

**From:** Simon Jones, Corporate Director, Growth, Environment and Transport

**To:** Susan Carey, Cabinet Member for Environment

**Subject:** Approval to award a Contract for environmental remediation works at North Farm closed landfill site

**Key decision:** 22/00046

**Classification:** **Unrestricted**

**Past Pathway of report:** None

**Future Pathway of report:** None

**Electoral Division:** Tunbridge Wells East

**Summary:** To seek Member approval to award a Contract for environmental remediation works at North Farm Closed Landfill Site. Works encompass installation of a geosynthetic clay liner (GCL) and associated drainage to reduce leachate generation plus works to upgrade the existing landfill gas collection system to prevent harm to human health and to the environment.

**Recommendation(s):** The Cabinet Member for Environment is asked to agree to provide delegated authority to the Corporate Director of Growth, Environment and Transport to award a contract for environmental remediation works at North Farm Closed Landfill Site.

## **1. Introduction**

- 1.1 This report provides information concerning the need to undertake remediation works at North Farm Closed Landfill site, Tunbridge Wells to address environmental issues.
- 1.2 KCC has a statutory obligation under the Environmental Protection Act 1990 to manage and maintain its closed landfill sites such that environmental harm does not occur.
- 1.3 Management of the site has noted a number of environmental issues that need to be addressed through a package of remediation works in order to prevent harm from occurring. These include:
  - High volumes of leachate are produced by the site, which if not managed effectively could result in pollution of nearby watercourses.
  - Landfill gas which predominantly comprises methane gas is produced by the site. The existing gas extraction and collection system has significant age-related faults which in turn limits the performance of the gas flare to burn the gas efficiently.
  - Surface emission surveys have recorded persistent areas of elevated landfill gas emissions. This is venting greenhouse gases to the atmosphere.

## 2. The report

- 2.1 Historically the site was a landfill operating from the early 1960's, taking predominately domestic waste from the Tunbridge Wells area. The landfill site was closed in the early 1990's, and a gas extraction system and flare stack was installed in 1995. The landfill was constructed as a land raise operation, with tipping undertaken to form a domed structure.
- 2.2 Under the Environmental Protection Act 1990, Kent County Council (KCC) is responsible for managing the impact of its closed landfill sites on both the environment and human health. KCC Waste Management undertakes a programme of monitoring of gas and waters (leachate) at the North Farm closed landfill site with subsequent reporting defining risks and identifying remediation works necessary.
- 2.3 Active ongoing assessments have highlighted several continuing environmental issues which KCC needs to resolve.
- 2.4 Identified environmental issues are:

### **High volumes of leachate**

Leachate is produced when rainfall permeates through the landfill capping materials and into the waste. This emerges in the leachate collection drainage ditches around the perimeter of the site, where it is collected and subsequently pumped to Southern Water's Wastewater Treatment Works (WWTW).

The current system results in significant quantities of leachate being generated as any rain falling across the whole site is collected by the same drainage system and is pumped off site for treatment. A discharge consent permits this activity, which is at risk of being breached following periods of heavy rainfall. KCC is coming under increasing pressure to reduce these volumes, as the WWTW cannot cope with the high demand. Breaches could lead to the discharge consent being withdrawn.

During extreme weather events there is also the risk of the system being overwhelmed, resulting in leachate overtopping the drainage system and being discharged directly into nearby watercourses.

### **Release of landfill gas to atmosphere**

Landfill gas comprises predominantly methane and carbon dioxide, which are powerful greenhouse gases and under certain conditions it is explosive and an asphyxiant. In order to control the migration of this gas, a series of wells and pipework, known as a gas collection system, is in place at the site, connected to a gas flare, which safely burns the gas. A recent audit of the system by a specialist Contractor has identified a number of age-related issues with the collection system. These are such that it is becoming harder to maintain a fully functioning system.

In addition, the capping soils laid when the site was closed are not able to prevent surface emissions to atmosphere across the entire site.

- 2.5 Options for achieving outcomes are:  
**Option 1 – Do nothing**

This is not considered to be a viable option, as there are environmental issues that need addressing. Doing nothing has the potential for harm to the environment or human health to be realised. In this instance, the site may then be officially classified as Contaminated Land and remediation costs imposed upon KCC.

**Option 2 – Install GCL across the top of the site to minimise leachate generation and upgrade gas collection system to reduce emissions**

This is the preferred option as it sustainably manages leachate generation in the future and also addresses the poor performance of the existing gas collection system. The project requires investment, due to the cost of the Geosynthetic Clay Liner installation but will result in lower revenue costs for the discharge of leachate. Alternative liner systems were appraised; however, they were not deemed suitable due to availability or level of resource needed for installation. This option will also decrease the risk of KCC breaching its discharge consent limits on daily leachate volumes. By upgrading the gas collection system will include drilling of replacement wells and laying new pipework to connect to the existing gas flare – this will reduce the discharge of greenhouse gases.

**Option 3 – Install storage to attenuate leachate on site during heavy periods of rainfall and upgrade gas collection system**

This option will also decrease the risk of KCC breaching its discharge consent, but it will not reduce revenue costs or offer a sustainable solution. Optioneering to determine the feasibility of this option noted that there is insufficient space on site to locate the required size tank without significant earthworks including removal of landfilled wastes (a costly undertaking). As with Option 2, upgrade works to the gas collection system will include drilling of replacement wells and laying new pipework to connect to the existing gas flare.

Overall **Option 2** has been determined to be the most cost effective and will address the environmental issues identified, protect the biodiversity at the site whilst reducing emissions.

If daily discharged volume limits are breached as a consequence of no action being taken, there is a risk that Southern Water would withdraw the discharge consent for the site. This would result in many litres of leachate having to be transported off site for disposal at very significant unbudgeted cost. In order for this to occur a large holding pond/tank would still need to be provided. This would be a wholly unsustainable situation both financially and environmentally and must be avoided.

### **3. Financial Implications**

- 3.1 Works to place a GCL liner are estimated to be in the region of £1.1m, subject to no soil import required.
- 3.2 There is currently a committed budget allocation of £1.007m for the project, the tender process will be designed to drive value, bringing the cost as low as possible

3.3 The upgrade works to the gas collection system, is costed at £102k, additional funding is available from an established renewals reserve and the general aftercare budget to meet this environmental priority.

#### **4. Legal implications**

4.1 Under the Environmental Protection Act 1990, Kent County Council (KCC) is responsible for managing the impact of its closed landfill sites on both the environment and human health.

4.2 If the decision is taken to not approve this tender award, then there is a risk that environmental harm may occur as noted in the above option – do nothing. In this instance, the site may then be officially classified as Contaminated Land and remediation costs imposed upon KCC.

#### **5. Equalities implications**

5.1 The Equality Impact Assessment undertaken concluded there is no detriment identified for any group with protected characteristics.

#### **6. Other corporate implications**

6.1 This project will subsequently unlock the site for potential further development. Colleagues in Sustainable Business & Communities have secured a grid connection for the development of a potential solar array on the site. Subject to further Authority approvals this could generate green electricity for import to the grid and could become a community project.

#### **7. Governance**

7.1 The Service Director for Environment & Waste will inherit the main delegations via the Officer Scheme of Delegation due to the potential financial value of this contract.

#### **8. Conclusions**

8.1 Environmental remedial works as outlined in this report are required to prevent harm to the environment and human health from occurring. Feasibility and optioneering reports have determined Option 2 - install GCL across the top of the site to minimise leachate generation and upgrade gas collection system, to be the preferred option.

#### **9.1 Recommendation(s):**

The Cabinet Member for Environment is asked to agree to provide delegated authority to the Corporate Director of Growth, Environment and Transport to award a contract for environmental remediation works at North Farm Closed Landfill Site.

#### **10. Background Documents**

- 10.1 Equality Impact Assessment
- 10.2 Record of Decision

## 11. Contact details

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