanes of traffic or left turn bays
- Designing plant groupings, mulch, and boulders to allow people to walk freely through a median
- Offsetting plants from median curblines
- Locating irrigation infrastructure within parkways when possible, or within wider portions of medians when the infrastructure cannot be placed in a parkway

For more information on City Parks Department safety procedures, please contact the City Parks Department for additional information about medians safety procedures.

3.2 STREETSCAPE PROJECT DESCRIPTION REQUIRED

For streetscapes to be successful, it is important for City staff in multiple departments to have a clear understanding of the design intent, assumptions, and the needs for maintenance, monitoring, and replacements of plants or other components.

A project description is needed to supplement technical project plans. The purpose is to prompt designers and staff to record the whole story of the streetscape project.

3.2.1 Streetscape Project Description required.

All streetscape projects involving landscaping and urban design elements must include a Streetscape Project

Description developed by the project consultant(s) or City staff, as applicable, upon completion of design. The description must:

- Be concise and avoid technical jargon.
- Include relevant commentary in addition to objective facts and information.
- Describe the design intent, assumptions, and maintenance and renovations that will be needed over time to realize the design intent.
- Note all aspects of the project from initial grading and soil preparation, to irrigation systems, to planting and establishment procedures, to management and maintenance.
- Explain how the project complies with applicable provisions under these Streetscape Standards.
- Note outstanding issues that need to be monitored over time.

Examples of topics to be addressed include:

- Reasons and concepts for all project decisions including planting, irrigation, mulches, boulders, hardscape, and urban design elements.
- Plant species needing pruning or trimming, frequency and timing for pruning or trimming, specific weeding control practices, annual clean-up, and dividing or periodic replacing to achieve the intent.
- Water requirements of plant species.
- Plant species with a limited track record in streetscapes that warrant monitoring.
- Mulches that need replenishing or clean-up.
- Long-term maintenance needs regarding silt build-up.
- Urban design features that may need touch ups, replacements, stocking of parts, or other maintenance and renovations.
- For arterial street medians and parkways, a typical traffic control plan for maintenance.
- Any other information useful for future understanding and management of the streetscape.

3.2.2 Landscape Plan Required; Required Elements for Landscape Plans.

Every Streetscape Project Description must include a landscape plan. Streetscape landscape plans may be included with a larger development landscape plan provided the plan meets Streetscape Standards as applied to the streetscapes within the landscape plan. All landscape plans must include, at a minimum:

- The items required by the City for Development Review applications.

- Survey of existing trees, tree inventory and mitigation table provided by the Forestry Division, tree protection notes, and a legend showing trees to be preserved and protected in place and trees to be removed.

- A plant list: quantity, species (common and scientific names), species diversity percentage, water demand, caliper, and method of transplant. There must be unique symbols for each species, and all species must be labeled with abbreviations to match the legend. Mitigation trees must be identified and labeled.

- Hydrozones or plants with similar water demands should be grouped within irrigation zones.

- Calculations for streetscape water use, which may not exceed an average of 11 gallons per square foot per year, must be calculated separately from any larger development landscape plan. Water use calculations do not include water for streetscape trees.

- Separate sheet/layer for ground cover (mulches and boulders)

- Ditch easements, top of embankment, access easements, utility easements, sight triangles, and other maintenance easements must be identified.

- Existing irrigation infrastructure including point of connection, backflow, controller, valve boxes, and approximate location of the mainline must be identified.

SECTION 4

Landscape Standards

The following standards apply to all street classifications city-wide, except where specific areas have applicable planning documents that set forth alternative standards tailored to the area and except that no parkway or median landscaping will be allowed on bridges (note that potted planting, which is not landscaping, is allowed on bridges).

The City of Fort Collins maintains a recommended plant list. Designers are encouraged to select plants from this list. On a case-by-case basis, designers may propose plants not on the list based on the design intent for the particular project.

4.1 STREET TREES

Groupings of street trees along street edges are the fundamental, unifying element of continuity in city streetscapes.

Street trees can be considered as multi-functional public infrastructure that:

- Defines the street as distinct space, providing a unifying framework for abutting developments.
- Provides canopy shading and stormwater interception along streets and sidewalks to reduce glare and urban heat island effect.
- Provides a buffer between pedestrians on the sidewalk and vehicles in the roadway, which increases pedestrian safety and comfort.

4.1.1 Tree planting in parkways.

Where a sidewalk is separated from the curb in accordance with the *Larimer County Urban Area Street Standards*, groupings of canopy shade trees must be planted in the parkway spaced at an average interval not exceeding 30 feet, and centered between the curb and the sidewalk.

Design teams and applicants must coordinate with the Forestry Division for field locating trees, approving and tagging trees at nurseries, issuing a permit for planting, and inspections after planting.

4.1.2 Species groupings within tree groupings.

To the extent reasonably feasible, street tree groupings in landscape areas, whether inside or outside of the sidewalk, must be in groupings in which no more than three trees in the grouping are the same species. The intent is to provide a degree of species diversity within a deliberate, repeating design pattern.

Designers are encouraged to arrange changes in species to reflect roadway conditions, such as open stretches of roadway between access points, stretches approaching intersections and driveways, and/or changes in adjoining land use.

4.1.3 Street trees in sidewalk cutouts.

If a project involves a new sidewalk that must be attached to the curb due to unique constraints or context, then the sidewalk width must be wide enough to incorporate planting cutouts with tree grates to the maximum extent feasible.

- Such sidewalks must be at least 12 to 15 feet wide with cutouts at least 32 square feet at 20 to 30-foot spacing. Larger cutouts with more than 32 square feet are encouraged. The distance from the back of the tree grate to the back of the sidewalk must be a minimum of 4.5 feet.

- In all cases, trees in sidewalk cutouts must be located at least 8 feet away from buildings and offset from building entrances.

- If such an attached sidewalk has an abutting landscape area, then 8 feet must be the minimum width in which canopy trees shall be provided in sidewalk cutouts.

- The minimum area of any sidewalk cutouts must be 32 square feet, using 8x4-foot tree grates. Larger cutouts with more than 32 square feet of area are encouraged, for example 4x12-foot or 4x16-foot tree grates, to support tree health.

- The soil surface in a sidewalk cutout must be level with the bottom of the sidewalk slab. Trees must then be planted with the top of the root flare 1 to 2 inches above the soil surface.

- Cutouts are preferred over trees grates. Where tree grates are allowed, all tree grates must be installed per manufacturer's instructions. Tree grate frames must be set in a true, flat plane to prevent rocking of the grate.

- Tree grates must be able to withstand the loads of snow clearing equipment without breaking.

- Grates must be of a pedestrian-safe ADA-compliant style with slot openings 3/8-inch or less.

- A spacing interval up to 40 feet is allowed for street trees in grates where abutting commercial buildings face the street with no intervening vehicle use area between the street and the building.

4.1.4 Tree planting outside of sidewalks where existing constraints preclude parkway tree planting or sidewalk cutouts.

Where a sidewalk is attached to the curb and is less than 8 feet in width, canopy shade trees shall, to the extent reasonably feasible, be established in an area ranging from 4 to 7 feet behind the sidewalk at 20 to 30 foot intervals. This standard shall also apply where unusual constraints preclude tree planting in a parkway.

Any such planting will typically require coordination with abutting property owners.

4.1.5 Adjustment of spacing intervals.

The City Forester may approve or require larger or smaller spacing intervals to better fit the growth habits of different street tree species, for safe use of the street or sidewalk, for a stretch of shade intolerant xeric landscaping, and to better fit with existing trees or other existing conditions unique to the location.

4.1.6 Overhead power line conflicts.

Ornamental trees may be planted in substitution of the canopy shade trees where overhead lines and fixtures prevent normal growth and maturity.

4.1.7 Spacing from driveways.

No tree shall be planted closer than 4 feet from any driveway or alley.

4.1.8 Tree separation from utilities.

Landscape and utility plans must be coordinated. Utility separations must meet the minimum standards of the Fort Collins Land Use Code. The specified distance is measured as the horizontal separation from the center of the proposed tree to the edge of the existing or proposed utility.

Exceptions to these requirements may occur where utilities are not located in their standard designated locations, as approved by the City Forester. Tree-utility separations shall not be used as a means of avoiding the planting of required street trees.

4.1.9 Irrigation provided to trees.

Irrigation must be provided to new and existing trees if applicable. Irrigation to trees must be on a separate zone from other plant material.

4.2 TURF-TYPE GRASS

Turf-type grass in parkways provides a multi-functional solution for landscaped edges along city streets of all classifications. The term “turf-type grass” as used throughout these Streetscape Standards means continuous plant coverage that is native or hybridized for arid conditions, with a low water requirement. Once established, such low-water turf-type grass typically requires approximately one watering per week during the average growing season. Turf-type grasses allowed in Fort Collins streetscapes must not exceed an average of 11 gallons of water per square foot per year. Any turf-type grass installed must meet hydrozone requirements in the Fort Collins Land Use Code. Turf-type grasses may be used in Fort Collins streetscapes.

Efficiently irrigated, mowed turf-type grass provides a uniform and resilient living edge to city streets over a long growing season. The living edge, along with street trees, is a unifying element that helps define city streets as continuous spaces.

4.2.1 Requirements.

Section 5 includes parkway landscaping standards for arterial streets. Section 6 includes parkway landscaping standards for collector and local Streets.

4.2.2 Prohibitions.

No artificial turf or artificial plants may be included in any streetscape. Turf or grass that is not hybridized for arid conditions or has a high water requirement, or both, may not be included in any streetscape.

4.3 ALTERNATIVES TO TURF-TYPE GRASS

Alternatives to irrigated turf-type grass can be an appropriate choice for property owners abutting collector and local streets. Alternatives to turf-type grass must meet the same watering restrictions as turf-type grass. Alternatives can also be appropriate for arterial street projects in special plan areas where such alternatives are recommended.

Mulched planting beds can be an acceptable alternative solution to turf-type grass for parkway landscaping in some situations. With appropriate plant selection and proper maintenance, it can offer seasonal interest and add character.

This alternative can require less water than some turf-type grass. While maintenance needs can be less frequent than a cool-season turf-type grass mowing regime, they can be more complex and occasionally more time-consuming, as weeding, trimming, mulching and replacing materials are important to keep the plantings healthy and attractive. Mulched planting beds are not suited for heavy foot traffic, so incorporating footpaths may help guide pedestrians to preferred crossing points.

4.3.1 Requirements.

Section 5 includes parkway landscaping requirements for arterial streets. Section 6 includes parkway landscaping requirements for collector and local Streets.

4.4 SIGHT DISTANCE TRIANGLES AT INTERSECTIONS

Sight distance generally refers to the line of sight from a driver at an unsignalized intersection to approaching vehicles that the driver needs to see in order to safely enter traffic.

4.4.1 Requirements.

A visual sight distance triangle, free of any structures or landscape elements must be maintained at street intersections and driveways, as required in Figure 7-16 in the *Larimer County Urban Area Street Standards*. Sight distance triangles must be shown on plans, and plants and boulders within the sight distance triangles must meet height restrictions. The following note should be included on applicable plan sheets: “SIGHT DISTANCE TRIANGLE: BOULDERS AND ULTIMATE PLANTS HEIGHTS MUST NOT BE TALLER THAN 24 INCHES ABOVE FLOWLINE WITHIN SIGHT DISTANCE TRIANGLE.” The note may also refer to Section 4.4 of these Standards and Figure 7-16 of the *Larimer County Urban Area Street Standards*.

Deciduous trees may be allowed to encroach into the clearance triangle provided that the lowest leaves must be at least 8 feet from grade and are spaced so that they do not obstruct line of sight. For trees less than 10 feet tall, the lowest leaves must be at least 6 feet from grade.

4.5

LOW IMPACT DEVELOPMENT – STORMWATER MANAGEMENT

In a "Low Impact Development" (LID) approach to streetscapes, landscaped parkways and medians are depressed rather than raised, to help manage stormwater runoff closer to the source. Depressed landscape areas are designed with special soil mixes, corresponding plantings, and other design techniques to infiltrate and filter runoff, instead of concentrating and conveying all runoff to centralized detention and treatment facilities.

The City's Stormwater Criteria Manual, which governs the management of stormwater in the city, describes design and maintenance techniques applicable to streetscapes.

4.5.1 LID in Public Right-of-Way.

LID techniques and technologies are allowed on a case-by-case basis within public right-of-way, provided the drainage patterns and the infrastructure allow for such measures to be used. LID will not be allowed near bus stops or other roadway areas carrying heavy (weighty) vehicle loads. No infiltration systems will be allowed within or under pavement in public right-of-way.

4.5.2 LID streetscape projects.

In any streetscape where a LID approach is used, Streetscape requirements under this manual shall be adapted or modified as needed per the Stormwater Criteria Manual. The project description must include expected lifespan and any remediation needs for the LID based on silt load. LID maintenance must be defined by the development agreement for the project, if applicable.

SECTION 5

Arterial Streets

The city's arterial streets are complex and expensive public infrastructure, combining virtually all utility and transportation systems of the city. Arterial streets have a functional purpose in addressing needs for traffic and utilities. The City's Comprehensive Plan also recognizes the less tangible purpose of streets as public space. As high-visibility public space, arterials create first impressions, are experienced by all residents on a daily basis, and play a large role in determining the character and conveying the civic intention of the City of Fort Collins.

Arterial streetscapes vary widely: from the Downtown core, to suburban residential areas, to the Natural Areas in the Poudre River valley.

Some arterial streets feature medians within street corridors and roundabouts. In addition to managing traffic, medians provide high-visibility space for landscaping and provide a refuge for pedestrians crossing the road. Medians can humanize the scale of a wide street and add beauty and civic identity. Medians are a highly visible mainstay of urban design, and thus are a major aspect of the City's streetscape efforts.

5.1

ARTERIAL STREETSCAPES MAP

The Arterial Streetscapes Map recognizes differences between various roadways throughout the city. It indicates where a "Standard Arterial Streetscape" approach should apply, and where other corridor segments and gateway intersections warrant their own tailored approach to streetscape design and management.

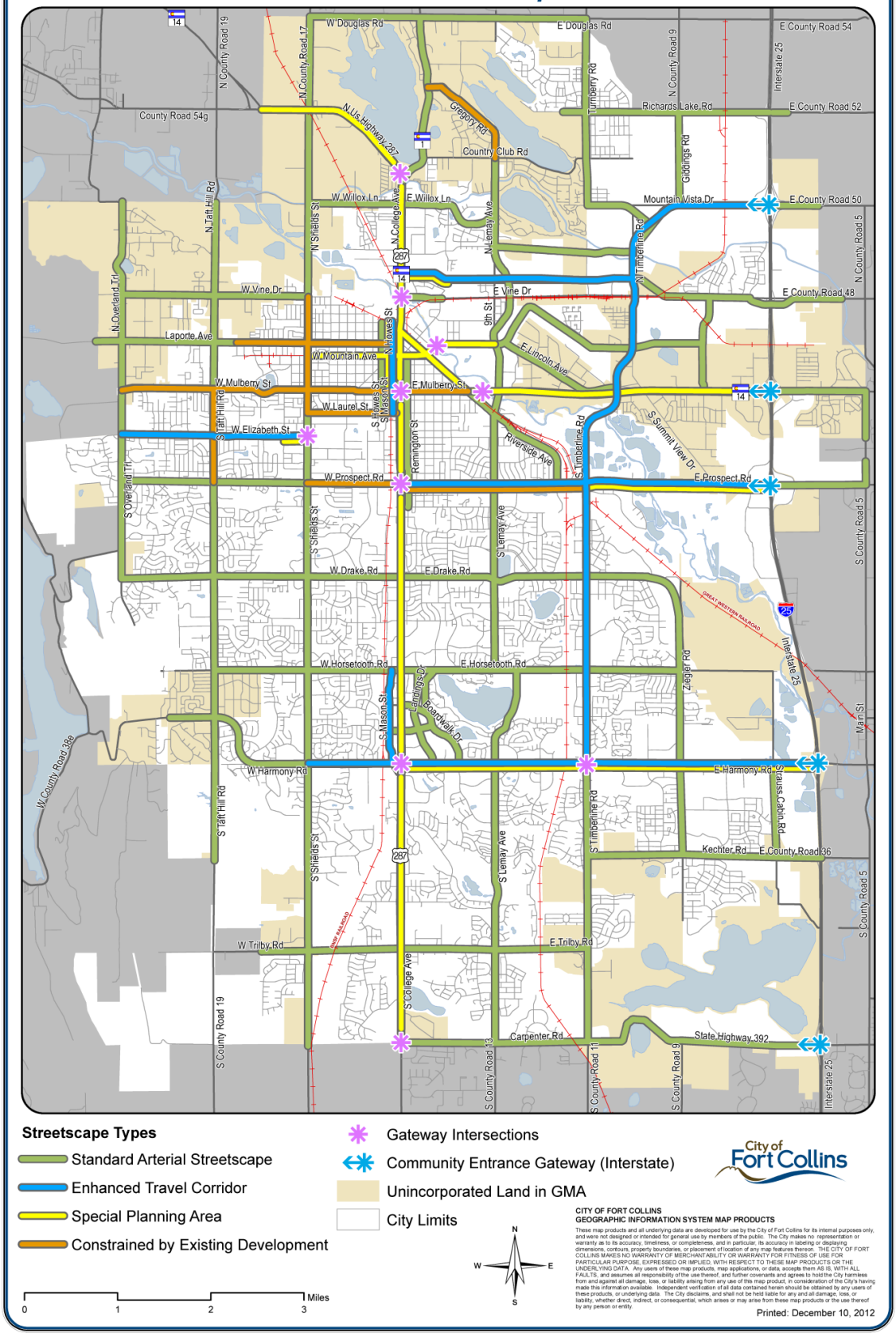
The Map works in conjunction with design standards in the following chapters to guide investment in streetscapes throughout the city.

The types of Arterial Streetscapes and Gateways are:

- Standard Arterial Streetscapes.
- Enhanced Travel Corridors.
- Special Planning Areas.
- Streetscapes Constrained by Existing Development.
- Gateway Intersections.
- Community Entrance Gateways (at Interstate 25).

Streetscape Design Standards and Guidelines

Arterial Streetscapes



Streetscape Types

- Standard Arterial Streetscape
- Enhanced Travel Corridor
- Special Planning Area
- Constrained by Existing Development

- Gateway Intersections
- Community Entrance Gateway (Interstate)
- Unincorporated Land in GMA
- City Limits

0 1 2 3 Miles

City of Fort Collins

CITY OF FORT COLLINS
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5.2

ARTERIAL STREETSCAPE DESIGN: STANDARD ARTERIAL STREETSCAPES - MEDIANS

The primary focus of "Standard Arterial Streetscapes" is on medians, including those within roundabouts. While many arterial streets have medians, some do not.

Median standards emphasize a mix of perennials, grasses, shrubs, and tree groupings, with a mulched ground surface. These standards aim to reflect Fort Collins's western regional character by using plants with low water requirements that are adapted to the harsh roadway environment.

Planting compositions must include:

- Varied plant forms, textures, and foliage in addition to flowers that provide interest throughout changing seasons.
- Coordinated, repeating groupings of plants to form an overall pattern.
- Accent groupings to add detail and variation within the overall pattern.
- Related elements such as mulches and boulders.

When designing arterial streetscapes, strong consideration should be given to the safety of maintenance crews and the traffic impact of the necessary safety protocols used during maintenance.

5.2.1 Median width measurements.

All references to median widths are from back of curb to back of curb.

5.2.2 Median grading.

The ground surface in landscaped medians shall be crowned with a high point in the center, with slopes not to exceed 12:1 or approximately 8.3 percent. This standard shall not apply where a median has a cross slope due to opposing traffic lanes and curbs having different elevations, such that a crown may not be feasible; nor shall this standard apply where a LID approach has been approved.

5.2.3 Median grading in roundabouts.

The ground surface in center medians in roundabouts shall be crowned with slopes not to exceed 12:1 or approximately 8.3 percent. The intent of this standard is to increase the visual prominence of landscaping, and work in conjunction with planting and hardscape elements to achieve year-round screening of visibility across the roundabout to a height of at least 4 feet.

5.2.4 Median planting general approach.

Tree groupings and mixed plantings of other plant types must be established and maintained in medians that are at least 6 feet wide, except where safety or sight distances would be impacted. Medians less than 6 feet wide must be paved rather than planted. Paving options are discussed in section 5.2.14.

5.2.5 Median tree groupings:

- Canopy shade trees, ornamental trees, and evergreen trees must be planted in groups of three, five, or more to the extent reasonably feasible, and grouped so that no more than three trees in the grouping are of a single species. Open intervals must be provided between the groups.
- Open intervals between tree groups must constitute 30-60% of the length of a given median. These percentages are intended to convey a general proportion rather than a precisely measured formula.
- Determination of the open intervals must be based on the design intent and growth assumptions for trees over a given time frame.
- Where median length allows, repetition of tree groupings is encouraged.
- Tree species diversity must meet requirements in the Fort Collins Municipal Code and Land Use Code.

5.2.6 Tree separation from median edges.

Trees must be separated from concrete edges as required in this Subsection based on assumptions for growth and pruning over a given time frame. The following minimum separations must be provided:

- Ornamental trees – 2.5 feet from back of curb
- Large evergreen trees – 9 feet from back of curb
- Small evergreen trees – 7 feet from back of curb
- No columnar or low-branched trees are allowed unless there is safe clearance (18 inches) between the back of curb and the tree at mature size
- No columnar or low-branched trees are allowed in sight distance triangles
- No trees are allowed in medians less than 6 feet wide

5.2.7 Street widening.

- Wherever roads are widened, retain existing trees to the extent reasonably feasible. Land Use Code Tree Preservation and Mitigation sections should be applied.
- The Landscape Plan should include tree protection guidelines that refer to parkway width (10 feet minimum on arterials, 8 feet minimum on all other streets), or median size, installation of irrigation, and who maintains irrigation.

5.2.8 Staggered median tree groupings if space permits.

Tree groupings may be staggered rather than aligned in straight rows, where median width permits a stagger of at

least 2 feet. In narrower medians with inadequate space for staggered groupings, trees may be required to be planted in straight rows.

5.2.9 Mixed plantings.

Mixed plantings of perennials, ornamental grasses, shrubs, and shrubby trees must be installed and maintained to cover approximately 50% of the median area with living material within 5 years of initial planting, based on growth and maintenance assumptions made by the designer. No more than 50% of the median area may be covered by nonliving material.

- Mixed plantings must be composed of groups of at least 3 plants per group, with each group composed of a single species.
- Mixed plantings must be arranged in an informal pattern rather than formal rows or geometrically-shaped groupings. The informal pattern must include coordinated, repeating groupings of plants in an overall composition, rather than random placement.
- Mixed planting standards apply to all medians 6 feet wide or wider.
- Perennials must be planted no closer than 12 inches from the back of curb. Shrubs must be planted so that they are no closer than 12 inches from the back of curb at mature size.
- Ornamental grasses must be limited to large groupings. The proportion of ornamental grass must be limited to no more than 10% of the total number of plants.
- There must be no understory plantings within a 5-foot diameter of existing or proposed tree trunks.
- Plantings and plant groupings must be spaced or arranged to allow safe passage for maintenance workers through medians.
- Plant symbols depicted on the Landscape Plan must represent full growth habit of plants. Height and width of plants at full maturity must be included in the plant table.
- Every plant must be identified with a unique symbol that includes the first two letters of the genus and species, e.g. Quercus macrocarpa (QU MA).
- The use of perennial groundcover plants is encouraged to help with weed control, erosion, and loss of mulch to wind and water events.

5.2.10 Mixed plantings – two options for intensity.

Two options for mixed plantings are allowed:

- Perennial Garden Style.
- Shrub Garden Style.

Perennial Garden Style: This option emphasizes the maximum degree of

planting intensity, color, and variety, with perennials used for the full length of a median. This results in a higher number of different plant groupings and a higher total number of plants to achieve approximately 50% plant coverage.

Shrub Garden Style: This option allows the use of larger shrubs and shrubby trees to achieve approximately 50% plant coverage with a lower number of different plant groupings, lower total number of plants, and decreased maintenance needs.

5.2.11 Perennial Garden Style requirements.

At least 4 groupings of perennials or ornamental grasses, and up to 3 groupings of shrubs per 250 square feet must be planted and maintained, with emphasis on providing color and/or texture over a long growing season. Groupings must be composed of a single species with at least 3 plants.

5.2.12 Shrub Garden Style requirements.

Up to 3 groupings of shrubs per 250 square feet must be planted and maintained, with emphasis on color and/or texture over a long growing season. Groupings must be composed of single species with at least 3 plants.

5.2.13 Decision on options.

The garden style option to be used in any project must be approved by the Director based on consideration of the relative importance of a given median to community image, intensity of adjacent land uses, the width and length of the median, traffic control requirements for maintenance, and City budget considerations. In general, the Perennial Garden Style is more appropriate in higher-activity, mixed-use areas. The Shrub Garden Style is generally more appropriate in residential and other lower-activity areas. The garden styles can also be combined, such as Perennial Garden Style at the ends of a median and Shrub Garden Style in the middle of the same median.

5.2.14 Median noses - planting.

Median noses that are 6 feet wide may be planted with low mixed planting under 30 inches in height from the flowline. Median noses with a width of 6 feet or less must be paved with concrete. On a case-by-case basis, it may be an option to embed boulders or cobbles in the concrete, stamp a pattern, or use pavers for visual interest.

5.2.15 Plants and mulches in conjunction.

Plant groupings must be designed in association with either cobble/stone mulch or organic mulch. Plants selected to feature green leaves and flowers are generally complemented by organic mulch, while stone mulch can detract from their effects. Stone mulch can complement evergreens, other plants selected to feature distinct forms or textures, and xeric plants with grey-green foliage.

When mulches are mixed, the patterns must be in sweeping curves, and not rectangular blocks or strips along the edge.

5.2.16 Mulches.

Organic mulch, consisting of undyed shredded woody material, must be used either alone or in combination with stone mulch to enhance visual interest. When combined, the mulch pattern must be designed in coordination with plant groupings and extend across the full width of the median. These patterns should flow in sweeping curves rather than forming rectangular blocks, linear strips, or edging along the median.

Stone mulch, if used, must consist of 2 to 4-inch stone combined with groupings of 4 to 12 inch stone that is hand placed as accents for visual interest and to separate abutting organic and stone mulches. Larger stone should be placed first, to be embedded, mingled, and settled with the smaller stone rather than loosely dumped.

5.2.17 Boulders.

Boulders may be used in medians with a curb height of at least 12 inches, to structure and complement plant groupings. Boulders must be set back at least 12 inches from back of curb and must have a maximum height of 18 inches above curb. They must be designed and placed in deliberate groupings to be embedded and mingled with the planting and mulch design pattern, and any low walls or slopes. They must be placed prior to planting and mulching, and slightly sunk into the ground. Boulders must be tan Masonville sandstone quarry blocks, rounded river boulders, or weathered moss rock boulders.
Boulder selection must be based on continuing an established theme, or establishing a theme where none exists.

5.2.18 Median hardscape – edges and paving.

Hardscape treatments depend on different median widths and different contexts throughout the city, must comply with the following requirements:

A. In median areas that are at least 6 feet wide, a barrier curb edge must be installed where a project includes 1) a new median, or 2) an existing median that lacks splash blocks or has splash blocks that warrant replacement. The barrier curb must be at least 8 inches tall as measured from the flowline, and the top of curb must be at least 12 inches wide with a maximum slope of 8.3 percent. The purpose of this standard is to provide additional depth for planting areas, space for maintenance personnel, an additional correction barrier for vehicles leaving the roadway, and a visual design that complements the curb and gutter. Where a median tapers to less than 6 feet, the curb must return across the median to enclose the upper landscape area.

   The following exceptions to the barrier curb shall apply:

   1) Sloped concrete splash blocks with integral tan tint and exposed aggregate finish may be used in lieu of a barrier curb if a median project is located in a street segment or area of the city where existing splash blocks have a previously established theme and are expected to remain for a long term.

2) Where a median is less than 6 feet wide, the edge must be a standard 6-inch curb with no barrier curb or splash block.

B. Along existing and proposed median corridors with median landscaping and limited vehicular access, a vehicular pull-out must be provided for maintenance vehicle parking.

C. Median areas under 6 feet wide must be paved rather than planted. Paving must be rectangular concrete or brick pavers set on a concrete base. On a case-by-case basis, it may be an option to embed boulders or cobbles in the concrete, stamp a pattern, or use pavers for visual interest.

The following exception to pavers shall apply: where existing tan exposed-aggregate concrete median paving establishes a prevailing theme, a median under 6 feet wide may be paved with tan exposed aggregate concrete.

5.2.19 Roundabout planting and hardscape.

Roundabout central medians in Standard Arterial Streetscape areas must be developed and maintained with tree groupings and mixed plantings in the Perennial Garden Style, with boulders and a mulched ground surface. Landscape walls may be included to reinforce the pattern and provide year-round structure for plantings. Any landscape walls should be built from locally sourced and readily available materials so that replacements can be easily found if necessary.

Apron paving and any special curbs must be designed for visual interest with tinted, textured concrete, pavers, or similar material. Aprons must be wide enough for maintenance vehicles to park without restricting the turning movements of oversized vehicles.

Irrigation controllers and backflows must be located in the center of the roundabout or in the parkway to avoid damage from vehicles.

Radial median arms must be paved in single-lane roundabouts. Radial medians arms in double-lane roundabouts may be planted with landscaping with a height of less than 30 inches from flowline. During maintenance, City crews will close one vehicle lane on each side of the radial median arm. Double-lane roundabouts must be designed to allow for normal and oversized traffic flow during maintenance operations.

Design of each individual roundabout must be unique unless multiple roundabouts are related in a pair or group as part of a single traffic management project. Design elements include planting themes, plant species, apron paving, and other hardscape details.

5.3

ARTERIAL STREETSCAPE DESIGN: STANDARD ARTERIAL STREETSCAPES - PARKWAYS

The City maintains some arterial street parkways, with exceptions where other arrangements are made with another entity. Turf-type grass provides a range of benefits as a solution to arterial

street parkways as described in Section 4. The benefits described are relevant for all street classifications, but are particularly relevant for arterials, which form a continuous city-wide framework of public space.

5.3.1 Irrigated Turf-Type Grass.

Parkways in Standard Arterial Streetscapes shall consist of turf-type grass (or turf-type grass alternatives) and street tree plantings as described in Chapter 4. Appropriate irrigation, including dedicated irrigation for trees must be provided to maintain health of plantings with efficient use of water.

5.4

ARTERIAL STREETSCAPE DESIGN: ENHANCED TRAVEL CORRIDORS

Standard Arterial Streetscape standards may or may not be adequate and appropriate for design and maintenance of Enhanced Travel Corridors (ETCs), depending on unique circumstances in each ETC.

ETCs are intended to evolve as a framework that incorporates and supports high frequency transit with special emphasis on walkability and bicycling.

5.4.1 Tailored streetscape approach.

For streetscape projects where previous ETC plans do not define a streetscape approach, the Standard Arterial Streetscape standards in Section 5.2 shall be considered as the minimum requirement for the level of quality and investment.

Design and maintenance shall then be adapted to unique circumstances in each corridor as appropriate, based on study of and response to:

- Guiding policies for ETCs.
- Established precedents in the corridor that are consistent with the vision and policies for ETCs.

Examples of permissible design variations include:

- Planting patterns to reinforce the pattern of transit facilities.
- Hardscape elements – edge treatments, paving, planters, and the like, particularly where related to transit stops and shelters.
- Urban design amenities in a coordinated program, particularly including paving, furnishings, and structures at transit stops and shelters.
- Safety considerations for maintenance workers and the impact of safety protocols to the traveling public.

In all cases, design must include repeating elements to create a theme for the corridor and avoid clutter of unrelated elements.

5.5

ARTERIAL STREETSCAPE DESIGN: SPECIAL PLANNING AREAS

Special planning areas have subarea plans, corridor plans, or other planning documents that recognize their unique context and character. The level of

specific direction for streetscapes varies among the plans.

These areas warrant their own distinctive streetscapes with tailored design and maintenance characteristics.

5.5.1 Tailored streetscape approach.

For streetscape projects where plan documents are not definitive, the Standard Arterial Streetscape standards in Section 5.2 shall be considered as the minimum requirement for the level of quality and investment, and may be considered as a reference for design.

Design and maintenance shall then be adapted by project designers and staff based on study of and response to the context and any established precedents that are consistent with the vision and policies for the area, and are thus expected to remain.

Examples of permissible design variations on the Standard Arterial Streetscape include:

- Distinct patterns of trees and other plant groupings.
- Signature plant species.
- Hardscape elements - such as edge treatments, paving, low planter walls or landscape walls, and the like.
- Urban design amenities such as paving, street furnishings, and transit stop shelters or other themed structures in a coordinated program.

In all cases, design must include repeating elements to create a theme for the area and avoid clutter.

5.6

ARTERIAL STREETSCAPE DESIGN: CONSTRAINED CORRIDORS AND SEGMENTS

These are arterial corridors and segments where the Standard Arterial Streetscape is not feasible due to physical constraints of existing development. Typically, both parkways and medians are constrained.

5.6.1 Tailored streetscape approach.

Streetscape projects in these areas shall incorporate aspects of a Standard Arterial Streetscape to the extent reasonably feasible. The allocation of available space and the compromises on each component of the design shall be determined on a project-by-project basis.

The most important aspects to consider in the streetscape approach are safe sidewalks, street trees as described in Chapter 4, the safety of maintenance workers, and the impact of safety protocols to the traveling public.

5.7

ARTERIAL STREETSCAPE DESIGN: GATEWAY INTERSECTIONS

Gateway intersections are exceptional locations where the Standard Arterial Streetscape should be augmented with additional intensity of streetscape development in any capital projects. These locations warrant the highest

level of investment for design, construction and maintenance.

The intent is to highlight entryways into the city and edges of districts within the city. The locations consist of intersections, whether signalized or roundabouts, extending outward as appropriate to include medians and parkways associated with the intersection.

5.7.1 Components.

Streetscape projects at gateway intersections must be enhanced with a coordinated program of components including at least four of the following, with consideration given to the likelihood of damage and the ability for easy repairs:

- Plantings of annual flowers in beds or large pots. These should be placed as far as possible from traffic while maintaining truck access for weekly maintenance and fertilization. Annuals must be on dedicated irrigation zones that are accessible for repair.
- Railings or low walls.
- Bollards.
- Pedestrian lighting/ other specialty lighting.
- Columns, pylons or other urban design structures.
- Signal or light pole treatments.
- Color themes in repeated components.
- Special paving.
- Sculpture or other public art.

5.8

ARTERIAL STREETSCAPE DESIGN: COMMUNITY ENTRANCE GATEWAYS (I-25)

Interstate 25 interchanges act as major community entrances, in conjunction with the arterial streets leading into Fort Collins from the interchanges.

Future improvements to the interchanges are expected to include gateway design features to reinforce the community entrance role.

Design and management of any such interchange improvements, and arterial streetscapes near the interchanges, may present opportunities for coordination.

For example, any interchange gateway features may be appropriate to extend westward along a segment of the arterial streetscape. If such features are not appropriate to be extended, they may still influence, or be influenced by, the character of the arterial streetscape.

SECTION 6

Collector and Local Streets

6.1 PARKWAY LANDSCAPING

Streetscapes along collector and local streets typically consist of parkways only. The primary purpose of parkway landscaping is to support street trees and complement them in serving multiple functions:

- Define streets as the framework of public space within which individual properties fit.
- Contribute to the attractiveness and visual interest of the street edge.
- Mark the transition from public to private space.
- Blend public interests in street infrastructure with interests of abutting property owners who are required to maintain these parkways by City Code.

6.1.1 Two approaches.

Two main approaches to landscaping parkways are allowed in collector and local streets: turf-type grasses, and mulched planting beds. Pros and cons of each are discussed in Section 4.In both approaches, appropriate irrigation must be provided to maintain the health of plantings with efficient use of water.

In areas where there is no development plan that specifies parkway landscaping, the owner of the property abutting the parkway may select either approach, regardless of any homeowners association (HOA) covenants that may apply to the development, and shall be responsible for the installation and maintenance of the parkway landscaping in accordance with Section 24-42 of the City Code.

6.1.2 Approved development plans govern.

In developments with approved landscape plans, the parkway landscaping must be in accordance with the plan.

A HOA, or a property owner with notice to and opportunity for comment from the HOA, may request a Parkway Landscaping Amendment to an approved plan for parkway landscaping. Such a request by a property owner shall be limited to the parkway strip abutting the lot of the property owner and shall be reviewed by the Director in accordance with Section 6.3.10(E) of the Land Use Code.

6.1.3 New development landscape plans.

Where a developer desires to offer non-turf-type grass options to homeowners, the landscape plan must contain notes and drawings specifying options for non-turf ground cover plantings, with consistent mulch and a recommended plant palette. The landscape plan notes must also recommend a generic irrigation design.

6.1.4 Turf-type grass.

Turf-type grass is allowed, as discussed in Section 4. The choice of grass species and variety can make a major

difference in water use needs, ease of establishment, survival of the grass, weeding, mowing, and renovation requirements.

6.1.5 Boulders.

Boulders must be set back at least 2 feet from back of curb and at least 2 feet from the edge of the sidewalk. Boulders must have a maximum height of 12 inches above curb.

6.1.6 Mulched planting beds.

Non-turf ground cover plantings are allowed, including mulched planting beds and ground cover plantings. With an understanding of plant selection and proper irrigation and maintenance, these plantings can provide seasonal interest with little water required.

Property owners are encouraged to incorporate choices that provide a degree of congruence with neighboring properties in terms of mulches and character of plantings.

6.1.7 Requirements for non-turf ground cover plantings:

A. Landscaping must be designed, installed and maintained so that at least 50% of the area is covered with live plant material within 3 years from installation.

B. Plant materials must be under 2 feet tall if within 5 feet of a driveway and under 3 feet tall in other areas. Owners are encouraged to select plants that maintain these height limits with little or no pruning.

C. Plant materials must not obscure the line of sight for traffic or obstruct the sidewalk. Plantings of any height that obstruct the line of sight or cause safety concerns may be required to be kept trimmed to a lower height or removed so visibility is provided/maintained.

D. No fences or thorny/prickly plant material are allowed.

E. In mulched planting beds, the soil surface must be 2 to 3 inches below the curb and sidewalk to allow for mulch to be contained. To avoid clutter, no additional timbers, concrete products, plastic or metal edging, or similar material shall be included.

   Exception: if edging is needed to keep turf-type grass out of mulched areas (perpendicular to the street) such edging must be flush or within 1 inch of the ground surface, so it is not a visible element and to prevent exposed sharp edges of the edging.

F. Plant materials and mulch must be kept off the street and sidewalk.

G. Avoid cutting tree roots when converting an established turf-type grass parkway to a planting bed.

H. Within a tree's dripline, minimize grade changes to protect the tree roots.

SECTION 7

Maintenance Standards

The purpose of this Section is to foster a consistent, high-quality appearance for all streetscapes, whether maintained by the City or its agents, or by private developers, businesses, or individuals.

Given the high visibility of city streetscapes, the public is able to observe both the maintenance practices and the results of that maintenance. Public perception of a well-maintained landscape is shaped by practices that promote the health of landscape materials, ensure a neat and well-cared for appearance, and that contribute to the City's water resource sustainability goals. Quality maintenance is a function of workmanship, funding, expertise, and technique. These standards are designed to ensure that streetscapes are cared for in a manner that reflects the high regard that citizens have for these important public spaces. In general, all landscaping must be maintained in healthy condition with a neat and attractive appearance throughout the growing season. Irrigation systems, structures, and sidewalks must be maintained to represent the original integrity of the design and installation.

7.1

TREE MAINTENANCE AND MANAGEMENT REQUIREMENTS

7.1.1 Separate standards document.

A separate document, the *City of Fort Collins Tree Management Standards and Best Management Practices,* contains the City's standards for planting and maintenance for all trees in the public rights-of-way and applies whether the work is performed for the City contractually, by the City, or by private entities or individuals. Exceptions to the standards and practices require written approval of the City Forester.

7.1.2 Permits for tree work.

A permit must be obtained from the City Forester before planting, pruning, or removing any tree or shrub within the public right-of-way of any street or sidewalk. Businesses performing this work must be licensed by the City. No tree shall be cut back in such a manner that its health will be impaired or it creates an unsafe condition. An exception to this rule may occur to provide emergency relief of an immediate danger to persons or property. Any such emergency procedures must be reported promptly to the City Forester with plans for completion or follow-up work submitted for approval. See the *City of Fort Collins Tree Management Standards and Best Management Practices* for details on acceptable pruning practices.

7.2
MAINTENANCE RESPONSIBILITIES

Maintenance responsibilities vary among different street types, and with specific circumstances of abutting properties.

7.2.1 Maintenance responsibility standards and requirements.

Unless otherwise specified in a written agreement, the following maintenance responsibilities and requirements apply.

A. Street trees located on the City right-of-way are the responsibility of the City Forestry Division to manage, maintain, and replace, regardless of who maintains the surface.

Exception: some streetscape projects include a warranty period for establishment of newly planted trees and/or a development agreement in which the project is responsible for maintenance.

B. Medians irrigated by a City-owned water source in arterial streets will be maintained by the City.

Exception: some streetscape projects include a warranty period for establishment of median landscaping and/or a development agreement in which the project is responsible for maintenance.

C. Parkway landscaping on collector and local streets shall be maintained by the adjacent property owner in accordance with City Code.

D. Parkway landscaping on arterial streets will be the responsibility of the City if there is no developer, individual, organization, or homeowners association that enters into an agreement with the City to maintain them, or that can be fairly assigned the maintenance responsibility based on their unique benefit.

E. The following three other different scenarios for planting and continuing maintenance are possible, depending on circumstances:

1) The developer installs the landscape and the City takes responsibility for tree maintenance after a warranty period for full tree establishment during which time specific obligations are met. The landscape (turf-type grass, other plantings, mulches, irrigation) continues to be maintained by the developer, homeowners association, or other responsible party.

2) The developer installs the landscape and, after meeting required obligations during the first two years after installation, the City takes responsibility for both tree and landscape maintenance.

3) The landscape is part of a City capital project, and a contractor does the landscape work. Following final completion, the City is responsible for tree maintenance and may or may not be responsible for landscape maintenance.

7.3

ACCEPTANCE OF NEW ARTERIAL STREETSCAPE PROJECTS FOR CITY MAINTENANCE

7.3.1 Streetscape installed to City standards.

Any new streetscape landscaping not designed and installed to these standards may be rejected by the City Parks Department for inclusion in its maintenance program. Developers and City capital projects must notify the City Parks Department and conduct an inspection with Parks and Forestry Division staff at the end of the warranty period. Any defects in the landscaping or irrigation system must be corrected by the project that installed the streetscape.

7.3.2 Inspections.

- Inspections must be completed at major milestones during the installation process. Contact Parks and Forestry Division staff for a list of milestones.
- Parks will inspect plants twice per year, in the spring and late summer of the warranty period to assess plant mortality and replacement needs.
- Replacements must be completed:
    - Early enough in the growing season (no later than September) to allow for establishment of trees and plants before irrigation is turned off.
    - Before the end of the growing season while replacement plants are still readily available. Lack of availability of the correct varieties could delay replacements until the following growing season.
    - Refer to the Forestry Division for optimal tree planting time requirements.

7.4

GENERAL MAINTENANCE STANDARDS

7.4.1 Trash.

Trash must be removed on a regular basis and before every mowing.

7.4.2 Turf-type grass.

Turf-type grasses that can be maintained at 3-inches or less according to best practices for turf-grass maintenance must be maintained at a 3-inch cut during the growing season. Trimming must be concurrent with mowing, to match height of open turf-type grass, around mowing obstructions such as trees, curbs, and vacuum breakers. Extra care must be taken to avoid damaging tree and plant material with trimmers and mowers. Turf-type grass must be edged concurrent with mowing to prevent growth over edges. Visible clippings must be removed from sidewalks and streets. Any irrigation tree rings damaged by mowing or trimming must be repaired immediately.

Turf-type grasses that cannot be maintained at 3-inches or less according to best practices for turf-grass

maintenance must be maintained at a maximum height of 12 inches.

7.4.3 Shrubs.

Shrubs must be pruned as needed to: 1) remove dead or diseased branches; and 2) support plant health and vigor. Dead shrubs must be removed and replaced immediately. Shrubs must not extend over the curb or sidewalk. Shrubs that create sight line or access problems must be removed and replaced with a more appropriate plant species.

7.4.4 Perennials.

Perennials must be deadheaded and trimmed throughout the growing season as appropriate for the health of each species. Depending upon plant needs and seasonal interest, perennials and ornamental grasses shall be cut back in late fall or early spring prior to new growth. Dead perennials must be removed immediately and replaced per the design intent.

7.4.5 Annuals.

Planting of annuals in the spring must be in designated annual flower beds or pots. Annuals must be regularly deadheaded of spent blooms. Annuals must be removed in the fall after the first hard frost.

7.4.6 Mulch.

Mulch must be replenished as needed to maintain complete coverage of the soil surface with a depth of 2 to 4 inches. In addition to careful placement and reduced depth underneath plants, mulch should be dished away from the base of plant material to avoid burying leaves or tender stems. Contact the Forestry Division for additional mulch requirements specific to trees.

7.4.7 Weeds.

All landscaped areas must be kept free of weeds and invasive grasses. Weeding may be done manually or by the use of herbicide and/or pre-emergent. The use of any restricted-use herbicide or soil sterilant is prohibited. In accordance with Best Management Practices, the effectiveness of the herbicide must be monitored and the weed management plan adjusted accordingly.

7.4.8 Off-Season Watering.

Early- and late-season watering shall be considered for trees that were planted before irrigation has been turned on for the growing season or after irrigation has been turned off for the growing season. Winter watering must be included for all trees planted late in the season.

7.5

MAINTENANCE ACCEPTANCE MEMORANDUM FOR CITY CAPITAL PROJECTS

When a City capital project involves installing a new streetscape, the project manager should coordinate with other City departments to prepare a maintenance acceptance memorandum. The memorandum should address the ultimate maintenance responsibilities for each streetscape element, including funding or personnel needs that could require a budget offer.

SECTION 8

Irrigation Standards

Proper watering systems help achieve City sustainability goals and citizen expectations for public spaces. Irrigation of parkway and median plant material is necessary to maintain a quality appearance and long-term health of streetscape plantings.

It is the City's intent to be a good steward of water resources consistent with "xeriscape" and "water-wise" principles related to social, environmental, and economic sustainability.

All irrigation systems must be designed to meet the needs of each unique landscape by following best management practices and up-to-date technology. Without proper irrigation design and maintenance, good stewardship of the landscapes is not achievable.

8.1 IRRIGATION SYSTEM DESIGN

8.1.1 General design standards.

Irrigation design and installation must comply with the following general standards:

- In parkways and medians where the Parks Division will ultimately take over maintenance, irrigation system design should follow the Parks Irrigation Standards. In parkways and medians that will be maintained by an entity other than the City, irrigation system design should follow Section 5.10.1(H) of the Land Use Code.

- Irrigation design must be done by a certified irrigation designer unless otherwise approved by the appropriate City department.

- Irrigation system design and installation must be monitored, inspected, and approved through the City Development Review process. If a streetscape is to be maintained by the City Parks Department, the City Parks Department must monitor, inspect, or approve the design and installation. Irrigation systems must be installed and maintained so that irrigation equipment will not spray onto any streets, walkways, or features or onto structures that could be damaged by water.

- The irrigation system must comply with the International Plumbing Code and with the City of Fort Collins Electrical Code.

- Any deviation in taps from the approved construction plans must be approved by City of Fort Collins Utilities or the applicable water provider prior to installation. Any water service line must be coordinated with the water provider.

- Any deviation in layout of the irrigation system from the approved construction plans

must be reviewed and approved by the City Parks Department before or during installation.

- The irrigation system must be designed to provide full coverage and matched precipitation rates.
- Xeriscape principles must be utilized in the design of the irrigation system.
- All designs must meet the industry's Best Management Practices from the Irrigation Association and ALCC (Associate Landscape Contractors of Colorado).
- Newly installed irrigation systems are subject to water audits.

8.2 CONTROL SYSTEM

Controllers must have smart controller technology, must comply with Land Use Code requirements, and must be approved by the City Parks Department. The number of stations must include two extra stations for possible future use. The controller box must be weather tight and vandal resistant with locking exterior disconnect.

8.3 INSTALLATION PREPARATION

8.3.1 Utility locates.

Locate all utilities prior to trenching and protect from damage.

8.3.2 Preliminary inspection.

The Contractor must inspect tap and any existing irrigation system, as applicable, prior to work.

8.4 INSTALLATION PROCEDURES

8.4.1 Water service connections (taps).

- Forty-eight hours prior to connection, the contractor must contact the City of Fort Collins Water Utilities, at 970-221-6700 to schedule the work for water taps and inspections. A minimum two weeks prior notice shall be given to the Water Meter Shop, 970-221-6759, for installations that will require meters and/or backflow devices larger than 2 inches.
- The contractor shall be responsible for excavation, connection to corporation stop at the water main, providing and installing the saddle for the PVC or A.C. pipe, making the connection to the existing water service, backfill and compaction, and pavement / shoulder / surface treatment replacement as needed. Soldered joints or fittings are permissible above grade or inside a vault. No solder, sealants, fluxes, pipe dope, and other materials shall contain any lead. All taps and installations are subject to approval and inspection by the City of Fort Collins Water Utilities or applicable water

utility. Install meter as specified in a precast vault. Inspection of service line (where appropriate), vault, water meter and backflow must be coordinated with the City of Fort Collins Utilities or applicable water provider.

8.5 TESTING

8.5.1 Testing requirements.

- All tests must be run in the presence of staff from the City Parks Department or from such other department that is responsible for accepting the work. Schedule all tests a minimum of forty-eight hours in advance. Repeat any failed tests until full acceptance is obtained.
- An operational test must activate each remote control valve from the controller.
- The contractor must replace, adjust or move heads and nozzles as needed to obtain acceptable performance of the system as directed by staff.
- The contractor must replace defective valves, wiring or other appurtenances to correct operational deficiencies.

8.6 COMPLETION SERVICES

8.6.1 Requirements upon completion of construction.

- When project construction is complete, the contractor must request a punchlist inspection for construction acceptance from the City Parks Department.
- The system must be demonstrated to staff from the City Parks Department.
- Product ordering information must be provided to City Parks Department staff including model numbers, sizes and styles for all components.
- Electronic as-built drawings must be provided.
- Two sets of 11” x 17” as-built drawings must be provided, showing the system as installed with each sheet clearly marked **“As-built Drawings,”** the name of the project, and all information clearly provided.
- A completed backflow test for the backflow prevention device must be provided by a licensed backflow tester.
- All excess materials, tools, rubbish and debris must be removed to leave a cleaned-up site.

- The system must be maintained in optimal working condition for the duration of time until final acceptance. Periodic adjustments must be made to achieve the most effective and efficient application of water.

8.6.2 Warranty period.

A two-year maintenance guarantee period and a five-year repair guarantee covering all errors or omissions in the design and/or construction provided by the contractor shall begin upon construction acceptance by the City Parks Division.

8.6.3 Final acceptance.

A. The contractor must schedule a final acceptance inspection by the City Parks Department. at least thirty days before the end of the two-year maintenance period. To schedule the inspection the contractor must contact the City Parks Department at least thirty days before the requested inspection date.

B. The contractor must provide operating keys, servicing tools, test equipment, warranties/guarantees, maintenance manuals, and the contractor's affidavit of release of liens. Submittal of all these items must be accompanied by a transmittal letter and delivered to the City Parks Department offices (delivery at the project site is not acceptable.)

C. The yearly backflow test report on the backflow device must be submitted to the City Parks Division.

8.7 GUARANTEE/WARRANTY AND REPLACEMENT

8.7.1 Requirements.

For a two year period following construction acceptance notice by the City, and before final acceptance and an additional three-year repair period after final acceptance, all irrigation materials, equipment, workmanship and other appurtenances are to be guaranteed and warranted against defects. Settling of trenches or other depressions, damages to structures or landscaping caused by settling and other defects must be corrected by the contractor at no cost to the City. Repairs must be made within seven days of notification by the City. The guarantee and warranty shall apply to all originally installed materials and equipment, and to replacements made during the guarantee/warranty period.

SECTION 9

Fine Grading and Soil Preparation Standards

9.1 GENERAL STANDARDS

Soil preparation is a crucial part of streetscape landscaping success. Individual projects may require specially tailored soil preparation, beyond the scope of these minimum standards, for sustainable health of specialized plantings.

9.1.1 Soil testing.

Soil tests conducted by a soil testing lab must be completed and submitted to the City for review; and recommendations in the lab reports must be followed in all cases. Generally this will include soil amendment and fertilizer recommendations; and in some cases, complete replacement of topsoil may be required.

9.1.2 Topsoil required.

If a landscape area is undisturbed, topsoil must be stripped to a 6-inch depth, or to topsoil depth as determined by field inspection. Stockpile and re-spread stripped topsoil over landscape areas after rough grades are established. If the site has been disturbed, or sufficient topsoil is not available, topsoil must be imported to achieve 6-inch depth in all landscaped areas.

9.2 SUBMITTALS

9.2.1 Soil Amendments.

Submit a representative sample and written confirmation from the supplier of soil amendment material composition including: percent organic matter, salts, nutrient composition and trademark.

9.2.2 Topsoil.

Submit a representative sample and written confirmation from supplier of topsoil material composition including: percent organic matter, salts, and nutrient composition.

9.3 MATERIALS STANDARDS

9.3.1 Soil Amendment.

Premium 3, by *A-1 Organics,* or an approved equal high quality composted material containing a minimum of 50% organic matter shall be required for all soil amendment. The mixture must be free from clay subsoil, stones, lumps, plants or roots, sticks, weed stolons, seeds, high salt content and other materials harmful to plant life. The compost must be coarsely ground with an even composition and have an acidity in the range of pH 5.5 to pH 7.0. All material must be sufficiently composted such that no original source material used is recognizable.

9.3.2 Topsoil.

Topsoil must be taken from a well drained, arable site and must be reasonably free of subsoil, stones, clods, sticks, roots and other

objectionable extraneous matter or debris. No stones or other materials over 2 inches in size shall be allowed. Topsoil must contain no toxic materials and have an acidity in the range of pH 5.5 to pH 8.5.

9.4
ROUGH GRADING OPERATIONS

9.4.1 Utility locates.

All utilities must be located prior to trenching and must be protected from damage. Required calls include but may not be limited to, Colorado 811.

9.4.2 Acceptance of rough grading by other contractors.

The landscape contractor must inspect and confirm that any rough grading from other contractors is per approved plans, and allows for 6-inch minimum depth of topsoil and specified soil amendments.

9.4.3 Clearing and grubbing.

The contractor must grub and remove unsuitable woody and rock material present in the surface grade.

9.4.4 Maintain drainage.

The contractor must take precautions to accommodate proper drainage and flow during and after grading and soil preparation.

9.4.5 Kill weeds.

Remove all weeds and apply herbicide to areas where noxious weed beds have been established and/or where seed mix is to be planted. Herbicide must be applied by certified contractors at the rate recommended by the manufacturer, after proper notification has been given, and in accordance with the chemical applicator's standards.

9.4.6 Rip planting areas.

Rip to 12-inch depth with agriculture subsoiler in all areas to receive plantings, stopping 6 inches back from any pavement. Remove all objects greater than 2 inches in diameter.

9.5
FINISH GRADING OPERATIONS

9.5.1 Topsoil placement procedures.

A. Spread 6 inches of topsoil over the entire landscaped area and grade to smooth and even lines. Establish swales and drainage as required per plans.

B. Evenly distribute soil amendment at a rate of 3 cubic yards per 1,000 square feet of area, or 1-inch depth over the entire area to be prepared. Modify the rate if a soil test or approved landscape plan recommends otherwise. Till amendments into the top 6 inches of soil. Compact to a firm, but not hard density (80% of *Standard Proctor Density* at 2% optimum moisture).

C. Trim finish grade elevations adjacent to paved areas to one inch below pavement finish grade.

SECTION 10

Grass Seeding Standards

10.1

GRASS SEEDING

10.1.1 Seed Mixes.

Seed mixes must be approved by the City Parks Department or from such other department that is responsible for approving the work based on the activity to take place, planned irrigation method, and maintenance to be performed in the area being seeded.

10.1.2 Submittals.

Certificates showing State, Federal or other inspection showing source and origin must be submitted.

10.1.3 Seed quality.

Seed must be fresh, clean, new crop seed composed of the varieties approved by the City with tested minimum percentages of purity and germination clearly labeled on the package. All seed must be at least 99.9% free of *Poa annua* and all weeds.

10.1.4 Mulch for seeded areas.

Mulch depends on the slope of the seeded area as follows:

A. For slopes 30% and less, native grass straw without weed seed and consisting of grasses as specified for the seeded application must be used (See Section 10.1.12) unless Hydromulch is used as provided in subsection B below.

B. For slopes 30% and greater: Hydromulch using *Weyerhauser* "Silva-Fiber" mulch or approved equal must be used. The mulch must not contain any substance that might inhibit germination or growth of grass seed. The mulch must be dyed a green color to allow metering of its application. See Section 10.1.13.

10.1.5 Tackifier.

Teratack III, or approved equal must be used.

10.1.6 Netting.

For slopes greater than 30%, *Soil Saver* jute netting or approved equal must be used. Netting must be stapled with No. 11 gauge steel wire forged into a 6-inch long U-shape, and painted for visibility in mowed areas. See Section 10.1.14.

10.1.7 Fertilizer.

Fertilizer must be determined and incorporated into the soil based on the results of soil testing. See section 9.1.1 of these standards.

10.1.8 Inspection.

The contractor must (1) inspect finish grade and trim where needed to obtain finish grades of one inch below adjacent pavements. (2) Verify positive drainage away from all structures. (3) Verify or complete removal of rock and debris larger than one inch from all areas to be seeded.

10.1.9 Weather for seeding.

Seed must not be sown in windy weather or when ground is frozen or otherwise untillable.

10.1.10 Methods for seeding:

A. A brillion type drill or hydraulic seeding methods may be used. Drill the seed in a manner such that after surface is raked and rolled, the seed has ¼-inch of cover.

B. Hydraulic seeding must be used in areas that are not accessible for machine methods. A hydraulic pump capable of being operated at 100 gallons per minute and at 100 pounds per square inch pressure must be used. The equipment must have an acceptable pressure gauge and a nozzle adaptable to hydraulic seeding requirements. Storage tanks must have a means of agitation and a means of estimating the volume used or remaining in the tank. Do not seed and mulch in the same operation.

10.1.11 Seeding rates.

Follow the recommended seeding rate for the specific type of seed.

10.1.12 Mulching operations for native grass areas.

Mulch must be applied at a rate of 2 tons per acre within 24 hours after seeding.

10.1.13 Hydromulching operations.

Wood cellulose fibers must be evenly dispersed by agitation in water. When sprayed uniformly on the soil surface, the fibers shall form a blotter-like ground cover that readily absorbs water and allows infiltration to the underlying soil. Cellulose fiber mulch must be added with the proportionate quantities of water and other approved materials in the slurry tank. All ingredients must be mixed to form a homogenous slurry. Using the color of the mulch as a metering agent, apply the slurry mixture uniformly over the seeded area. Apply with tackifier used at a rate of 120 pounds per acre. Unless otherwise ordered for specific areas, fiber mulch must be applied at the rate of 2,000 pounds per acre. Hydraulic mulching must not be performed in the presence of free surface water resulting from rains, melting snow or other causes.

10.1.14 Mulch netting operations.

Mulched areas over 30% slope must be stabilized with netting. If the contractor fails to net and subsequent soil erosion occurs, the contractor must re-establish the finish grade, soil preparation, seed bed, and apply netting at no cost to the City.

10.1.15 Watering.

Immediately after seeding and mulching, water the seeded area to a depth of 2 inches, but with care so that no erosion takes place and no gullies are formed. Water lightly 2 times per day and keep the seeded area moist until grass is established. Extreme care must be taken when watering sloped areas until turf-type grass is established to prevent erosion. Water these areas more often but for shorter periods of time.

10.1.16 Clean up.

All hydromulch and other mulch materials must be removed from all plant materials, fences, concrete and other areas except for the seed bed.

10.1.17 Protection of seeded areas for establishment.

The contractor must provide and install barriers as required to protect seeded areas from pedestrian and vehicular damage. Signage must be provided if needed.