



# Grass Growth Management Case Study & Cost Comparison

Doncaster Metropolitan Borough Council  
Street Scene Department



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## Current Practice and Analysis

The Street Scene department of Doncaster's Metropolitan Borough Council undertakes the maintenance of grass surfaces both in terms of those used for sports and recreation and others that include rural verges, roundabouts, road junctions, cemeteries, slopes and other difficult to maintain areas.

As standard practice, regular reviews are carried out into all the various practices and products that are available for the provision of a grass maintenance service.

The Council's Street Scene department provides annual maintenance to 25 bowling greens and, following a review of the cost, it was indicated this was an expensive operation.

## Pedestrian mower operation

25 greens x 3 cuts per week over the seasonal growth cycle required a total of **2,160** scheduled cuts per year.

Time taken to cut each green by this method was 45 minutes. Adding a time of 15 minutes per green for loading/unloading the mower from a vehicle and box emptying of grass clippings, increased the time to 60 minutes per green

Calculation of 1 hour per cut x 3 cuts a week per green = 1,800 hours during the summer growth season and 360 hours during the low growth season.

**A total of 2,160 hours of mowing.**

Following an analysis of this cost, the Council's Street Scene department undertook an evaluation on how the operation could be streamlined without reducing the standard of service provided.



## Evaluation

The Council looked at a range of mowing and chemical spray options that could be integrated with, or as a substitute for, its current mowing practices.

On the mowing side, it was identified that a ride-on mower could be used in place of the pedestrian mowers and a chemical Plant Growth Regulator (PGR) could be applied to reduce the growth of grass between scheduled mowing visits.

PGR's have been used for many years and are organic compounds that when applied in small amounts induce a change in plant growth and its development.

A number of products are marketed for this purpose but the most successful of these was identified through its chemical name Trinexapac-ethyl and its trade name *Maintain*.

*Maintain* redirects grass growth by specifically targeting the plants gibberellic acid site that is responsible for cell elongation. This action inhibits the plants vertical growth and diverts it down where it helps to produce, and increase, food reserves and lateral stem development.

The result of such application increases root growth development and strength, leading to a tighter, more-dense sward and reduced opportunity for weeds to establish.

*Maintain* can also be tank mixed with foliar products such as liquid fertilizers and selective herbicides.

## Trials

The evaluation of PGR treatments was carried out on two adjacent bowling greens in Edlington where one green was treated with a PGR, the other received no treatments. Both greens were cut using a pedestrian mower and all other maintenance practices were the same on both greens.

The green treated with a PGR spray applications showed an immediate reduction in grass growth and only required one cut per week compared to the green opposite that required three cuts a week.

Following this PGR trial it was considered that by only cutting once a week, a ride-on mower could be procured to replace the pedestrian

machines currently used. This ride-on mower reduced the greens cutting time to 18 minutes plus 12 minutes emptying of the boxes and loading/unloading of the mower from the transporting vehicle.

Therefore, the time spent mowing one green was now reduced to 30 minutes (0.5 hour), exactly half the time taken when using a pedestrian mower.





## Ride-on Mower

Calculation of 1 cut a week per green

= 600 cuts x 0.5 hour per cut

= 300 hours during the summer growth season and  
57 hours during the low growth season.

**A total 357 hours of mowing.**

**Mower efficiency savings:**

**Pedestrian mower 1,800 hours vs Ride-on mower 357 hours**

**Annual saving 1,557 hours**

## Plant Growth Regulator (PGR)

An annual programme of the Maintain PGR was applied to all 25 greens. Each green was treated 5 times throughout the year using a Quad bike fitted with a spray tank and boom.

Cost of Maintain PGR (Suggested Selling Price) £49.40

Labour (1 hr/green including travel time) £10.42

**Cost per green £59.82 per application**

Application x 5 per green/annum £299.10

**Application cost to all 25 greens/annum £7,477.00**



## Cost Comparison Analysis

### Historic Pedestrian Mower

Mowing time of 1 hr per cut x 3 cuts/week/per green  
= 2,160 cuts  
= 2,160 hours  
(1,800 hrs in the summer season and  
360 hours in the off-season)

Labour cost per annum           **£22,507**

### Ride-on machine in conjunction with Maintain PGR application

0.5 hr per cut x 1 visit/week/green  
= 714 cuts  
= 357 hours  
(300 hours summer season and  
57 off-season)

Cost per annum mowing           **£3,720**

Cost per annum PGR\*           **£7,477**

**Total**                                   **£11,197**

\*Includes cost of chemical and labour spraying

## Actual savings

Cost of mowing (pedestrian)   **£22,507**

Cost of mowing (ride-on)

& Maintain PGR                   **£11,197**

**Total annual savings**           **£11,210**

**Saving per bowling green per annum £452.00 (50%)**

### Quote

The council now has an annual saving of 78 hours per green and this, multiplied by 25 greens, means a total of 1,950 hours can be utilized on other maintenance tasks. Further savings can be made by combining more than one sprayable product and tank mixing the PGR with a herbicide and liquid fertilizer.

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