Treated Effluent Discharge Contribution (TEDC)

1. Introduction

The River Stour (Kent) Internal Drainage Board (IDB) is a statutory body operating under the Land Drainage Act 1991 and associated byelaws. Its primary function is to manage water levels, drainage, and flood risk within its district. The introduction of formerly potable water into the IDB's Drainage District, after suitable treatment, represents an unnatural increase in water volume that has to be accommodated. This additional water necessitates active management to help prevent adverse impacts on the drainage system, flood risk, and the environment.

To help address these challenges, the IDB applies a Treated Effluent Discharge Contribution (TEDC), a one-off fee designed to contribute towards the long-term costs associated with managing this additional water volume. This statement outlines the roles, responsibilities, justifications, and legal grounding for the TEDC, along with a detailed schedule of fees.

2. Roles and Responsibilities

2.1. Statutory Powers of the IDB

The River Stour (Kent) IDB has permissive powers to:

- Manage water levels and drainage within its district.
- Mitigate flood risk and protect properties, infrastructure, and agricultural land.
- Regulate the introduction of water into the catchment under its associated byelaws, which require consent for any discharge that increases flow or volume.

2.2. Separation from Utility Responsibilities

The TEDC is separate from charges levied by water utilities (e.g., Southern/South East Water) for the supply and treatment of potable water. While water utilities focus on water supply and wastewater treatment, the IDB must manage the downstream impacts of increased water volumes on drainage systems and the environment.

3. Justifications for the TEDC

3.1. Increased Water Volume

Treated potable water represents an unnatural increase in water volume within the catchment. This additional water requires active management to help prevent:

- Overloading of drainage systems.
- Increased flood risk.
- Adverse environmental impacts, such as erosion and sediment movement and deposition in aquatic habitats.

3.2. Increased Management Costs

The additional water volume necessitates:

- Enhanced maintenance of watercourses, channels, and infrastructure (e.g., desilting, vegetation management, obstruction clearance).
- Investment in flood mitigation measures.
- Increased monitoring and mitigation.

3.3. Cost Allocation Principle

The TEDC ensures that those responsible for introducing additional volumes of water into the catchment contribute to the costs of future watercourse management.

3.4. Legal Grounding

The TEDC is implemented under:

- The **Land Drainage Act 1991** and associated **byelaws**, which require the IDB to regulate the discharge of water into the IDB District.

4. Greywater Recycling, Rainwater Harvesting, and Their Impact on the TEDC

4.1. What is Greywater Recycling and Rainwater Harvesting?

- **Greywater Recycling**: The collection, treatment, and reuse of water from non-toilet plumbing systems, such as sinks, showers, and washing machines. This recycled water can be used for non-potable purposes, such as irrigation, toilet flushing, and industrial processes.
- **Rainwater Harvesting**: The collection and storage of rainwater from roofs and other surfaces for reuse in non-potable applications, such as garden irrigation, car washing, and industrial processes.

Both systems significantly reduce the demand for potable water and therefore reduce the volume of water discharged into the natural environment.

4.2. Benefits of Greywater Recycling and Rainwater Harvesting

- **Reduced Water Consumption**: By reusing greywater or rainwater, properties can significantly reduce their reliance on potable water supplies.
- **Lower Discharge Volumes**: Reduced discharge volumes mean less strain on drainage systems and lower environmental impact.
- **Cost Savings**: Reduced water consumption can lead to lower water utility bills and a reduced TEDC payable.

4.3. Reduction in TEDC Payable

To encourage the adoption of greywater recycling and rainwater harvesting systems, the IDB will offer **up to a 65% reduction in the TEDC** for properties that implement approved systems. The exact reduction will depend on the nature and effectiveness of the system installed, as determined by the IDB.

Approved Systems:

- Systems must meet the following criteria to qualify for a reduction:
    - Compliance with British Standards (e.g., BS 8525 for greywater systems).
    - Demonstrated ability to reduce potable water usage by a measurable percentage.
    - Adequate storage capacity and treatment quality to ensure safe and effective reuse.
    - Connection to non-potable applications, such as irrigation or toilet flushing.

Graduated Reduction Criteria:

- The reduction percentage will be determined based on:
    - The percentage of potable water replaced by the system.
    - The system's storage capacity and treatment quality.
    - The extent to which the system is integrated into the property's water management (e.g. automated irrigation or toilet flushing).

Table 1: Schedule of Reductions

System Effectiveness	Reduction in TEDC
Basic System (replaces 20-30% of potable water)	**25%**
Intermediate System (replaces 40-50% of potable water)	**45%**
Advanced System (replaces 60-70% of potable water)	**65%**

Inspection and Verification:

- The IDB will request a post-installation report to verify that the equipment is present and functioning as designed. Developers must provide this documentation to qualify for the reduction.

5. Schedule of Fees

The TEDC is calculated from the estimated water consumption over an assumed development lifespan of 100 years, and applies the same cost of management per m^3 as the existing Surface Water Development Contribution:

Surface Water Development Contribution (SWDC)
The SWDC is derived from the newly impermeable area within a development and the post-development discharge rate relative to Qbar.

The SWDC fees are calculated from a 1-hectare (10,000 m^2) impermeable property, with an Average Annual Runoff Volume: **7,200 m^3** (based on **800 mm** annual rainfall and a runoff coefficient of **0.9**)

- The assumed pre-development greenfield runoff coefficient of 0.5 so annual greenfield runoff is 4000 m^3 from 1ha
- The additional runoff is therefore **3200 m^3** per year per 1 impermeable ha.

Gravity Catchment:

- **Total SWDC**: **£15,800**
- **Cost per additional m^3accommodated by the RSIDB**: **£0.049**
  [(15,800/3200)/100]

Pumped Catchment:

- **Total SWDC**: **£18,900**
- **Cost per additional m^3 accommodated by the RSIDB**: **£0.059**
  [(18,900/3200)/100]

Treated Effluent:

- **Cost per additional accommodated m^3 by the RSIDB**: **£0.049**

The fee is designed to contribute towards the long-term costs of managing the additional water volume, ensuring that the IDB can fulfil its statutory duties to manage flood risks and help protect the environment.

5.1. Residential Properties

Property Type	Average Occupancy	100yr Water Consumption (m^3)	Fee Calculation	Fee (Rounded)
1 Bedroom	1.2	4,818	4,818 m^3 × £0.049	£236
2 Bedroom	2	8,030	8,030 m^3 × £0.049	£393
3 Bedroom	2.5	10,038	10,038 m^3 × £0.049	£492
4 Bedroom	3.2	12,848	12,848 m^3 × £0.049	£630
5+ Bedroom	4	16,060	16,060 m^3 × £0.049	£787

Calculation Basis (Residential):

- 110 litres per person per day (lppd) is a water consumption target for new homes in water-stressed areas of the UK. The UK government has set a goal of reducing water consumption to 110 lppd by 2050.
- 110 litres/person/day × 365 days/year = 40.15m^3 per person/year.
- The fee is calculated at £0.049 per m^3

5.2. Commercial/Industrial Properties

Property Type	Estimated Occupancy (per 100 m^2)	Fee Calculation (per 100 m^2)	Fee (per 100 m^2, Rounded)
Offices	8	8 × 2,010 m^3 × £0.049	£788
Retail	10	10 × 2,010 m^3 × £0.049	£985
Restaurants/Cafés	20	20 × 2,010 m^3 × £0.049	£1970
Light Industrial	5	5 × 2,010 m^3 × £0.049	£492
Heavy Industrial	3	3 × 2,010 m^3 × £0.049	£295
Agricultural	2	2 × 2,010 m^3 × £0.049	£197
Hospitals/Care Homes	8	8 × 2,010 m^3 × £0.049	£788
Schools	20	20 × 2,010 m^3 × £0.049	£1970

Calculation Basis (Commercial/Industrial):

- The same cost per m^3 as residential (£0.049) is applied.
- Occupancy per 100 m^2 is estimated based on UK building regulations and industry standards and 55l per person/day
- The fee is calculated per m^2 and scaled proportionally based on total floor space.

6. Practical Implementation

6.1. Application Process

- Developers are required to submit an application for Land Drainage Consent to the IDB, including details of the proposed development and any greywater/rainwater systems (where appropriate).
- Applications will be assessed based on the criteria outlined in this policy.

6.2. Appeal Process

- Applicants may appeal the TEDC or reduction rates by submitting a formal request to the IDB, accompanied by supporting evidence.

6.3. Review Period

- The TEDC policy and fee schedule will be reviewed annually for inflation, and every five years to reflect changes in water management practices. This may be more frequent to reflect any changes in legislation.

7. Conclusion

The TEDC is a fair and necessary charge to ensure the sustainable management of the River Stour Drainage District. It ensures that those introducing additional water volumes into the catchment contribute towards the associated costs of managing its impact on drainage systems, flood risk, and the environment. Aligning financial responsibility with the source of the additional burden helps to ensure that the IDB can fulfil its statutory duties and help protect the catchment for future generations.

The adoption of **greywater recycling** and **rainwater harvesting systems** is strongly encouraged, as these systems significantly reduce the volume of water discharged into the river network. Properties that implement approved systems may qualify for **up to a 65% reduction in the TEDC**, depending on the nature and effectiveness of the system installed. This incentive supports sustainable water management practices and reduces the long-term costs of water management for all stakeholders.