MINNEHAHA CREEK
WATERSHED DISTRICT
QUALITY OF WATER, QUALITY OF LIFE

Meeting: Board of Managers
Meeting date: 9/24/2020
Agenda Item #: 12.1
Item type: Board Discussion

Title: Arden Park Construction Update

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Purpose:
At the September 24, 2020 Board of Managers meeting, staff will provide an update on the final elements of the construction phase of the Arden Park restoration project.

Background:
Construction of the Arden Park restoration project, which included remeandering Minnehaha Creek and restoration of 2,100 feet of streambank, removal of a low-head dam in Minnehaha Creek, construction of a two-stage stormwater system that treats an 88-acre drainage area, restoration of floodplain wetland and upland habitat, and creation of new park trails and amenities, began in January 2019. Due to high precipitation and contractor delays in 2019, some project elements were not completed until recently. These elements are summarized below and include completion of planting along the new streambanks, repair of the stormwater swales that had become laden with sediment during construction, formal planting around the shelter building, and establishment of turf in the improved open space areas.

Summary:
Streambank planting: Minnehaha Creek through Arden Park had been ditched and straightened, had badly eroded streambanks due to flashy flows and a lack of vegetation on the streambanks, and received untreated stormwater from surrounding areas. The remeander forms a new creek alignment that slows stream flows, and creates naturalized streambanks built with fabric encapsulated soil (FES) lifts and large pieces of trees salvaged from the site to better absorb the force of high flows. The FES lifts were seeded during winter construction, and were intended to be planted in spring 2019 with native grasses and forbs. High water conditions in Minnehaha Creek throughout the growing season of 2019 prevented the vegetation subcontractor from planting approximately half of the 22,000 plants into the new streambanks. Lower flows in the creek this summer allowed for the planting to be completed, but due to some large precipitation events the FES lifts were damaged in a few locations. Those areas will be repaired late fall 2020 when the ground freezes and the contractor can safely use larger equipment along the creek. The streambanks will be further stabilized as plants develop deep root systems resilient to future high water.

Stormwater swales: The stormwater swales along the east side of Arden Park filter pre-treated stormwater from an 80-acre drainage area before the stormwater enters Minnehaha Creek. In late fall 2019, the project team observed slow drawdown of stormwater in the final two cells of the six cell system. A thorough investigation ensued to determine the cause of the slow drawdown. This included televising the drain tile within the swales, soil core sampling, two infiltration rate tests, and a review of design plans. The soil core sampling and infiltration tests determined that a layer of fine sediments covering the coarse bio-filtration media over the drain tile pipes was preventing water from efficiently percolating down to the drain tile. Based on the type of fine sediments found in the soil core sampling and observation of construction practices, it was further determined that inadequate erosion control and inlet protection within the construction site led to the deposition of fine sediments in the swales. The extent of sedimentation and resulting standing water also caused the loss of some vegetation in the two cells. In late August, the project contractor performed precise spot removal of these fine sediments in the first four cells where vegetation has established very well. In the remaining two cells, surviving plant material was removed and set aside, and the contractor used a vactor truck to remove all accumulated sediment. The cells were then replanted according to design plans. A third-party testing

company performed infiltration tests in each of the swale cells and confirmed that the drawdown rates meet project specifications.

Turf establishment and formal plantings: Before the restoration project, most of the open space in the center of Arden Park was unusable as poor drainage caused turf areas to hold standing water. A new drain tile system and improved grading in the green space around the shelter building and playground allows this area to drain well and be used by park visitors throughout the year. Construction of the new shelter building continued into early winter 2019 preventing the vegetation subcontractor from seeding the open space in 2019, and the turf areas were instead seeded in late spring 2020. However, construction compaction and inadequate watering led to poor turf establishment. The contractor recently implemented a turf establishment plan to till the compacted soils, remove large rocks, and incorporate 4-inches of compost. The open space areas were re-seeded and hydro-mulched on September 15, 2020.

In the open space areas and other popular areas of the park, heavy use by visitors has taken a toll on new plantings. To prevent trampling, the contractor and the city of Edina have worked to install temporary fencing and signage which will remain in place until plants are established.

These remaining project elements are planned to be finished by late fall 2020 at which time the project will be substantially complete. The construction project is under warranty for one year, and plant material is under warranty for three years, during which time vegetation throughout the project areas will be managed by the vegetation subcontractor. The city of Edina and the vegetation subcontractor have also entered into a separate contract for management of invasive species outside of the construction limits of the park. This will allow cohesive and efficient management of the entire site as it responds to restoration activities.