

## Cleaner seas for the Brighton and Hove area



Southern Water has announced plans for a new £200 million environmental improvement scheme to deliver even cleaner seas to the Sussex coast.

The multi-million pound wastewater treatment works and sludge recycling centre, proposed on land at Lower Hoddern Farm, Peacehaven, would treat the 95 million litres of wastewater generated daily by the 250,000 residents of Brighton and Hove, Woodingdean, Ovingdean, Rottingdean, Saltdean, Telscombe Cliffs and Peacehaven.

This wastewater is a combination of domestic wastewater from toilets, baths, kitchen sinks, washing machines and dishwashers, water used in factories, and rainfall.

At the moment, wastewater from the area travels through local sewers, many dating from Victorian times, to Portobello treatment works at Telscombe Cliffs.

There, it receives basic treatment, passing through grid-like screens to remove debris such as paper, grit, tampons, condoms and plastic wastes. The wastewater is then pumped out to sea through a 1.8km long sea outfall pipe.

The long sea outfall, together with the company's stormwater tunnel built underneath Brighton and Hove beaches, helps to ensure that local bathing waters meet the European bathing water standards.

However, following the rejection of plans to upgrade the Portobello works, the area is now the only one in Sussex unable to meet the latest European standards on wastewater treatment.

This legislation, the implementation of



*Locations reviewed*

which is monitored by the Environment Agency, has already resulted in Southern Water building a number of new and improved wastewater treatment works to serve other Sussex coastal resorts, including Hastings, Bexhill, Eastbourne, Newhaven, Shoreham, Worthing, Littlehampton and Bognor.

The company hopes you will be able to agree that there is a pressing national need for a new wastewater treatment works to serve the area.

## *Background*

In March 2001 the Secretary of State for the Environment, Transport and the Regions dismissed an appeal by Southern Water against the refusal of planning permission by East Sussex County Council, for a new wastewater treatment works and sludge recycling centre at Southern Water’s existing Portobello Wastewater Treatment Works.

In response to that decision, Southern Water set up a new project team to undertake a fresh and thorough review of potential locations for a new wastewater treatment works and sludge recycling centre to serve the area.

A Local Authority Consultation Group, which comprised representatives of West Sussex County Council, Adur District Council, Brighton and Hove City Council, East Sussex County Council and Lewes District Council, was also formed.

During 2001 and the first half of 2002, and in close consultation with this group, the company identified and then reviewed some 66 locations, taking into account the planning, environmental, engineering and operational issues relevant to each location.

A large number of these locations were

inaccessible, too small, partly developed or otherwise constrained to such an extent by protective landscape, nature conservation or heritage designations, that they were not considered viable options.

Following this lengthy process, eight sites were identified for further detailed consideration. The shortlist of sites was:

Shoreham Harbour

Black Rock

Lower Sheepcote Valley

Upper Sheepcote Valley

Ovingdean South

Peacehaven East

Brookside Farm Tip, Newhaven

North Quay, Newhaven.

A public consultation exercise was held in January 2003 on the shortlisted sites, including a series of public exhibitions.

It was clear that none of the original locations and shortlisted sites considered was free of constraints and it was apparent from the outset that there is no “easy option” for the provision of a new works to serve the area.

## *Choosing a site*

In November 2003, Southern Water announced it had selected Peacehaven as the site on which it would submit a planning application for a new wastewater treatment works and sludge recycling centre as part of its £200 million scheme.

Southern Water’s decision was based on a comparison of the advantages and disadvantages of the various sites, with a view to identifying the Best Practicable Environmental Option (BPEO).

In reaching its decision the company



*Locations shortlisted*

took into account all relevant matters including sustainability; proximity to the existing infrastructure serving the area; the availability of space for future expansion; regeneration; and planning, environmental, engineering and operational constraints.

It also carefully considered more than 2,000 responses made during public consultation on the shortlisted sites in January 2003.

On the basis of that exercise, the company came to the conclusion that Peacehaven represents the BPEO.

The BPEO is the option that provides the most benefits or the least damage to the environment, as a whole, at acceptable cost, in the long term as well as the short term.

### *What happens now?*

Southern Water is carrying out a new phase of public consultation to update local residents and other interested groups and organisations on the progress it has made in developing its scheme proposals.

In doing so, the company wishes to take on board local views and opinions ahead of submitting planning applications for the treatment works and associated infrastructure, including pipelines and pumping stations, in autumn 2004. While all representations will be given full consideration, this brochure specifically identifies those issues upon which we most want to hear from the public at this stage.

This will help form Southern Water's



*Youngsters enjoy cleaner seas at Littlehampton – a benefit of Southern Water's environmental improvement programme*



final proposals which it is intended will best protect the local area while also delivering the wider environmental improvements for the area as a whole.

### *The Peacehaven site*

Southern Water’s extensive site search, undertaken in conjunction with the local authorities, has demonstrated that there are no sites free of any constraints.

However, the company still faces the challenge of complying with stringent European legislation to deliver improved wastewater treatment and, ultimately, better seawater quality to the area.

The identified site at Lower Hoddern Farm is greenfield. It is outside the Sussex Downs AONB (Area of Outstanding Natural Beauty) and the proposed South Downs National Park, the boundaries of which are to the north and east.

It consists of arable farmland in a dry, shallow valley. Houses and the built-up urban area of Peacehaven lie to the south and west, with open downland to the north of the site.

Developments are planned to the south of the site, including new homes either side of the existing sports centre. There are also proposals in the local plan for a new primary school to the south of the sports centre and more playing fields to the west of the site.

There is no access to the site at present so a new road would have to be built to serve the wastewater treatment works.

### *The landscape*

The town of Peacehaven sits as a hard urban edge in the landscape.

To the south, the coast is defined by chalk cliffs while to the north lie the South Downs, a recognised Area of



*A photomontage shows how the site could incorporate a treatment works – as shown during public consultation in January 2003*



### Outstanding Natural Beauty (AONB).

Southern Water believes the final design of the treatment works could use a combination of land shaping and woodland planting. This would help contain the plant and accommodate both the new access road and future provision for public open space next to the site.

### *The development*

Southern Water fully acknowledges the challenges associated with locating a wastewater treatment works and sludge recycling centre in a dry valley, close to residential and amenity areas.

In particular, the scheme needs to consider the views of the works from the high ground to the east, on the A259 and from Bollen's Bush, both areas that overlook the site.

Specialists Reid Architecture are part of Southern Water's project team and their architects are now working with planning, environmental and landscape experts to help develop the best possible solution for the site.

This work is ongoing and has as its objectives:

- the screening of the works as far as possible, thereby minimising the effect of the works on view to the site
- respecting as far as is possible surrounding, existing and proposed land uses and environmental designations, in particular minimising the effect on nearby residential areas and local amenity.

### Lewes District Local Plan Adopted March 2003 Inset Map Number 3 - PEACEHAVEN

Key	
	Planning Boundary (See Policies RES5, RES6, RES16, RES17, E11, CT1, CT7)
	Conservation Areas (See Policies RES6, RES7, RES8, RES10, RES14, E8, E12, E14, E17, CF1, CT2, CT4, CT5, CT6, RE4, T6)
	Site Specific Policy
	Area of Outstanding Natural Beauty (See Policies CT2, ST25, ST29, E16)
	Conservation Areas (See Policies HA, HB, HC, HD, HE, ST26, ST28)
	Potential Housing Sites for period 2006-2011 (See Policy RES2 and paragraph 5.7)
	Primary Shopping Area (See Policy E4)
	Town Centre Boundary (See Policies E3, E4)
	Sites of Special Scientific Interest (See Policy ST8)
	Sites of Nature Conservation Importance (See Policy ST8)
	Ancient Monuments (See Policies HA, HB)
	Sites of Local Archaeological Interest (See Policies HA, HB, HT)
	The River Dase Policy (See Policies RE7, LW10)
	Area of Established Character (See Policy H2)
	Existing Car Parking available to public (See Policy T2)
	Alcove (See Policy RES)
	Parish Boundaries
	District Boundary
	Inset Map Boundaries

Southern Water is undertaking detailed site investigations at Lower Hoddern Farm. These include landscape, engineering and archaeological studies.

This work is vital to ensure the company has accurate up to date engineering and environmental data, information which will form the basis of an Environmental Statement.

This is a formal document to support the planning application and provide information on significant environmental effects of the proposals.

## Archaeology

Archaeologists, engaged by Southern Water, have uncovered evidence of Bronze Age or early Iron Age settlements at Peacehaven to the south of the treatment works site.

They made the discovery when they carried out a series of excavations and dug trenches at Lower Hoddern Farm.

Artefacts found included prehistoric worked flints and both prehistoric and Roman pottery. The marks left in the ground which reveal possible enclosures and ditches, believed to originate from the late Bronze Age/early Iron Age, have confirmed what the archaeologists always suspected – that Peacehaven, like much of the South Downs, was being farmed and lived on thousands of years ago.

The archaeologists have made a full record of the material found which was away from the site of the works. Therefore, the development of the works would not damage these archaeological deposits and the material will be preserved *in situ*.

## Marine surveys

A small team of marine biologists went underwater off Friars' Bay at Peacehaven to search for the ross worm, otherwise known as *Sabellaria spinulosa*, which can help make natural reefs over many



*A piece of Iron Age pottery found at Lower Hoddern Farm*

years. These, in turn, often provide a roof over the heads of other creatures, including a variety of small crabs and other worms.

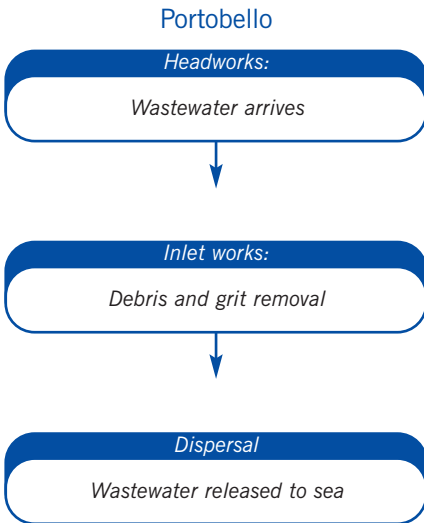
The worms live in tubes built from sand grains and commonly occur around the coastline as a thin crust on gravel or rocky seabed.

The biologists' survey results will enable Southern Water to protect any significant encrustations and environmentally sensitive locations as it builds a sea outfall pipe to release the cleaned wastewater far out to sea.



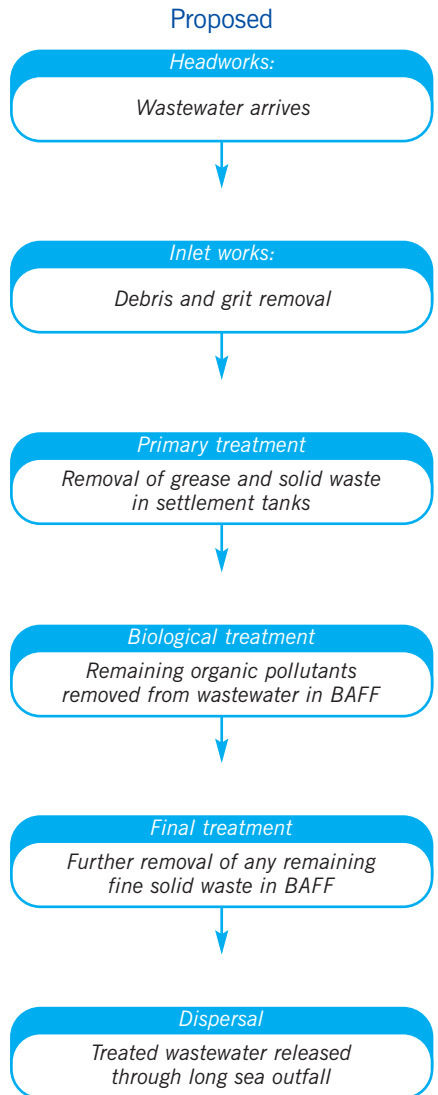
*Divers surveyed Friars Bay, Peacehaven*

## Current treatment process:



Wastewater before and after the proposed new and improved treatment process

## Proposed treatment process:



## What the works will do

Modern wastewater treatment works and sludge recycling centres are technically sophisticated, bearing little resemblance to the old edge-of-town sewage “farms” pioneered by the Victorians.

The new treatment works would include a multi-stage treatment process to ensure stringent European environmental standards are met.

This would include preliminary treatment, where wastewater passes through fine screens to remove debris such as paper, rags and plastic. Flows would then pass into tanks to remove both grit and grease.

Primary settlement would see the majority of the solid waste separated from the water, following which flows would pass into a BAFF plant (Biological Aerated Flooded Filter), a space-saving form of secondary biological treatment.

Here, wastewater would pass into specially-constructed tanks which are split into compartments.

Each compartment would be filled with a form of media – plastic beads for example – to help cultivate microscopic bacteria which break down and consume remaining organic pollutants as the wastewater passes through the tanks.

The treated wastewater would then be transferred from the works, via an underground pipeline, to Friars’ Bay at Peacehaven, where it would be released out to sea through a new 2.5km long sea outfall.

While the proposals would provide the modern treatment processes necessary to meet European environmental legislation, Southern Water has also incorporated the flexibility to include additional treatment processes, should they be necessary.



*Sunflowers grown using fertiliser granules produced by Southern Water*

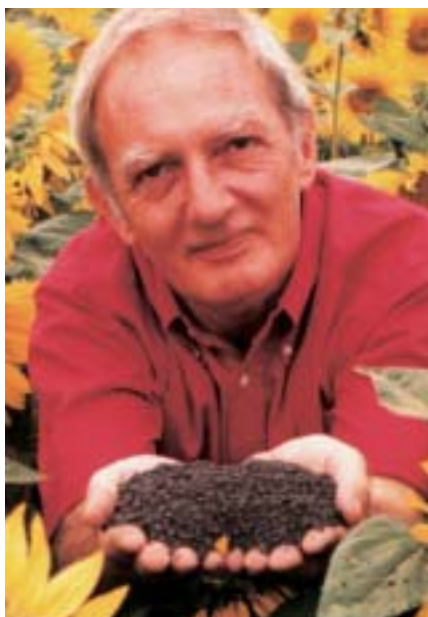
### *The recycling centre*

Solid waste removed from the wastewater during the treatment process forms sewage sludge.

This would also be treated at the Peacehaven site so it can be safely recycled to land as an organic fertiliser.

The proposed Sludge Recycling Centre at Peacehaven would treat both the sludge generated from wastewater which arrives at the works, and a smaller amount of sludge from other Southern Water sites.

The waste is thickened by adding chemicals to produce a homogenous mixture of water and solid material. This would then pass into digester tanks where it would be stored for up to 14 days and heated to a constant 35°C.



*The fertiliser granules*

This process allows bacteria within the waste to break down organic matter in the sludge to water, carbon dioxide and methane gas. The methane gas produced in this process would be stored on site in a gas holder and re-used to provide heat for the treatment processes.

The sludge would then be fed into a centrifuge which acts like a spin dryer, to separate the solid matter from the water to create a “cake”.

This would finally pass into a huge drying machine, similar to a tumble dryer, and be heated to 90°C to evaporate the vast majority of the remaining water.

The result is virtually smell-free dry granules, which are bagged and stored on site for a short period of time, before delivery to agricultural and other customers.

### *Controlling smells*

Southern Water places great importance on being a good neighbour, which is why the company invests huge sums of money in the latest technology to deal with smells. However sewage, by its very nature, is smelly and, if not dealt with properly, will generate smells.

All treatment processes that generate smells can be covered. The foul air generated is then collected and passed through a sophisticated odour control system to remove smells, before being released into the atmosphere.

When a modern treatment works is operating properly, there should be no



*Treatment tanks can be covered and the foul air extracted*

problems with smells. However, there are occasions when plant or equipment requires major maintenance, or emergency repairs must be carried out, in which case some smells may occur over a short period of time.

As far as possible the company will plan work to ensure any odours are minimised during these periods, and endeavour to return the works to maximum operating efficiency as soon as practicably possible.

### *Traffic and access*

The A259 South Coast Road links Peacehaven with Brighton to the west and Newhaven to the east. The A259 is a single carriageway road with a 7.5 tonne weight limit 'except for

loading' throughout Peacehaven. Traffic flows along this road vary between 25,000 and 30,000 vehicles per day.

Southern Water has considered the most appropriate ways of accessing the new works, during both construction and operation, and has looked at accessing the site from the east and the west.

The western access option would follow a route from the A259 via Sutton Avenue and Greenwich Way, extending past the Meridian Centre and the Meridian Industrial Estate via a new dedicated access road to the site approximately 700m in length.

The eastern access option would consist of a direct route from the A259 to the east of the wastewater treatment works. The eastern route would require the



*The western access option would follow a route from the A259 via Sutton Avenue and Greenwich Way*



*The busy A259 looking east*

construction of a new dedicated access road and junction with the A259 to the east of Peacehaven.

During construction of the wastewater treatment works on average between 15 to 20 lorries would enter and leave the site per day. Once in operation the number of visits to and from the site would vary from day to day. On average there would be 15 visits per day by lorries.

It is considered that the western access option is suitable to accommodate lorry movements associated with the construction and operation of the wastewater treatment works. This route passes along roads already used for access to the Meridian Centre and the Meridian Industrial Estate. The eastern access route would require construction across a part of the Sussex Downs Area of Outstanding Natural Beauty (AONB), a nationally designated landscape.

Both the western and eastern access route options would be constructed in accordance with recognised design standards having regard to the proposed landscape strategy.

At present Southern Water considers the most appropriate solution is to utilise the western access route to the site for use during both construction of the treatment works and as a permanent access once the site is operational.

However, the company is continuing to work closely with the local highways authority before making a final decision and there remain alternative options – for construction and operational access, the eastern access option; for construction access from the east and operational access, on completion, from the west, with land for the eastern access being reinstated after construction is complete.



*The scheme will bring improvements to local seawater quality and the wider environment*



## Infrastructure

To transfer wastewater from Brighton and Hove, Woodingdean, Ovingdean, Rottingdean, Saltdean, Telscombe Cliffs and Peacehaven to the new works and from the works to the new long sea outfall at Friars' Bay would require significant new sewerage infrastructure.

This would necessitate a pumping station in Brighton to transfer wastewater from the area along a 6km tunnelled pipeline to Portobello. Various options are being considered with reference to planning, environmental, engineering and operational considerations.

A new pumping station would also be provided at Portobello to pump Brighton wastewater, together with flows intercepted from Woodingdean, Ovingdean, Rottingdean, Saltdean, Telscombe Cliffs and Peacehaven, along

a further 5km of pipeline to the works. This pumping station would be below ground and not affect sea views from Telscombe Tye.

A new 2.5km long sea outfall would be provided at Friars' Bay. Part of this would be tunnelled offshore under the wave-cut chalk platform and the remainder laid in a dredged trench. A tunnel would connect the outfall to the works. Tunnel boring machines with a 2.4 metre diameter would create the necessary tunnels. They would work from Portobello towards Brighton and from the treatment works site to Portobello and Friars' Bay.

The tunnels would run under both public highways and some residential areas. They would be within solid chalk at a depth of between eight and 40 metres below ground level and it is unlikely that local residents would be aware of the construction activity.



*A tunnelling machine, used for a similar scheme in Portsmouth, Hampshire*



## *Your views*

Southern Water hopes you agree there is a pressing national need for a new wastewater treatment works to serve the area. It is not an option for the company to sit back and do nothing.

As part of the work to design its scheme, Southern Water is consulting local residents, planning authorities, parish and town councils, statutory and non-statutory organisations and public bodies.

Your views are welcome so they can be considered as final detailed designs of the scheme are drawn up.

You can write to:

**Southern Water**  
Southern House  
Yeoman Road  
Worthing  
BN13 3NX.

Alternatively, you can view this information and make comments on Southern Water's website:  
[www.southernwater.co.uk](http://www.southernwater.co.uk)



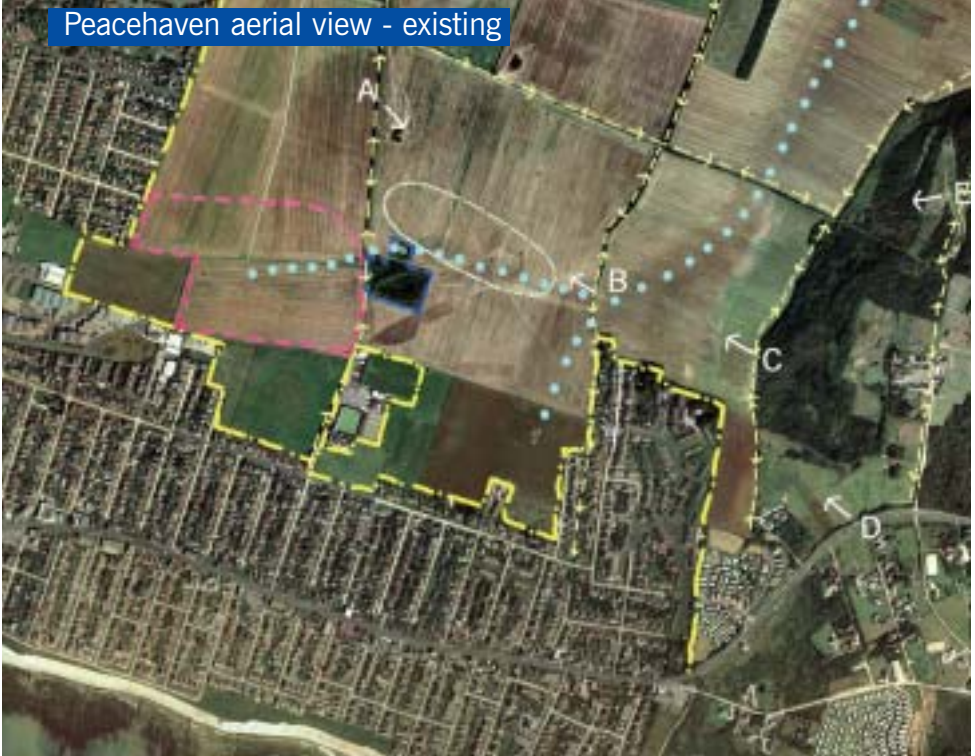
Telephone:

**0845 278 0845**

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# Cleaner seas for the Brighton and Hove area

Peacehaven aerial view - existing



**Key:**

--- Area allocated as Public Open Space (such as playing fields), under local authority's planning guidance.

--- Public footpaths to be maintained.

••• Line of bottom of dry valley.

A → Photo view points.

--- Edge of Peacehaven.

--- Existing pond.

--- Proposed outline of wastewater treatment works.

Peacehaven aerial view - proposed



**Key:**

A → Photo view points (see overleaf.)

--- Possible alternative site access route

Proposed site – concept design



View A



View B



View C



View D



View E



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