

Condition of Turf in City Parks

Overview

- Condition of Turf in City Parks
 - Update on current conditions and photos
- Villages at Buffalo Run East Park
 - Deteriorating turf conditions 2016-2019
 - Soil conditions
 - Typical industry practices to address conditions
 - 2019/2020 remediation plans
 - Results/current conditions
 - Ongoing remediation plans

2020 Turf Conditions Throughout the Parks System

- Staffing challenges due to COVID-19 hiring freezes early in the growing season created challenges in getting irrigation systems fully operational
 - Current staffing levels have allowed Parks staff to resume normal turf maintenance and irrigation practices
- Persistent hot and dry conditions have created challenges system wide
- Current turf conditions throughout the parks system and City building grounds are in overall good condition

Freedom Park



Pioneer Park



Fairfax Park



Monaco Park



Photos taken on 7/16/2020

Stampede Park



Turnberry Park



River Run Park



Fronterra Park



Photos taken on 7/16/2020

Villages at Buffalo Run East

September 2016



Villages at Buffalo Run East

October 2017



Villages at Buffalo Run East

June 2018



Villages at Buffalo Run East

September 2019



Villages Buffalo Run East Park

- Sodic Clay Soil Conditions (extremely high Sodium content)
 - Levels several times higher than upper limit for grass growth
- Similar conditions exist at Stampede Park (VBRW), Buffalo Run Golf Course, Second Creek Open Space
- Consulted with Agronomists, soil experts, leading golf and horticulture industry consultants
- Soil and irrigation water analysis

Villages Buffalo Run East Park

- Typical industry practices implemented that did not achieve desired results:
 - Aeration, top dressing, soil conditioners and surfactants, etc.
 - Planting of seed and sod with additional soil amendments
 - Underground drainage (French drains and leach fields)
 - Heightened irrigation system monitoring and modifications

Villages Buffalo Run East Park 2019 Remediation Plan

- Changing the Soil Profile and Composition
 - Drill and Fill Machine Purchased
 - 24 drill bits: 1-1/4" wide x 12" deep, 7.5" on center
 - Removes soil, fills holes with sand
 - Gypsum applications (multiple applications per year)
 - 1.5 tons per acre
 - Cation exchange
 - Soil conditioners to off set irrigation water deposits
 - Water treatment system (injection pump)?

2020 Remediation Plan

- Drill and Fill - 42 tons dried sand introduced into soil
 - Reduces compaction of clay soil, allows water and oxygen to move through soil
- Gypsum applications – monthly (approx. 1 ton/ month)
 - Pushes salt through the soil allowing nutrients to be delivered to plant roots
- Top dressing – 44 tons of top dressing material
 - 80% organic material, 20% USGA sand based on soil sampling

2020 Remediation Plan

- Turf Grass Re-Seeding
 - 2 seed vendors consulted, provided with soil reports and site visits
 - Each vendor provided seed recommendations for the high PH and Alkalinity soil (both stressed that soil profiles changes were imperative to achieve desirable results)
 - 2 blends of PH and Alkalinity tolerant seed selected to over-seed the turf grass areas (separate areas/plots for testing)

2020 Remediation Plan

- Turf grass areas reseeded in April showed initial germination and growth within 2 weeks
 - Unfortunately, unseasonably late freezing conditions killed off some of the growth and slowed/stunted the germination of the remainder of the seed
- Reseeding of a few areas as needed occurred again in late May/early June

Results/Current Conditions

- High rate of seed germination
 - Areas filling in from seed progressing to multiple leaf stages and building healthy root structures
 - Areas filling in nicely with seed and grass blade propagation
- Drainage of soil
 - Minimal issues with standing water after large rains or irrigation that resolve themselves by draining into/through the soil

SW Corner of Turf Area



SW Corner of Turf Looking East



Ballfield Area





West Turf Area Near Basketball Court



“Quality Community for a Lifetime”

North Turf Areas



Center of Park





VBRE Ongoing Remediation Plans

- Continue to follow practices that are showing good results for turf areas
 - Drill and Fill seasonally as necessary/able (2-3/season)
 - Monthly topdressing and gypsum applications
 - Frequent aerations (deep tine - monthly)
 - Soil sampling
 - Fertilization (spring, summer, fall)
 - Heightened irrigation system monitoring and fine tuning



VBRE Ongoing Remediation Plans

- Apply practices that are showing good results for turf areas to native areas
 - Drill and Fill seasonally as necessary/able (2-3/season)
 - Monthly topdressing and gypsum applications
 - Frequent aerations (deep tine - monthly)
 - Soil sampling
 - Fertilization (spring/fall)
 - Heightened irrigation system monitoring and fine tuning



VBRE Ongoing Remediation Plans

- Native areas currently showing growth in preliminary test plots
- Seed vendors working on recommendations for alkaline and PH tolerant blends with similar characteristics and aesthetics to currently used seed blends
- Aggressive re-seeding scheduled for Fall 2020 & Spring 2021

Questions?