New Faces to the ESC Team

Last November two new members were welcomed to the City's Environmental Team. Tyson Cerkowniak and Jose Alvarez were promoted to the role of Environmental Analyst. Previously, both Tyson and Jose were Environmental Technicians for the City.

Jose Alvarez -
A former Marine and graduate from Augustana University 17’, Jose joined the City of Sioux Falls Public Works team in 2017. He has worked as a Wastewater Operator (Class 1) and an Environmental Technician prior to his current role. In his free time, Jose enjoys reading, drawing, board games, and the great outdoors. Jose calls Sioux Falls home and looks forward to continuing his career as a steward for the environment.

Tyson Cerkowniak -
Graduated from South Dakota State University 10’. Tyson joined the City of Sioux Falls Public Works team in 2014. Tyson has worked as a Water Treatment Operator (Class 2), a Water Quality Analyst, and currently serves as one of three Environmental Analysts. Tyson enjoys woodworking, reading, golf, and spending time with family and friends.

Jose and Tyson will join Troy Lambert in managing the City's Stormwater Program and related projects.

The Environmental Analyst Team. From left to right: (Jose Alvarez, Troy Lambert, and Tyson Cerkowniak)
The Future of Erosion and Sediment Control (ESC) Inspections in Sioux Falls

With the number and size of construction sites increasing, the Environmental team will soon have a new tool to streamline the ESC inspection process of Sioux Falls’ largest construction sites. After doing some initial research and in-field trials, the Environmental team determined a drone would be a beneficial addition to the ESC program. A drone will allow our team to conduct more comprehensive inspections in less time. In addition, this technology will allow us to reach remote areas of sites that may not be easily accessible in a vehicle or on foot.

While a drone will make aspects of the ESC inspection process easier, it will not replace fieldwork. In most cases, the drone will be used to survey perimeter controls such as silt fence or longer stretches of diversion dikes and sediment ditches. Smaller sites and core areas of larger sites will still be inspected in person. Drone work will not be conducted directly above active work areas or where people are present. Drone work is anticipated to begin later this spring once the equipment and proper licensing is acquired.
MICS – Who’s Responsible

MICS or Minor Impact Construction Sites generally, but not always, represent a single lot or construction site within a greater common plan of development. MICS are often used to transfer ESC responsibilities to an individual homebuilder or lot owner while a development is built out. With MICS, the developer takes responsibility for stormwater permitting through the State of South Dakota while signing agreements with individual lot owners. The agreements call for lot owners to take full responsibility of their site from initial permitting and construction to final stabilization.

Once a site is permitted, it is the lot owner’s responsibility to ensure the site complies with the development’s specific erosion and sediment control plan (ESCP). Individual lot ESCPs usually consist of perimeter (silt fence) and vehicle tracking controls that must be installed before any grading or excavation work begins. During the project, any sediment leaving the construction area will be the responsibility of the lot owner. Work to remove any lost sediment must be initiated by the end of the same workday.

MICS does not relieve developers of their overall responsibility to maintain the development. Maintenance of regional controls like sediment basins and inlet protection remains the responsibility of the developer. If issues arise where no one responsible MICS party is identifiable, any required cleanup or maintenance will be the responsibility of the developer. For this reason, developers must relay any MICS concerns they may have with our office as soon as possible. This will allow us to follow up in a timely manner and resolve issues before they become larger problems for the development.

A MICS project will remain active until the site meets the City’s stabilization requirement of 70 percent live cover. If the lot is sold before this requirement is met, the responsibility to stabilize will be transferred to the new owner. In this case, a Notice of Stabilization form should accompany closing documents. All required erosion and sediment controls must remain in place until stabilization is achieved.
Erosion and Sediment Controls In Focus – Mulching and Road Cuts

Mulching

Mulching is a temporary erosion Best Management Practice (BMP) that involves the application of mulching materials such as long-stemmed grass hay, cereal grain straw, or wood. Mulching materials help protect soils from erosion forces such as raindrop impact, flowing water, and wind. Mulching shall be applied within 14 days to any disturbed areas that have reached final grade or that will remain undisturbed for a period longer than 21 days. Areas that will remain in an interim condition for more than 1 year shall also be seeded.

These mulching/seeding standards also apply to soil stockpiles. During our inspections, it has been observed that many sites have stockpiles of soils or that black topsoil has been applied but, neither are properly seeded for temporary or permanent stabilization. Observing soil stockpiles or dark topsoil in place on a site will begin this 14-day clock per our inspection reporting.

All erosion and sediment control plans must include a schedule indicating the anticipated starting and completion time periods of the site grading and/or construction sequence. The schedule will include the installation and removal time periods of erosion and sediment control measures, and the time of exposure of each area prior to the completion of temporary erosion and sediment control measures.

A well-planned phasing time schedule for a project should include serious consideration for seasonal inclement weather. This schedule is useful during late fall and winter when weather conditions can make stabilization efforts difficult. When the initiation of stabilization measures is stopped due to snow cover or arid conditions, stabilization measures shall be initiated as soon as possible. Failing to plan for these common regional conditions will likely lead to extra costs associated with poorly applied and poorly maintained temporary erosion BMPs.

Our observation for proper installation of mulching includes:

- Uniform surface roughening prior to mulch application (roughly 2–4-inch clumps).
- Clean (weed/seed free) long-stemmed grass hay or cereal grain straw with at least 50 percent of the mulch being 10 inches or more in length.
- Even application of mulching materials at a rate of two tons per acre (90 percent cover).
- Mechanically anchoring material by crimping/disking it about 4 inches into the soil without cutting it.
- In situations with steep slopes (3:1 or greater) or areas with limited access, the best option may be to use hydraulic mulching spread at a rate of 1,500 pounds per acre.
These steps have been shown to be effective at protecting the soil from erosion by holding fibers in place during erosion events. Like all controls, mulching requires regular maintenance to be effective. Remulching may be required between erosion events if significant losses occur.

Below are images from this year that show varying percentages of mulching coverage.

Road Cuts

Changes to the landscape/earthwork that can lead to sediment leaving the site or accumulating elsewhere. Road cuts can also end up undermining BMPs in place by channeling flows around them. They can also channel flows to parts of the site that do not have BMPs in place to handle sediment accumulation or flowing water. For our inspection, even if it was not within the Erosion and Sediment Control Plan Narrative or landscaping site plans, these issues will need to be addressed. This would also include needing to remove any sediment that escapes the site.

Sediment accumulation that will need to be removed from a final stabilization area (left) and a road cut that channeled flow directly into the nearby stream instead of the BMPs for the area (right).
Green Infrastructure Improvements

The City’s first Green Infrastructure (GI) pilot installations were completed in 2022. The largest such installation was completed along south Covell Avenue between 28th Street and 29th Street. The area of south Covell Avenue consists of highly impervious surfaces with minimum stormwater detention. Additionally, a significant bottleneck in the storm drainage system causes severe localized flooding during heavy rain events. Rain events in 2015 and 2019 highlighted this problem.

A means to solve this issue began in 2012 when the City began offering buyouts for property owners along Covell Avenue. Green space in the area slowly expanded over the next few years. Planning for a green infrastructure project started in 2020. The centerpiece of the project is a bioretention cell that utilizes native plants and landscaping to maximize water detention and improve stormwater water quality. The area also adds aesthetic beauty to the neighborhood and an educational showcase for residents. Project design and bidding occurred through mid-2021. Construction began in October 2021 and was completed one year later. The effectiveness of the projects will be monitored throughout 2023. The City hopes that these initial GI projects will highlight their potential and promote further GI development throughout town.
Excavation of Bioretention Cell - October 2021

Final Completion of Bioretention Cell - October 2022

Stormwater Seminar
When: Wednesday, March 1, 2023
Where: Downtown Siouxland Library in combination with the monthly IRAB meeting
Siouxfalls.org\green