This report has been cleared for submission to the Board by Karen Creed

Signed [signature] Date 15/4/10

epa Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

OFFICE OF CLIMATE, LICENSING & RESOURCE USE.

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	DIRECTORS		
From:	Gavin Clabby	**Environmental Programme**	**Licensing**
Date:	30th March 2010		
RE:	Application for a Waste Water Discharge Licence from Cork County Council for the Baltimore Agglomeration, Reg. No. D0296-01		

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 1,001 to 2,000
Licence application received:	27th February 2009
Notices under Regulation 18(3)(b) issued:	18th May 2009
Information under Regulation 18(3)(b) received:	30th June 2009
Site notice check:	20th March 2009
Site visit:	17th November 2009
Submission(s) Received:	None

1. Background

1.1 Agglomeration

The Baltimore Agglomeration is approximately 1 (one) km^2 in size of which approximately 0.7 km^2 constitutes the urban development of Baltimore town. Baltimore is a coastal harbour town, about 11 km southwest of Skibbereen. The town is a popular centre for water sports with a sailing school operating in the harbour. Baltimore Harbour is comprised of approximately 2 km^2 of sheltered waters in the Ilen Estuary (see appendix). It is protected from the exposed coastal waters of Roaringwater Bay by Sherkin Island to the west, and Spanish Island and Ringagory Island to the north. The harbour is a regionally important fisheries resource and tourist amenity.

Baltimore also has a large contingent of holiday homes. It has a permanent population of approximately 400, which increases at least fourfold during the summer.

This licence application was made by Cork County Council (Western Division) which is the Water Services Authority (WSA) for the Baltimore agglomeration.

1.2 Waste Water Collection System

The agglomeration's collection system is partially combined (i.e. some sections are used to convey surface water as well as wastewater), and has both pumped and gravity systems within the network. There are two pumping stations in the agglomeration. The first pump station at the Pier (P1), serves the public toilets and the Baltimore Sailing centre. A small number of houses on the western side of the network are served by P2 located at The Cove. Therefore, according to the applicant, and as evident above, only a small proportion of the overall collection network is dependent on the pumping stations.

In addition, the applicant states that the combined system caters for a large amount of storm water. A number of sections of the existing collection system are to be relined to reduce infiltration of storm water. It is also proposed to lay additional storm sewers throughout the town to curtail the amount of storm water entering the proposed wastewater treatment plant (WWTP).

The Department of the Environment, Heritage and Local Government (DoEHLG) has approved the contract for upgrading of the network and the existing pumping stations. This is separate to the DBO contract for the WWTP. The network contract is currently waiting funding, and consequently, work has yet to commence.

1.3 Waste Water Treatment

The existing treatment plant is located by the quay wall, just east of the pier. The treatment process is a primary sedimentation system (septic tank). The capacity of this tank is 209 m^3. Data supplied by the applicant suggests that, for the year prior to the application, the capacity is adequate for primary treatment of the agglomeration's effluent during the wintertime, but inadequate for the increased summertime population.

A new wastewater treatment plant (WWTP) is proposed under a design, build and operate (DBO) contract. It will be located on a site to the north of Baltimore village, adjacent to the lifeboat house (see appendix) The proposal specifies an activated sludge process, constructed in a modular layout, with disinfection of the effluent to be included as part of the treatment process. Tenders for the DBO contract have been assessed by the WSA and the selected proposal is currently with the DoEHLG for approval. The application states that the proposed construction completion date is set for June 2011. However, consultation with the DoEHLG suggests that March 31st 2012 is a more likely date. Any relevant conditions and schedules in the RL will be set in reference to this later date.

1.4 Population Equivalent – Agglomeration

Located in a tourist area, the Baltimore agglomeration has significant seasonal variations in population equivalence. Data compiled between 2000 and 2008 indicate a winter PE of 377 and a summer PE of 1,681. Based on population projections for the lifetime of the Recommended Licence (RL), the PE for the purposes of this application is 1,950.

1.5 Design Population Equivalent - WWTP

The current treatment works were designed for the smaller PE associated with the agglomeration's winter population. The capacity of this tank is 209 m^3, which equates to a design PE of 1,150. It is evident from the applicant's data that the treatment works are overloaded during the peak tourist summer months.

It is stated in the application that the proposed new WWTP will have tertiary treatment, as described in section 1.3 above, and will cater for a population equivalence of 3,600. A review of the licence will be required to accommodate a loading of over 2,000 PE as the application is for 1,001 to 2,000 P.E.

1.6 Site Visit

A site inspection was undertaken as part of the site notice check on March 20th 2009. On the 17th November 2009, a meeting was held with Declan Groarke, Ian O'Mahony and Orla O'Brien of Cork County Council at the their offices in Skibbereen, Co. Cork, to discuss and clarify issues arising from this licence application assessment, in particular the status of the pumping stations and overflows, as well as the progress on the proposed WWTP.

2. Discharges to Waters

2.1 Existing Discharges.

The primary discharge, SW01 BALT is the outfall from the septic tank and discharges into the harbour below the low tide level between the North Pier and Bull Point.

There are no secondary discharge points in the agglomeration.

The sewerage network has one storm water overflow discharge point, SW02, which discharges through the same pipe as SW01 and serves as the storm water overflow for the septic tank. Condition 4.11 requires the licensee to include a determination of compliance with the criteria for storm water overflows, as set out in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995 and any other guidance as may be specified by the Agency.

2.2 Proposed Discharges.

Upon completion of the WWTP, the current primary discharge point location will be discontinued. The new primary discharge point, SW01p BALT, will be located at the foreshore adjacent to the proposed WWTP.

The current overflow from the septic tank SW02 will be discontinued and replaced by SW05 (featuring a longer outfall pipe) when the tank is refurbished as a storm water retention tank.

2.3 Discharges - Urban Waste Water Treatment Regulations

The existing and proposed discharges are to Transitional Waters from an agglomeration of less than 2,000 PE. Therefore, under Article 7 of the Urban Waste Water Treatment Regulations, as amended, the WSA 'shall ensure...that urban waste water entering a collecting system shall before discharge be subject to appropriate treatment'. The applicant has identified that due to the 'sensitive nature of the receiving water' in Baltimore, secondary treatment (with disinfection) is regarded as appropriate treatment. The RL requires that the proposed WWTP shall be completed and commissioned by the 31st March 2012, and the discharges from which shall be subject to the requirements of Part One of the Second Schedule in the above regulations. It should be noted here, however, that Baltimore Harbour and the Ilen Estuary are not designated Sensitive Waters, as listed in Schedule One of the UWWT Regulations (Amendment) 2010. Therefore the requirements of Part Two of the Second Schedule do not apply.

3. Receiving Waters and Impact

The waters of Baltimore Harbour are designated as Transitional by the South Western River Basin District (SWRBD). Freshwater enters the harbour via the River Ilen. However, EPA monitoring data suggests that the salinity of the water in the vicinity of the primary discharge is approximately 34 psu. Hence, for the purposes of this report, the assessment of the quality of the receiving water will be in the context of transitional water chemistry at near full seawater salinity. The following table summarises the main considerations in relation to Baltimore Harbour of the primary discharge.

Table 3.1 Receiving Waters Summary

Characteristic	Classification	Comment
Receiving water name and type	Baltimore Harbour (River Ilen Estuary), Roaringwater Bay, West Cork	Transitional Water (~34 psu). IE_SW_130_0100 Sheltered harbour opening to exposed coastal bay.
Resource use/ Amenity value	Tourism, Sailing, Swimming	Sea Angling, Water contact sports
Applicable Regulations	Urban Waste Water Treatment Regulations 2001 (as amended) S.I. 254 of 2001 and S.I. 440 of 2004, SI 48 of 2010 EC Environmental Objectives (Surface Water) Regulations 2009 S.I. 272 of 2009 EC (Quality of Shellfish Waters) Regulations 2006 (as amended) S.I. 268 of 2006 and S.I. 55 of 2009 EC Regulation 854/2004 and SI 335 of 2006	No Sensitive Water designation. Key Transitional Water Parameters: BOD, DO, MRP Shellfish Waters approx 0.3 km from existing primary discharge and 0.15 km from proposed primary discharge. Seasonally Classified A/B for Oysters in 2008 for Sherkin North, Lapsed Classification for Baltimore Oysters, formerly B in 2006
Designations	Shellfish Waters SAC/NHA 000101	Baltimore Sherkin Roaringwater Bay and Islands
WFD Overall Status WFD Objective WFD Risk Category	Good Protect 1a	 Status year: 2008
WFD protected areas	Roaringwater Bay and Islands, Shellfish Waters	See above See above
Any other important issues	Bathing Water Quality Regulations S.I. 79 of 2008	No designations in the wider area, but harbour used as swimming and boating amenity

3.1 Quality of Receiving Waters

According to the Draft River Basin Management Plan (RBMP) published by the South Western River Basin District (SWRBD), the overall status of the River Ilen Transitional Waters is good, with the overall objective set to protect this status. The overall risk is set at 1(a) (at risk), with the main pressure identified as urban wastewater discharges. Dissolved Inorganic Nitrogen (DIN) and Dissolved Oxygen (DO) status are rated as 'good' (i.e. Unpolluted). MRP and BOD status are rated as 'high' (i.e. Unpolluted, most favourable status).

The EPA's Office of Assessment has, based on Estuarine Monitoring Programme data assigned the Ilen Estuary with a quality status of 'Intermediate', using the Trophic Status Assessment Scheme (TSAS) criteria. Data from ten separate monitoring stations in the estuary was assessed. (The overall estuary did not achieve 'Unpolluted' status, as it failed the criteria for Winter DIN and Summer DO. However, if the data from the nearest monitoring station to the discharge (IN070, see appendix), is assessed in isolation, it is clear the waters around Baltimore Harbour, by themselves, would achieve 'Unpolluted' status.

The EPA IN070 data is based on 24 samples taken on various dates during the summer season of 2007 and 2008. During these peak pressure months, the receiving waters are within the limits for all three compliance parameters. The results show that waters in the vicinity of the discharge point are compliant with all relevant parameters in the Surface Water regulations.

Monitoring data supplied by the applicant was based on a single sample taken in late October 2008. The value of this single data set was considered limited, and it did not reflect conditions during the peak nutrient loads of the summer months. The WSA shall assess the requirements for monitoring, as provided for in *Schedule B: Monitoring* and *Condition 4.16* of the Recommended Licence.

According to the Baltimore Sherkin Pollution Reduction Programme (PRP) which was drafted in accordance with Shellfish Water Regulations in 2009, the results of monitoring undertaken for the purposes of the Shellfish Waters Directive (2006/113/EC) and the Shellfish Waters Regulations do not indicate any water quality issues within the vicinity of this shellfish area. However, shellfish flesh results were also available from the MI from November 2008, February 2009, May 2009 and August 2009. The shellfish guideline value for biota faecal coliforms was breached in the November 2008 and August 2009 samples.

The Characterisation Report for Baltimore/Sherkin (also drafted in accordance with Shellfish Water Regulations in 2009) states that the licensed aquaculture sites were classified 'A/B' for Oysters in accordance with EC Regulation 854/2004 (and SI 335 of 2006). This shellfish flesh classification carried out by the Sea Fisheries Protection Authority (SFPA), also indicates faecal contamination in shellfish flesh. Further analysis of the report indicates that within the designated shellfish area, the licensed aquaculture area for Oysters (Sherkin North) is classed as 'A', However, this classification is seasonal and it reverts to 'B' from the 1st of June to the 30th of November, The Baltimore bed, which is the closest licensed area to the current and proposed discharges, was, in 2006, classed 'B' for oysters. Due to the cessation of activity at this bed, this classification has since lapsed.

In summary, the receiving waters of Baltimore Harbour are compliant with the European Communities Environmental Objectives (Surface Waters) Regulations (S.I. 272 of 2009) However; biota samples from the area are not compliant with faecal coliform guideline values in the relevant Shellfish Regulations, thereby indicating faecal contamination of the shellfish waters. The current WFD status of the Ilen Estuary is 'Good', but with a significant risk of failing to protect this status. WWTP's are regarded by the SWRBD as one of three key pressures putting the WFD objectives for the estuary at risk (Baltimore impact discussed below.)

3.2 Impact of Discharge on Receiving Waters

General

The applicant did not submit any modelling or calculations for a discharge at the current location (SW01 Balt). However, the report on the assessment of impacts for the proposed WWTP, submitted as part of the application discusses the current scenario in some detail. The report refers to the fact that the current outfall discharges to a shallow bay and where the movement of water is low. Limited dispersal of effluent would be expected during low tides. It is probable that this is having a negative ecological impact in the immediate area of the discharge.

Modelling (dye tracking) was carried out for the proposed outfall (SW01p Balt). This discharge point is in the more open and deeper water off Bull Point (see appendix) and was selected to avoid the unsatisfactory dispersion characteristics found in the vicinity of the pier. The dye tracking shows that the plume is carried away from the harbour and the shellfish water boundary and effectively dispersed.

Faecal Coliforms

The bacteriological impact of the current discharge on the receiving waters (including shellfish waters) cannot be established, as no modelling or calculations were completed. However, as discussed in Section 3.1 above, there is some microbiological shellfish flesh contamination in the general bay area.

In relation to the proposed discharge, the applicant submitted calculations, which predict the concentration of faecal coliforms at the nearest shellfish bed as 0.6 fc/100mls. This calculation includes a 5000 fold reduction from the proposed UV disinfection unit. Without the UV treatment the concentration would be 3000 fc/100mls. The Characterisation Report for Baltimore Harbour/Sherkin states that the Baltimore WWTP is a key pressure affecting the Shellfish Waters. This is reflected in the Baltimore Harbour/Sherkin PRP, which requires upgrading the current WWTP as a basic measure, but does not specify the inclusion of UV treatment. Conditions 4.16, 5.6 and 5.7 of the RL require the WSA, in consultation with designated public authorities, to further assess the discharge's impacts on the Shellfish Waters and to install UV disinfection where appropriate.

Nutrients

Although the WSA have specified some of the final design parameters of the proposed WWTP, it is not yet known what the specified discharge concentrations will be for Orthophosphate and for the major constituent parameters of DIN (i.e. Ammonia and Nitrate). However, taking into account the typical nutrient profile of the influent, concentrations no greater than 10 mg/l Orthophosphate and 35 mg/l total for DIN would be expected upon discharge, with basic secondary treatment. The predictive calculations described in the section above suggest the effluent would be diluted 1428 times within 300 metres of the discharge point. Therefore, the typical concentrations in the receiving water, within a 300 meter radius, would be 0.007 mg/l PO_4-P and 0.025 mg/l DIN-N. These concentrations would fall well below the Surface Water Regulation's Orthophosphate limit of 0.04 mg/l P and Coastal Waters high status DIN limit of 0.17 mg/l N. In fact, manipulation of the predictive formula used by the applicant shows that the in the above conditions, the receiving waters would be compliant within a 55m radius.

The RL specifies an Orthophosphate ELV of 10 mg/l (as P), and three individual ELV's of 35 mg/l (as N) for DIN, Ammonia and Total Oxidised Nitrogen (TON). This should allow some flexibility in the influent concentrations, and the final WWTP design, whilst allowing regulatory compliance within a relatively small radius of the discharge, as well as protecting and improving the trophic status of the Ilen Estuary.

Biological Oxygen Demand (BOD)

The BOD_5 of the current typical effluent discharge is 220 mg O_2/l. At the current annual average discharge flow rate of 495 m^3/day, this equates to a BOD_5 load of 108 kg O_2/day. In peak summertime conditions, approximately 30% of the sewage overflows untreated, with the remainder receiving a 35% reduction in BOD. This would lead to a typical influent BOD of 600 mg O_2/l being reduced to 390 mg O_2/l. At the maximum reported flow rate of 1485 m3/day the peak BOD_5 load to the harbour is estimated at 580 kg O_2/day. Despite this large organic load currently entering the slack shallow waters in the vicinity of the harbour, all BOD results from IN070 are compliant with the Surface Water Regulations.

At the ELV specified in the RL of 25 mg O_2/l and using the current annual average discharge flow rate of 495 m^3/day, the calculated BOD_5 load for the proposed WWTP, would be 12.38 kg O_2/day. Extrapolating the current average discharge from the current peak summertime PE (1680) to the maximum PE allowable under this licence (2000), the peak summertime discharge would increase to 589 m^3/day, equating to a BOD_5 load of 14.7 kg O_2/day. These much reduced loads should further improve and protect the quality of the water in Baltimore Harbour and the wider Ilen Estuary.

The RL specifies a BOD ELV of 25 mg/l O_2/l, as required by the UWWT regulations. The foreshore licence issued for the proposed outfall, limits the BOD_5 load to 17 kg O_2/day. However, the RL, which supersedes any environmental conditions from the foreshore licence, does not impose any BOD_5 load limit.

Conclusion

With the increased level of wastewater treatment and more open discharge location, the proposed discharge is very likely to improve the quality of Baltimore harbour water and further reduce the risk to the Shellfish Waters and any WFD objectives for the Ilen Estuary.

4. Monitoring

An improved level of monitoring may be beneficial for the harbour for the remainder of the current WWTP's lifetime, as well as for the proposed WWTP and discharge. This may not only be helpful in ensuring the WFD objective of 'no deterioration', but also helpful in protecting and improving the current quality of the Shellfish Waters. Monitoring data from the WFD or Shellfish Directive Programmes may be sufficient for this purpose. The WSA shall assess the requirement for additional monitoring, as provided for in *Schedule B: Monitoring* and *Condition 4.16* of the Recommended Licence.

Schedule B.1 Monitoring of the Primary Waste Water Discharge requires monthly monitoring for several parameters in the first year of the operation of the new WWTP and, providing the first year's results are compliant, a reduction to quarterly sampling in subsequent years. Parameters, at all monitoring frequencies, will include cBOD, COD and Suspended Solids (SS). Flow, pH and Visual Inspection are also included. *Schedule A.1* sets ELVs for the proposed WWTP, for pH, cBOD, COD, SS, Orthophosphate, Ammonia, TON and DIN that reflect what is currently achievable with secondary treatment.

In line with the UWWT Regulations, *Schedule A.1* does not set Emission Limit Values (ELVs) for the existing Primary Waste Water Discharge and *Schedule B.1* does not require monitoring for the existing Primary Waste Water Discharge. However Condition 3.1 and 3.3 of the RL specifies that the WSA shall take measures as are necessary to ensure that no deterioration in the quality of the receiving waters shall occur as a result of the discharge. These conditions are considered appropriate to ensure, that prior to the completion of the proposed WWTP, the current septic tank is properly maintained and providing basic primary treatment, thereby reducing the BOD and nutrient load in the confined, low tidal movement waters by the Pier.

5. Combined Approach

The Waste Water Discharge Authorisation Regulations, 2007 (S.I. No. 684 of 2007) specify that a 'combined approach' in relation to licensing of waste water works must be taken, whereby the emission limits for the discharge are established on the basis of the stricter of either or both, the limits and controls required under the Urban Waste Water Treatment Regulations (S.I. No. 254 of 2001) and the limits determined under statute or Directive for the purpose of achieving the environmental objectives established for surface waters, groundwater or protected areas for the water body into which the discharge is made. The RL as drafted gives effect to the principle of the Combined Approach as defined in S.I. No. 684 of 2007.

6. Programme of Improvements

A proposed wastewater treatment plant (WWTP) is also to be constructed under a design, build and operate (DBO) contract. The new WWTP will provide preliminary and secondary treatment or their equivalent, to achieve a final effluent in compliance with Urban Waste Water Treatment Regulations, 2001. (S.I. No. 254/2001). Tenders for the DBO contract have been assessed by the WSA and the selected proposal is currently with the Department of the Environment, Heritage and Local Government for approval. The proposed construction completion date is set for June 2011. Upon consultation with DoEHLG Inspector, the Recommended Licence specifies that the WWTP and ancillary works (including the cessation of Secondary Discharge SW02) shall be complete by 31st March 2012.

7. Compliance with EU Directives and Related Directives

In considering the application, the requirements of Regulation 6(2) of the Waste Water (Discharge) Authorisation, Regulations, 2007 (S.I. No. 684 of 2007) were regarded, notably:

Drinking Water Abstraction Regulations [S.I. 294 of 1989]
Baltimore agglomeration discharges to transitional waters. Therefore, there are no water abstraction points and the above regulations do not apply.

Sensitive Waters
Baltimore Harbour is not designated as a Sensitive Water under the UWWT Regulations (Amendment) 2004. Therefore, the UWWT Regulations, 2001 limits for Total Phosphorous and Total Nitrogen limits do not apply.

Water Framework Directive [2000/60/EC]
The RL, as drafted, transposes the requirements of the Water Framework Directive. In particular, *Condition 3. Discharges,* provides conditions regulating discharges to water, while *Schedule A: Discharges,* specifies limit values for those substances contained within the wastewater discharge. Those limits specified in the RL are determined with the aim of protecting the good water quality status.

Urban Waste Water Treatment Directive [91/271/EEC]
The proposed WWTP, as required by Annex 1.D of the Urban Waste Water Treatment Directive, is required to provide appropriate treatment for the agglomeration. Nonetheless, Baltimore currently complies with the requirements of the Urban Waste Water Treatment Directive, in terms of the level of treatment provided (ie Appropriate Treatment as defined therein). The RL, as drafted, has regard to the requirements of the Urban Waste Water Treatment Directive. In particular, *Condition 3 Discharges* provides conditions regulating the discharges to waters, and *Schedule A: Discharges,* specifies the limit values for those substances contained within the wastewater discharge.

Bathing Water Directive [2006/7/EC]
Baltimore Harbour is not designated as a Bathing Water, although there is some bathing activity in the vicinity of the existing and proposed discharges. However, no further measures are required to comply with the above directive.

EC Freshwater Fish Directive [2006/44/EC]
Baltimore agglomeration discharges to transitional waters. Therefore, the above regulations do not apply.

Shellfish Waters Directive [2006/113/EC]
Although Baltimore Harbour is not within designated Shellfish Waters, the nearest designated area is approximately 0.3 kilometres away from the existing discharge and approximately 0.15 kilometres away from the proposed discharges. The Characterisation Report for Baltimore Harbour/Sherkin states that the Baltimore WWTP is a key pressure affecting the Shellfish Waters. This is reflected in the Baltimore Harbour/Sherkin PRP, which requires upgrading the current WWTP as a basic measure, but does not specify the inclusion of UV treatment. Conditions 4.16, 5.6 and 5.7 of the RL require the WSA, in consultation with designated public authorities, to further assess the discharge's impacts on the Shellfish Waters and to install UV disinfection where appropriate.

Dangerous Substances Directive [2006/11/EC]
The applicant has provided sampling results for the 19 dangerous substances in the primary and decommissioned secondary discharge for the purposes of the licence application. The measured concentrations are not considered significant. The agglomeration is effectively domestic in nature with a limited contribution from some commercial activities. The initial screen for the application is therefore considered sufficient and the agglomeration is compliant with the Dangerous Substances Directive.

Birds Directive [79/409/EEC] & Habitats Directive [92/43/EEC]

The Baltimore agglomeration directly discharges into an SAC site designated under the E.U. Habitats Directive. As part of the Part Planning Approval Process for the Schull Sewerage Scheme the WSA carried out an appropriate assessment, taking into account the requirements of Article 6 of the Habitats Directive. This assessment, which was regarded as having been completed correctly, demonstrates that the reduced load from the proposed secondary treatment plant discharging to more open waters with improved dispersion characteristics will further protect the unpolluted status of the Ilen Estuary.

Cross-office Liaison

As previously referred to in Section 3.1 above, I consulted with Shane O'Boyle of the EPA's Office of Assessment in relation to the quality of the receiving waters. Advice and guidance issued by the Technical Working Group (TWG) was followed in my assessment of this application. Advice and guidance issued by the TWG is prepared through a detailed cross-office co-operative process, with the concerns of all sides taken into account. The Board of the Agency has endorsed the advice and guidance issued by the TWG for use by licensing Inspectors in the assessment of wastewater discharge licence applications.

Submissions

No submissions were received in relation to this application.

Charges

The RL sets an annual charge for the agglomeration at € 2,316 and is reflective of the monitoring and enforcement regime being proposed for the agglomeration.

Recommendation

I recommend that a Final Licence be issued subject to the conditions and for the reasons as set out in the attached Recommended Licence.

Signed

Gavin Clabby
Office of Climate, Licensing and Resource Use

Appendix

Baltimore primary discharge and SWO (SW01 and SW02)

Proposed Baltimore primary discharge (SW01p)

Current WSA Monitoring Point (SW01d)

Shellfish Regulations Monitoring Point

EPA Monitoring Point IN070

Agglomeration Boundary

Site of Existing Waste Water Treatment Plant

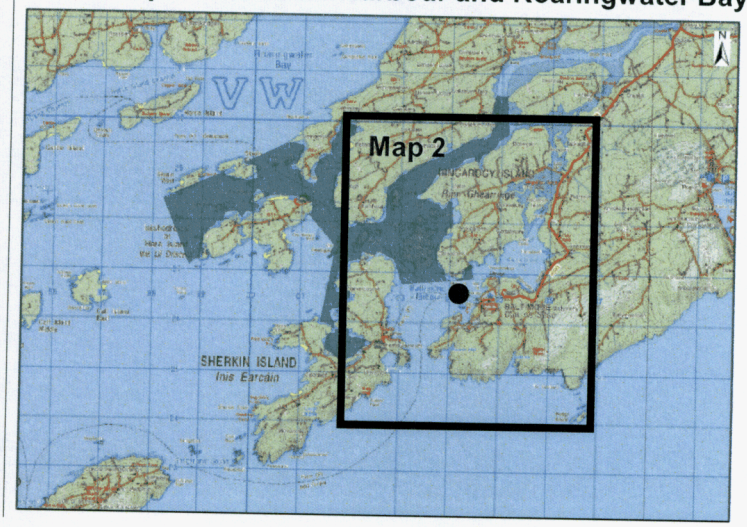
Site of Proposed Waste Water Treatment Plant

Shellfish Water

Ebb Tide (~SW)

Flood Tide (~NE)

Map 1: Baltimore Harbour and Roaringwater Bay



Map 2: Baltimore Harbour