



Contaminated Land Strategy

July 2001



CONTENTS

Section	Topic	Page
1	Introduction	1
2	Objectives of the Strategy	3
3	How the Strategy has been produced	4
4	Regulatory Context	5
5	The roles of the Borough Council and the Environment Agency	5
6	Defining contaminated land	6
7	Dealing with contaminated land	7
8	Pollutant linkages and risk assessment	8
9	The local area	9
10	Previous land uses	10
11	Priorities and timescales	12
12	The investigation process	15
13	Management arrangements	16
14	Dartford Borough Council land interests	17
15	Contaminated land outside the Borough	17
16	Sources of information	18
17	How the information will be used	20
18	Information management	21
19	Dealing with enquiries	21
20	Liaison with relevant agencies and interested parties	22
21	Strategy review	22
22	Glossary of terms	23
23	List of contacts	25

1.0 INTRODUCTION

1.1 Under the Environmental Protection Act 1990, all local authorities are required to inspect land within their areas with the purpose of identifying contaminated land. Part of the requirement is for each local authority to produce, publish and adopt a Strategy as to how it intends to carry out this obligation. This document is Dartford Borough Council's Contaminated Land Strategy (hereafter referred to as "the Strategy"). Within the Strategy, the phrase "contaminated land" shall have the same meaning as the definition of "contaminated land" provided within Part IIA of the Environmental Protection Act 1990 (see Section 22 "Glossary of Terms").

1.2 Consultation on the Strategy has taken place and comments were invited from interested parties, to be received by no later than 18 April 2001. The comments received were considered and the final version of the Strategy was produced and adopted by Dartford Borough Council (hereafter referred to as the "Council") on 27 July 2001.

1.3 In recent years there has been an increase in emphasis on environmental issues covering a range of subjects. In general terms, the strategy that has been adopted by the Council to deal with contaminated land has strong links and interactions with other strategies and policies of the Council. For example:

Local Agenda 21 and the Local Plan Review: The Council has adopted a Local Agenda 21 strategy. Also, the current the Local Plan, adopted in April 1995 is currently under review. Both these documents include references to previously developed land, sometimes referred to as "brownfield land". Local Agenda 21 encompasses nature conservation and sustainable development issues and both these aspects will be given due consideration when carrying out investigations to determine the nature and extent of contaminated land.

Consultation and involvement of community groups and business: In recent years, many of the initiatives coming from central to local government have involved the need to communicate effectively with the local community. The methods used for such consultation may vary according to the issue being dealt with. In all cases, the Council will examine the type of consultation required, identify ways of achieving this, and seek comments from the identified participants. This approach will be used when identifying the interested parties of land that has been identified as being contaminated.

1.4 There are other general issues where the new contaminated land regime will interact with existing practices. For example:

Enforcement: One of the main functions of a local authority is to enforce legislation within its area. Wherever possible, the Council attempts to advise on, and encourage compliance with, legislative obligations placed on those who live and work within its area. However, if such attempts fail, the Council will consider using its powers to take enforcement action (i.e. the service of notices) and where necessary, instigating legal

proceedings. In many cases, the primary legislation requires local authorities to take formal action. The Council has adopted an Enforcement Concordat and this will govern and direct all enforcement action taken by the Council.

General issues of land contamination: For many years, local authorities have dealt with land contamination issues. This may have been through the clean up of sites being developed for housing or commercial use, the removal of fly-tipped material or under statutory nuisance powers. Such actions will continue in the future as many of these examples would not fall within the legal definition of contaminated land.

Public access to information: the Council receives many requests from individuals, community groups and businesses for information. Some information is of a confidential nature. Information relating to contamination will only be placed within a public register if the land is found to be contaminated. This is in accordance with the legal obligations placed on the Council.

- 1.5 It is clear that although this Strategy is specific to contaminated land, it does interact with many other policies of the Council. The aim of this Strategy is to identify and state the Council's approach towards the investigation of land within the Borough to determine the nature and extent of contaminated land within the meaning of Part IIA of the Environmental Protection Act 1990.

2.0 OBJECTIVES OF THE STRATEGY

2.1 The objectives of this Strategy are to:

- i. identify a rational, ordered and prioritised approach for the inspection of land to determine the nature and extent of contaminated land as defined by Section 78A(2) of the Environmental Protection Act 1990;
- ii. inform the Environment Agency, the public and others, of the Council's approach towards the inspection of land and to consult relevant bodies and agencies during the investigation processes;
- iii. assist in identifying the resources needed to inspect land for contamination;
- iv. assist in identifying appropriate internal procedures and responsibilities for the assessment of land,
- v. acknowledge that amendments will be required and to timetable a review into the inspection programme, and
- vi. to provide a framework for work leading to the production of a public register detailing regulatory action taken by the Council for the remediation of contaminated land within the Borough.

2.2 Procedures that result in the effective investigation of land will be documented and reviewed annually, during the review of the Strategy. In time, these are likely to form appendices to the Strategy.

2.3 The purpose of this Strategy is **not** to describe the detailed methods of investigation and enforcement action. Investigative techniques that are in common, accepted use will be considered and no doubt, others may evolve in the passage of time. Enforcement action is largely governed by statutory guidance. Therefore the Strategy does not consider the issues of apportioning liability for remedial action.

2.4 Similarly, this strategy will **not** deal with contamination that is to be resolved through the use of other legislation. For example, this would include ensuring the "suitability for intended use" approach through planning controls, enforcement via Waste Management legislation, etc. Guidance on such matters is given within the Department of the Environment, Transport and the Regions (DETR) Circular 02/2000.

3.0 HOW THE STRATEGY HAS BEEN PRODUCED

3.1 Although the Council's Environmental Strategic Development Section has been responsible for co-ordinating and compiling the Strategy, significant input has been made from other teams. In particular, contributions from the Planning, Legal, Financial and GIS (Geographical Information System) sections have been essential in production of the Strategy. See chart below.

3.2 To produce the initial draft, the following were considered:

- DETR Guidance documents: Contaminated Land Inspection Strategies - Technical Advice for Local Authorities, and Circular 02/2000: Environmental Protection Act 1990: Part IIA Contaminated Land
- Internal discussions;
- External discussions with other local authorities, and via the Kent Contaminated Land Forum;
- Information obtained from attendance at relevant seminars/workshops;
- Available resources;
- Expected level of development on "brownfield" land;



4.0 REGULATORY CONTEXT

4.1 The Environment Act 1995 inserted a new section (Part IIA) into The Environmental Protection Act 1990. The regulations and statutory guidance came into force in April 2000. It is the introduction of this new regulatory obligation, commonly referred to as the Part IIA regime, which has resulted in the need for this strategy. The following paragraphs examine the regulatory context in more detail.

4.2 All local authorities are required to take a strategic approach to inspect land in their areas for contamination. Statutory guidance requires that the approach adopted should:

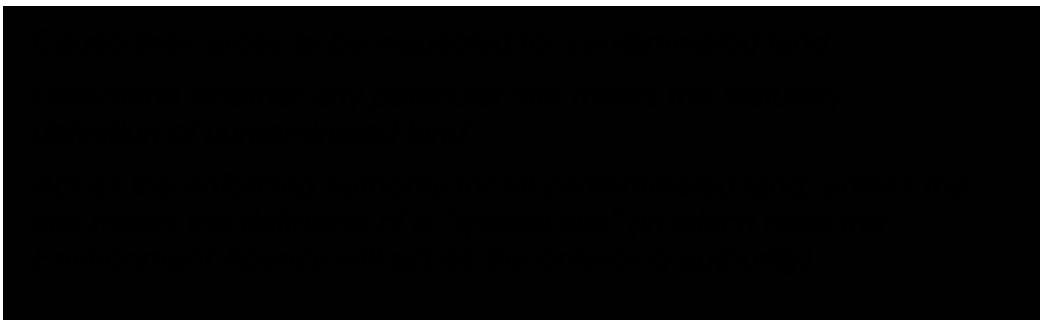


4.3 The strategy has been developed in line with these requirements and DETR's guidance, "Contaminated Land Inspection Strategies -Technical Advice for Local Authorities". The current strategy has yet to be approved by the Council and will be the subject of consultation prior to adoption.

4.4 Upon receipt of comments, the consultation draft strategy will be amended where appropriate and submitted to Cabinet for referral to full Council in June 2001 for adoption.

5.0 THE ROLES OF THE BOROUGH COUNCIL AND THE ENVIRONMENT AGENCY

5.1 Under Part IIA, local authorities have been identified as the prime enforcers of the new legislative controls. Local authorities have a duty to:



5.2 The Environment Agency has a regulatory role in assisting local authorities, providing site-specific local guidance, dealing with “special sites” and publishing periodic reports on the state of land contamination nationally.

6.0 DEFINING CONTAMINATED LAND

6.1 The term CONTAMINATED LAND can be interpreted in many different ways. The meaning within the new regime is based upon harmful effects or risk of harmful effects. A legal definition of contaminated land is given in Section 78A(2) of Part IIA of the Environmental Protection Act 1990:



6.2 Section 78A(5) requires the regulatory authority to act in accordance with guidance issued by the Secretary of State in determining significance and likelihood of harm. At the time of writing this draft strategy, the guidance relating to risk assessment (CLEA) has not been published.

6.3 The receptors recognised as being potentially sensitive are shown in the table on the following page.

6.4 As referred to in Section 5, the Environment Agency has a regulatory role in dealing with “special sites”. There is no simple definition to the term “special site”, but a description can be found within Regulations 2 and 3 and Schedule 1 of the Contaminated Land (England) Regulations 2000.

RECEPTORS	
<p>Human beings</p> <p>Ecological systems or living organisms forming part of a system within certain protected locations, including:</p> <ul style="list-style-type: none"> ➤ Sites of Special Scientific Interest(SSSIs) ➤ National Nature Reserves ➤ Marine Nature Reserves ➤ Nature Reserves ➤ Special Areas of Conservation (SACs) ➤ Special Protection Areas (SPAs) ➤ Candidate SACs ➤ RAMSAR sites ➤ Areas of special protection for birds 	<p>Property in the form of buildings, including:</p> <ul style="list-style-type: none"> ➤ Ancient Monuments <p>Property in other forms</p> <ul style="list-style-type: none"> ➤ Crops ➤ Livestock ➤ Home-grown produce ➤ Owned or domesticated animals ➤ Wild animals subject to shooting or fishing rights <p>Controlled waters</p> <ul style="list-style-type: none"> ➤ Surface waters (e.g. rivers, lakes, streams, territorial and coastal waters, bathing waters, shellfish waters and salmonid/cyprinid waters) ➤ Drinking water abstractions ➤ Source protection zones ➤ Groundwater – private abstractions <p>Groundwater – major aquifers</p>

7.0 DEALING WITH CONTAMINATED LAND

7.1 If an area of contaminated land has been identified, the Council's approach for dealing with it will be the same regardless of whether the local authority or the Environment Agency is the regulator. There are four main stages to this approach:

- i. To establish who is the “appropriate person” to bear responsibility for the remediation (or “clean-up”) of the land.
- ii. To decide what remediation is required and to ensure that this occurs, through:
 - Reaching a voluntary agreement
 - Serving a remediation notice, if agreement cannot be reached
 - Carrying out work themselves, in certain circumstances
- iii. To determine who should bear what proportion of the liability for meeting the costs of the work
- iv. To record certain information about regulatory action on a public register.

8.0 POLLUTANT LINKAGES AND RISK ASSESSMENT

8.1 For a site to meet the definition of contaminated land, a pollutant linkage must first be established. A pollutant linkage comprises three components:

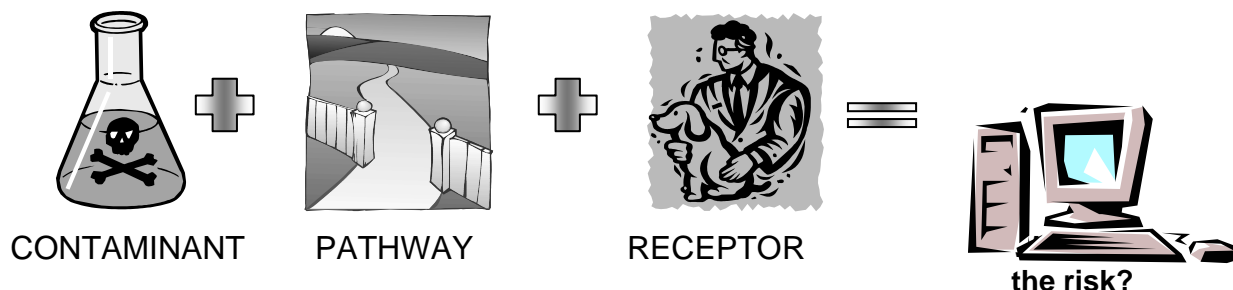
- i. A source of contamination in, on or under the ground
- ii. A pathway by, or through, which a receptor is being exposed to, or affected by, a contaminant, or could be so exposed or affected by;
- iii. A receptor of a type specified in the Statutory Guidance, including human beings, ecological systems, animals or crops, buildings or controlled waters

8.2 If the three components of a pollutant linkage exist, then the Council must satisfy itself that:

- i) significant harm is being caused to the receptor in the pollutant linkage;
- ii) there is a significant possibility of significant harm being caused to that receptor;
- iii) pollution of controlled waters is being caused; or
- iv) pollution of controlled waters is likely to be caused.

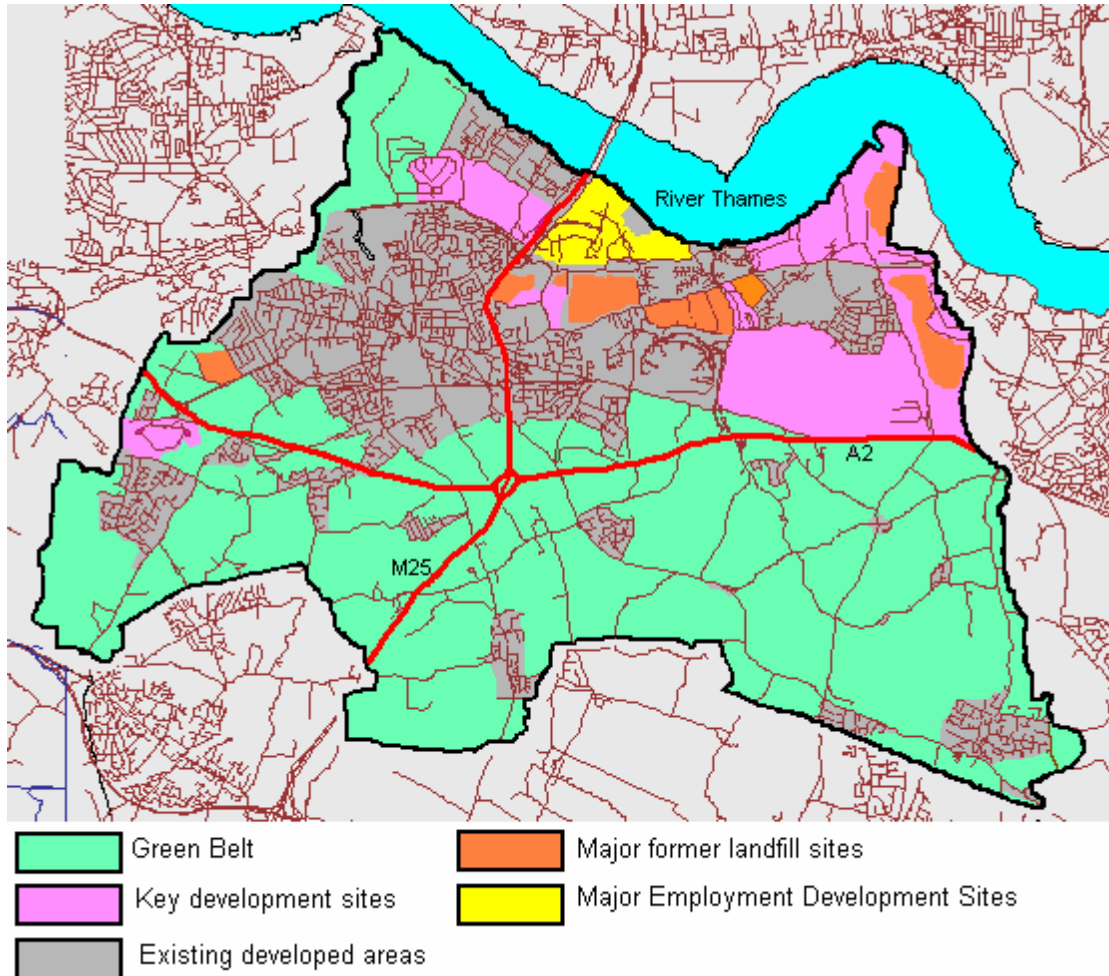
If this is the case, the pollutant linkage will form the basis for a determination that a piece of land is contaminated land.

8.3 The determination of land as contaminated land will require the Council to carry out an appropriate scientific and technical assessment of all the relevant and available evidence, including, where necessary, an assessment of the risks arising from the pollutant linkage. The Council may use authoritative and scientifically based guideline values to assess risks (e.g. guideline values derived from CLEA, the Contaminated Land Exposure Assessment model soon to be published by DETR), or other relevant, appropriate, authoritative and scientifically based risk assessment models.



9.0 THE LOCAL AREA

THIS MAP SHOWS THE DARTFORD BC AREA AND ILLUSTRATES THE MAJOR LAND USES WITHIN THE BOROUGH



9.2 Dartford Borough lies 25 km south east of Central London in Kent between the North Downs and the River Thames. The smallest of the Kent districts, it covers an area of about 7,000 hectares and has a population approaching 86,000. The Borough occupies an important strategic location within the South East, bordering Greater London to the west, the River Thames and Essex to the north and the remainder of Kent to the south and east. Two of the principal lines of communication within the region intersect here - the M25 London Orbital Motorway and the A2, linking London to Canterbury and the Channel ports - to provide excellent links to the capital, the remainder of the South East and Continental Europe. The Queen Elizabeth II Bridge across the Thames provides a dramatic and strategic landmark in this part of Thames Gateway. The North Kent railway line links Dartford to London mainline stations.

- 9.3 The northern part of the Borough, between the A2 and the Thames, includes the communities of Dartford, Stone, Swanscombe and Greenhithe, together with a number of smaller settlements and is primarily urban in nature. Approximately two thirds of the Borough's population reside in this part of the Borough. Outside the built up areas, the landscape character is typical of the Greater Thames Estuary, mainly low lying ground consisting of relatively inaccessible marshland. The northern part of the Borough also includes the majority of the major development sites within the Borough which are primarily sites occupying large areas of recycled land. Together with the land north of the A2 in neighbouring Gravesham Borough, it forms the "Kent Thames-side" area of the Thames Gateway (identified by Government as one of two areas within the Gateway with potential for significant growth). Work is currently underway which is identifying approximately 14 'growth nodes' across the Thames Gateway with 4 in North Kent, namely Kent Thames-side, Medway, Isle of Grain and Sittingbourne / Sheerness.
- 9.4 The southern part of the Borough is generally semi-rural in character. It comprises a mix of open, gently undulating countryside, covered by Green Belt designation, and a number of villages and dormitory settlements. Further south, beyond the Borough, the land rises to form the Kent North Downs. A large area of the Borough is underlain by a chalk aquifer. The potentially contaminative historical land uses within the Borough that may overlie the aquifer may therefore pose a risk to controlled waters.
- 9.5 Dartford is an important employment centre with major employers such as Glaxo Smith Kline, Dartford & Gravesham and Thames Gateway Health Trusts, the Borough Council and J&E Hall, as well as the retail sector both at Bluewater and in the town. However, the Borough's proximity to London and its good rail and road connections mean that nearly 50% of the working population work outside the Borough.
- 9.6 There are several Sites of Special Scientific Interest (SSSI's) and other important "eco-receptors" wholly or partly within the Borough. The "nature conservation" issues relating to land are an important consideration when investigating contamination. The relevant sites have not been shown on the indicative map of the Borough but are contained within the Council's Local Plan and Local Plan Review documents.

10.0 PREVIOUS LAND USES

- 10.1 Being adjacent to the River Thames and with its close proximity to London, economic growth within the Borough has taken place since Medieval times. However, the economic growth coincided with the development of the local government system for the town during the 18th century. During this period the storage of gunpowder, the development of a cotton mill and the beginnings of successful period of general engineering developed. Major improvements for the flow of traffic, which grew along with the town's economy, took place within the town centre.

- 10.2 The 19th century has been described as Dartford's "boom" era. The town's population grew from 2,406 in 1801 to 18,643 in 1901. In keeping with many other areas in the country, and particularly the south east, the population in the next century grew significantly to its current level of approximately 86,000. The industries that grew up during the previous century were developing even more and this was assisted by the introduction of the railway to the town in 1849.
- 10.3 An indication as to the economic development in the area can be demonstrated by the following table:

CENTURY	INDUSTRY
15 th	Lime kiln, leather tanning, brewing
16 th	Smelting, papermaking
17 th	Iron mill, more paper mills, gunpowder storage
18 th	Timber processing, weaving, beginnings of general engineering, early cement (non Portland), gunpowder factory, printing
19 th	Milling, clay pipe manufacture, pharmaceuticals, Engineering, portland cement manufacture, mineral extraction (+ associated landfilling)
20 th	Engineering, munitions, electricity production, landfilling

- 10.4 While the above table is not a detailed account of the industrial developments within the area, it does give an indication as to when the major industries developed. Many industries (papermaking, pharmaceuticals, engineering) still remain today.
- 10.5 In recent years there has been a significant growth in the local and regional development of the area. Many "high tech" businesses operate from Dartford. This development, along with national growth in housing needs, has resulted in many previous industrial sites (brownfield sites) being developed for other uses. Through the planning process, controls were put in place to require the developers to clean-up any contamination of these sites. However, the new contaminated land regime still requires that these sites be examined to ensure suitable and sufficient works were carried out. The legacy of the extensive mineral workings in the Borough was, for many years, a dominant feature of the local environment. However, the recognition by the Government of Kent Thameside's important role in the regeneration of the Thames Gateway, the opening of Bluewater and the proposed new CTRL station at Ebbsfleet mean that this part of north-west Kent is likely to experience considerable economic change.
- 10.6 The historical land use within the Borough has been diverse with some industries having developed over a prolonged period of time.

Accordingly, the potential for contaminated soil being present on land formerly and presently used for industrial/commercial enterprises is high.

11.0 PRIORITIES AND TIMESCALES

- 11.1 At this stage, the Strategy cannot identify timescales by when all land will have been investigated. However, the Strategy will assist in identifying the likely resources required for the forthcoming year's investigations. When determining detailed inspection priorities, protection of human health and controlled waters will be given the highest priority. It therefore follows, that examination of housing developments on land that may have been put to a former contaminative use will need to take place early on in the investigation process. Similarly, if development of land that may have been put to a contaminative former use is imminent, the Part IIA regime will be applied as well as the normal Development Planning and Building Regulation controls.
- 11.2 Following the desktop studies, areas of land will be assessed again with regard to priorities with a view to carrying out more detailed investigations, including, where appropriate, intrusive sampling and analyses. The initial risk assessment method will use the CLARE computer model which is a tool for ranking sites according to their environmental risk potential. The Council will use authoritative and scientifically based guideline values to assess risks (e.g. guideline values derived from CLEA, the Contaminated Land Exposure Assessment model soon to be published by DETR), or other relevant, appropriate, authoritative and scientifically based risk assessment models. However, it is recognised that other risk assessment methods may also be appropriate, or that others may be developed in the future. The preferred method for risk assessment will therefore be kept under constant review. Upon completion of the historical land use studies, further risk assessment will take place with the objective of identifying priorities if further investigation is required. The risk to the receptors listed in the Table on page 7 of the strategy (i.e. Human Beings, Ecological systems, Property and Controlled Waters) will be assessed with risk to human harm being given the highest priority.
- 11.3 When considering costs, there may be benefits in a number of sites being investigated consecutively, particularly if core and trial pit sampling is required. Therefore, a programme of intrusive sampling can only be determined after the initial desktop studies and more detailed inspection of the identified sites has been completed. If a large number of sites need high priority intrusive sampling it may also be necessary to consider the use of external consultants if sufficient in-house resources do not exist.
- 11.4 Unless urgent sites are investigated and contamination is found, it is anticipated that detailed investigations will not take place during the majority of 2001. During this initial period, most work will be concentrate on the desktop studies and revisiting the remediation work undertaken as a result of housing developments.

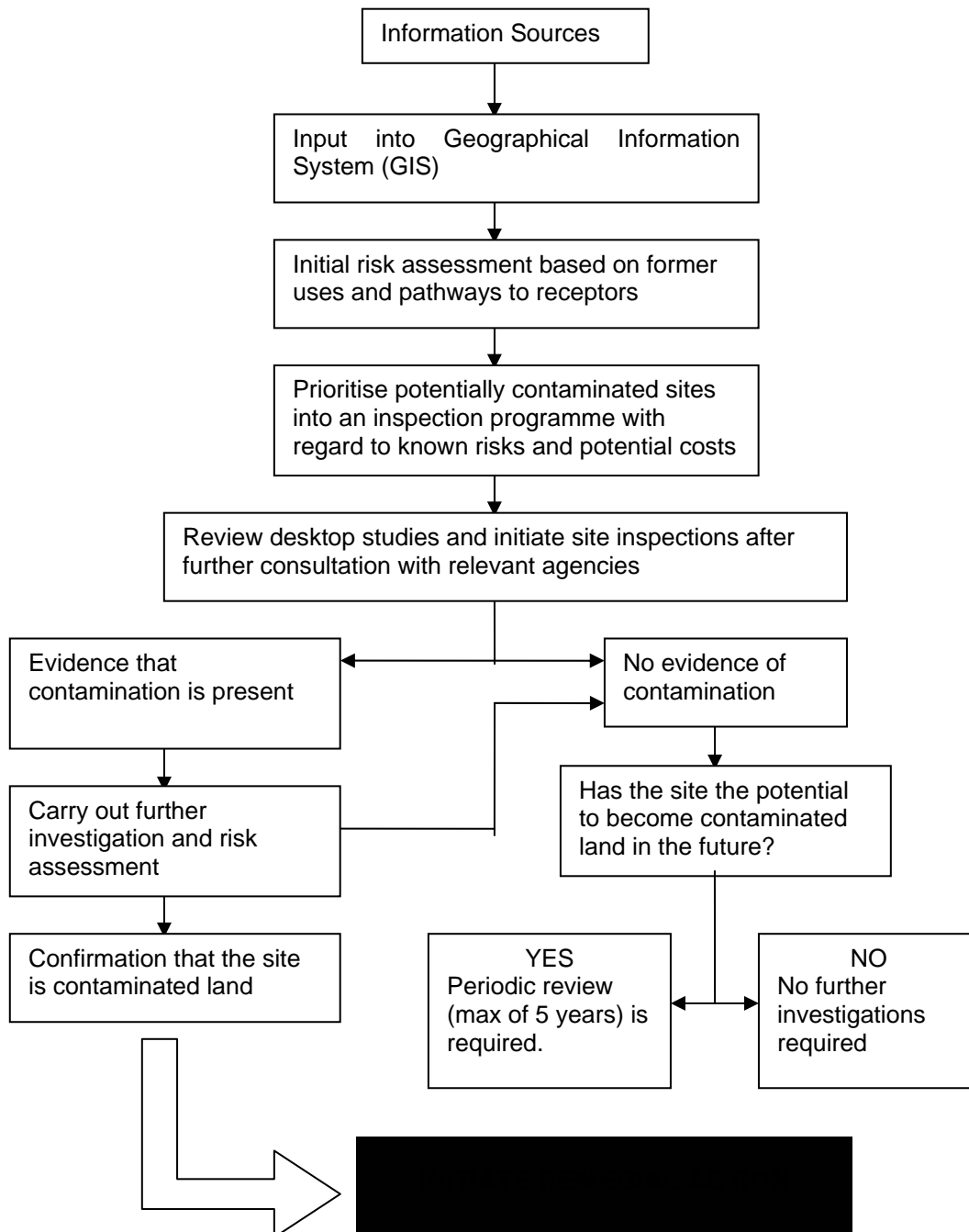
11.5 The proposed timetable on the following page can only be **indicative** as the availability of resources may vary from time to time and land requiring “urgent” remediation will take priority. The term “urgent” is to be applied to sites where the Council is aware that there is actual or imminent risk of harm and that urgent remedial action is required. Flexibility in changing the timescales will be necessary, as the results of investigations become known. Resources for each year are determined the previous year and will need to be directed to the most urgent issues when more information is available. The annual review of the Strategy, and the work programme, will assist in focussing on the most pressing issues while also progressing the inspection of land so as to meet the legal responsibility of the Council.

**INDICATIVE TIMETABLE FOR THE INSPECTION OF THE BOROUGH TO
DETERMINE NATURE AND EXTENT OF CONTAMINATED LAND**

	ACTION	2001												2002											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Strategy development	Deal with sites requiring urgent remediation																								
	Circulate draft strategy for consultation																								
	Consider comments received																								
	Report draft strategy to Cabinet																								
	Adopt Contaminated Land Strategy																								
	Provide copies to Environment Agency and others																								
Initial desktop studies and investigations	Initial desktop study via historical maps, etc. to identify previous land uses with potential to cause contamination																								
	Identify land that may have had a contaminative former use that is designated for development within the Local Plan																								
	Establish database of land that may have been put to a contaminative use including ownership if known																								
	Review existing records for more detailed information																								
	Seek further information if appropriate																								
	Initial site inspections re "special features" etc																								
Detailed investigations	Review current information																								
	Identify potential receptors																								
	Identify suspected and confirm known pathways																								
	Intrusive sampling and analyses																								
	Review of pathways following sampling																								
	Risk assessment and declaration of contaminated land																								
	Enforcement action																								
	Review Strategy & potential costs for next financial year																								

12.0 THE INVESTIGATION PROCESS

- 12.1** The investigation processes will need to allow for variations between each site investigated. However, written procedures will be developed to enable a set of general principles to be applied. These principles will be based upon current and future guidance as may be issued by the DETR and other relevant agencies.
- 12.2** It is not the purpose of this Strategy to state what the investigation procedures will be. At present, the general actions shown in the following Flow Chart will be applied:



13.0 INTERNAL MANAGEMENT ARRANGEMENTS

- 13.1 The day-to-day responsibility for the identification of contaminated land rests with the Council's Scientific Officer. The Environmental Strategic Development Manager is responsible for identifying resources to enable the Council to meet its legal obligation and to manage the daily operations for that purpose. Issues of a strategic nature, and the identification of future costs will be the subject of discussion between the Director of Environment and the Environmental Strategic Development Manager.
- 13.2 The Scientific Officer will undertake the desktop investigations and significant input will be required from the Property Information Manager. Field work will be undertaken by the Scientific Officer although in some cases, specialist advice/equipment may be needed which shall be purchased from external consultants. The risk assessment shall be carried out by the Scientific Officer. Some enforcement issues may be complex and although the Scientific Officer and the Environmental Strategic Development Manager will be responsible for initiating enforcement for remedial action, some input may be required from the Head of Legal Services.
- 13.3 The identified responsibilities for specific issues are summarised in the following table.

KEY to role: P= primary role S= supporting role n/a= not applicable	ISSUE	Strategy Development	Strategy Review	Initial Investigations	Detailed Investigations	Risk Assessment	Declaration of contaminated land	Enforcement	Voluntary remediation	Finance
OFFICER										
Scientific Officer		S	S	P	P	P	P	P	P	S
Environmental Strategic Development Manager		P	P	S	S	S	S	P	S	P
Director of Environment		S	S	n/a	n/a	n/a	n/a	P	S	P
Managing Director		S	S	n/a	n/a	n/a	n/a	n/a	n/a	P
Development Control Manager		S	S	n/a	n/a	n/a	n/a	n/a	P	S
Head of Legal Services		S	S	n/a	n/a	n/a	S	S	n/a	S
Property Information Manager		S	S	S	S	S	n/a	n/a	n/a	S
Planning Policy Manager		S	S	n/a	n/a	n/a	n/a	n/a	n/a	S

14.0 DARTFORD BOROUGH COUNCIL LAND INTERESTS

- 14.1 Land owned, in full or in part, by the Council is subject to the same degree of investigation. The timescales applied to the investigation of Council land will be determined in accordance with the methodology applied to other land.
- 14.2 The procedures will differ where contamination of Council land is found, in that voluntary remedial action will then become the primary consideration. Although voluntary action would also be an option for land in other ownership, the Council would not have the ultimate decision to proceed with this approach, as it would with its own land.
- 14.3 When investigating its own land, the Council will need to address the issue of transparency and demonstrate consistency with the investigation of other land. The conclusions of investigations of Corporately owned land will be reported to elected Members of the Council. In this way, a single officer or group of officers will not be responsible for determining the course of further action to be taken, i.e. the enforcement issues will not be delegated to officers. Instead, officers' recommendations will be debated and considered. Elected Members will then determine the further action to be taken having regard to legislative obligations and guidance and conformity with actions taken with respect to land not owned by the Council.
- 14.4 It is not easy to state what interests the Council has in land ownership. For example, at the time of writing, the Council owns 4833 homes, let to tenants. In 1977, just after the last major reorganisation of local government, the number of Council homes in the Borough was 7844. At various times throughout the history of local government, boundaries have changed and land ownership/interests have also changed. Therefore, previous Council land interests may be an influencing factor when determining liability groups.

15.0 CONTAMINATED LAND OUTSIDE THE BOROUGH

- 15.1 Particular care will be needed when determining the effects of potentially contaminated land at the boundaries with other local authorities. Specific consultation on this issue will take place at the appropriate times to ensure the influence of contaminated land on land within another local authority's area is correctly assessed. Further progress will need to be made on this issue in due course.

16.0 SOURCES OF INFORMATION

16.1 The Environment Agency has agreed to provide the following information:

- Catchment plan showing location of water course, settlements etc.
- Plan showing relationship of catchment management plans to local authority boundaries.
- Plans showing features such as flood defence works, sewage treatment works, landfill sites, bathing waters, areas of Agency concern regarding water quality.
- Information on location of environmentally sensitive areas e.g. SSSIs.
- Groundwater vulnerability maps.
- Locations of water abstraction points.
- Information on quality of river quality objectives.
- Locations of sites with waste management licences.
- Location of closed landfill sites.
- Location of sites with IPC authorisations.
- Locations of licensed nuclear sites and sites where radioactive substances are regulated by the Agency.

16.2 The Environment Agency has provided the following information on CD-ROM:

- Local authority district boundaries extracted from Ordnance Survey boundary line data.
- Unitary authority boundaries extracted from Ordnance Survey boundary line data.
- Local Environment Agency Plan (LEAPs) boundaries for Southern Region (higher accuracy than the National set).
- Current and former landfill sites in the Kent Area - **WARNING this data is sensitive and must not be released externally in digital or hardcopy format.**
- Discharge Consents (all) in Kent. Includes revocations, variations etc. Data sourced from Charges for Discharges (CFD).
- Industrial Process (IPC) sites in Southern Region. These are Part A site regulated by the EA under the Environmental Protection Act 1990. This does not include part B sites regulated by the local authority.
- Type 4 Radioactive Substance (RAS) Permissions allowing the ownership and use of radioactive material within the conditions of the authorisation (not quality assessed).

- Type 2 RAS Permissions (sites subject to licensing under Section 1 of the Nuclear Installations Act 1965 (2 licences both at Dungeness Power Station). Also Type 3 RAS permissions allowing the accumulation & disposal of radioactive material within the conditions of the authorisation (not quality assessed).
 - Waste Management Licences (current) in Kent.
 - Water Abstraction Licences in Southern Region (live only), extracted from the NALD (National Abstraction Licensing Database) Database.
 - Impoundment Licences in Southern Region (live only), extracted from the NALD Database.
 - Southern Water's Waste Water Treatment Works.
 - Bathing Water Quality sampling points.
 - Rivers at a scale of 1:50,000 from the Institute of Hydrology (IoH) in the Kent Area.
- 16.3 Several major purchases have been made in order to assist in the investigation of land. Historic Mapping and Image Processing plus OrthoRectification software and also Orthorectified Aerial Photography of the Borough has been purchased.
- 16.4 Information sources will include commercial directories, planning applications, existing DBC records, and local knowledge. With respect to the latter source, experience has shown that local people who have lived and worked in an area for a substantial time can provide invaluable information on land uses. Therefore, this potential source of information shall be considered and local people encouraged to participate in identifying the historical land uses within the Borough.
- 16.5 Other information sources will include relevant agencies (for example MAFF, English Nature and English Heritage) to ensure that each site investigation involves those agencies that may be able to offer advice or information relating to the land being investigated. In this way, due regard can be given to issues not normally within the scope of local authority activities. A list of contacts for the relevant agencies will be compiled when written procedures are developed (also refer to Section 20).

17.0 HOW THE INFORMATION WILL BE USED

- 17.1 The principal approach will be to combine and store information on the Geographical Information System (GIS) and use the data to make an initial assessment of potentially contaminated land. The information will be stored on GIS in "layers" and these layers can then be combined to produce a composite map of land use for the whole Borough. This information will then be assessed using software to analyse the risk of contamination based on previous land uses. More details of this are given in the following paragraph.
- 17.2 The Property Information Section will use the Historic Mapping (4 epochs; 1860, 1896, 1909, 1932) and the GIS to produce a series of historic land use maps. The objective will be to produce a single map of the Borough that combines the information from the 4 epochs. Other reference material, such as old Trade Directories and other historic records, will also be considered when carrying out this task. Aerial photography will also be used to combine the single historical land use map with recent aerial photography. During this process the alignment of the separate maps and photographs will need to be carefully matched and specific software has been purchased to achieve this. This process is known as Orthorectification. Data for the waterway network and locations of receptors will then be added and 3D imaging software will be used to assist in the identification of potential pollution pathways. All of this data and analysis will result in a database that will be analysed using CLARE (Contaminated Land Risk Evaluator) to produce a quantifiable risk assessment. Consideration will also be given to the use of other risk assessment processes such as the CLEA (Contaminated Land Exposure Assessment) guidelines which are currently being prepared by DETR. Where appropriate, relevant data from other sources will also be incorporated into the land use classifications.
- 17.2 Once the risk assessment is complete the data will be used to further refine the Contaminated Land Strategy and the software will be further used to produce visualisation of possible contaminated sites and their relationship to receptors in 3D. The data layers created for this report will be made available on the corporate GI system at the conclusion of the project.

Summary of software.

- | | | |
|---|------------------------|--|
| 1 | <i>PCI ImageWorks</i> | <i>(Image classification and colour image visualisation)</i> |
| 2 | <i>PCI OrthoEngine</i> | <i>(Image Orthorectification terrain modelling)</i> |
| 3 | <i>PCI Fly</i> | <i>(Real time 3D flythrough and visualisation)</i> |
| 4 | <i>CLARE</i> | <i>(Contaminated land risk evaluator)</i> |
| 5 | <i>Data</i> | <i>- Historic mapping, aerial photography, DETR CD.</i> |

18.0 INFORMATION MANAGEMENT

- 18.1 Transparency is one of the underlying principles of the Environmental Protection Act 1990 Part IIA regulatory regime. The Council has a duty to keep a public register to record certain information about its regulatory activities. The Contaminated Land Regulations 2000, Schedule 3, lists the details that must be held in the public register. This includes remediation notices, declarations and statements, any appeals against remediation or charging notices, any designations of special sites and any conviction for offences. There are certain exclusions where information is deemed commercially confidential or may affect national security.
- 18.2 The public register will be in paper form and will be held at the Civic Centre and other forms of access to the register will be considered. It will be made available to the public on request at Reception during office hours. Information will be updated regularly in accordance with contaminated land guidance. A reasonable fee will be charged for copies of relevant information requested and charges will be identified prior to the request being dealt with.
- 18.3 Relevant information supplied to the Council during its investigations will be held separately and marked clearly as 'Inspection Information'. This information will be treated as confidential, subject to the written consent of the owner to disclose the information to the public, in accordance with the Environmental Information Regulations 1992. Such information will be appropriately indexed on receipt to ensure that there is a clear audit trail for all information held.

19.0 DEALING WITH ENQUIRIES

- 19.1 Written procedures for responding to enquiries relating to contaminated land enquiries have been produced. The procedures ensure that enquiries can be traced and that the various officers that may respond to the enquiries follow the same procedures. In some instances, standard phases are used for consistency. The procedures can be viewed in detail upon request, and are currently filed within File C68 (Contaminated Land) and these can also be found within the computer reference:

Envshare/Admin Procedures/ConLandEnquiries.doc

- 19.1 As a result of the new Contaminated Land legislation, specific questions may be asked in relation to contaminated land. The information provided will vary according to the status of investigations relating to each area of land. The response will also depend on the confidentiality of the information held by the Council. If the land in question has not been investigated, the following standard response will be provided:

"This land, and land adjacent to it, has not yet been the subject of investigation to determine the extent of any contamination as required under Part IIA of the Environmental Protection Act 1990".

19.2 The responsibility for advising the Senior Land Charges Clerk of the Council of any changes to the information held rests with the Environmental Strategic Development Manager.

20.0 LIAISON WITH RELEVANT AGENCIES AND INTERESTED PARTIES

20.1 The new contaminated land regime has identified local authorities and the Environment Agency as the enforcing agencies. Therefore, close liaison between the Council and the Environment Agency will be essential. Fortunately, the links that have been established over many years as a result of formally consulting the Environment Agency on planning applications has resulted in lines of communication being established.

20.2 The Kent local authorities have established working groups that report to the Kent Chief Environmental Health Officers' Group and contaminated land is a topic that would, and already has been, discussed at the Environmental Protection Technical Working Group. This will continue.

20.3 The establishment of the Contaminated Land Forum in Kent, of which the Environment Agency, Kent County Council and the Kent local authorities are members, has also enabled detailed discussions, presentations and links to be established with some major developers within the County. With respect to this latter point, in 1995 the Council produced guidance on contaminated land issues for developers working within the Borough. The guidance will be reviewed at the first review of the Strategy.

20.4 The existing links with other interested parties has ensured that liaison on contaminated land issues has already taken place, and will provide the base for further development of where necessary. Formal communication links will need to be established with agencies that may not presently be the subject of regular or formal liaison for Council staff carrying out the investigations (for example English Nature, English Heritage, etc).

21.0 STRATEGY REVIEW

21.1 Each year, the Strategy shall be reviewed and this shall commence prior to the Council's budget setting process. In this way financial implications will be given due regard.

22.0 GLOSSARY OF TERMS

<p>Appropriate person: Any person who is an appropriate person, determined in accordance with section 78F of Environmental Protection Act 1990 Part IIA, to bear responsibility for anything which is to be done by way of remediation in any particular case.</p>
<p>Brownfield land: A site that has been generally abandoned or underused where redevelopment is complicated by actual or perceived environmental contamination. Only a small proportion of brownfield land sites are expected to meet the definition of contaminated land. Another often-used phrase is “previously developed land”.</p>
<p>CLARE: Contaminated Land Risk Evaluator - software developed to assess the risk from contamination in relation to the previous land uses for a given piece of land</p>
<p>CLEA: Contaminated Land Exposure Assessment - a methodology for carrying out a risk assessment. (Expected June 2001)</p>
<p>Contaminant: A substance which is in, on or under the land and which has the potential to cause harm or to cause pollution of controlled waters</p>
<p>Contaminated land: Any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances, in, on or under the land that:</p> <ul style="list-style-type: none"> (a) significant harm is being caused or there is a significant possibility of such harm being caused; or (b) pollution of controlled waters is being, or is likely to be caused
<p>Controlled waters: Includes: Inland waters (rivers, streams, underground streams, canals, lakes and reservoirs) Groundwaters (any water contained in underground strata, wells or boreholes) Coastal Waters</p>
<p>GIS: Geographical Information System. A set of software tools for the analysis and visualisation of spatial data</p>
<p>Harm: Harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his/her property</p>
<p>Image Processing Software: A set of software tools to facilitate analysis of ground cover/land use from multi spectral aerial imagery</p>
<p>Liability group: The persons who are appropriate persons with respect to a particular significant pollutant linkage</p>
<p>NALD:</p>

National Abstraction Licensing Database
<p>OrthoRectification: A process to remove height displacement errors on aerial photography and produce a flat two dimensional map for further analysis</p>
<p>Pathway: One or more routes or means by, or through, which a receptor: (a) is being exposed to, or affected by, a contaminant, or (b) could be so exposed or affected</p>
<p>Pollutant linkage: The relationship between a contaminant, a pathway and a receptor</p>
<p>RAMSAR sites: A site protected under an international convention on protection of wetlands of international importance, especially as habitats for waterfowl, named after the city in Iran where the convention was signed</p>
<p>Receptor: Either: (a) a living organism, a group of living organisms, an ecological system or a piece of property which: i. is in a category listed in Table A in Chapter A (of DETR Circular 02/2000) as a type of receptor, and ii. is being, or could be, harmed, by a contaminant; or (b) controlled waters which are being, or could be, polluted by a contaminant Also refer to the table following paragraph 7.4 of this document</p>
<p>Remedial action: Any individual thing which is being, or is to be, done by way of remediation</p>
<p>Remediation notice: Defined in section 88E(1) of the Environmental Protection Act 1990 as a notice specifying what an appropriate person is to do by way of remediation and the periods within which he is required to do each of the things so specified</p>
<p>Special site: Any contaminated land which as a result of its current or previous use, or contaminants present is required to be designated as a Special Site (defined by section 78A(3) of the Environmental Protection Act 1990), under the regulation of the Environment Agency</p>
<p>Suitable for intended use approach: A determination as to the suitability of the identifiable end use of a piece of land with respect to the contamination issues that may affect the land</p>

23.0 LIST OF CONTACTS

<p>Dartford Borough Council: Mr P Kessel Environmental Strategic Development Manager Dartford Borough Council Civic Centre Home Gardens Dartford Kent DA1 1DR</p>	<p>Miss S Atkins Scientific Officer Dartford Borough Council Civic Centre Home Gardens Dartford Kent DA1 1DR</p>
<p>Environment Agency: Mrs J Mossom Area Contaminated Land Officer Environment Agency Orchard House, Endeavour Park Addington, West Malling Kent ME19 5SH</p>	<p>Also: Mr J Atkinson & Miss J Hookey (same address)</p>
<p>English Nature Dr L Solly The Countryside Management Centre Coldharbour Farm Wye, Ashford Kent TN25 5DB</p>	<p>English Heritage South East Region Eastgate Court 195-205 High Street Guildford Kent GU1 3EH</p>
<p>South East England Development Agency SEEDA Headquarters Cross Lanes Guildford Kent GU1 1YA</p>	<p>Department of the Environment, Transport & the Regions Land Quality Team Marine, Land and Liability Division DETR 3/B4 Ashdown House 123 Victoria Street London SW1E 6DE</p>
<p>Dr Patrick Miller Contaminants Division Food Standards Agency Aviation House 125 Kingsway, London, WC2B 6NH</p>	
<p>Kent County Council Sessions House County Hall Maidstone Kent ME14 1XQ</p>	<p>Ministry for Agriculture, Fisheries and Food MAFF Nobel House 17 Smith Square London SW1P 3JR</p>
<p>Health and Safety Executive International house Dover Place Ashford Kent TN23 1HU</p>	<p>QED (Quality Environment for Dartford) c/o Mr J Bettey Environmental Strategic Development Dartford Borough Council Civic Centre Home Gardens Dartford Kent DA1 1DR</p>