

## Attachment C.2 - Ballycotton Sewerage Scheme - Measures to Prevent Unintended Discharges

### WwTP

The following features have been included in the design of the WwTP to mitigate the risk associated with potential unintended discharge.

- A bypass mechanical screen will be provided at the inlet works. This will be used in the event of main screen failure.
- The WwTP will include a 127m<sup>3</sup> buffer tank to accommodate flows in excess of flows for treatment. This will provide emergency wastewater storage if required.
- Should the 127m<sup>3</sup> buffer tank fill before a malfunction/power failure at the WwTP has been resolved, excess flows will be screened before discharging to Ballycotton Bay.
- The stored liquid will be returned to the treatment stream once inlet flows reduce sufficiently.
- Any overflows from the WWTP will be screened through fine screens prior to discharge.
- A SCADA and telemetry system will be provided for external monitoring of WwTP processes/operations. This system will be linked to the Irish Water SCADA system via the WwTP SCADA system and will provide text alert alarms to the relevant maintenance and operations personnel in the event of an emergency. The telemetry / SCADA support system shall monitor the operation of the facilities including:
  - Mains power failure
  - Available/Run/Trip status for all electrical equipment
  - Water levels in the pump sumps and storage tanks
  - Status for all level switches
  - Instantaneous flow in the rising main (inlet to WwTP)
  - Instantaneous flow from the WwTP to Ballycotton Bay (i.e. treated effluent flow)
  - Totalised flows
  - UPS Fault/Healthy Status
- All pumps will be in a duty/standby arrangement in case of malfunction/maintenance operations.
- The WwTP has been designed so that the power requirements can readily be served by a mobile generator. In the event of power failure, a mobile generator will be brought to site. A facility for the connection of a mobile generator, in the event of mains electrical power failure, has been incorporated into the design. A standby generator changeover facility is included in the control panel

Therefore, whereas issues may arise in the operation of the WWTP, adequate provision has been made in the design to ensure any such issues can be addressed in a timely manner with no undue negative impact on the environment.

### Pumping Stations

The following features have been included in the design of the pumping stations to mitigate the risk associated with potential unintended discharge.

- 24-hour emergency storage capacity has been provided at both pumping stations (65m<sup>3</sup> at the Pier PS and 105m<sup>3</sup> at the Cow PS) to allow operatives 24 hours to respond to and resolve a malfunction or power failure before flows discharge to Ballycotton Bay via emergency overflow.
- In the event that the 24 hour storage capacity is exceeded, all flows will be screened before discharging to Ballycotton Bay.
- As the minimum power requirement for the operation of pumping station can be readily served by a mobile generator unit and adequate emergency storage has been provided in the stormwater holding tank, no permanent back-up power facility is required. A mobile generator will be brought to site when required. A facility for the connection of a mobile generator, in the event of mains electrical power failure, has been incorporated into the design.
- Ultrasonic level sensors will be provided in the holding tanks and pump sumps. These will be the main level controllers for the associated equipment. Back-up floats will provide secondary control.
- Pumps will be in a duty/standby arrangement in case of malfunction/maintenance operations.
- A SCADA and telemetry/RTU system will be provided for external monitoring. This system will be linked to the Cork County Council countywide SCADA system via the WWTP SCADA system and will provide text alert alarms to the relevant personnel as required. The RTUs will be capable of communicating with Irish Water's Telemetry Master Station.
  - The telemetry / SCADA support system shall monitor the operation of the facilities including:
    - Mains power failure
    - Available/Run/Trip status for all pumps
    - CSO overflow status and flow
    - Water levels in the pump sumps and storage tanks
    - Status for all float switches
    - Instantaneous flow in the rising main (inlet to WWTP)
    - Instantaneous flow from the WWTP to Ballycotton Bay (i.e. treated effluent flow)
    - Totalised flows
    - UPS Fault/Healthy Status