COLORADO
Department of Transportation

Revegetation Process Changes
Myth Busters (As of 7/26/21)

Intent of this Guidance:

The HQ Landscape Architecture Section are providing written responses to some of the common concerns and misconceptions related to the recent revegetation project delivery process changes. The intent of this dynamic document is to provide consist best practices statewide, but might need to be adjusted based on specific projects and site conditions that initiate issues or concerns by SWMP designers or authority during construction. The revamped roadside revegetation process changes are new and still under evaluation, we encourage you to contact us to dialog further on your specific project questions. Please continue to check-in to see additional proposed solutions to the questions and issues that arise from the project delivery process.

DESIGN PHASE:

1. **Myth - Topsoil testing is required on all CDOT projects and is a requirement of the CDPHE Stormwater Permit.**
   Answer –The topsoil testing process has been developed as a tool to help inform Stormwater Management Plan designers. The topsoil depth survey and lab results will improve the success of revegetation and should be used in the following design phase decisions:
   - Determine the locations of the site where existing topsoil is available and the average depth that can be salvaged.
   - Determine if existing topsoil should be salvaged and stockpiled or if other topsoil management strategies should be used on the project.
   - Determine seed mix composition based on pH and salinity lab results.
   - Identify chemical or physical limiting factors to native plant establishment.
   - Provide data to correctly specify the 212 topsoil amendments.

   Topsoil testing should only be conducted when the project plan to reuse on-site topsoil (use pay item 207-00700).

2. **Myth – There is no guidance for SWMP Designers to consider when suggesting that a project should salvage and stockpile the existing topsoil.**
   Answer - The agronomic values of the topsoil should be tested by a lab to assure that they are in an acceptable range and if the existing site conditions meet the following criteria.

- Existing vegetation on the site consists of desirable plant species and overall has a low percentage of noxious and annual grasses. A rule of thumb is less than 10% of the vegetative cover should consist of undesirable species to salvage on-site topsoil including the litter and duff.
- There should be a limited amount of rocks greater than 6" diameter visible on the surface. Surface coverage greater than +/-20% of large rock fragments make salvaging topsoil cost prohibited and the project will require a 207 project special provision based on the CDOT Maintenance requirements in the standard.
- Project site conditions must accommodate the space required to stockpile the topsoil and the stockpiles must be managed to preserve those properties of the soil that support revegetation.
- Conditions must allow all topsoil stockpiles placed at a minimum 50 feet away from Waters of the US.

3. **Myth – There is no statewide process for in-house designed SWMPs to charge the lab cost for topsoil testing to projects.**
   Answer - Topsoil testing is charged to the project. The laboratory analysis cost is approximately $60 for each sample submitted. Once invoices are received, the most efficient payment method is for the Region pcard holder to complete payment.

4. **Myth - CDOT does not have a process for making topsoil amendment recommendations for projects that completed topsoil sampling.**
   Answer - CDOT has developed a Topsoil Amendment Calculator that allow SWMP Designers to enter the lab results data and the area of each seeding method. The calculator will provide all the required pay items and quantities that are required on the SWMP.

5. **Myth – No project used the revised 207 and 212 specifications prior to making them standard special provisions. In addition, there is no cost data available for construction budgeting.**
   Answer - Below is a list of projects that used the specifications and pay items and provide some competitive cost data for construction estimating.
   - 22320 SH69 Structure Replacement (M-13-P) – Pilot Project
   - 21011 SH96 Structure Replacement (K-17-F) – Pilot Project
   - 21088/21089 SH7 Estes Park to SH72 – Pilot Project
   - 22962 - US34 Structure D-27-G Replacement
   - 23254 - US36 Emergency Rebuild
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6. **Myth - There is no training available for SWMP Designer to implement the changes.**
   Answer - CDOT is requiring a recertification class for all SWMP Designers that will focus on using the new 207 and 212 project delivery tools. The recertification class is anticipated to be released in the 4th quarter of 2021.

CONSTRUCTION PHASE:

1. **Myth - Region Environmental Staff does not have access to penetrometers if construction project Engineers need assistance with testing the subgrade soil preparation.**
   Answer - CDOT has purchased penetrometers for each region. Below is a list of revegetation subject matter experts in the regions that would have access to the penetrometers.
   - Region 1- Susie Hagie (Susie.Hagie@state.co.us) 303-757-9932
   - Region 2- Troy Rice (troy.rice@state.co.us) 719-648-3462
   - Region 3 – Jen Klaetsch (jennifer.klaetsch@state.co.us) 970-683-6223
   - Region 4- Nick Schipanski (nicholaus.schipanski@state.co.us) 970-350-2127
   - Region 5- Danielle Wilkinson (danielle.wilkinson@state.co.us) 970-382-1425

2. **Myth – There is no training available for the authority during construction to implement the changes.**
   Answer - CDOT is in the process of developing a series of short videos for Engineers/Inspectors that details the verification and testing requirements of the new specifications.

POST CONSTRUCTION PHASE:

1. **Myth – There is no process in place to assess whether or not the process changes are improving long term roadside revegetation sustainable conditions after project completion.**
   Answer - CDOT is developing a post construction upland revegetation monitoring plan for projects statewide to collect data on the following performance standards.
   - Native species cover and diversity
   - Successional stages for desirable specified species
   - Rooting depth and topsoil structure
   - Nutrient cycling
   - Organic matter composition and litter/duff production
   - Diversity of soil biota
   - Infiltration rates and soil aggregation rating
   - Identify noxious weeds and percent coverage
   - Pollinator habitat assessment rating