Best Management Practice
Modification of the OTC's Mowing Program

On March 10, 2003, the Environmental Protection Agency (EPA) mandated that all entities that directly discharge collected stormwater to surface waters of the state must submit a Storm Water Management Plan (SWMP). The SWMP must detail how to effectively manage stormwater run-off which discharges to Ohio's lakes, rivers and streams. The Ohio Turnpike Commission's (OTC's) Storm Water Management Plan was approved on March 19, 2003, for coverage under the Ohio EPA's general permit to discharge.

As part of the SWMP, Best Management Practices (BMP's) are identified, evaluated and implemented where they effectively and efficiently create a positive effect on stormwater management. The BMP's listed in the SWMP contain both existing and proposed practices that will increase the quality of collected stormwater runoff that discharge to the surface waters of the state.

The OTC discovered that simple modifications to a current BMP (the mowing program) would improve the quality of the stormwater. Previously, the OTC promoted a continuous cycle of mowing from spring to fall, which kept the grass height between approximately three (3) to six (6) inches. This practice was developed to provide a sufficient roadside clear-zone, to control brush over-growth and to present an aesthetically pleasing roadside. However, continuously mowing the grass to a shorter height actually weakens the integrity and thins the grass turf. The thin grass turf provides poor treatment of stormwater run-off, requires constant re-seeding and provides minimal protection against soil erosion. To help counteract these detrimental qualities, the OTC modified the mowing operation to provide a minimum grass height of six (6) inches along the roadside shoulder. The modification inherently results in less frequent mowing cycles.

The modification to the OTC's mowing program results in three (3) benefits. The first benefit allows the grass to spread and thicken. Grasses generally spread and thicken by two (2) methods; seed germination and plant regeneration. Sufficient time must be permitted for grass seeds to develop and mature. Once grass seed has matured, subsequent mowing will disperse the grass seed and initiate regeneration of the original plant, as well as off-shoots that develop as a result of mowing. By reducing the number of mowing cycles the OTC is increasing the effectiveness of mowing and decreasing the amount of work required. Additionally, shorter grass turf is typically more susceptible to being overtaken by weeds. Based upon these characteristics, a reduction of mowing will allow grass turf to broadly spread, fully densify and allows a quicker recovery from turf damage.

The second benefit of the reduced mowing cycle is that less maintenance is required. The nature of a highway environment requires the use of a low maintenance, durable and hardy grass that can thrive in poor soil conditions, harsh climates and exposure to de-icing materials. This differs from residential grass seed that is usually higher maintenance and is less durable. Factors such as good soil conditions and less exposure to harsh materials contribute to higher success rates in residential grasses. The OTC utilizes a grass seed that can be applied easily, applied often, at minimal cost and does not require constant mowing and fertilizer applications to insure acceptable turf coverage. The reduced use of fertilizers assists in reducing the amount of nutrients in stormwater runoff, which is a benefit to the stormwater quality.

The third benefit is that a fully grown, healthy grass area provides a useful filter by trapping and absorbing small amounts of litter, sediment and fluids that leak from vehicles. Stormwater runoff that passes through a tall and thick grass filter is more effective in reducing pollutants in stormwater than a low cut, thinning grass. This is due to the increased surface area on healthy grass and the higher amount of grass seedlings per area. In addition to the benefit of a more effective stormwater runoff filter, a taller and thicker grass turf will aid in reducing the germination of unwelcome weeds. This occurs from the tall grass providing shade to the ground immediately surrounding the area of the grass, which inhibits weed growth. This also aids the OTC's goal of reducing the use of herbicides to all but minimal, necessary applications.

The implementation of a modified mowing practice requires a schedule, an average grass height requirement and identifies what areas are to be mowed. The schedule requires coordination between mowing and herbicide applications to permit effective grass growth and effective weed control. The schedule is expected to include three mowing cycles adjacent to the mainline roadway shoulders. The first two mowing cycles are expected to occur during mid April to late May. The third mowing cycle will be completed between the third week of August and the third week of September. The mowing schedule was developed to follow the growing cycle of Northern Ohio grasses that experience quality growth during the cool spring and fall weather. The average mowed grass height will be six (6) to eight (8) inches.

The modified mowing practice will provide an effective, efficient and less costly method to manage vegetation. The program will continue to provide safe clear zones and aesthetically pleasing roadsides while providing a higher stormwater quality. The modified mowing practice appears to meet the goals and objectives anticipated by the BMP detailed in the OTC's Storm Water Management Plan.