



Planning, Development and
Transportation Services
Planning Services
281 North College Ave.
P.O. Box 580
Fort Collins, CO 80522-0580
970.221.6750
970.224.6134 - fax
fcgov.com/currentplanning

Guidance for Turf-to-Native Conversions in the City of Fort Collins

Background: Many Front Range residential and commercial developments are considering projects that convert non-native landscaping to native species. The City of Fort Collins is interested in supporting these projects, however, there are important differences between native and non-native species that must be considered prior to beginning the conversion. Conventional non-native turf provides a certain aesthetic and can withstand substantial foot traffic under a variety of conditions. Such non-native turfs are appropriate in certain situations and allowable by City Land Use Code [LUC 3.2.1(E)(2)(a)]. Native grass species are adapted to local soil and climatic conditions common to the Front Range and thus require substantially less water, maintenance and cost than non-native turf species. Realistic expectations and proper planning can result in a healthy stand of turf that uses less water, creates economic savings, and avoids conflicts with existing code.

Project Goals: The intent of this guidance is to assist a Turf-to-Native conversion project by outlining the aesthetic, ecological, and economic goals and expectations that must be considered; these goals will influence the process, seed mix used, and success of the project. Will a warm season or cool season mix be used? This is an important decision since warm season and cool season grasses each have unique growth characteristics, appearances, watering demands, weed management, and maintenance characteristics. For example, cool season grasses have a longer growing period, generally grow taller, and require more irrigation than warm season species. See Table 1 for more detail.

- Aesthetics
 - Are there high visibility vs. low visibility areas?
 - Using a low growing, less diverse mix along sidewalks, parkways, etc. can provide a turf-like cover and situationally appropriate vegetation that requires minimal maintenance.
 - Conversely, low visibility areas away from heavy pedestrian use can support taller, more diverse mixes that provide greater ecological benefits.
 - Are there high traffic areas?
 - A hardier species mix of cool season grasses may be needed to withstand high foot traffic, such as areas where people recreate or along parkways. Warm season grasses have a lower tolerance for foot traffic.
 - How dense do you want your turf to be?
 - If a dense turf desired, then a seeding rate of 3-4 pounds/1,000ft² might be appropriate. If a more native aesthetic is desired, then a lighter seeding rate might be appropriate.
- Ecological
 - Is improving/creating wildlife and pollinator habitat a goal?
 - Providing wildlife and pollinator is surprisingly easy in many circumstances. Common approaches range from allowing tall vegetation to remain, allowing some dead and dry vegetation to remain, and using a diverse seed mix.

- Are wildflower patches desired?
- Economic
 - What is the annual water allotment and irrigation budget?
 - Although long-term maintenance of native turf is lower than non-native turf once established, keep in mind that substantial effort and resources must be given to the conversion and establishment of native turf for it to be successful long-term. Non-native turf grasses (i.e., Kentucky bluegrass and fescues) can be very difficult to kill and weed pressure will likely be substantial during the establishment phase. Additionally, landscapers must adopt different management practices and schedules than those typically employed on conventional non-native turfs.

Table 1. Characteristics of Cool- and Warm-season Grasses		
	Cool-season	Warm-season
Growing season	Early spring to fall when temperatures are roughly 40°-75°F (approximately late Mar-Oct with a break in the hottest months of the summer)	Summer months when temperatures are roughly 70°-95°F (approximately May-September)
Growth Height	1 – 3 feet (unmowed)	1 – 3 feet (unmowed), but buffalograss and blue grama generally remain <1 foot high
Irrigation Demand	Low	Very Low
Dormant Season Appearance	Varies	Straw color
Foot Traffic Tolerance	Moderate	Low
Shade Tolerance	Moderate	Low
Appropriate Areas of Use	Less visible areas; more visible areas with increased maintenance; detention basins	Near sidewalks, streets, high visibility areas, and areas with low traffic

CONVERTING TURF TO NATIVE: This section is intended to outline the basic steps in developing a turf-to-native project plan. There are likely additional details that should be included in the implementation of a conversion project.

- Determine Existing Conditions
 - What are the existing soil and moisture conditions? Conduct a soil test for a marginal price to determine what amendments, if any, are needed.
- Conversion of Existing Turf:
 - Choose the ideal seeding date (typically during July and August) and work backwards to establish the timeline. Typically, 6 weeks are needed between beginning to kill the existing turf and beginning seeding.
 - What herbicide will be used to kill the existing turf, at what rate, and how many total applications are planned? Original turf should be actively growing at time of application. Bluegrass is a very persistent species that requires two or more applications.
 - Organic methods of killing turf, such as the lasagna method in which cardboard, mulch, and soil amendments are layered to suppress the grass beneath, may be more appropriate if your conversion area is small.
 - Are noxious weeds present that need to be addressed?
 - Does the existing irrigation system need to be altered for tree/landscape plantings, improvement of irrigation system, etc. prior to seeding? Have the Water Conservation and Forestry Departments been consulted?
- Seeding of Native Turf Species:

- Multiple passes of aggressive aeration in multiple directions are necessary prior to seeding to create opportunities for seed-soil contact
- At a minimum, a rangeland drill seeder is required, however steep slopes or inaccessible land may require other methods such as hydroseeding or broadcast.
- If wildflowers are seeded, two approaches can be used. With both methods it's helpful to have designated wildflower areas to tailor the weed management approach.
 - Seed wildflowers together with the native turf seed: With this method, careful planning is required with the use of herbicides for weed control since broadcast spraying will kill the wildflower species. Herbicide applications are best used as localized spot spraying.
 - Establish the native turf first and then seed wildflowers at a later time: This method allows for broadcast spraying of herbicides for weed control, but presents a challenge for establishing wildflowers since they will be competing against an established turf. Best practice would be to thin the turf in the designated wildflower area to create niches for wildflower seed-soil contact, seed the wildflowers, then ensure seed contact by raking or dragging implements. An alternative is to plant mature wildflowers instead of seeding.
- Will be fertilizer be used? If so, an organic, slow-release fertilizer is recommended as native species are adapted to low-nutrient soils common to the Front Range. Excessive nutrients will promote weed growth.
- Establishment Maintenance:
 - Is irrigation available to assist establishment/germination? Will temporary or permanent irrigation be used?
 - This can be a complex question to answer and will vary according to the type of project (i.e., a private residence or large development). Learn more from the City Utilities [here](#) and [here](#).
 - What is the watering schedule for the establishment period?
 - Multiple ways to detail – number of watering events per week, length of time per watering event, amount of water per watering event, etc.
 - Creating an irrigation schedule is helpful to allow your seed to establish but not overwater, thereby creating an unhealthy dependency on water and not taking full advantage of the financial and water conservation benefits native species provides. An example establishment irrigation schedule is below:

Example Irrigation Plan for Establishment*	
Frequency	Duration
Twice a day (morning and evening)	4 weeks
Once a day (morning or evening)	2 weeks
Once every other day (morning or evening)	2 weeks
Once every 3-5 days (morning or evening)	2 weeks
Once a week (morning or evening)	Till the end of the first growing season
*Adjust as necessary given precipitation and condition of plants	

- What is the mowing schedule during the establishment period?
 - In general, the less-frequent mowing to a higher height is better. Only mowing to a minimum of 6" helps to suppress weeds and maintains a higher soil moisture content. Mowing frequency should be once or twice a year, in the spring and/or the summer. 'Beauty strips', or narrow strips that are

Proposed seed mix indicating species and seeding rates for specific seeding methods
Watering plan defining the schedule, timeline, and amount of water to be used for the various stages (establishment and maintenance), how precipitation will be accounted for, etc.
Fertilization and aeration plan (if needed)
Mowing plan (frequency of mowing, mowing height, etc.)
Weed management plan

Relevant Landscape Standards: Landscape Area Treatment [LUC 3.2.1(E)(2)], Water Conservation [LUC 3.2.1(E)(3)], Streetscape Standards (2013; <https://www.fcgov.com/planning/streetscapedesign.php>), Municipal Code Article VII Section 12-120 and 130