

Vale of Glamorgan

Visible Services Department ENVIRONMENTAL REPORT 2006/2007



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The Vale of Glamorgan Council's Visible Services Department is committed to continually improving its environmental performance.

This report details our Environmental Performance for 2006/2007 and forms the base of our submission for the Green Dragon Environmental Standard, an award that is run in conjunction with ARENA Network and Groundwork Wales.

The Green Dragon Standard is an Environmental Management System with 5 levels, with level 5 being an equivalent to ISO 14001.

Environmental Management System (EMS)

The Visible Services Department currently holds a level 4 certificate for the Green Dragon Environmental Standard and is working towards achieving level 5 during 2007.

The EMS is audited on a regular basis to ensure all areas meet the Green Dragon standard. If any areas need improving, the appropriate action can be taken.

The EMS is well documented and placed in an Environmental Manual, which is available to all members of staff as a paper copy or on the intranet. There are 5 Environmental Manuals all together. Each division has its own manual and there is one overarching departmental manual.

An Environmental forum is held every month at the Alps Council offices. The purpose of this forum is to discuss the Environmental Management System with key members of Visible Services and other departments that use the Alps offices and who are applying for their own level of Green Dragon. The purpose of these meetings is to discuss ways to improve the environmental performance of the department and all divisions based at the Alps.

There are moves within the Council now to have all departments attain a relevant Green Dragon level. This could also mean expanding the Alps Environmental Forum to encompass the whole Council.

Service description

The Visible Services Department provides key front-line services to the Vale of Glamorgan. These range from refuse collection, maintenance of roads and open spaces, road gritting during the winter months and planting and maintaining trees along the highways and in parks.

The Visible Services Department also undertakes many other roles within the Vale. It maintains all public toilets, makes sure traffic signals are working, encourages and promotes recycling and enforces laws concerned with graffiti, dog fouling and fly tipping.

The department also undertakes less obvious roles within the community. These include designing new traffic systems and upgrading signs around the Vale.

To fulfil these roles the department requires specialist facilities and equipment. These facilities are provided at The Alps & Court Road Depots. Equipment includes vehicles, machinery as well as trade workshops.

Materials such as bitumen surfacing, refuse bags, plants and turf are also required. The department also uses large quantities of fuel, electricity and water.

The departments' responsibilities are divided over 4 divisions, each with their own area of expertise. These are:

- Highway Maintenance
- Waste Management & Cleansing
- Parks & Ground Maintenance
- Engineering Design and Procurement

The department provided the following services in 2005/06:

- Domestic refuse collected from 54489 households every week
- Recycling collected from 54489 households every week
- Maintained 15414 streetlights
- Pre-salted 22220 km of road carriageway to prevent ice formation
- Maintained 1018 km of highway
- Maintained 7 parks, 3 public gardens, 11 allotments, 47 football pitches, 9 rugby pitches, 7 bowling greens, 30 tennis courts, 2 hockey pitches and 8 cricket pitches
- Continued to develop Dyffryn Gardens

306 staff using a total of 155 vehicles delivered this service.

Significant Environmental Impacts

The Visible Services Department has identified all of its significant environmental impacts and listed them in the Visible Services manual. The impact is calculated by multiplying the consequence of the impact with the likelihood of the impact occurring.

The consequence of an environmental impact occurring considers the legislation, the interest the aspect raises, the environmental damage and the scale of the aspect.

The likelihood of an environmental impact occurring considers control measures, frequency and risk involved.

From the resulting scores, the aspects are then grouped depending what level risk they are to the environment, low, medium or high. The high-risk impacts are then prioritised for the targets and objectives. The aspects register is updated whenever there is a significant change to the site or the operations that take place. The aspect register for the Visible Services Department highlighted that energy usage and fuel use and storage are the most significant environmental aspects.

Greenhouse Gas Emissions

The Visible Services Department monitors its greenhouse gas emissions (GHG). The only GHG that the department releases is Carbon Dioxide. From April 2006 to March 2007, the department released the following Carbon Dioxide emissions.

Energy Value		Quantities	Conversion Factor	Result (kgCO ₂)
KWh	Mains electricity	576,580.23	0.43	247,930
KWh	Street lighting & traffic furniture	8,820,274.50	0.43	Now a Green Source
KWh	Car park electricity	5,956.00	0.43	2,561.08
Litres	Gas-oil or diesel	685,617.30	2.68	1,837,454
Litres	Petrol	2,563.58	2.31	5,922
Litres	LPG	6,684.11	1.51	10,093
			Total	2,103,960

VALE OF GLAMORGAN**ENVIRONMENTAL POLICY**

The Vale of Glamorgan Council has a significant impact on the local environment. This impact arises from providing services (direct effects), for example by staff using resources and creating waste; and from influencing the environmental actions of others (indirect effects), for example by regulating, motivating and raising environmental awareness. The Council recognises its impact on the area and is committed to protecting and enhancing the environment for future generations by promoting sustainable practices and acting responsibly, considering environmental, social and economic factors in all decision making processes.

The Council is committed to continual environmental improvement and the Corporate Plan 2006-2010 details a number of key targets and aims reiterating this commitment. The three key aims identified in the Corporate Plan are the conservation and enhancement of the Environment, improvement in waste and resource management and reduction in the environmental impact of Council activities.

In all its activities the Council will endeavour to adhere to principles of sustainability and sustainable development, specifically:

- Ensure environmental legislation is complied with, and fulfil our statutory environmental responsibilities.
- Minimise the use of non-renewable resources including energy in its own buildings, vehicles and in all Council activities.
- Avoid waste and encourage the conservation, reuse and recycling of resources.
- Encourage the installation of renewable energy sources.
- Minimise environmental pollution from all its activities and influence others to do the same. Conserve, restore and enhance the Vale's built and natural environment, keeping it safe, diverse and pleasant.
- Reduce the need for the movement of both people and goods. Where movement is necessary, encourage the use of public transport, car sharing, cycling and walking.
- Procure and provide goods and services in a socially and environmentally responsible manner.
- Promote understanding and participation in environmental issues through education, information and community consultation.
- Provide appropriate resources and the necessary training for staff to ensure that they are able to fulfil the commitment given in this policy.

This Environmental Policy will be made available to all staff and other interested parties.

Date 28th October 2006

Date 28th October

Signed

Signed

Cllr J James – Leader
Executive

Mr J Maitland Evans – Chief

Management Review

A management review has taken place to discuss the EMS and ways that it could be improved. The Review took place at a directorate level and covered all departments in the directorate. The review covered environmental policy, objectives and an overview of the green dragon standard.

As this review isn't specific to the Visible Services Department, there are plans to hold a management review that is exclusively for the department shortly. The Management Review takes place once a year, but environmental issues are on the agenda for every Visible Service management meeting, therefore, if any of the managers has an issue with the EMS, it can be brought up.

Objectives and Targets

The Visible Services department is leading the way throughout the Council in terms of its environmental management system.

In a bid for environmental improvement, the department has highlighted areas for improvement

	Headline Action	2006/07 target	2007/08 target
1	Implement Energy Reduction Action Plan for the Alps Site	5% reduction of CO ₂ emissions on 2005/06 baseline	20% reduction of CO ₂ emissions on 2005/06 baseline
2	Implement Energy Reduction Action Plan for the Court Rd Site	5% reduction of CO ₂ emissions on 2005/06 baseline	10% reduction of CO ₂ emissions on 2005/06 baseline
3	Carbon Dioxide emission reduction for the vehicle fleet	Reduction of CO ₂ emissions of 3.5% from the fleet on the 2005/06 baseline	Further reduction of CO ₂ emissions of 7.5% from the fleet on the 2005/06 baseline
4	Monitor all utility bills and use the information to prioritise actions for minimisation of use	100% of assets to be monitored, targets to be set for reduction of water use in 2007/08	100% of assets using the data, 5% reduction in CO ₂ emissions from electricity use in public toilets.
5	Reduce use of non-renewable resources and ensure source of renewable resources is sustainable	Systems in place to monitor use and methodology to assess sources complete	All materials assessed, action plan for improvements in place
6	Reduce the amount of waste produced directly by VS and increase the recycling rates of VS waste	Reduce waste by 10%, increase VS recycling by 10%	Reduce waste by 15%, increase VS recycling by 15%
7	Ensure all pollution prevention legislation is fully complied with	Review impact assessments for all substance storage and identify areas for improvement	Implement any measures required
8	Achieve and maintain Green Dragon Level 5 accreditation	Achieve Green Dragon Level 5 accreditation	Maintain Green Dragon Level 5 accreditation

Energy Management

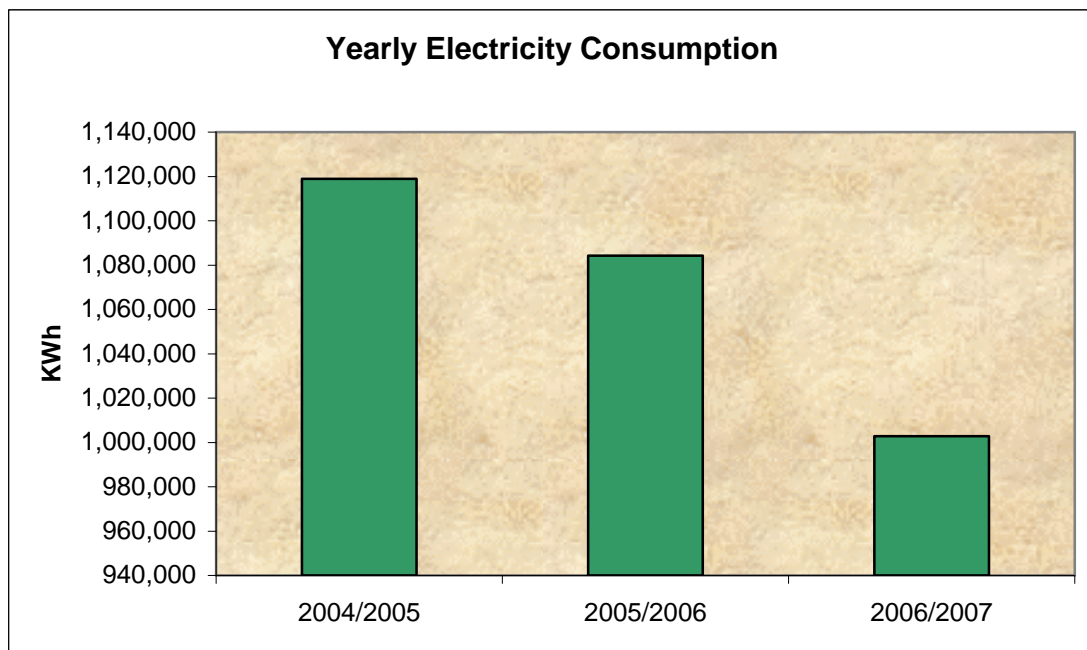
Electricity

7.5% Reduction in electricity consumption at the Alps Depot

The electricity usage for the Visible Services Department can be split into 3 separate components. There are the main offices in the Alps, Court Rd depot and the Vale's 15,000+ streetlights. The department does have a large energy output, but nearly 65% of the departmental energy usage comes from street lighting. For the past 2 years the energy supply for street lighting has been derived from renewable sources. The contract has just been extended so during 2006/2007, the Vale's street lighting will continue to be 100% green energy.

The Alps Depot

The electricity supply at the Alps is linked by remote sensor and can provide a half hourly analysis of the electricity consumption of the site. The site has seen a reduction in electricity usage over the past 12 months compared to previous years.



Year	Electricity Usage (KWH)	CO ₂ Emissions (Kg)
2006/2007	1,002,747	431,181.21
2005/2006	1,084,215	466,212.45
2004/2005	1,118,866	481,112.38

There has been a reduction of 7.5% in electricity usage and carbon emissions. This shows excellent progress within the department.

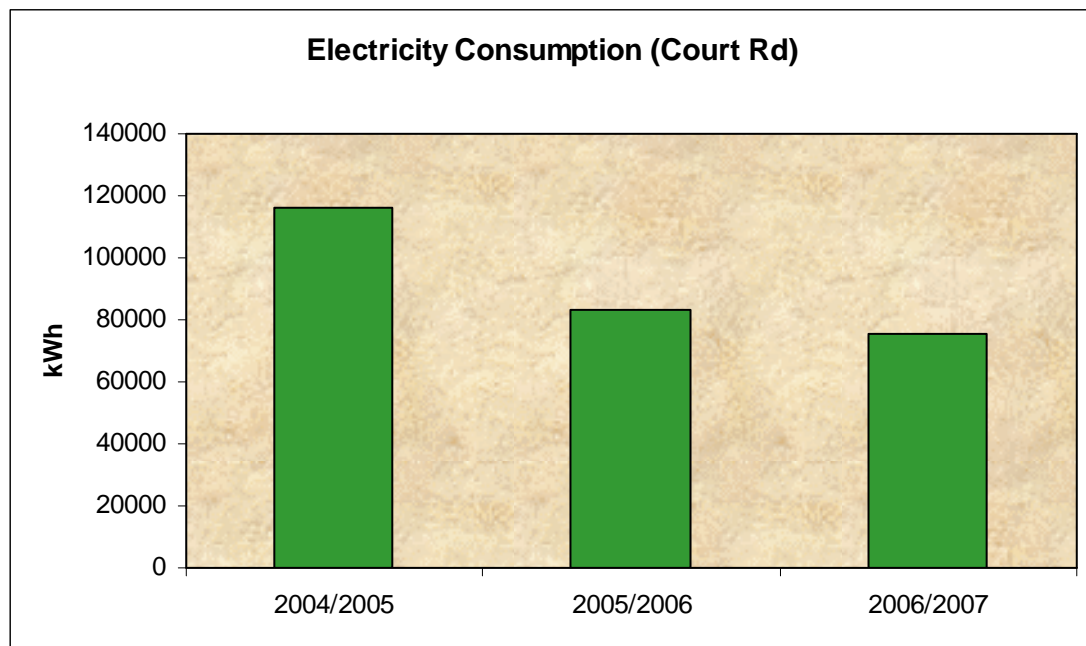
The buildings main source of heat comes from nighttime storage heaters. These aren't a particularly efficient way of heating up a large building, but their usage has been managed to help reduce electricity consumption. Over the Christmas break, all heaters were turned off, resulting in a decrease in energy used by 22% compared to December 2005.

All storage heaters were turned down to reduce energy consumption in February. The timers were also set to switch the heaters off on Saturday night/Sunday morning. This gave us our biggest saving so far. In March 2007, our electricity was reduced by 41% compared to March 2006. There have also been several IT initiatives put in place to help reduce electricity consumption. From January this year, the IT department introduced a scheme where it switched off all computers automatically at 7:30pm.

Court Rd Depot

9.8% reduction in electricity consumption at Court Rd Depot

The Court Rd Depot houses the Parks & Grounds Maintenance division. The majority of offices are connected via a series of Porta-Kabins at the top of the yard. Further down the yard there is a garage and several disused buildings. Due to the state of the buildings and lack of insulation, the staff frequently uses portable heaters in the winter to keep warm.



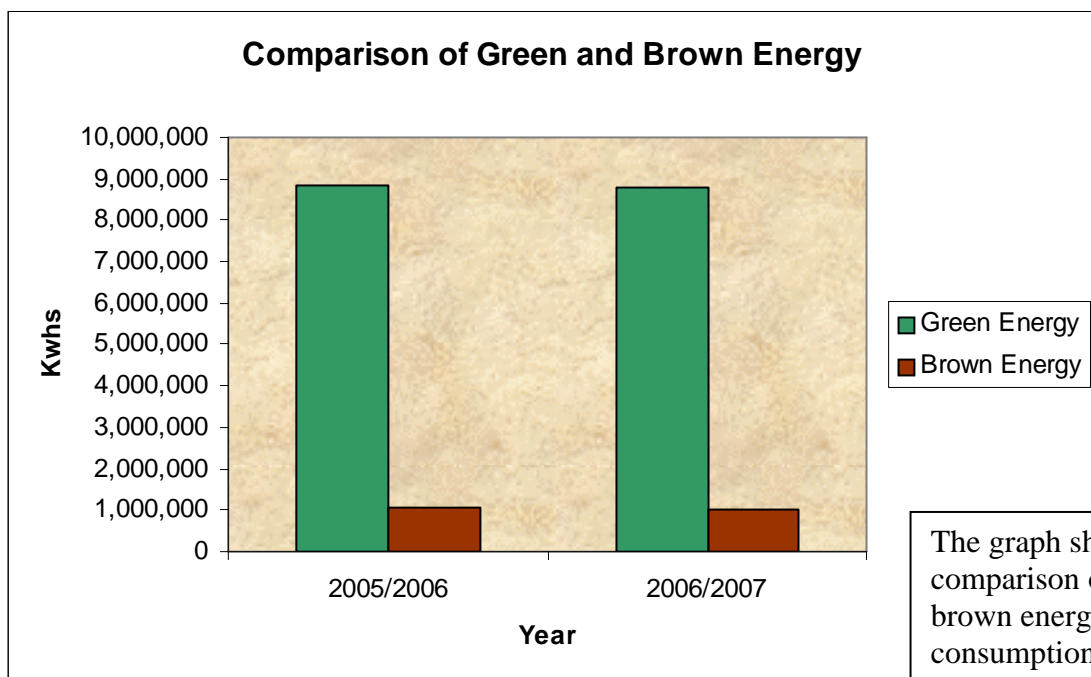
Year	Electricity Usage (KWh)	CO ₂ Emissions (Kg)
2006/2007	75,208	32,339.44
2005/2006	83,396	35,860.28
2004/2005	116,195	49,963.85

Despite these conditions, there has been a decrease in electricity consumption at the Court Rd Depot as a result of the EMS. It was also a

milder winter this year, so there was a decrease in the use of portable heaters, thereby reducing electricity consumption.

Street Lighting

The Street Lighting section has continually striven to improve its environmental performance over the past couple of years. The biggest improvement came in September 2004 when all of the local Councils in South Wales switched to a renewable source to power all of the streetlights and traffic furniture.



The graph shows a comparison of green and brown energy consumption within Visible Services.

Year	Electricity Usage (KwH)	KgCO ₂ Saved
2006/2007	8,820,275	3,792,718.04
2005/2006	8,777,803	3,774,455.08

Because of the Council's commitment to the environment, a new contract with a green energy supplier has been introduced for 2007/2008. During 2006/2007, we prevented 3,774,455 KgCO₂ from being emitted into the environment.

The street lighting group has also implemented several other initiatives to help reduce energy consumption.

- Thermal photocells on streetlights are being replaced with more efficient, electronic units. These result in a saving of one hour per column per day.

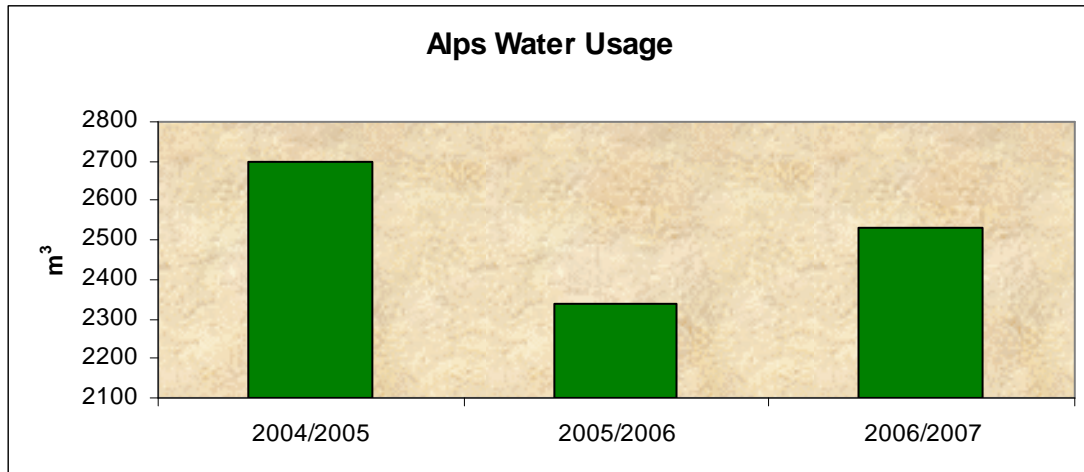
- There has been a mass replacement of illuminated street signs with non-illuminated, high visibility street signs where legislation has allowed a change.
- Energy efficient LED lighting units are used to replace lamps on illuminated road signs.
- The electronic ballasts in streetlights have been modified. This will reduce energy use and increase lamp life.

Water Usage

8% Increase in water consumption at Alps Depot

Although water is a renewable resource, a large amount of energy is used to treat and pump water to its required location. The Alps Depot only has one water meter serving the whole site, so the quantities shown are site specific, not departmental.

The Alps Depot uses water for the toilets, kitchens, showers and the vehicle wash down bay. The meter is located outside the main entrance and is read quarterly by Welsh Water.



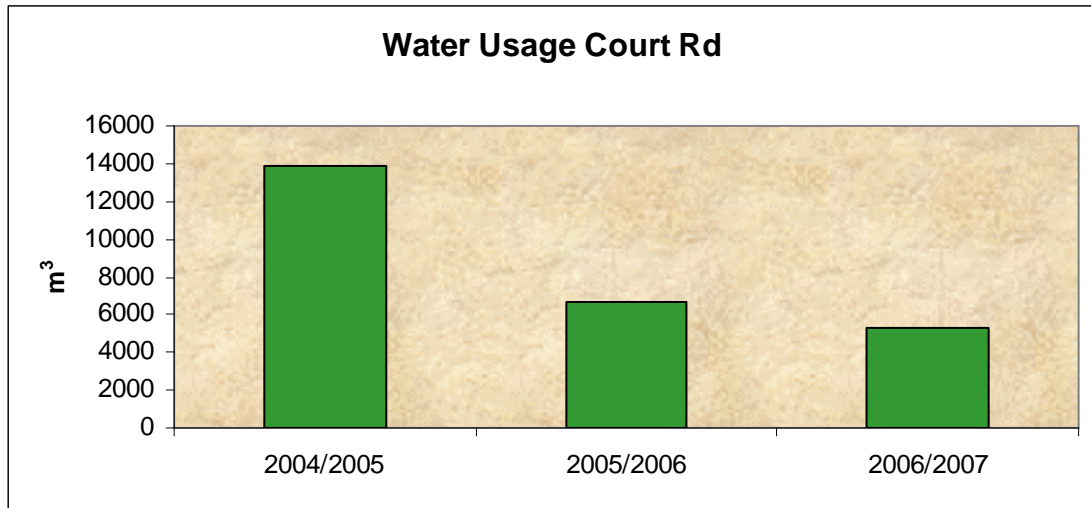
Year	Water Usage (m ³)	% Difference
2006/2007	2532	8
2005/2006	2338	-13
2004/2005	2699	-55

In previous years we have seen a decrease in water usage around the site, but during 2006/2007 there has been an 8% increase in water consumption. At the present time there is no real explanation to the increase in water consumption.

Court Rd Depot

20.77% reduction in water consumption at Court Rd Depot

Water usage at Court Rd has decreased over the past 3 years. The depot also only has the one-metered supply. Water usage varies greatly at Court Rd. There is a wash down area for the vehicles that use the depot, toilet and kitchen facilities, and water here is tanked to water plants either at the depot or some of the remote locations where the division have planted bedding plants.



Year	Water Usage (m ³)	% Difference
2006/2007	5307	-20.77
2005/2006	6698	-51.69
2004/2005	13865	455.71

There are also a number of other sites that fall under Visible Services. One of the objectives and targets for 2006/2007 was to ensure that 100% of assets would be monitored. Due to staffing issues this was not possible. But we are now working towards all public conveniences and parks having their water and electricity being read on a monthly basis.

Waste & Recycling

14% reduction in waste going to Landfill
38 tonnes of paper recycled

As a reactive service that serves the community, we are fully aware of the quantity and the variety of waste that the department produces. All waste contractors used are checked to ensure they have the correct licences.

Office Waste

The general office waste generated by office staff, is picked up by our own Waste Division and disposed of in the nearest landfill in Cardiff. We estimate that 12.4 tonnes was sent to landfill.

During 2006/2007, a 'Battle of the Bins' competition was held between the 2 blocks at the Alps Depot to encourage people to reduce the amount of waste that is thrown away. Throughout the year, there was a 14% reduction in the amount of waste going to landfill.

Paper

A local company called Shaw Environmental Services (SES), which is based in Cardiff, recycles our office paper. Office bins were taken away from desks and paper-recycling bins were placed in every office, so every member of staff had access to a paper-recycling bin and discouraged from using waste bins. During 2006/07, we estimate that 38 tonnes of paper was sent to be recycled instead of going to landfill.

Cardboard – Cardboard from the stores is taken away by Severnside. We estimate that 5 tonnes of cardboard is recycled each year. The cardboard waste produced in the office is collected and recycled with the Vale's residential recycling.

Lamps

A company called Marwood recycles all lamps that are replaced by the Street Lighting section. We estimate that 7300 lamps were sent to be recycled last year.

Construction Waste

The construction waste falls mainly to the Highways Maintenance Division. It includes the rubble from construction and maintenance of the highways. There are several possible locations for this waste: -

Simplyfill – A waste contractor located next door to the Alps. 960.45 tonnes were diverted to Simplyfill, where the waste is then sorted and recycled if

possible. It is estimated that 32% of waste that goes through Simplyfill is recycled.

Whitehall Landfill – Mixture of soil and stone from road patching. In 2006/07 52.32 tonnes was sent.

Hendy Recycling – 306.06 tonnes sent to be recycled. This general construction waste includes bitumen material and concrete.

Gullypot Liquor – during 2006/07 395.53 tonnes was sent to landfill in Cardiff. Plans are in development for a site in Pant-y-lladron that will be able to recycle gullypot liquor. Construction work for this commenced in February 2007 and is due for completion in July 2007.

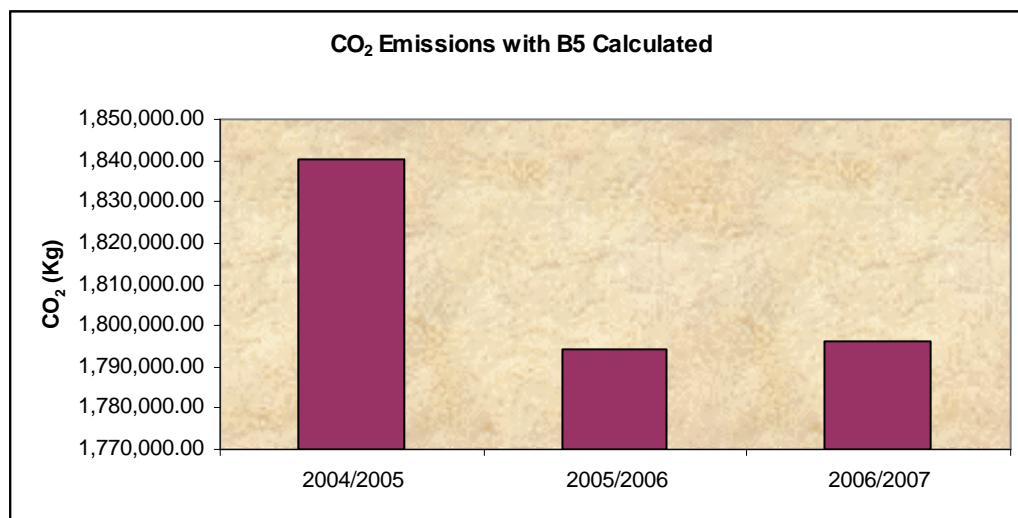
Transport Management

2% increase in fuel consumption.

Because the Visible Services department is dependant on its vehicles to deliver its services, it is considered to be one of the key areas that we have a significant environmental impact. The size of the fleet is always being evaluated to see where changes can be made. Vehicles are modernized where possible and replaced with vehicles that are more efficient.

August 2006 saw the introduction of B5 Bio diesel fuel for the fleet. This is a cleaner fuel to run the fleet on. This is being further developed by the inclusion of the Vale's schools waste cooking oil being utilised by a company to produce bio diesel.

The objectives and targets for 2006/07 looked to reduce the fleet by 3 vehicles and reduce CO₂ emissions 3.5% from the 2005/06 baseline.

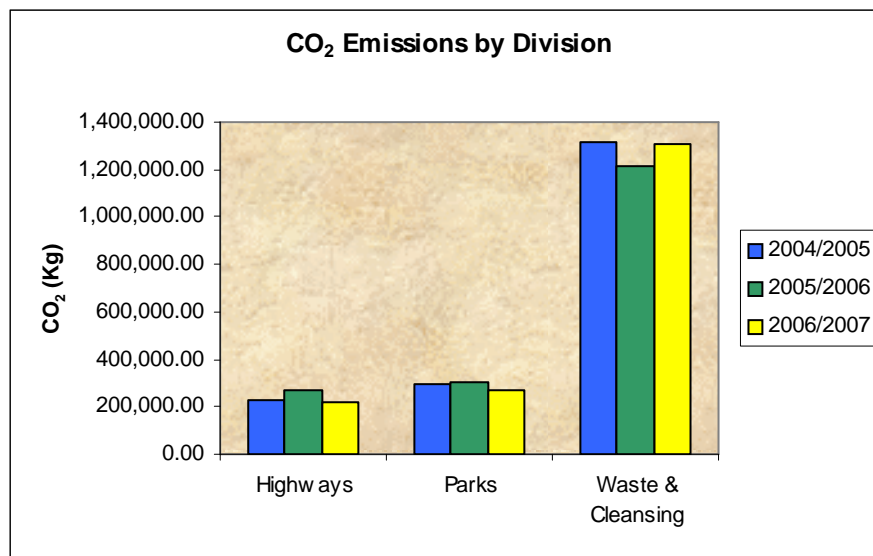


	Litres	CO ₂ (Kg)
2006/2007	694,865.35	1,796,200.39
2005/2006	678,752.55	1,794,225.39
2004/2005	695,902.76	1,840,130.93

The above graph and table show that we have increased our CO₂ emissions by our fleet activities.

When we look at each division separately we can soon understand where the increase has come from. Although there is a general trend with Highways and Parks decreasing their CO₂ emissions, emissions from Waste and Cleansing have increased.

Over the past year, the Waste division has increased their fleet and vehicle usage due to the domestic kerbside recycling scheme. Whilst there has been an increase in fuel consumption, there has been a benefit due to the success of the domestic kerbside recycling scheme. Over the next year, the division plans to review and rationalise their routes to improve fuel efficiency and reduce CO₂ emissions.



All of the departmental vehicles are serviced regularly at the garage that is also located at the Alps Depot. The garage itself has attained level 2 of the Green Dragon standard. Thus ensuring all waste associated with the upkeep of our vehicles is dealt with in the best manner possible.

Bulk Materials

The Department uses a large quantity of bulk materials to fulfil its main service requirements. The Highways Maintenance Division has pioneered the use of glassphalt, as part of its road construction. Glassphalt is made of 30% crushed green glass, limestone and bitumen, replacing the normal layer below the road's surface. Large quantities of green glass had to be land filled as there was no demand for recycled green glass, but now there is a use for crushed green glass, less is diverted from landfill. We have established a good working relationship with the quarry next door, where we buy our glassphalt. The quarry as a standard now provides all of its customer's glassphalt unless they specifically request 100% new material.

	2005/2006	2006/2007
Glassphalt	110 tonnes	265.06 tonnes
Sand	300.28 tonnes	286.5 tonnes
Cement	2694 x 25-kilo bags	2962 x 25-kilo bags
Limestone	282 tonnes	134.75 tonnes
Dust	228 tonnes	243 tonnes
Sub-base	301 tonnes	258.25 tonnes
Leotak emulsion	28 (210L) drums	23 drums
Reams of paper	3390 reams	3298
Herbicide	350L HM/225L P&GM	40L P&GM
No of aluminium street-lighting columns	348	233
Top-dressing soil 70-30 mix for bowling greens etc	68 tonnes	48 tonnes
Onga Loam (for cricket pitches)	28.5 tonnes	18.5 tonnes
Root-zone mix (soil for pitch renovation)	184 tonnes	160 tonnes
Landscape soil	25 tonnes	54 tonnes
Total soil:	305.5	280.5
Wooden stakes (for trees etc)	280	74
Play bark	160m ³	40m ³
Bedding plants	191097	190680
Bedding- area of planting in m ²	3746	3540

There has been a general decrease in amount of bulk materials used. However a reason for this could be due to budget constraints more than anything else. We have seen a decrease in the amount of paper we have used; during 05/06 we used 3390 reams but last year that was reduced to 3298 reams of paper. We have seen an increase in the amount of Glassphalt used, but that has a positive impact on the environment.

The bedding Plants used by Parks are peat free and over the past few years a local nursery has won the tender to supply the Council, therefore reducing transport impacts. The plants used are not drought tolerant, therefore needing irrigation on a regular basis. Although in order to reduce the need for irrigation, a more drought tolerant species, *pelargonium* spp, is used in difficult to irrigate areas, or areas that are generally exposed and dry.

Salt

Gritting the roads during the winter months is an important activity of the Winter Maintenance team and now a statutory duty under the Highways Act 1980. During 2006/07 we used approximately 1489 tonnes of gritting salt compared to 2285 tonnes in 05/06. Although there is a reduction in the quantity of salt used, it isn't really comparable as the service is reactive to unpredictable weather conditions. The reduction in salt used is due to the extremely mild winter we had last year, which resulted in fewer gritting runs. The salt is kept in a specially built salt barn to prevent leaching into the surrounding area. The gritters are also calibrated at the start of each year to ensure the correct amount of salt is released and done so in a controlled fashion.

Pollution Prevention & Mitigation

There are formal procedures in place to prevent or mitigate any potentially polluting incidents. A full pollution prevention plan is available in the Environmental Manual and all appropriate staff are trained to handle any pollution incidents. E.g. Spill-kits are located by fuel pumps in case of spillage.

Training

All staff have environmental training as part of their induction. The training covers the Green Dragon Standard and what their role is within the EMS. The training also covers current environmental issues such as climate change and sustainable development. The training is updated annually to ensure that the information is current and interesting. An external body carries out any specialist training, such as internal auditing.

Legal Compliance

The Visible Services Department maintains a register of all legal requirements relating to its operations. It is updated periodically via updates from ARENA network and netregs websites. The responsible persons then update the legislation register. As a local authority, it is important we comply with all current legislation and keep up to date with any new legislation that comes into effect. We can then alter our working practices to ensure we are working within the law. The new WEEE regulations regarding the disposal of all electronic equipment will apply to our street lighting department, so we are working with our supplier to ensure that our equipment is disposed of correctly.

Sustainable Development

Sustainable development is defined as meeting the needs of today's generation without compromising the needs of future generations. As the

issue of climate change becomes more prevalent in the media, so does the issue of sustainable development, and the need to be more aware of the strain we place on our natural resources.

The department is always monitoring its activities to ensure that actions and services undertake are sustainable. All divisions are constantly looking at ways to reduce their use of non-renewable resources and invest in more sustainable raw materials. The Highways Maintenance division for example uses glassphalt as part of road building. This replaces approximately 30% of new aggregate with crushed green glass. They are also trialling the use of the Rhino-patch system. This system re-uses the old material to patch any damage on the highway, therefore reducing the amount of raw material needed for small routine maintenance jobs.

Future plans include a proposal to build a wind turbine to supply the Alps offices with renewable energy. Any excess can then be fed back into the grid. This would reduce our carbon footprint even further.

A new gully arisings recycling facility has received EA consent, planning approval and all other required licences. Construction started in February and the facility will be operational by early summer 2007. Neighbouring local authorities will also dispose of their arisings in this innovative project.

Conclusion

The Visible Services Department recognises that the operations carried out has an impact on the environment but is committed to reducing this impact and both preserving and protecting the natural resources. We will strive to continually improve our Environmental Management System and constantly review our Environmental Impacts. Building on the strengths of the Green Dragon Standard within the department, the Vale of Glamorgan Council is adopting the Green Dragon Environmental System throughout all departments within the council.



Michelle Fitzpatrick
Green Dragon Coordinator



Keith Jones
Environmental Manager



Miles Punter
Environmental Champion