Ripplefect information sheet

Step 4: Implement your action plan
Develop an implementation plan

Having a detailed implementation plan for each of your main improvement actions will help you to secure management commitment including any financial approval. The plan will also help you to manage the implementation of each action more effectively.

This Ripplefect information sheet provides guidance on developing an implementation plan for the following:

- product design;
- process improvements;
- installing water saving devices; and
- on-site water treatment.

You will already have prioritised your actions for improvement, but it is important now to schedule the implementation of your actions carefully to achieve maximum impact and minimise disruption.

You may decide to implement actions according to financial outlay to tie in with annual budget allocations or payback period. Alternatively you may consider which actions offer the greatest water and carbon savings.

To decide on the best course of action concentrate on your business's key driver for water efficiency:

- Are cost savings your key driver?
- Is security of your water supply your main concern?
- Are customers asking for improved environmental performance and reduced carbon emissions?

Regardless of the key driver and the priority options you have identified, you should consider starting with the 'quick wins', (the easiest and no-cost or low-cost measures) before progressing to the options that require more investment of time and/or money.

If some of your actions require capital expenditure, such as purchasing new equipment, consider in advance how this will be achieved and the timescales involved. For example, do you want to request proposals from several companies, or do you want one company to come in and implement all your actions?

As part of this process you may need to consult with key colleagues and delegate responsibility. Further guidance on how you can approach this is provided in the Ripplefect information sheet: Communicating implementation plans and raising awareness.
Once you have decided which actions you want to implement first, develop your implementation plans detailing the key steps that need to be taken, when they will be taken and who will be responsible for them.

When preparing your implementation plans, ensure you allow sufficient time between actions so that a short delay in implementing one does not disrupt a subsequent action or the entire schedule. You will need to predict any potential barriers or delays, such as purchasing equipment and services or waiting for production downtime before changes can be made to process lines.

As a minimum, seek to include the following detail for each action identified in your implementation plan:

- What specific roles will different people be responsible for? Don’t try to do everything yourself.
- What are the costs and potential savings associated with each action?
- How long will implementation take? Consider any timing issues such as scheduling work during planned production downtime.
- What are the potential barriers to implementation?
- What stages are at risk of delay and what can you do to minimise this risk?

A template for an implementation plan is shown in Figure 1 and can be downloaded here.

**Figure 1 Rippleffect implementation plan template**
Example 1: Developing implementation plans for product design

One way of reducing your water consumption is to consider the amount that is actually needed in your products. Rethinking this could save a significant volume of water together with associated costs. Some examples include using less water in washing detergents and soaps.

Some products may need to have a certain concentration to ensure a certain delivery quality, such as plant food, but consider at what point this concentration is required. For example, can customers dilute the concentrate at the point of use?

Rigby Taylor Limited made water efficiency savings through reviewing the company’s operations and products. The company developed an innovative line-marking system which combines ready-to-use white marking paint and a multipurpose spray-marking machine.

The concentrated paint does not need pre-mixing with water. As a result, it is estimated that a local authority responsible for 100 pitches:

- could save around 10,000 litres of water per year;
- benefit from less manual handling and rapid drying time; and
- use smaller vehicles as the product and its applicator are now more compact.

If your action plan includes redesigning a product or product range, you should consider the relevance of the following tasks for successful implementation:

- Identify priority products that could be improved to reduce water consumption, and consult with your product designers, sales representatives, production managers and distribution managers.
- Allocate responsibility for product redesign and agree key milestones, internal consultation activities and final approval processes.
- Prepare for and arrange product concept launch meetings with key clients, send out samples if possible, and seek early feedback.
- Finalise product design (and associated packaging).
- Source and install any process equipment upgrades, working with production managers to minimise down time.
- Provide product specifications and training to production line staff.
- Undertake a manufacturing trial, correct any issues, and prepare for full scale production.
- Monitor water savings and quantify additional profits, provide feedback to colleagues and consider external promotion of product improvements to the media, customers and other stakeholders.
- Review the implementation of the product redesign and any lessons learnt.
- Plan for further product development.
Example 2: Developing implementation plans for process improvements

There are many simple process improvements that you could make to reduce the cost of water supply and its disposal. Some examples include:

- implementing and optimising cleaning-in-place (CIP) systems;
- installing high pressure low volume triggers on hoses used for cleaning;
- vehicle washing with buckets instead of hoses;
- using scrapers/squeegees/brushes to clean floors instead of hoses;
- using pigging techniques to minimise product loss during process cleaning/between batches;
- re-circulating cooling water and recycling grey water;
- fixing leaks and overflows, and reducing water pressure;
- on-site water treatment prior to discharge to sewer;
- using appropriate water types for the task in hand (for example, not using hot water unless it is necessary);
- lagging water supply pipes (both hot and cold); and
- reducing losses through evaporation.

**Duco Limited** achieved water efficiency savings through process improvements. After one of the treatment processes, a water bath is used to cool the umbilical and prevent the release of fumes. Previously, all the water was discharged under an appropriate permit. DUCO Ltd installed a new water bath with equipment for monitoring water temperature and cleanliness so that water that is within specification can be re-used in the process. This reduced annual water consumption by 400 m$^3$.

Regardless of the process improvement, make sure you have considered:

- The most significant process improvements you could make.
- Whether any new equipment is required. Source these carefully, and consider using the [Water Technology List](#) (part of the Enhanced Capital Allowance scheme) to identify water efficient products.
- Whether staff require specific training or if you need to stimulate behaviour change.
- Whether process improvements will have any adverse effects (for example, an increase in the length of time needed to do a task such as cleaning).
- How you will monitor water (and associated cost) savings the improvement will make and how you will communicate this to your colleagues.
Example 3: Developing implementation plans for installing water saving devices
A good place to start looking for water efficient equipment providers is the Water Technology List (WTL).

By purchasing products on the WTL, your business may be eligible for tax relief in the form of an Enhanced Capital Allowance scheme (ECA). The ECA scheme provides a 100% first-year allowance for investments in certain water efficient plant and machinery. It enables businesses to write off 100% of the cost of qualifying plant and machinery against taxable profits in the year of purchase.

The technologies supported by the WTL include:
- Cleaning-in-place equipment
- Efficient showers
- Efficient taps
- Efficient toilets
- Efficient washing machines
- Flow controllers
- Greywater recovery and reuse equipment
- Leakage detection equipment
- Meters and monitoring equipment
- Rainwater harvesting equipment
- Small scale slurry and sludge dewatering equipment
- Vehicle waste water reclaim units
- Water efficient industrial cleaning equipment
- Water management equipment for mechanical seals
- Water reuse - efficient wastewater recovery and reuse systems

Visit the WTL website for further information or call the WTL Advice Line on 0844 875 5885.

Marshalls, a leading UK manufacturing company, implemented a water and materials recycling system at its Ramsbottom site. Rainwater was harvested from its 5,000 m² roof and stored in two 40,000 gallon tanks. This added nearly 3,000 m³ of water into the production process. Along with other initiatives, the rainwater harvesting reduced mains water consumption from 11,000 m³ to 500 m³. The whole water-saving initiative cost £250,000.

However, the total financial saving from reduced water consumption, recycling materials, reduced vehicle movements and disposal costs is estimated at £175,000 a year with a payback period of just 15 months.

For further examples of projects where rainwater harvesting systems have been successfully installed or for more advice on how rainwater harvesting can impact your business and the environment, refer to the following websites:
- The UK Rainwater Harvesting Association¹
- The Water Regulations Advisory Scheme²

¹ [www.ukrha.org](http://www.ukrha.org)
² [www.wras.co.uk](http://www.wras.co.uk)
Examples of rainwater harvesting and utilisation around the world can be found in UNEP's publication: *An Environmentally Sound Approach for Sustainable Urban Water Management: An Introductory Guide for Decision-Makers*.

Before selecting the most appropriate water saving devices for your site, consider the following:

- Which areas of the business have the greatest scope to save water through the installation of water saving devices?
- How much water could you save through the installation of specific devices, will effluent treatment costs be reduced and are there any other likely cost savings (for example, reduced energy needed for heating water)?
- What is the payback period for the installation of specific devices? In addition to the costs of purchasing the device and installing it, ensure you consider any other costs in your calculations (including production downtime or increased maintenance costs).
- Will you need to source several supplier quotes for installation? If so, make sure you allow time for this in your implementation plan.
- Will the equipment need optimising and managing after installation, for example CIP equipment?
- Will it be necessary to train staff on how to use new equipment?

**Example 4: Developing implementation plans for on-site water treatment**

On-site wastewater treatment is becoming increasingly popular as a means to comply with legislation and trade effluent consents and reducing effluent disposal costs. There are three main types of water treatment:

- Primary Treatment (flow and load equalisation and solids removal).
- Secondary Treatment (physico-chemical and biological).
- Tertiary Treatment (final effluent polishing and possible effluent recycling).

**G’s Fresh Beetroot** has used membrane technology to successfully treat its effluent, producing a water of sufficient quality for re-use on site. The benefits to G’s Fresh Beetroot of taking action to minimise water use and waste include:

- Water-related cost savings of £16,000/year.
- Effluent-related cost savings of £126,000/year.
- Annual water consumption reduced by 22,400 m³.

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When considering installing water treatment technologies consider the following:

- What quality of water do specific processes require?
- Have you used the Mogden Formula Tool to identify if effluent disposal costs can be reduced?
- Can water be recovered for reuse, for example, can grey water be used for toilet flushing or as a process cooling water?
- Could wastewater be treated on site?
- Have you researched the technology options available and spoken to equipment suppliers to establish the best ones available for your business?
- Can you recover any raw materials or product from the effluent?
- Is there space to install new equipment and will existing pipe runs need to be updated?
- Will you have to pump the wastewater any distance (this could impact on your energy costs)?
- Have you included all capital costs and operating costs in your payback calculations?
- How will you secure the investment internally, will it need senior level approval?
- What are the timescales for installation and will it require process downtime?

This information sheet is one of a series from the Rippleffect, for more information [click here](http://www.wrap.org.uk/rippleffect).