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1 Introduction

This report evaluates the planning and scheduling of the winter leaf sweeping work, including the measurement of elements of efficiency and performance, in line with defined allocation of resources to meet those planned objectives. Findings of this report are to inform proposals and recommendations to bring about improvements to future service delivery.

1.1 Background

Following the realignment of the former Street Cleansing and Landscape Services and resulting creation of Streetscene in September 2005 the Streetscene Service inherited responsibility for the cleansing of winter leaf-fall on adopted footpaths throughout the borough. The resource commitment, initially provided by Waste Management, consisted of one mechanical brush on a contract-hire basis for a period of approximately 12 weeks.

Clearance of leaf-fall in 2005 consisted of a combination of reactive (complaint led) works and known “problem routes”. Completion of the 2005 works highlighted inefficiencies and the inability to provide meaningful statements to the public (Callers). The need for development was recognised and the specific recording of Calls in relation to leaf-fall commenced in December 2005.

As a result a schedule of sites was derived from the 2005 Calls data record and in consultation with all Landscape-Streetscene staff to produce a list of 190 streets (sites). (There is currently no capability to adequately record the length of routes covered.)

2 Purpose

This report provides a review of the winter leaf sweeping operation carried out by the Landscape-Streetscene Service, in the period 23 October 2006 - 22 December 2006.

All five headings of the report must be completed to contribute to the development of the winter leaf sweeping to commence in 2007.
The following issues are required elements for inclusion within this report:

1. presentation of completed data sets – including charts and tabular listings for:
    - machine productivity in relation to schedules. Presentation of data should distinguish between non-productive elements;
    - calls recorded in relation to leaf-fall (show pertinent input routes where possible);
    - distinction must be made between operational performance (in-line with the scheduled works) and Calls, unless a direct correlation can be evidenced;
2. identification and interpretation of Calls in relation to scheduled sites during the defined periods;
3. review of routes for: resources, frequencies applied, access;
4. proposals for improvements;
5. summary review and re-presentation of data and charts from Interim Report (Nov. 2006);

The Streetscene Leaf Sweeping Schedule is related to adopted highway footpaths; Streetscene has added ancillary surfaced areas, but does not include the main carriageways of the highway. This Report does not include any assessment or data in relation to the cleansing of the carriageways.

3 Findings

All data used in this report is derived from Mayrise (Grounds) and the Streetscene Leaf Sweeping Work Schedule 2006. Mayrise is used to record all Calls related to the service. The Leaf Sweeping Work Schedule provides the statement of planned operations and is updated to show planned works against actual works, using daily reports from the operatives in the sweepers.

3.1 Scheduled leaf sweeping Leaf Round - data review

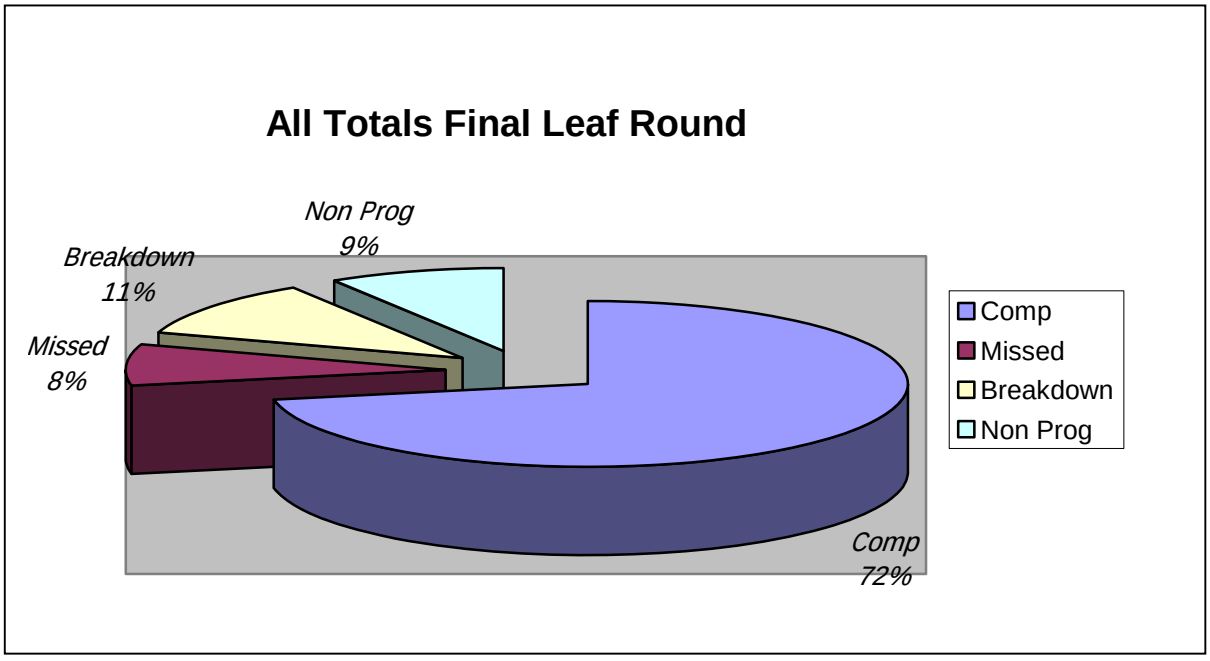

Figure 1 Chart showing total productivity over the entire scheduled period

This chart shows the work achieved as a combined total for Widnes and Runcorn areas.

The non-programmed work element represents additional sites completed during normal works time. In this case the total adjusted percentage of completed works is 81%.

3.1.1 Non-productive elements

The combined proportion of missed sites and breakdowns form 19% of the total figure, and is broken down further in Figure 2 to highlight the reasons.

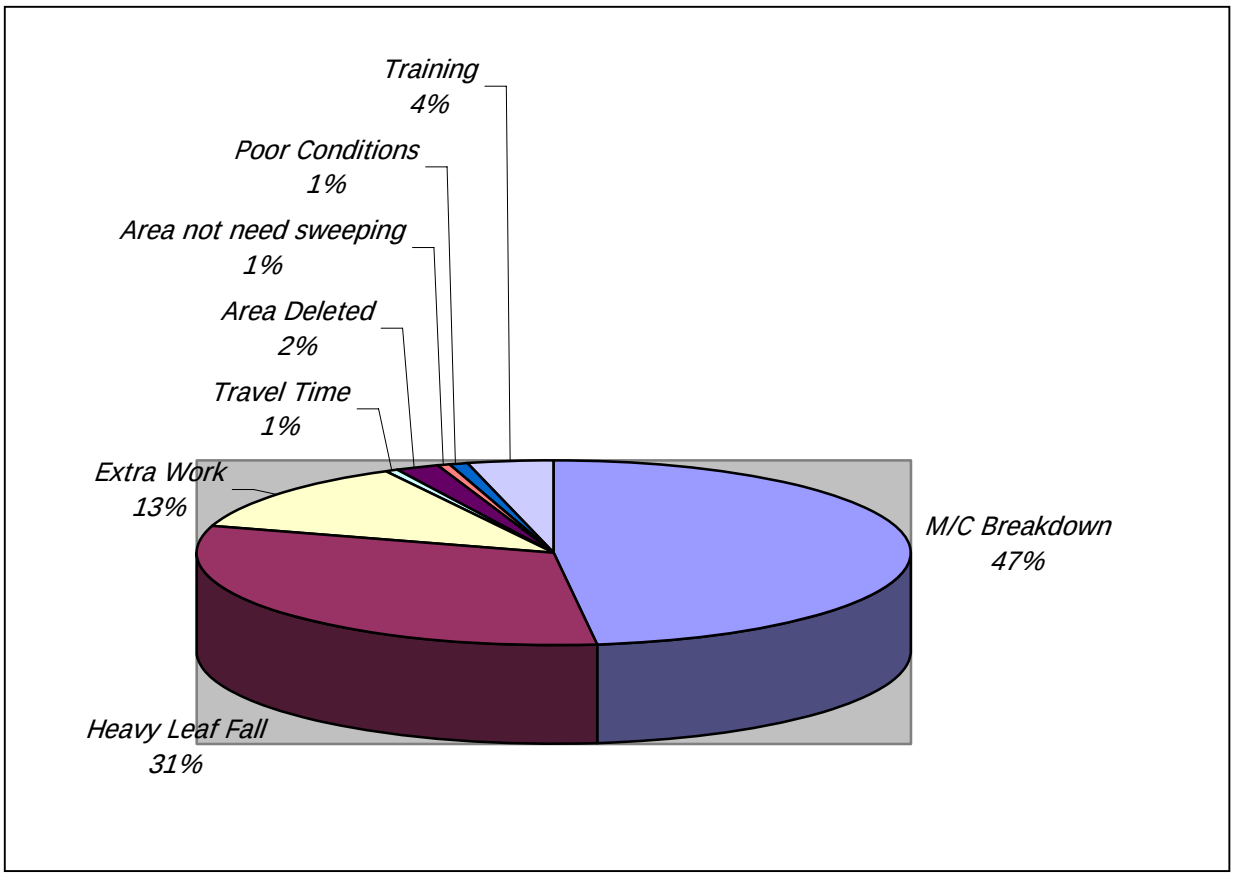

Figure 2 Chart breakdown of non-productive elements

Figure 2 (above) shows breakdowns accounted for just under half the lost time, and heavy leaf fall for one third of the time. Extra work (13%) was due to sites that had been missed on their scheduled day but were completed within the following day after and may, therefore, be included in the final completed total. This represents an extra 2% of the completed making a total of 83%.

Areas that could not be completed early in the round due to “heavy leaf fall” were completed at a later date but within the scheduled periods. Data shows that the significant elements responsible for this were machine breakdowns and training time (to drive the mechanical sweepers) ultimately delaying the start of certain routes.

The Widnes areas particularly suffered due to sweeper breakdowns - effectively delaying starting the round by 2 weeks. This led to the heavy build up of leaves on the Widnes sites that the machine struggled to deal with.

Table 1 shows the revised percentage of productivity for both Widnes and Runcorn completed during the entire period of the 2006 Leaf Sweeping Work Schedule.

Table 1 Table of Final Total

Completed	Missed	Breakdown
83%	6%	11%

This represents an overall improvement of 10% on the Interim Report, and the amount of missed totals has improved by 4%. (Appendix 2.)

3.2 Calls Relating To Leaf-Fall

Figure 3 contains data drawn from the Landscape Mayrise Database and includes all Calls taken by Halton Direct Link.

Data on winter leaf-fall was not recorded before December 2005 and so comparison is only made for that month. The following chart shows the comparison between the Mayrise Leaf Sweeping Calls taken during December of 2005 and 2006.

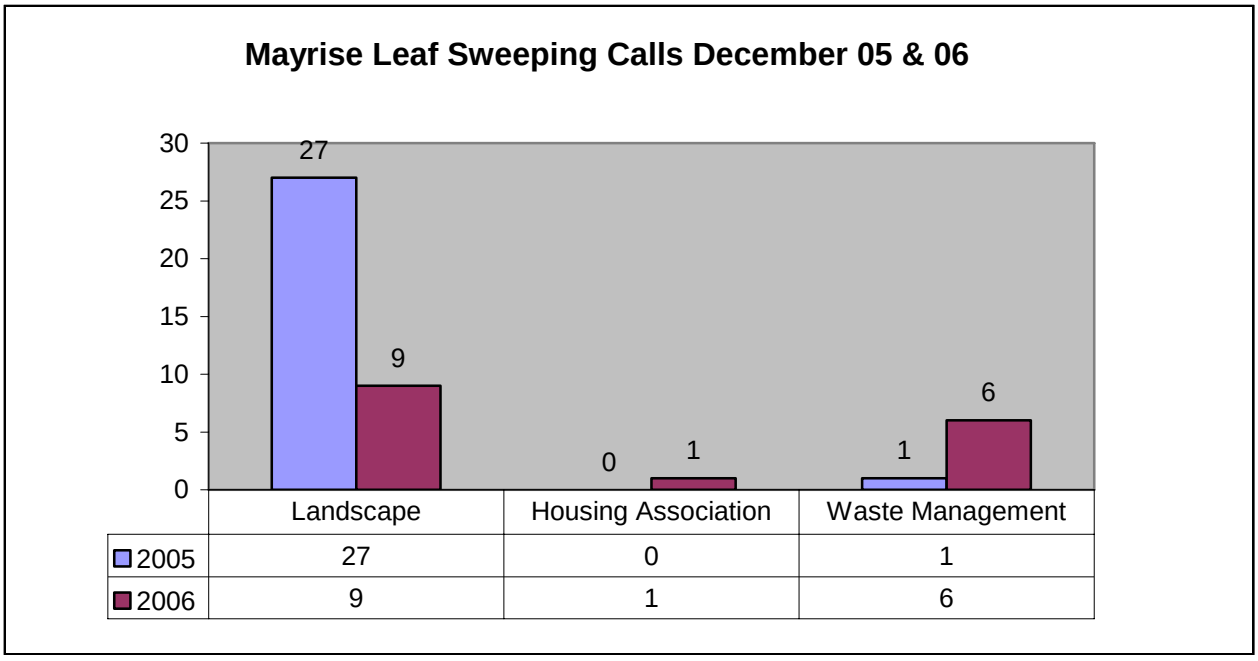

Figure 3 Calls for Dec 2005 - 2006

Whilst the total number of Calls to the Service fell by 42%, those calls taken in relation to the Landscape Section works alone were reduced by 66% compared with 2005. Over half of those calls were related to sites not included on the current Landscape Leaf Sweeping Schedule.

Where possible, Calls were compared to the planned Schedule but sweeping machines were not directed away from their planned routes. Calls represent and addition to the scheduled work. Table 2 shows how Calls were accommodated.

Table 2 Use of Resources

Resources directed to Calls	**December 2005 Leaf Sweeping Calls**	**December 2006 Leaf Sweeping Calls**
L-S Grounds Teams	15	5
L-S Scarab sweepers	4	2
L-S Shop Front Teams	2	0
L-S Beat Operators	6	2
Referred to Housing Association	0	1
Referred to Waste Management	1	6
Total No of Calls	**28**	**16**

Due to shortcomings in the capabilities of recording systems it not yet possible to adequately show any reliable relationship between the Calls and the scheduled routes.

3.3 Review of Scheduled Routes

During the Leaf Sweeping Round a number of additional sites for sweeping were identified through Mayrise Calls, ad-hoc site reports from managers and operators, and e-mails from local councillors in compiling an additional list of sites for inclusion on the 2007 schedule. A total of 44 additional streets/sites have been proposed, including affected routes within Halton Housing Trust (HHT) areas. (Appendix 1.)

Initial plans for the2006 schedule included the use of multiple frequencies to manipulate "priority routes" and relative amounts of leaf-fall. This proposal was not carried through for logistical reasons.

3.4 Proposals for improvements

As seen in 3.2.1.1 Figure 4, non-productive elements of the final leaf round accounted for 19% of the total figure. This was an improvement of 9% on the November interim figures.

Breakdowns.

Breakdowns accounted for 47% of the non-productive total and were the highest contributor to lost time. More responsive approach to repair and reliability could improve productivity significantly. This is exacerbated, as drivers have no mobile phone or communication device to report breakdowns etc. Appropriate maintenance training for all drivers may assist in helping to prevent breakdowns.

Heavy Leaf Fall.

Heavy Leaf Fall accounted for a third of the lost time. The late start of the schedule in Widnes was due to machine breakdown and led to a heavy build up of leaves on these sites. However, by the end of the round operations had been recovered and additional sites completed. If breakdowns were responded to more quickly, the round would have started on schedule.

There were a number of sites noted that needed sweeping more frequently than the12-day schedule. The hire of an additional Sweeper would cope with the additional frequency anticipated and would allow Mayrise Calls to be addressed without tasking neighbourhood teams. Increasing the frequency of sweep on high profile and problem areas and decreasing the frequency of other sites may address the issue within existing resources.

Training.
Time lost due to driver training was 4% of the final total. This could be avoided by training the operators before the round starts using existing Mechanical Sweepers from Waste Management.

Driver Training should not represent the same problem in 2007 as we have an existing pool of trained operators to use these machines, unless the number of machines is increased or a different model of machine used.

Extra work.
Non-programmed work (overtime) proved effective in dealing with work missed through breakdowns and made best use of resources.

Travel Time.
Travel time was highlighted as a problem when Mechanical Sweepers working in Runcorn had to fuel-up at the Lowerhouse Lane Depot in Widnes. As a result of heavy bridge traffic in the morning approximately 1 – 1-½ hours was lost travelling for fuel. Fuelling at the garage in Heath Road, Runcorn would avoid this (and by fuelling around lunchtime when the garage is less busy to avoid conflict with other domestic users of the garage).

A total of 75 journeys were made to the recycling centre to tip waste.

Miscellaneous.
Less than 1% of the total was lost for various reasons such as the Mechanical Sweepers getting stuck on wet paving. In practice odd mishaps will occur during any operation and as such are negligible. Unless they become more frequent they will not warrant further investigation.

4 Conclusions

A net reduction in leaf-fall related Calls has been achieved. Without historical data to contradict the apparent situation it is reasonable to accept that this is due to proactive scheduling and management based on planned routes.

The use of a scheduled approach to this operation has allowed more effective allocation and management of resources to the issue of winter leaf-fall. Routine recording and reporting has identified opportunities for improvement in the delivery and perception of the service, and contributed to the provision of information in response to Calls from the public and Council Officers (e.g. Highway Inspectors).

4.1 Resource Implications

All planned sweeping was completed within existing budgets. However, as no reliable historical data is available on this service, satisfactory comparisons (other than with the previous year) cannot be made.

Throughout November and December 2006, the two mechanical sweepers, tipped more than 290 tonnes of leaf waste at the Haddocks Wood Recycling Centre, Runcorn.

4.1.1 People

Drivers were seconded from within the existing Streetscene workforce. Due to machine access restrictions, and additional men were used in certain areas e.g. where paths could only be cleaned by hand (because of obstacles and/or where the mechanical sweepers were too heavy for the paved pathways). Beat operatives were used to address this where works coincided with their allocated routes/areas.

Overtime was used on some routes in order to complete a route within the day. This occurred almost exclusively when the machine was unable to complete due to heavy leaf fall or breakdown (a maximum of 2 hours). This avoided the need to revisit sites, making more effective use of staff and vehicle time.

4.1.2 Equipment

Two “Scarab Minor” Sweeping Machines were hired for an eight-week period and swept on a 12-day schedule. These required daily maintenance by the driver and a change of brushes approximately every two weeks.

4.1.3 Financial

Hire and operating costs for sweeping machines falls within the scope of existing budgets. Scheduling has clear implications for efficiency in the allocation and availability of resources and in reducing transit times. However, additional financial implications over and above those anticipated include:

- Repairs of breakdowns (spare parts etc.);
- Lost productivity due to breakdowns;
- One Agency employee - hired for 2 days to cover driver absence (the associated costs are negligible);
- 4 hours of overtime was incurred on particular routes. The neighbourhood teams completed 2 Saturdays, addressing additional areas highlighted during the schedule.

4.2 Legal Implications

Drivers need a valid driving licence and the hired vehicles may need separate or additional insurance cover.

The potential liabilities may be significant if winter leaf sweeping is not effective. However, no correspondence has been received form Insurance Services in relation to this type of claim.

5 Recommendations

1. Publish the 2007 leaf-sweeping schedule to Halton Direct Link;
2. Investigate effectiveness of response mechanisms to leaf-sweeping related Calls;
3. Examine the opportunities for operation of the mechanical sweepers at weekends;
4. Re-introduce multiple schedules, using varied frequencies, for priority and heavily affected routes/sites;
5. Introduce validated driver & maintenance training, before October 2007, to develop the pool of qualified staff;
6. Introduce vehicle contract hire clause to address breakdowns with mechanical sweepers;
7. Prepare a Business Case (IT) to examine viability and benefits of incorporating Route Planning facilities;
8. Determine extent of insurance cover provided under hire agreement for mechanical sweepers and lodge details with Insurance Services;
9. Investigate the use of tipping on-route;
10. Investigate optimum vehicle operating weights to reduce the number journeys to tip.

5.1 Risk Analysis

The following statements are made directly in relation to the above Recommendations.

1. Until a satisfactory method of correlating Calls with the scheduled works is developed (using accurate date parameters) then the effectiveness of the sweeping operations will remain predominantly subjective. Use of a published schedule would allow more effective recording in relation to complete and/or due (programmed) works.

2. Use of Neighbourhood Teams and beat-based operatives to respond to Calls represents more efficient use of resources, allowing the scheduled works to continue proactively. This needs to be actively monitored to ensure that competing demand does not impact negatively on landscape team plans.

3. Without flexible working arrangements, weekend working will have a significant impact on salaries/overtime. As the relative size and maturity of trees, and, therefore, the level of leaf fall, is difficult to assess in context, the increased sweeping frequencies should serve to reduce build-up on certain routes. This may not necessarily result in increased amounts of tipping.

4. Current practice of using the mechanical sweepers during weekdays only means that, over 12 weeks, machines are used for approximately 70% of the hire period. (No servicing takes place at weekends.) As leaf-fall occurs within a finite period, weekend working may represent the most effective means of increasing coverage in that period. Increased schedules will reduce the problems encountered with heavy leaf fall in 2006 by more frequent intervention. The 2006 schedule is considered to be at an optimum frequency, and any reduction would be likely to have adverse effects. Without additional mechanical sweepers (and drivers) or introducing weekend working then some existing routes would need to be removed. This would require a revision of all routes based on a priority - as yet undefined - and effectively represent a reduction in service delivery.

5. Validated driver training has not been researched and may have significant cost implications.

6. Hire contracts are procured through the councils Fleet Maintenance service. The most effective opportunities to reduce the “downtime” resulting from breakdowns must be put to the Fleet Maintenance service. Any potential increase in hire charges must be weighed against effects on service delivery.

7. Use of PDA devices and proprietary software may bring a number of benefits - primarily through more efficient route planning. The incorporation of GPS facility would allow real-time recording of activity and produce an accurate measure of the sites swept. Landscape Services has a successful track record and experience in using the type of device. The existing Vehicle Management System (Fleetmatics) would meet the real-time recording of activity element of this recommendation but not the route planning. Such devices would be applicable to other Streetscene operations and any cost implications could, therefore, be spread across the service.

8. Should current contract insurance cover be inadequate then HBC Insurance Services should be approached to identify opportunities to utilise corporate insurance cover in the first instance.

9. The ability to empty the mechanical brushes on-route formed part of the original proposal and would save a significant amount of non-productive travelling time currently incurred. This proposal was unable to be implemented in 2006 due to difficulties in trailer design. Any bespoke purchase would need to be carefully considered as to its “out of season” role.

10. A wide variation weights is noted from tipping records which may in part be justified by convenience in relation to the tipping site. From averaging the tipping weights it is clear that the number of visits may be able to be reduced by a significant amount. Potential risks may be present in relation to load bearing of surfaces, e.g. pedestrian paving.

6 Appendix

Additional Sites

Review summary of Interim Report – Nov. 2006

Appendix 1

Additional Sites

These areas were identified through a review of Calls and by consultation with Neighbourhood Spaces Managers, Councillors and members of the public. Sites are grouped by neighbourhood zones and HHT areas in Widnes and Runcorn.

Widnes West

Edinburgh Road
Clap Gate Crescent
Briarfield Avenue

Widnes Central

King Georges Rec. MUGA & surrounding paths.
Victoria Park – Skate Park

Widnes East

Elworth Avenue

Widnes HHT

Brentfield
Arley Drive
Afton
West Bank areas –
Irwell Street
Parsonage Road – around community centre
Pathways (2) to bridge including subway and bus stops
St Mary's Road – along promenade
Beaumont Street
Hurst Street
James Close
Davies Close
Alice Court
Church Street – new estate off
Bridge View Close
White Street
Wrights Crescent

Runcorn Central

Roehampton MUGA
Spennymoor
Halton Lodge – paths by shops
Halton Brook – No22 Penfolds
Barnfield Avenue
Leaside – pathway
Southampton – carpark
Windmill Hill – shops
Plymouth Close – carpark No's 15-25
Halton sports – pathway
Shepherds Row No 101
Norgrove Close – pathway

Runcorn East

Wigg Island – entrance
Haddocks Wood – drive

Runcorn West

Weston Point
Sandy Lane – school path
Weston Road
Wellington Street – car park
Castle Rise – No 120 pathway
Holloway

Appendix 2

Review summary of Interim Report – Nov. 2006

An Interim report was produced to review the early progress of the Landscape Leaf Sweep Round. The Total Results of this report are shown below for comparison with the final report figures shown in Section 3 of this report.

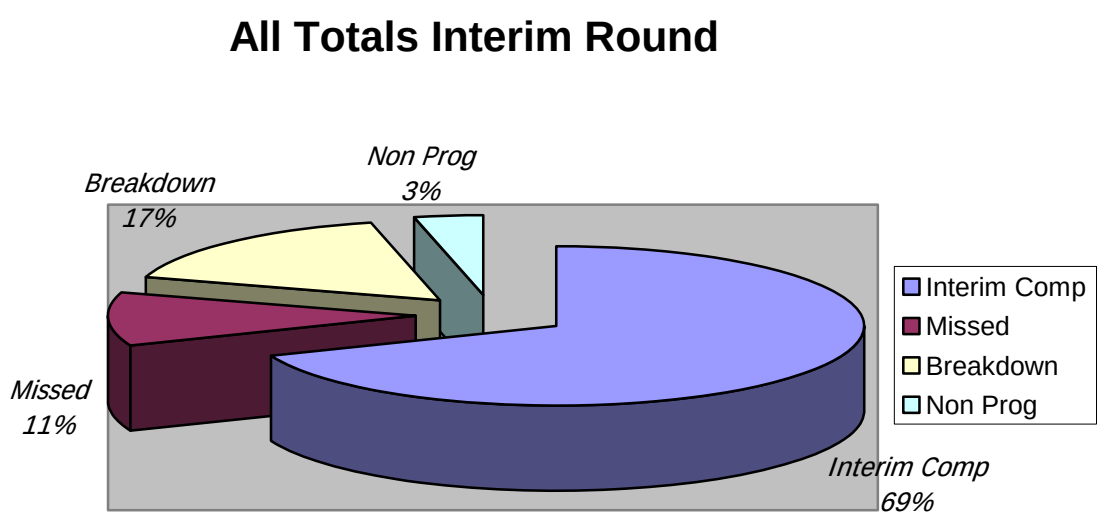

Figure 4 Chart of Interim totals

This chart shows the targets achieved as a total for both Widnes and Runcorn areas. Data is taken from the Landscape Leaf Round Schedule. This schedule was updated daily using daily work sheets completed by the operators of the Scarab Sweepers.

The target achieved should include the non-programmed work, as this represents additional areas completed during normal works time. The total adjusted percentage including non-programmed work is 72%.

Non-productive elements

Missed areas and breakdowns formed 28% of the total figure. This is broken down to highlight the reasons for this.

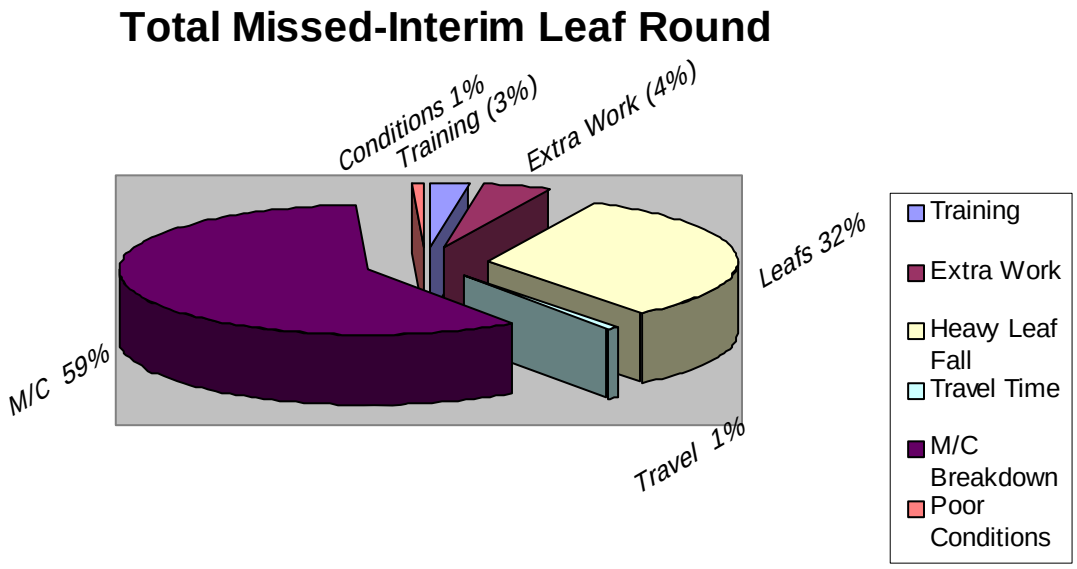

Figure 5 Chart of non-productive elements

As can be seen from the chart above breakdowns accounted for over half the lost time and heavy leaf fall for a third of the time.

The extra work resulted from sites that had been missed on their scheduled day. These missed sites were accommodated within planned schedules on following days and should be included in the final completed total.

This accounts for an extra 1% on the completed total making it 73%.

Table 3 Interim Total

Completed	Missed	Breakdown
73%	10%	17%