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Maximising Productivity in Grounds Maintenance

To: All Chief Executives, Main Contacts and APSE Contacts

Key Issues

- Grounds maintenance is a labour intensive service
- The deployment of the workforce at optimal levels of productivity is increasingly a focus in this service
- This briefing outlines current practices to ensure that optimal productivity can be achieved through the way in which working hours are deployed and also considers the use of new technologies, new equipment and other techniques to improve productivity.

1. Introduction

At its most basic definition, productivity is simply the state of being productive. It is often expressed as a ratio of outputs to inputs used in a particular process, providing a measure of the efficiency of production.

In the current financial environment, it is more important than ever for local authorities to ensure that they are getting the most out of their resources and achieving high ratios of output, with service demands in many cases now requiring 'more for less'.

This is fuelling the need for councils to find increasingly more ways to improve the amount of productive elements within their service provision and corresponding reductions in non-productive elements.

2. Productivity in local government

Historically productivity levels on grounds maintenance, and other front line council services, were measured for the purpose of controlling the payment of an incentive bonus to blue collar staff. They were based on the calculated standard times for completing a particular task with councils employing teams of work study professionals to measure work

tasks and maintain the data needed for the schemes. In essence, the more work you did, the more bonus money you could earn up to a specified level.

Such schemes had been originally developed for the manufacturing sector (often termed as 'piece work') as an incentive for increasing output on the production line and they didn't transpose too naturally to the service sector, especially areas like grounds maintenance where unpredictable factors such as the weather are so prevalent.

However, the information produced around the process was useful for providing the basis for calculating routes for grass cutting and other repetitive tasks and when Compulsory Competitive Tendering legislation was introduced in the late 1980's, compelling local authorities to compete with the private sector, the data became invaluable for tendering for work in-house.

At that time, bonus schemes began to be phased out as private competitors rarely had such additional payments in their costs. Any incentive schemes that did survive a few years longer only lasted until single status agreements came into being. The demise of these schemes reduced the need for work study and the administrative process around it, resulting in initial savings. However, it also had the inevitable effect of removing incentives and consequently reducing productivity, with much of the base data being lost over the ensuing years making it more difficult for managers to measure the effectiveness of their workforce.

More recently technology is allowing some catch-up to take place. For example, GPS tracking on vehicles and machinery can provide operational data for performance and productivity analysis and the use of handheld devices and smartphone 'apps' provides the opportunity to reduce non-productive elements of the working day such as travel and administration.

Within grounds maintenance, the requirement for maximising productivity is being driven by reductions in budgets, both within the service and on a wider basis where non-statutory services are under greater scrutiny. This is forcing many authorities to review the level of service they provide, the resource they match to that requirement and the methods they employ to achieve it.

3. Assessing and meeting demand

There is no requirement in legislation for local authorities to carry out maintenance on their grounds and open spaces. The impacts of not carrying out the service can impinge on services that do have a legislative obligation, such as street cleansing which is governed by the Environmental Protection Act and where a failure to keep grass, hedge or tree growth in check can produce litter traps, for example.

Failure to carry out the service and the resulting aesthetic deterioration may also be a trigger for increases in crime and anti-social behaviour, in much the same way as the 'broken window' criminological theory espouses, and there are also other considerations around health and safety that help establish a need for maintenance to be carried out. However, the amount of maintenance that should be undertaken is very much open to interpretation and, as such, results in differing standards even between neighbouring local authorities. The majority of grounds maintenance budgets are devoted to cutting grass and over the years councils have generally undertaken mowing to restrict grass growth to a maximum length.

In the days of compulsory competition, contracts were specified either on quality (maximum lengths as outlined above) or by a specific frequency of grass cuts and visits to other horticultural features. In both cases they were based on the location and perceived importance of the land. Tendering for a quality specification meant estimating the frequency of grass cuts and other work required during the year anyway, so the same result was achieved.

It was relatively straight forward to apply standard minute rates to the frequencies and bills of quantities to establish the workforce levels required at different times of the year, in many cases resulting in seasonal working, either through annualised hours arrangements or by retaining a smaller core workforce and supplementing it with additional temporary labour in the busier growing season.

At that time, standards around the country didn't tend to vary too much as contracts were standardised and this didn't generally change too much when the legislation on competition was later relaxed, having established service standards that had become the expectation level for elected members and the general public. Any deterioration in the standard tended to result in increased complaints and subsequent return visits.

With many grounds maintenance services experiencing budget cuts in recent years, service levels and standards have had to be reviewed and in most cases decreased. For APSE's most recent 'State of the Market' survey for Local Authority Parks Services, more than 75% of respondents had seen a decrease in bedding/flower displays and almost 50% had reduced the frequency of grass cuts. A corresponding reduction in labour was also reported but it is unclear whether there was a direct and scientific correlation between the reduction in workload and the reduction in the workforce or whether more arbitrary decisions had to be taken in light of the absence of productivity data alluded to earlier.

Clearly expectation levels have had to be managed down in those authorities that have reduced their standards, but where that has been managed effectively a new demand for the service has been established. Meeting that demand still requires greater labour resource in the growing season of the summer months, even with reduced standards, but many are constrained by budgets to providing just a basic service albeit with extended summer working hours to take advantage of the longer daylight hours. However, this only

addresses the known demand, that which can be reasonably predicted (although still affected by different weather conditions). There is also unpredictable demand in the form of additional requests for service or reparative work. Where possible, additional work tends to be put back to the winter months when there is usually a bit of spare capacity. With increasingly less spare capacity within the summer months though, the need for enforcing a 'right first time' policy gains importance.

There are a number of ways in which the seasonal nature of grounds maintenance work can be addressed. As referred to above, annualising hours between summer and winter better matches both growing season and daylight hours and in the last state of the market survey almost 60% of respondents had this system of spreading working hours out. This did represent a decrease of around 5% on the previous study underlining the fact that there are pros and cons for this system for both the organisation and the workforce.

For the organisation, an annualised hour's system reduces the need for overtime in the summer and provides staff in line with when they are needed. It also decreases the dependency on temporary labour and the management and training issues involved with them, leaving a full-time workforce that can be trained and skilled as required to increase productivity. However, longer hours have to be managed in order to be productive and shorter working hours reduces spare capacity in winter. There is an increased administrative requirement though, as holidays and sickness absence have to be applied by hours in recognition of the different working days for example and hours are banked and applied pro rata. For the workforce, working hours are longer in the summer and holidays use up more hours than if taken in the winter, although shorter working days in the winter is attractive to many people.

An alternative to annualised hours is to introduce shift rotas that allows standard hours to be worked across different portions of the day, some teams start early, other teams finish late, again having the advantage to the organisation of providing more labour when it's needed. The shifts can be rotated to share 'earlies' and 'lates' over the summer period. This relies on having the correct workforce levels to meet winter demand and no more, as in the traditional model of having standard hours throughout the year. In this model full time provision should cover the lowest level of demand with supplementary labour provided when needed by temporary workers, either directly employed or procured through an agency. There is a cost associated with the recruitment, induction and training of temporary staff which would need to be budgeted for and although many authorities are able to recruit the same temporary staff year on year, they tend to be less reliable than full-timers and there is usually further turnover of staff during the season with all the disruption that causes.

Alternatively again, there may be the opportunity to cross skill full-time employees to enable them to help meet different seasonal demands when they aren't required on grounds maintenance, for example as part of winter maintenance operations on highways.

4. Increasing productivity

Achieving more from the resources available, whichever method of manpower planning is applied, depends on matching the resource to the need. That might mean ensuring that enough staff have the right skills to meet all the demand, including consideration for covering absences. A skills matrix (or competency framework) is a very useful tool for showing the skills required for the different aspects of the service, the skills that individual employees have and the gap between the two. They can also be used in conjunction with age profiling as a basis for succession planning.

It may not be efficient or cost-effective for the council to provide some of the necessary skills in-house as there may not be enough demand to justify the cost. Alternatively though, there may be an opportunity to take up the slack competitively in a commercial capacity, as a number of local authorities have done with their tree gangs and weed spraying operations, for example.

As important as having the right skills for the job is the need to have the right tools and equipment. Grass cutting is the most resourced element of grounds maintenance in this respect and the range of mowing equipment available is extensive. The importance is on choosing the right type of mower for the standard of cut required and the topography of the ground it will be used on.

Traditionally councils used to cut amenity grass areas on a fortnightly cycle, firstly with pedestrian cylinder mowers such as the "multimower", later with ride-on cylinder triple mowers (where they could be deployed without damaging the machine and/or the land.) Cylinder mowers were able to produce a low cut with cuttings dispersed to leave a good standard. The alternative was a rotary mower which tended to be used on longer grass which cylinder mowers couldn't cut through, but which tended to clump cuttings together rather untidily.

As mowing frequencies are decreasing, there has been a move away from cylinder mowing equipment with a corresponding improvement being seen in the quality of build and cut in rotary mowers, both pedestrian and ride-on machines, manufacturers seemingly responding to the changing environment of local government to produce what is now needed.

In terms of the machines themselves, the width of the cut often determines its suitability for a particular area of grass, obviously the widest taking the less cutting time and therefore being the most productive alternative. As some authorities haven't reviewed their machine utilisations for some time, this may not be actually happening in some places.

Doncaster Metropolitan Borough Council spent last summer conducting a series of experiments on grass growth and cutting. They gave over an area of one of their amenity

grounds and fenced off a number of areas within it which were then left progressively longer than normal before cutting. As well as measuring the rate of growth, a number of different types of mower were used on the different lengths to see which coped best, including some new equipment on trial. Finally, they undertook time and motion studies to establish any savings that new equipment would give them against existing methods. The results will allow them to reschedule routes with larger rotary mowers operating a reduced frequency with the potential savings that will bring.

5. Reducing non-productive time

Maximising productivity can also be achieved through the reduction of non-productive elements within the working day. Identifying these elements and how much of the working day they account for can be difficult without direct observation and that may be the best way to make that assessment, using time and motion studies to monitor performance.

However, optimisation of the working day can effectively reduce non-productivity by ensuring that the work is planned and undertaken as effectively as possible. The majority of a grounds maintenance operative's unproductive time is spent travelling to and from site so it makes sense to ensure that work is planned where possible within the same vicinity. Route optimisation is becoming an increasingly popular way of maximising productivity on refuse collection and street cleansing services and grass cutting routes are another area where a review of the best method of service delivery can pay dividends, although it is not as common yet within the route optimisation packages currently available.

Time spent on work planning can be very effective in reducing other elements of non-productive time, such as ensuring that machinery, tools and equipment are maintained in good working condition and available to be used when needed, that crews are able (and encouraged) to leave the depot promptly in a morning and are not returning too early at the end of the day and that once on site, work instructions and plans are clear and understandable. Lunchtime and personal break arrangements also need to be managed to avoid unnecessary journeys and optimise time on site, providing the appropriate welfare facilities are available to staff.

Increased use of technological advances can assist in optimising productivity. Many authorities now use vehicle trackers on their vans and larger mowers which are capable of recording a number of aspects that improve fleet and performance management, including operating periods and running times, as well as vehicle movements. The use of hand-held devices and smartphone 'apps' linked to grounds inventory and work scheduling software or the council's CRM system reduces travel times and costs of returning to the depot for work instructions, for example, as well as enabling a faster response to complaints.

6. APSE comment

As budgets decrease productivity in grounds maintenance services will be an increasing focus of activity in ensuring that services can continue to be delivered in a cost effective and appropriate way, whilst safeguarding local environmental standards. The grounds maintenance workforce is the key component in delivering the service and APSE would advocate the involvement of the workforce and trade unions in navigating any changes to working practices.

Utilising new technologies, and keeping up with developments in equipment and machinery, as well as engaging with suppliers about the new demands on local authority grounds services, should also form part of a comprehensive strategy in maximising productivity in grounds maintenance services.

APSE's Solutions service works with a number of authorities to ensure that resources are matched to services needs through taking a diagnostic approach to service redesign and ensuring resources are matched to needs. You can view further case studies on the APSE website www.apse.org.uk

This briefing was produced with the kind assistance of Dave Henrys an APSE Associate.

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