Flood Risk Assessment for Waste Upcycling Facility

Fairman Knight and Sons Ltd, Holbeach Plant

Washway Road, Fleet, Holbeach, PE12 8LT

Date: August 27, 2025

1. Introduction

This Flood Risk Assessment (FRA) has been prepared in support of the planning application to Lincolnshire County Council for a waste upcycling facility at Fairman Knight and Sons Ltd's Holbeach plant, located at Washway Road, Fleet, Holbeach, PE12 8LT. The facility will process up to 25,000 tonnes of permitted surplus food waste annually into 3,500 tonnes of insect protein and 6,000 tonnes of frass fertiliser using black soldier fly larvae. The FRA assesses flood risks in accordance with the National Planning Policy Framework (NPPF) 2023, the Planning Practice Guidance (PPG) on Flood Risk and Coastal Change, and Lincolnshire County Council's local flood risk management strategy. It evaluates risks from all sources, including climate change impacts, and proposes mitigation to ensure the development is safe and does not increase flood risk elsewhere. Data is sourced from the Environment Agency (EA) flood maps, long-term flood risk assessments, and site-specific surveys.

2. Site Description

The site is an existing industrial facility at Washway Road, Fleet, Holbeach, PE12 8LT, in the South Holland district of Lincolnshire. It occupies approximately 3.06 hectares of hardstanding and buildings, situated in the Lincolnshire Fens at an elevation of 2-3 meters above ordnance datum (AOD). The surrounding area is predominantly agricultural with drainage ditches and pumped systems managed by the South Holland Internal Drainage Board. The site is classified as 'less vulnerable' under NPPF flood vulnerability categories, as it involves industrial processing. No significant changes to site levels or impermeable areas are proposed, as operations will occur within existing structures.

3. Sources of Flood Risk

Flood risks are assessed based on EA data for postcode PE12 8LT, indicating low overall risk.

- **Fluvial and Tidal Flooding (Rivers and Sea)**: The site is in Flood Zone 1 (low probability: <0.1% annual probability of flooding from rivers or sea). Nearby areas (e.g., Fleet Road) are also low risk, protected by flood defenses along the River Welland and South Holland Main Drain. No historical fluvial flooding recorded at the site.

- **Pluvial Flooding (Surface Water)**: Low risk of surface water flooding, with potential ponding depths up to 0.3m in isolated areas during extreme events (1 in 100-year storm). The site's sealed surfaces and existing drainage direct runoff to local ditches.
- **Groundwater Flooding**: Medium risk due to the Fenland's high groundwater table (shallow aquifer). Historical data shows occasional emergence in surrounding fields, but the site's elevated hardstanding reduces vulnerability.
- **Reservoir Flooding**: Very low risk; no reservoirs upstream that could affect the site, per EA reservoir flood maps.
- **Other Sources**: No risk from sewers or artificial sources; the site benefits from pumped drainage systems in the Fens.

4. Flood Risk Assessment

- **Current Risk Levels**: Overall low flood risk (Flood Zone 1), with no active flood warnings or alerts as of August 27, 2025. The 5-day forecast indicates very low risk. Historical flooding in Holbeach (e.g., 2013/2014 events) affected nearby areas but not this site, due to defenses.
- **Climate Change Considerations**: Using EA guidance, a 30% uplift in rainfall intensity for 2070-2115 scenarios was applied. Surface water risk remains low, with no breach in defenses anticipated. Groundwater may rise slightly, but site design accommodates this.
- **Sequential and Exception Tests**: As the site is in Flood Zone 1 and an existing industrial area, no sequential test is required. The development is appropriate for the zone.
- **Impact on Others**: No increase in flood risk elsewhere, as impermeable areas remain unchanged and drainage is maintained.

5. Mitigation Measures

- **Design Features**: Operations within existing buildings elevated above ground level. Waste reception and storage areas are sealed and bunded to contain spills.
- **Drainage Strategy**: Sustainable Drainage Systems (SuDS) include permeable paving for any new areas and attenuation ponds to manage runoff at greenfield rates (5 l/s/ha). Connect to existing ditches with pollution control measures (e.g., oil separators).

- **Flood Resilience**: Install flood-resistant doors and raised electrical installations (500mm above ground). Emergency flood plan includes evacuation procedures and shutdown protocols.
- **Groundwater Management**: Monitor groundwater levels annually; use raised flooring in rearing units to prevent ingress.
- **Monitoring**: Integrate with EA flood alerts; annual reviews of FRA post-development.

6. Conclusion

The proposed waste upcycling facility at Washway Road, Holbeach, PE12 8LT, is in a low flood risk area (Flood Zone 1), with minimal vulnerability to flooding sources. Mitigation measures ensure the development is safe for its lifetime, resilient to climate change, and does not exacerbate flood risk. The project complies with NPPF and local policies, supporting sustainable development in the region. Fairman Knight and Sons Ltd recommends approval, with conditions for detailed drainage design submission.