

## WATERFORD MAIN DRAINAGE, PHASE 2



## WASTEWATER TREATMENT PLANT

### Background

Waterford City Council has completed construction of Phase 2 of the Waterford Main Drainage scheme to comply with EU Directives and Irish Regulations. The objective of the project is to enhance and protect the existing environment, and to provide for sustainable development within Waterford City and the environs of South Kilkenny. The scheme provides for the transfer of wastewater to a new Waste Water Treatment Plant at Gorteens, Co. Kilkenny and the preliminary, primary and secondary treatment of the wastewater before discharge to the River Suir.

**Phase 1** of the Waterford Main Drainage scheme was completed in the 1990's and comprised the construction of several main interceptor sewers through the City, and Waterpark Pumping Station/Outfall.

**Phase 2** of the Waterford Main Drainage scheme comprised:

- Construction of a Waste Water Treatment plant at Gorteens, Co.Kilkenny
- Construction of a sewer collection system on the North side of the River Suir, to deliver waste water to the site of the treatment plant
- Construction of a sewerage system and pumping stations for the Maypark catchment, to intercept existing discharges and to pump waste water to the sewer collection system on the North side of the River Suir
- Modifications to the Waterpark Pumping Station to pump waste water to the sewer collection system on the North side of the River Suir
- Construction of a sewerage system for the Belview area of Co.Kilkenny
- Construction of pumping stations and rising mains at Rocklands, Beacon Quay, & Slieverue on the North side of the River Suir

## The Treatment Plant

The Waste Water Treatment Plant was constructed using a single Design Build and Operate Contract (DBO) with a 20 year operating period. The Waste Water Treatment Plant facility provides for the treatment of domestic, commercial and industrial wastewater from Waterford City and Environs including the IDA lands and residential properties at Slieverue - Belview, Co. Kilkenny. The plant has a design Population Equivalent of 190,600 which caters for the existing (47,000) and future (68,600) population. The non-domestic loading is equivalent to 122,000 PE (64% of design capacity). The plant provides Preliminary, Primary and Secondary treatment and the treated wastewater achieves the standards required under the European Urban Waste Water Regulations. Treated effluent is discharged by a diffuser outfall into the River Suir and the treated sludge is recycled as a fertiliser to agricultural lands.

The site has the advantage of allowing for modular expansion in the future if required.

### Wastewater treatment processes include:

- grit and screenings removal and disposal
- primary sedimentation
- activated sludge secondary treatment
- stormwater storage and treatment
- final settlement tanks
- sludge treatment
  - pasteurisation
  - anaerobic digestion
  - biogas recovery
  - temporary storage and reuse / disposal
- all mechanical and electrical installations
- SCADA and telemetry system

The first of the conventional Civil Works Contracts commenced on the North side of the River Suir, in May 2005. The Waste Water Treatment Plant DBO Contract commenced in October 2006 and commissioning was completed in July 2010. The total inclusive costs for the Phase 2 scheme amounts to approximately €82 million.

### The Benefits of the Scheme are:

- The elimination of existing discharges of untreated waste water to the River Suir
- The provision of a Waste Water Treatment Plant to cater for domestic, commercial and industrial developments up to 2025, with further capability for modular expansion of the plant.
- The provision of infrastructure to allow development to proceed in the City and Environs in a sustainable manner
- The improvement of Water Quality

The Wastewater Treatment Plant construction was undertaken by Anglian Water International (AWI), with major contributions from Enpure Ltd for Process Design, Mechanical and Electrical installation; Coffey Construction for Civil Works construction; and Celtic Anglian Water for operation of the Plant. AWI will operate and maintain the plant for a 20 year period. Mott MacDonald Ireland have provided management services as Engineering Consultants and Employer's Representative.

