

**Table 3.8.4: Archaeological constraints Inventory of Recorded Monuments**

Constraint Study Code	Reference Nos.	Legal Status	Townland	Monument Type	National Grid Reference	Information Source	Information Detail	Type of Impact Predicted	Suggested Mitigation Measure
CH1 (see CH16 also)	CO087-006--- Inventory 4614	Recorded monument	Rathanker	Ringfort	17590/06740	RMP Inventory	Indicated. In pasture, on south-facing slope. Roughly circular area (35.3m n-s; 32.5m E-W) defined by heavily overgrown earthen bank (H1.85m) SE to SW; low rise elsewhere, with slight depression externally to NW. Break in low rise to NW and E. Possible souterrain (5140) in interior.	Indirect: pipe impacting ZAP of monument	Monitoring of pipeline in vicinity of ZAP for monument
CH2	CO087-013--- Inventory 5193	Recorded monument	Ballywilliam	Holy Well	18127/06719	RMP Inventory	Indicated 'Tubberlaonann' Roadside. Enclosed by rectangular stonewall; roofed with slab. Surrounding area wet; overgrown; no longer in holy use.	Possible inadvertent damage when pipe trench is dug, due to proximity of monument to roadside	Securely fence off during pipe works (remove fencing when project complete). Monitoring of pipeline in vicinity of ZAP for monument
CH3	CO087-024--- Inventory 4973	Recorded monument	Parkgarraff	Ringfort	17599/06616- --	RMP Inventory	Indicated. In pasture, on south-facing slope. Shown on 1842 OS map as circular enclosure (diameter c. 40m); as slight	None. Monument is no longer extant and obscured by modern	Monitoring of pipeline in vicinity of ZAP for monument

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Constraint Study Code	Reference Nos.	Legal Status	Townland	Monument Type	National Grid Reference	Information Source	Information Detail	Type of Impact Predicted	Suggested Mitigation Measure
							curve in NNW-SSE field fence on 1902 and 1934 OS maps. Modern bungalow now occupies site. Field fence (h 1.2m) SW to NW, possibly retains original bank. Fosse (d 0.95m) outside bank.	construction	
CH4	CO087-025--- Inventory 5186	Recorded monument	Ballyfouloo	Holy Well	17567/06574	RMP Inventory	Indicated 'Tobernadihy' In wooded area, beside road. Site not located. According to Hurse (1926, 90) well closed but 'rounds were made and votive gifts offered' and 'the old thorn bush or tree remains'.	Indirect: pipe impacting ZAP of monument	Monitoring of pipeline in vicinity of ZAP for monument
CH5	CO087-026--- Inventory 6155	Recorded monument	Monkstown (Castlefarm)	Lime Kiln	17626/06533	RMP Inventory	Indicated. Built against natural slope. Front south-facing; heavily overgrown with arched recess (wth 2.6m; D 2.7m), front of recess partially infilled with rubble, stoking hole evident. Funnel infilled; rear of kiln collapsed.	Indirect: Possible inadvertent damage when pipe trench is dug, due to proximity of monument to roadside	Securely fence off during pipe works (remove fencing when project complete). Monitoring of pipeline in vicinity of ZAP for monument
CH6	CO087-033--- Inventory 6293	Recorded monument and Protected	Carrigaline Middle	Mill	17307/06249	RMP Inventory	Indicated. Late 18th/early 19th century flour mill, in Carrigaline town. Shown	Indirect: pipe impacting ZAP of monument. Monument	Monitoring of pipeline in vicinity of ZAP for monument

Constraint Study Code	Reference Nos.	Legal Status	Townland	Monument Type	National Grid Reference	Information Source	Information Detail	Type of Impact Predicted	Suggested Mitigation Measure
		Structure 00579					as L-shaped structure on 1842 OS map. Rectangular 4-storey mill (long axis N-S), now used as a store. Roof double-half-hipped. Wooden floor intact; also remains of hoist system and winnow. Courtyard to North enclosed on three sides by additional buildings.	already renovated for modern use.	
CH7	CO087-036-01 CO087-036-02 CO087-036-03 Inventory 5698	Recorded monument and Protected Structure 00576	Carrigaline Middle	Graveyard Church Church of Ireland Church	17414/06259 17415/06259 17419/06259	RMP Inventory	On north shore Owenboy estuary, on south side of road; rectangular area (c. 50m E-W; c. 80m N-S) enclosed by stone wall; still in use, recent extension on west side. Inscribed headstones date from 1690, also a number of chest tombs; large gabled burial vault SE of church. Facing entrance to graveyard, SW of church, altar tomb of Lady Susanna Newenham, date 1754, set in vaulted shelter; burial place of Newenham family of Coolmore house. At centre, St. Mary's C of I church; nave and chancel	Indirect: pipe impacting ZAP of monument. Monument still in use as graveyard.	Monitoring of pipeline in vicinity of ZAP for monument

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Constraint Study Code	Reference Nos.	Legal Status	Townland	Monument Type	National Grid Reference	Information Source	Information Detail	Type of Impact Predicted	Suggested Mitigation Measure
							with spired tower at west end; built in new-Gothic style in 1823 to design of Pain brothers, brass tablet above door. On site of ancient parish church of Carrigaline, described in 1700 as 'above 70 foot long... well slated and well furnished with seats' (Lunham 1909, 169-70); O'early notes 'detached stone' bearing inscription 'this church was rebuilt in the year of our Saviour Christ, 1723'; Smithe (1750, vo. 1 208) described it as 'in decent order'; no visible surface trace. Font dated 1637 inside church.		
CH8	CO087-038--- Inventory 6163	Recorded monument	Shanbally	Lime Kiln	17555/06461	RMP Inventory	Indicated. In quarry, built against natural slope. Arched recess (H2.4m; wth 1.98m; D 3m), sloping slabs to rear, stoking hole evident; keystone inscribed 'G.P.B. 1837. Stone-lined funnel almost completely infilled. Not located during this survey (no access and very	Indirect: pipe impacting ZAP of monument.	Monitoring of pipeline in vicinity of ZAP for monument

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Constraint Study Code	Reference Nos.	Legal Status	Townland	Monument Type	National Grid Reference	Information Source	Information Detail	Type of Impact Predicted	Suggested Mitigation Measure
							overgrown with vegetation).		
CH9	CO087-040--- Inventory 5312	Recorded monument	Shanbally	Enclosure	17528/06387	RMP Inventory Aerial Photograph	Indicated. In pasture, on south-facing slope of E-W ridge overlooking Owenboy river. Depicted on 1842 OS map as hachured D-shaped enclosure; south part of site now levelled. Arc (NW to NE) formed by earthen bank (H 0.85m) with external fosse. Possible second earthen bank (H 0.75m) immediately outside fosse; heavily overgrown and incorporated into field fence system. Interior surface irregular, interfered with; open to south.	Indirect and direct Impact. ZAP impacted by WWTP site and pipeline at this location. Some of pipe route adjacent to extant bank now extant as field boundary	Creation of c.20m buffer zone around monument in order to protect it from inadvertent damage and to maintain integrity of monument in landscape. Berms, trees and fencing should respect buffer zone and be placed outside it.  Pipeline to respect buffer zone and should not impinge it.
CH10	CO087-041--- Inventory 6364	Recorded monument	Shanbally	Circular Enclosure	17547/06365	RMP Inventory	Not shown. In pasture, on south-facing slope. Aerial photograph (Bord Gáis) shows levelled circular enclosure. No visible surface trace. Due to the photographic evidence and the fact that this is in close proximity to another enclosure it is	Indirect: pipe impacting ZAP of monument. Adjacent to WWTP site.	Creation of c.20m buffer zone around monument in order to protect it from inadvertent damage and to maintain integrity of monument in landscape

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Constraint Study Code	Reference Nos.	Legal Status	Townland	Monument Type	National Grid Reference	Information Source	Information Detail	Type of Impact Predicted	Suggested Mitigation Measure
							quite likely that its archaeological remains are subsurface.		Pipeline to respect buffer zone and should not impinge it. Berms, trees and fencing should respect buffer zone and be placed outside it.
CH11	CO087-049--- Inventory Not included	Recorded monument	Ballybricken	Possible church	17705/06449	RMP	Not included in inventory. Site not located during inspection.	Indirect: pipe impacting ZAP of monument.	Monitoring of pipeline in vicinity of ZAP for monument
CH12	CO087-054--- Inventory 4271	Recorded monument	Ringaskiddy	Shell midden	17908/00345	RMP Inventory	Not shown. On beach at Curlane Bank. Narrow layer of midden material extends for 30m n-s along shoreline just above high tide mark and measures 0.1m in thickness. Deposit contains cockles, limpets and winkles with some oyster and razor shells. Large scatter of shells (c. 100m e-w) on beach at low tide level.	No Impact of archaeological feature (shell midden) and its ZAP, as it is not intended to undertake intrusive works at this location at present.	Existing pipe wayleave. No works required at this time. Should work be required in future, suitable mitigation should be put in place.
CH13	CO087-077---	Recorded monument	Kilgarvan	Church	17975//06647	RMP Urban	Not included in inventory. No surface trace found	Indirect: pipe impacting ZAP	Monitoring of pipeline in vicinity

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Constraint Study Code	Reference Nos.	Legal Status	Townland	Monument Type	National Grid Reference	Information Source	Information Detail	Type of Impact Predicted	Suggested Mitigation Measure
	Inventory Not included					Archaeology Survey County Cork	during walkover. Located close to harbour in centre of Cobh. No visible trace. Unlocated during walkover inspection.	of monument.	of ZAP for monument
CH14	CO087-078--- Not included	Recorded monument	Kilgarvan	Graveyard	17967/06684	RMP Urban Archaeology Survey County Cork	Not included in inventory. No surface trace found during walkover. Urban Survey records that it was uncovered in 19th century and its site is now occupied by Cove Male National School.	Indirect: pipe impacting ZAP of monument.	Monitoring of pipeline in vicinity of ZAP for monument
CH15	CO087-079--- Not included	Recorded monument	Kilgarvan	Graveyard	17975/06647	RMP Urban Archaeology Survey County Cork	Not included in inventory. No surface trace found during walkover. Urban Survey records site now occupied by Pearse Square and originally uncovered in 19th century and recorded by Coleman in 1894.	Indirect: pipe impacting ZAP of monument.	Monitoring of pipeline in vicinity of ZAP for monument
CH16	CO087-097--- Inventory 5140	Recorded monument	Rathanker	Possible Souterrain	17590/06740	RMP Inventory	Not shown. In ringfort (4614). According to Hurse ('subterranean passage or cave was to be seen between forty and fifty years ago. It is now covered with a large flat stone and the soil has	Indirect: pipe impacting ZAP of monument	Monitoring of pipeline in vicinity of ZAP for monument

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Constraint Study Code	Reference Nos.	Legal Status	Townland	Monument Type	National Grid Reference	Information Source	Information Detail	Type of Impact Predicted	Suggested Mitigation Measure
							grown over it'. No visible surface trace.		
CH17	CO087-107--- Inventory 6361	Recorded monument	Carrigaline East	Possible Souterrain	17506/06287	RMP Inventory	Not shown. Uncovered during building of house c.1977. According to local information consisted of 'stone-lined passage'. Destroyed by foundation trenches. (pers. comm. S. Lane). No trace found during inspection.	Indirect: pipe impacting ZAP of monument. Impact already occurred due to construction of house.	Monitoring of pipeline in vicinity of ZAP for monument
CH18	CO087-109--- Inventory 5871	Recorded monument	Carrignafoy	Battery	18097/06667	RMP Inventory	Indicated. On steep s-facing shore of Great Island with commanding view of entrance to Cork harbour; remains of roughly star-shaped fort later enclosed within rectangular ordnance grounds; known as Cove Fort. Fort built 1743-9 (Brunicardi 1982,4)	Direct and Indirect: pipe impacting ZAP of monument and some stretches very close to extant portions of the monument.	Monitoring of pipeline in vicinity of ZAP for monument
CH19	CO099-072--- Inventory 3941	Recorded monument	Commeen	Fulacht Fiadh (burnt mound)	17423/06108	RMP Inventory	Not shown. According to local information, fulacht fiadh discovered during reconstruction of rural water scheme. No visible surface trace. Well nearby	Indirect: pipe impacting ZAP of monument	Monitoring of pipeline in vicinity of ZAP for monument

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<b>Constraint Study Code</b>	<b>Reference Nos.</b>	<b>Legal Status</b>	<b>Townland</b>	<b>Monument Type</b>	<b>National Grid Reference</b>	<b>Information Source</b>	<b>Information Detail</b>	<b>Type of Impact Predicted</b>	<b>Suggested Mitigation Measure</b>
CH27	CO087-010--- inventory 5693 & 5894	Recorded Monument Protected Structure	Ballyvoloon	Church and Graveyard	17960/06785	RMP Inventory PS	Indicated. "Cobh Cemetery". Square graveyard, large collection of inscribed headstones, contains ruins of 17th church. Many headstones have maritime connection. Lusitania mass grave here in SW corner. Site of ancient parish church called Clonmel.	Indirect: pipe impacting ZAP of monument	Monitoring of pipeline in vicinity of ZAP for monument

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**Table 3.8.5: Architectural constraints inventory of Recorded Structures within study area**

Constraint study code	Reference (RPS County Code)	Address	Location/ Coordinates	Site Type	Source	Importance/ Legal Status	Information Detail	Type of Impact Predicted	Suggested Mitigation Measure
CH6	00579	Carrigaline Middle	17307/06249	Mill	Cork County Development Plan (as varied)	Protected Structure (and recorded monument)	List of Protected Structures Also a recorded archaeological monument.	No impact on fabric of structure, pipeline in vicinity of structure.	none
CH7	00576	Carrigaline Middle	17415/06259	St Mary's Church	Cork County Development Plan (as varied)	Protected structure (and recorded monument)	List of Protected Structures. Also a recorded archaeological monument.	No impact on fabric of structure, pipeline in vicinity of structure.	none
CH27	00861	Ballyvoloon	17960/06785	Clonmel Church and graveyard	County Development Plan	Protected Structure and recorded monument	List of Protected Structures. Also a recorded archaeological monument.	No impact on fabric of structure, pipeline in vicinity of structure.	none

**Table 3.8.6: Further potential Architectural Constraints within study area**

Constraint Study Code	Ref. Nos	Address	Location/ Coordinates	Site Type	Source	Importance/ Legal Status	Information Detail	Type of Impact Predicted	Suggested Mitigation Measure
CH20	none	Ringaskiddy	Within study area, 177180/0643 60	Roadside memorial	Fieldwork	none	Memorial for a death near this location.	Direct Impact: May be inadvertently disturbed during construction.	Suitably protected and fenced off (temporarily) during construction works
CH21	none	Ringaskiddy	Within study area, 176970/0646 59	plaque	Fieldwork	none	Cork Harbour Commissioners commemorative plaque erected in 1980 and bearing the inscription 'This plaque acknowledges the assistance of the European Regional Development Fund in the development of the port of Cork. June 1980'. It is a 2.40m high brick structure.	Direct Impact: May be inadvertently disturbed during construction.	Suitably protected and fenced off (temporarily) during construction works
CH22	none	Ringmeen, (Whitepoint)	Within study area, 178520/0657 20	Limekiln	Fieldwork OS map analysis	None	Unusual occurrence of an unrecorded kiln in Co. Cork. Rynne in his publications does not note it. Associated with a local quarry to west of monument. Marked on the first edition 6" map with a limekiln symbol (circle/ring with dot). In	Indirect impact: adjacent to location of pipes	Suitably protected and fenced off (temporarily) during construction works  Archaeological monitoring in vicinity of monument.

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Constraint Study Code	Ref. Nos	Address	Location/ Coordinates	Site Type	Source	Importance/ Legal Status	Information Detail	Type of Impact Predicted	Suggested Mitigation Measure
							very good condition.		
CH23	None	Ballyfouloo "Strawhill"	075400/065100	Railway Embankment	Fieldwork OS map analysis	None	Railway embankment extant relating to the Great southern railway which ran from Carrigaline to Crosshaven. Closed in the 1930s. Low possibility that some remains of Raffeen Mills may be present subsurface at this location also.	Indirect: impact adjacent to pumping station	Archaeological monitoring of construction works (due to presence of modern fill at location of station).
CH24	None	Kilnaglery/C ommeen	073525/061515	The Dandy Bridge	Fieldwork OS map analysis	None	Indicated as Ford and crossing point and bridge. Origin of name unknown. Bridge single span semi-circular headed arch in mortared stone. Parapets at either side of roadway, mortared stone. Very overgrown. Stone paving noted in water to north side of bridge, possible original fording paving. Modern pipes on northern side of bridge.	Direct and Indirect impact: adjacent to pipe location. Route of pipe may traverse bridge	Archaeological monitoring of construction works. Protection of bridge in case of inadvertent damage should it be required (sandbagging, scaffolding or suchlike).
CH25	None	Kilnaglery	074255/062100	Bridge/ Railway	Fieldwork OS map	None	Railway embankment extant relating to the	Indirect impact: adjacent to outfall of	Archaeological monitoring in

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Constraint Study Code	Ref. Nos	Address	Location/ Coordinates	Site Type	Source	Importance/ Legal Status	Information Detail	Type of Impact Predicted	Suggested Mitigation Measure
				Embankment	analysis		Great southern railway which ran from Carrigaline to Crosshaven. Closed in the 1930s. Kilnaglery bridge to south. Marked on earlier editions of maps. Modern road now traverse bridge which appears modern (though may be older and repaired).	pipe	vicinity of monument
CH26	None	Historic Town	179750/066470	Historic Town	Fieldwork OS map and documentary analysis	None (as a historic entity)	Cobh town is a complex and very important cultural heritage location. It is not designated as an entity in its own right but for the purposes of this study has been allocated a CH number. This CH number incorporates the contents of the Cobh Development Plan (CTC 2005) including its PS list and so they have not been described individually. At the end of the 18th century Cobh was described as a small fishing village consisting of a few scattered houses. Its subsequent rise arose	Direct and indirect impact: Pumping stations and pipe locations in historic town	Archaeological monitoring of all pipe routes within Urban district of Cobh.  Sympathetic design of major pumping station at West Beach.  Suitable Screening of all works during construction phase so as not to detract from the historic integrity of the town until they are made good. Archaeological testing in advance of construction of

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Constraint Study Code	Ref. Nos	Address	Location/ Coordinates	Site Type	Source	Importance/ Legal Status	Information Detail	Type of Impact Predicted	Suggested Mitigation Measure
							<p>from its convenient island location for shipping in Cork Harbour. It also benefited from the erection of Camden and Carlisle forts and by the construction of an artillery barracks on Spike Island to the south. It was a British naval base until 1937 and was the principal American naval base in Europe during WW1. In 1838 the Sirius sailed from here- the first steamer to cross the Atlantic. In the 19th century Cobh was a "winter resort" and in 1894 Queen Victoria visited when it was temporarily called "Queenstown". The ill-fated Titanic stopped at Cobh before it continued its maiden voyage to America (Zajac et al, Urban Survey 1995)</p>		<p>pumping stations at Carrigaloe and West Beach.</p>

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## Off-Shore Impacts

The insertion of the Marine Pipeline between Cobh and Monkstown will result in a direct and potentially significant negative impacts to the existing riverbed/seabed environment. While no archaeologically significant material/structures/deposits were encountered during the survey, the potential of impacting buried, in-situ, archaeological material still remains. In addition, the pipeline will impact the foundations of the northern wing of the Royal Victoria Baths. It is recommended that direct impacts to this structure be avoided, preserving the in-situ masonry foundations of the northern wing. It is recommended that the pipeline either be placed outside the site of the Royal Baths, or inserted between the north and south wings; originally the swimming pool area. No *in situ* remains are believed to remain within this intersection between the north and south wings.

Archaeological monitoring licensed to the DEHLG is recommended during all riverbed/seabed disturbances associated with insertion of the marine pipeline between Cobh and Monkstown, with the proviso for full excavation of any archaeologically significant material uncovered at this time. In addition, it is recommended that direct impacts to the site of the Royal Victoria Baths be avoided, preserving the *in situ* masonry foundations of the North and South Wings.

In contrast, the insertion of the pipeline along the upper foreshore of the Owenboy River does not represent a significant impact to the existing foreshore environment. The upper foreshore has already undergone extensive and successive modern alteration with the placement of flood protection measures and a concrete encased pipeline. Should the impact area remain limited to the pipeline corridor identified on the Figure 2.9 *Associated Development Works*, it is extremely unlikely that any archaeological material/structures/deposits will be impacted during the construction process.

### (ii) 'Worst Case Scenario' Impact

In the unlikely event that no archaeological mitigation is implemented for the duration of the construction phase of the proposed development, it is considered likely that unrecorded archaeological deposits and/or artefacts may be destroyed without proper archaeological recording occurring.

### (iii) 'Do-Nothing' Impact

In the event of the development not proceeding at the identified sites of Cork Lower Harbour and its environs, no RMP (known archaeological sites), potential sub-surface unrecorded archaeological features or artefacts will be disturbed.

### 3.8.5 Mitigation Measures

#### (i) Construction and Operational Phases

##### On-shore Mitigation Measures

Monitoring/testing mitigation measures identified in Tables 3.8.4 to 3.8.6 and Table 3.8.7 will be subjected to archaeological monitoring under licence by an archaeologist. In the event of archaeological deposits and/or artefacts being encountered during this monitoring the National Monuments Section of the DEHLG and the National Museum of Ireland (NMI) will be consulted to determine the requirements, if any, for further mitigation.

The pipeline routes along the existing roads that are not adjacent to/within any RMP will be inspected by an archaeologist, at a schedule which will be agreed prior to commencement of construction activities. The detailed design of the proposed development will ensure that the pipeline route does not impact directly on any RMP site.

It should be noted that it is the remit of the National Monuments Section and the NMI to legally recommend any one or a combination of the above specified measures, or indeed to make additional recommendations in respect of mitigation.

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**Table 3.8.7: Mitigation Measure Summary**

General Predicted Impact Summary	Mitigation Measure Summary
Predicted impacts on specific CH sites 1-27	Refer to Tables 3.8.4 to 3.8.6 for suggested specific measures
Impact of green field pipe routes on unrecorded subsurface archaeology or cultural heritage	Field walking of all green field areas when accessible. Archaeological test trenching and/or monitoring of pipe routes
Impact of WWTP	Archaeological testing in advance of construction
Impact of pipe routes where it cuts boundaries such as barony/townland boundaries	Archaeological test trenching of locations where this occurs
Impact of pipe routes within zones for CH sites	Archaeological monitoring of these locations
Impact of pipe routes along roads outside zones for CH sites	Archaeological Inspections of works at these locations
Impact of major pumping station locations: Monkstown, Raffeen/Strawhill, West Beach and Carrigaloe	Archaeological testing and/or monitoring of these locations
Visual Impact of pipeline routes	Suitable screening during construction especially in CH26 (Cobh)
Visual Impact of major pumping stations	Suitable screening to minimise visual impact on cultural heritage. In particular, sensitive design of West Beach pumping station in line with provisions of Cobh Development Plan (CTC 2005), due to its highly visible location with the cultural heritage town of Cobh.
Scale of proposed development	Due to scale of proposed development it is suggested that a Project Archaeologist be appointed to the project to oversee and manage its cultural heritage dimension during construction by liaising directly with main contractor

### Off-shore Mitigation Measures

#### Pre-construction Measures

No further ameliorative measures are recommended in advance of construction commencing.

#### Construction Phase Measures

Archaeological monitoring licensed to the DEHLG is recommended during all riverbed/seabed disturbances associated with insertion of the Marine Pipeline between Cobh and Monkstown, with the proviso for full excavation of any archaeologically significant material uncovered at this time. In addition, it is recommended that direct impacts to the site of the Royal Victoria Baths be avoided, preserving the *in situ* masonry foundations.

As impacts are not anticipated, no construction phase measures are recommended for the insertion of the upper foreshore pipeline along the northern side of Owenboy River.

An archaeologist should be retained for the duration of the relevant works.

The time scale for the construction phase should be made available to the archaeologist, with information on where and when ground disturbances and dredging will take place. It is essential for the developer to give sufficient notice to the archaeologist/s in advance of the construction works commencing. This will allow for prompt arrival on site to monitor the ground disturbances. As often happens, intervals may occur during the construction phase. In this case, it is also necessary to inform the archaeologist/s as to when ground disturbance works will recommence.

In the event of archaeological features or material being uncovered during the construction phase, it is crucial that any machine work cease in the immediate area to allow the archaeologist/s to inspect any such material.

Once the presence of archaeologically significant material is established, full archaeological recording of such material is recommended. If it is not possible for the construction works to avoid the material, full excavation would be recommended. The extent and duration of excavation would be a matter for discussion between the client and the licensing authorities.

It is recommended that the core of a suitable archaeological team be on standby to deal with any such rescue excavation. This would be complimented in the event of a full excavation.

Secure site offices and facilities should be provided on or near those sites where excavation is required. Fencing of any such areas would be necessary once discovered and during excavation.

Adequate funds to cover excavation, post-excavation analysis, and any testing or conservation work required should be made available.

Machinery traffic during construction must be restricted as to avoid any of the selected sites and their environs.

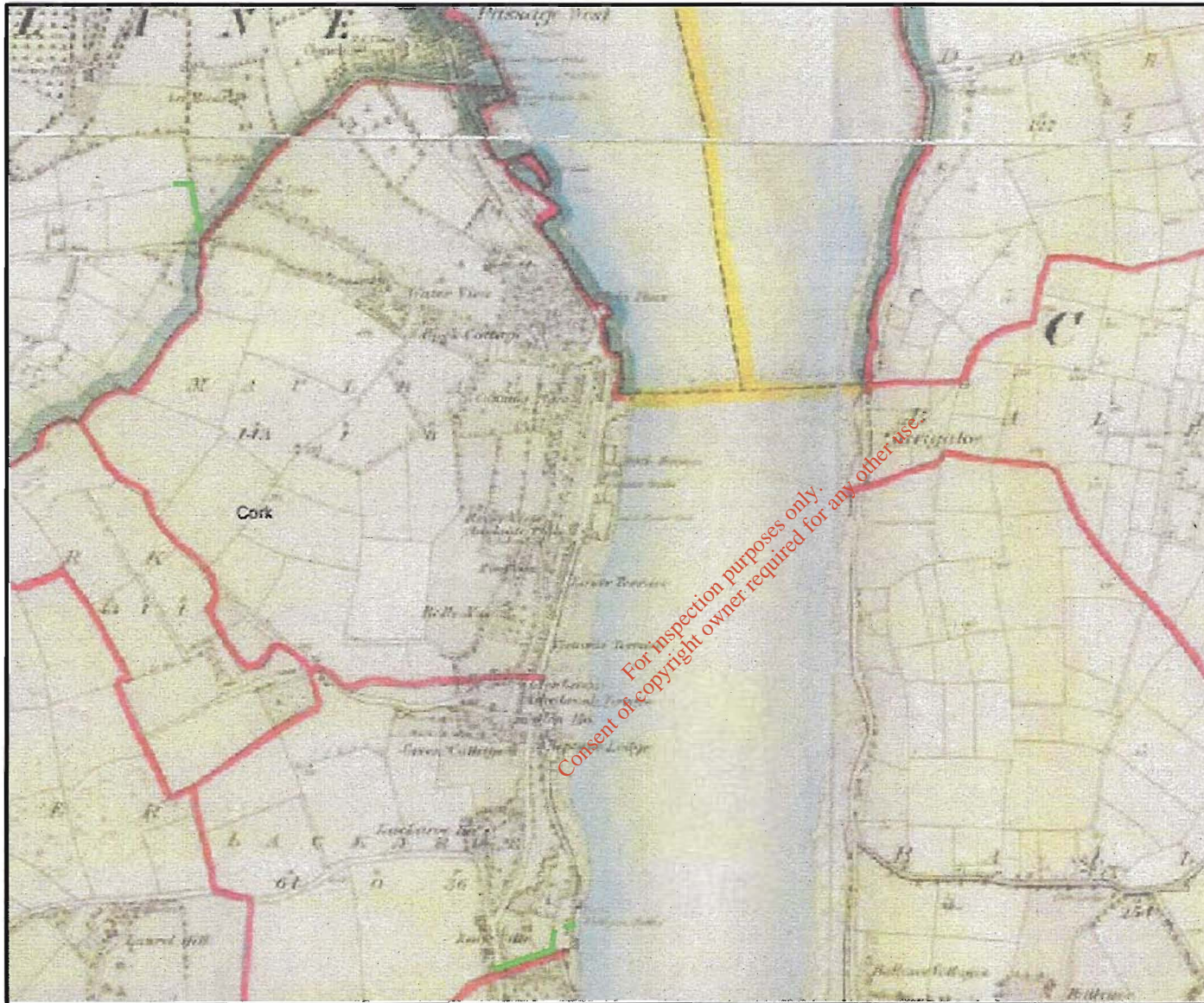
Spoil should not be dumped on any of the selected sites or their environs.

### **3.8.6 Residual Impacts**

It is anticipated that in the event of the mitigation measures as specified above being implemented in accordance with the requirements of the National Monuments Section and the NMI, there will be no residual impacts of significance arising from the proposed development.



FIGURE 3.8.1 LOCATION OF UNDERWATER AND INTER-TIDAL SURVEY AREAS.



LEGEND:

- TOWNLAND BOUNDARIES
- GREEN FIELD PIPELINE

FIGURE 3.8.2 TOWNLAND BOUNDARIES IN THE PASSAGE WEST/MONKSTOWN AREA



LEGEND:



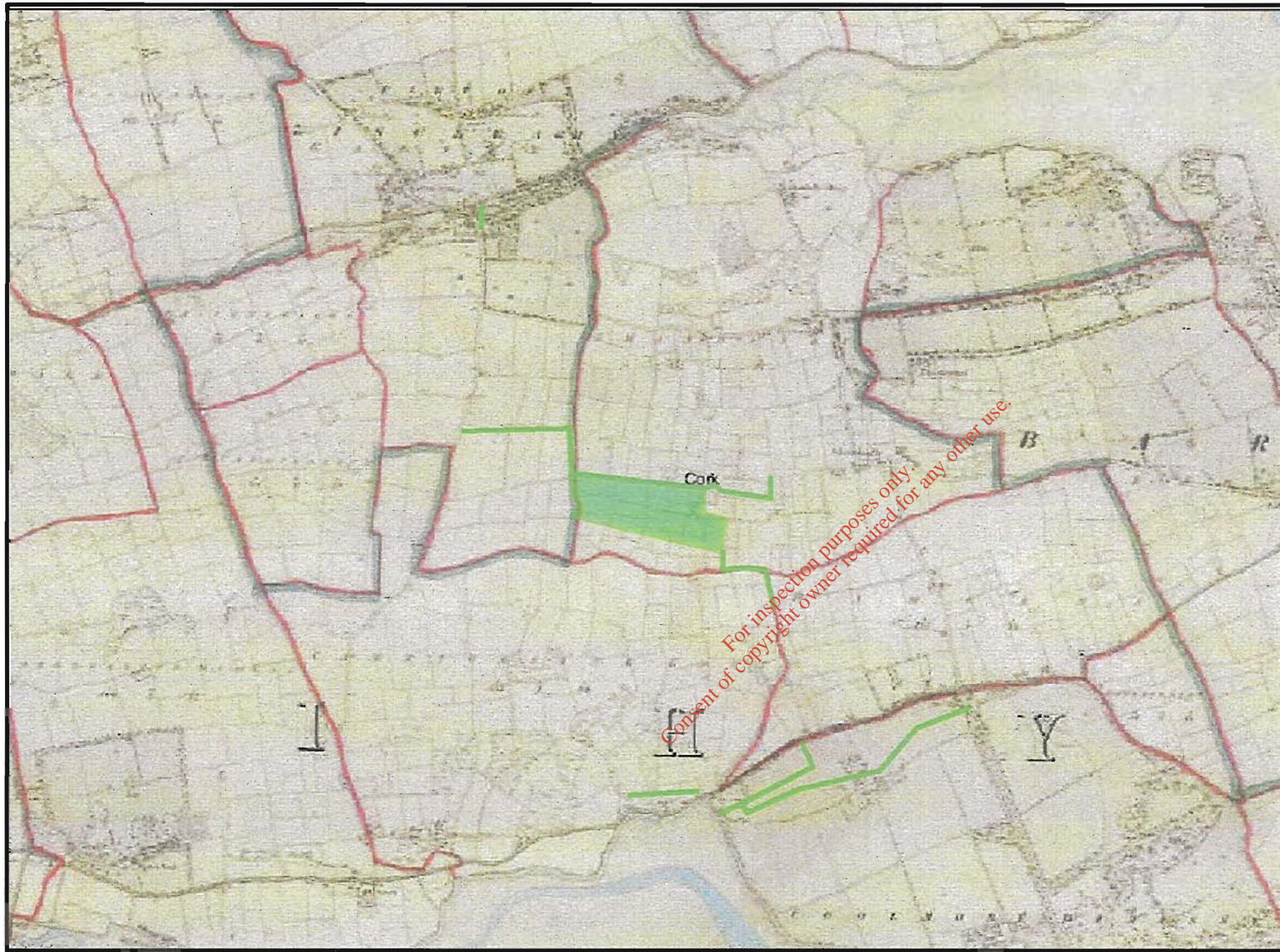
-  TOWNLAND BOUNDARIES
-  GREEN FIELD PIPELINE

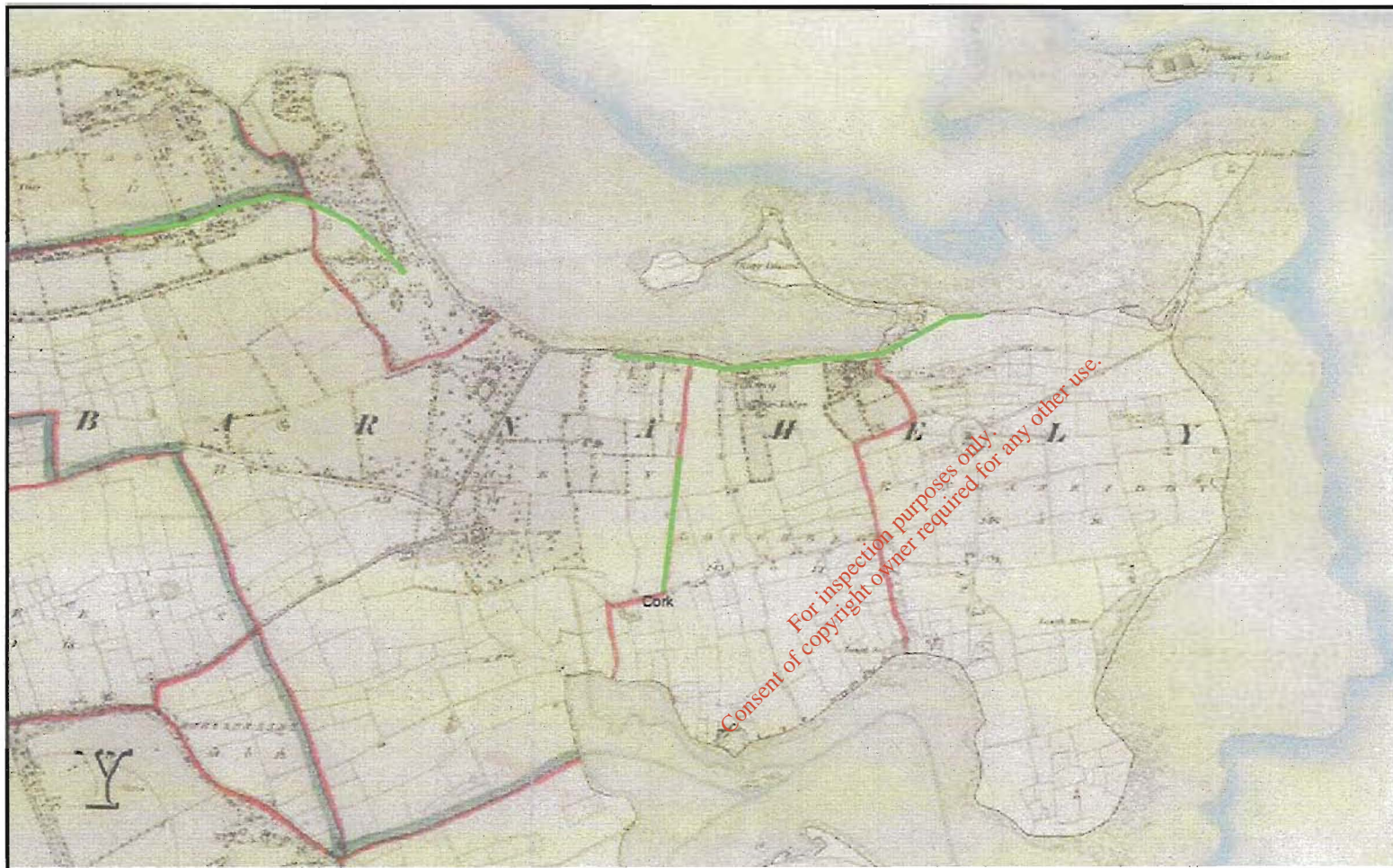
FIGURE 3.8.3 TOWNLAND BOUNDARIES IN THE CARRIGALINE AREA



LEGEND:

- TOWNLAND BOUNDARIES
- GREEN FIELD PIPELINE

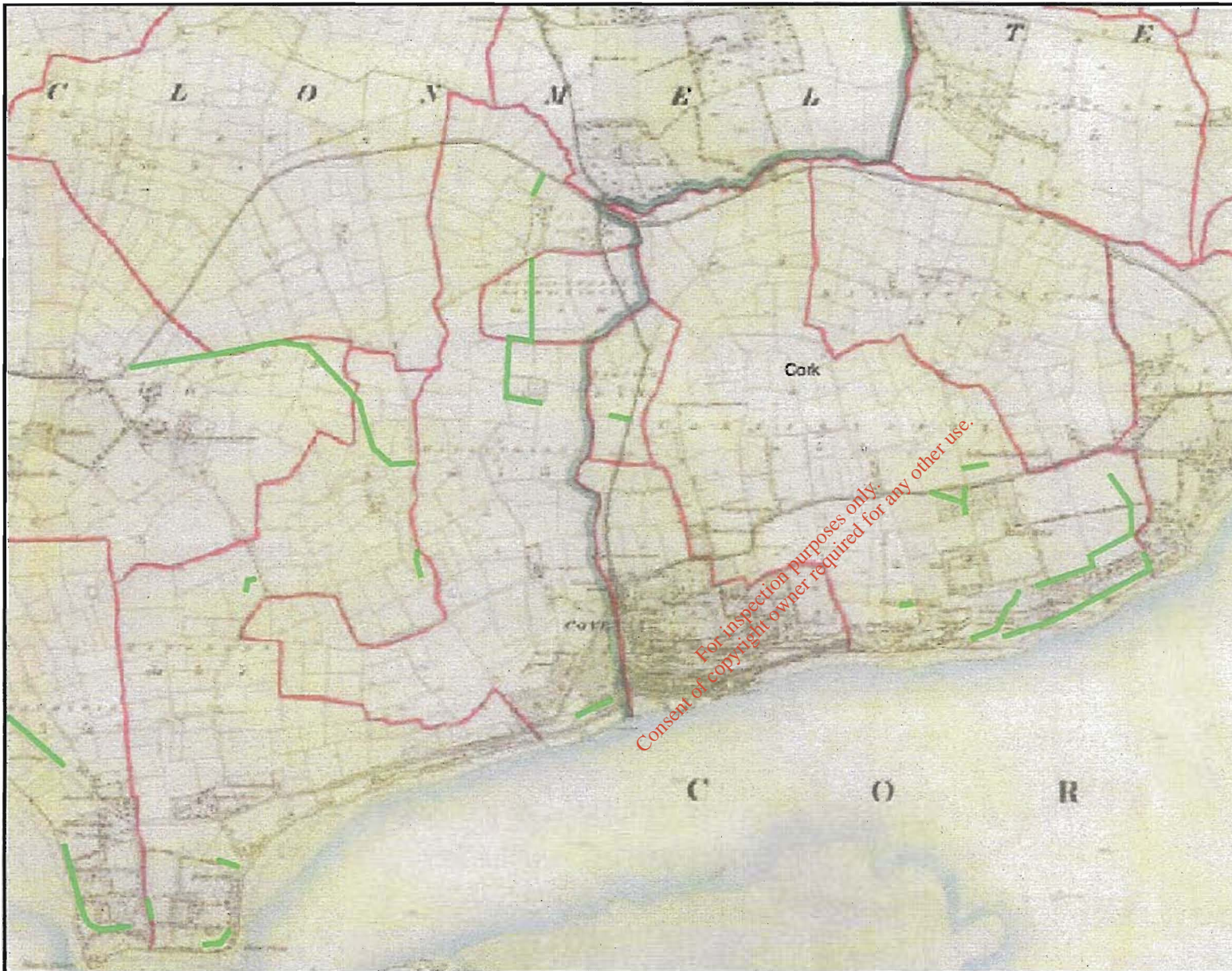
FIGURE 3.8.4 TOWNLAND BOUNDARIES IN THE SHANBALLY AREA



LEGEND:

- TOWNLAND BOUNDARIES
- GREEN FIELD PIPELINE

FIGURE 3.8.5 TOWNLAND BOUNDARIES IN THE RINGASKIDDY AREA



LEGEND:

- TOWNLAND BOUNDARIES
- GREEN FIELD PIPELINE

FIGURE 3.8.6 TOWNLAND BOUNDARIES IN THE COBH AREA



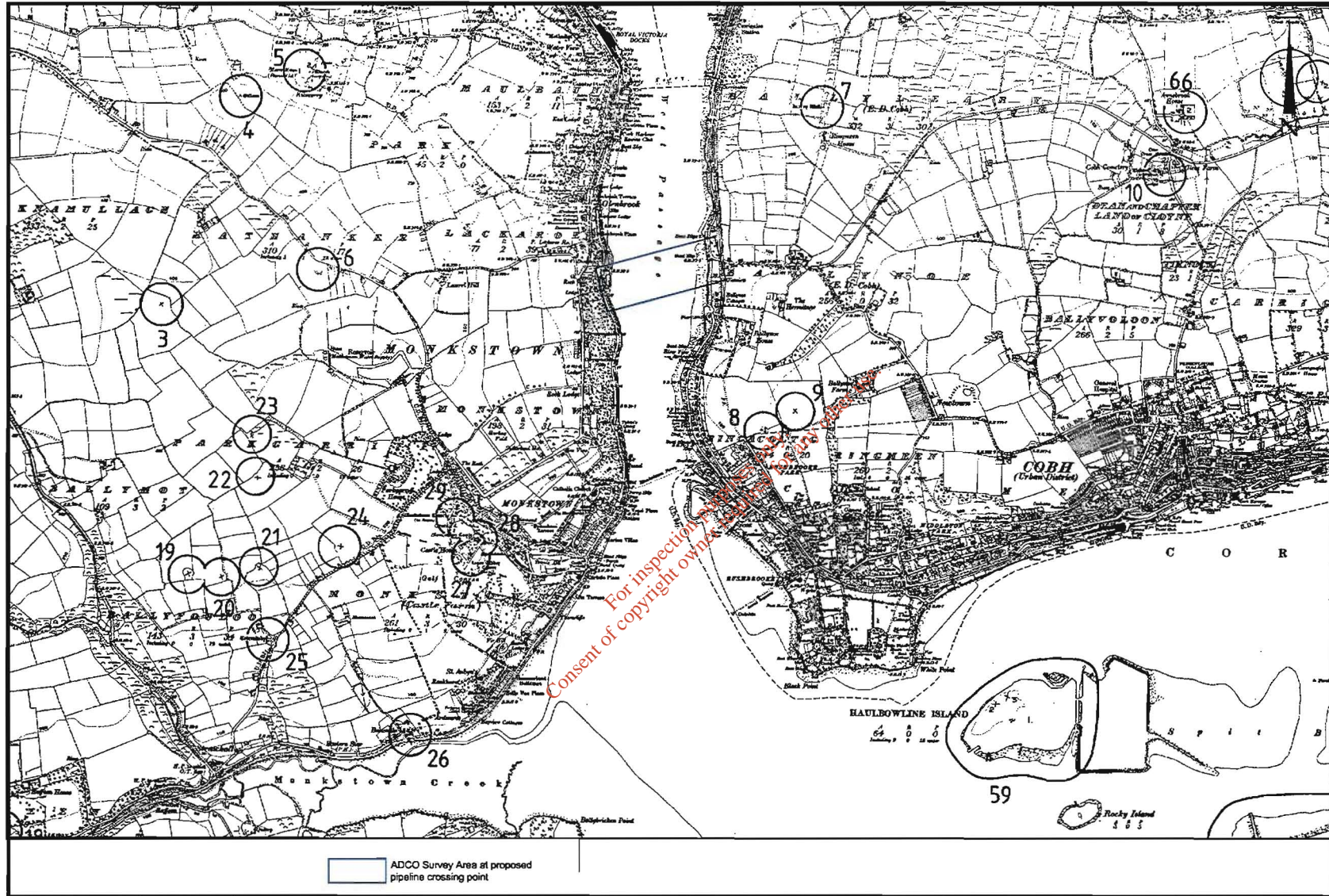


FIGURE 3.8.7 RMP SITES WITHIN THE VICINITY OF THE PROPOSED MARINE CROSSING

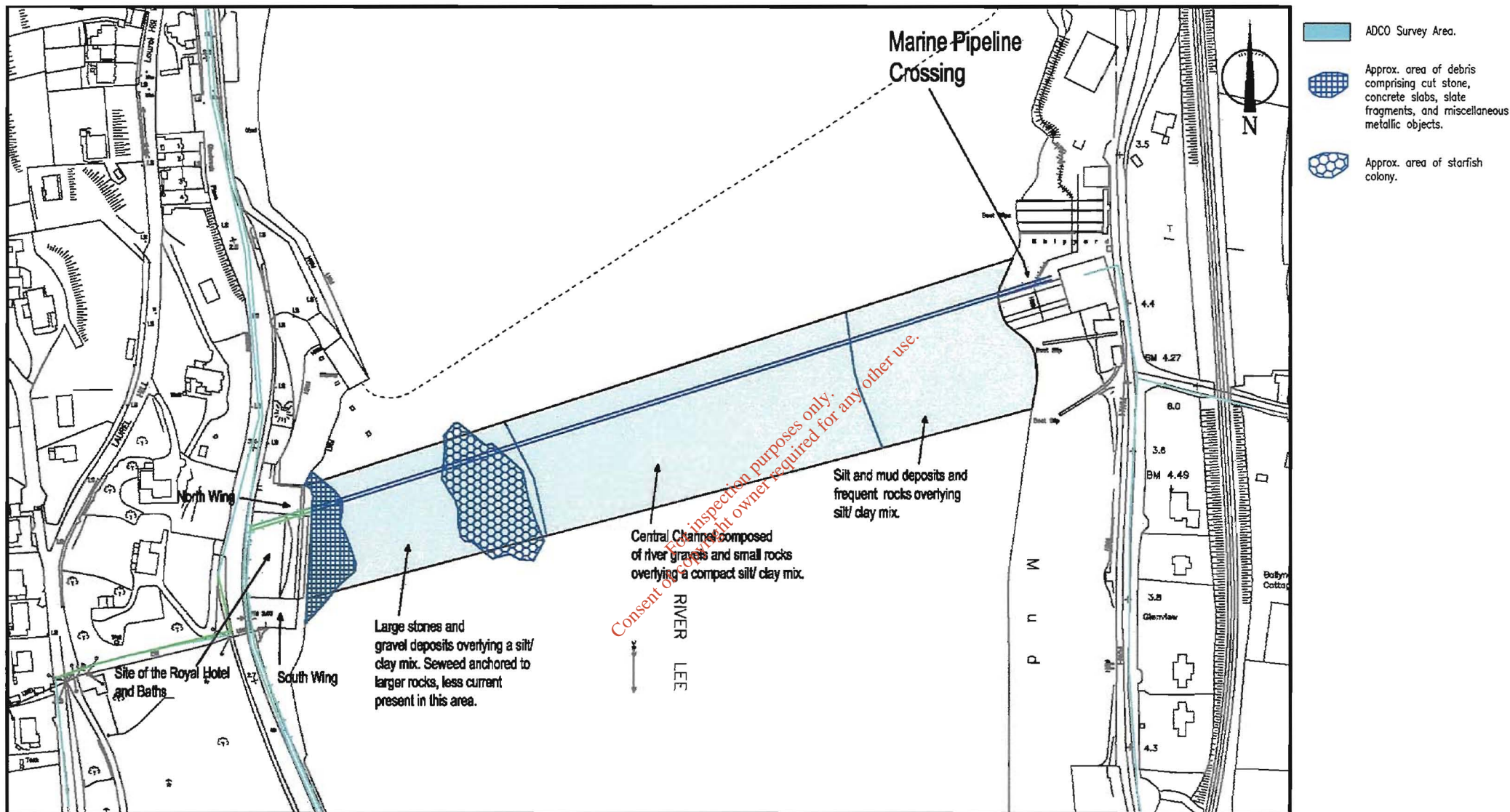


FIGURE 3.8.8 SURVEY AREA AND SEABED OBSERVATIONS AT SITE OF PROPOSED MARINE PIPELINE CROSSING





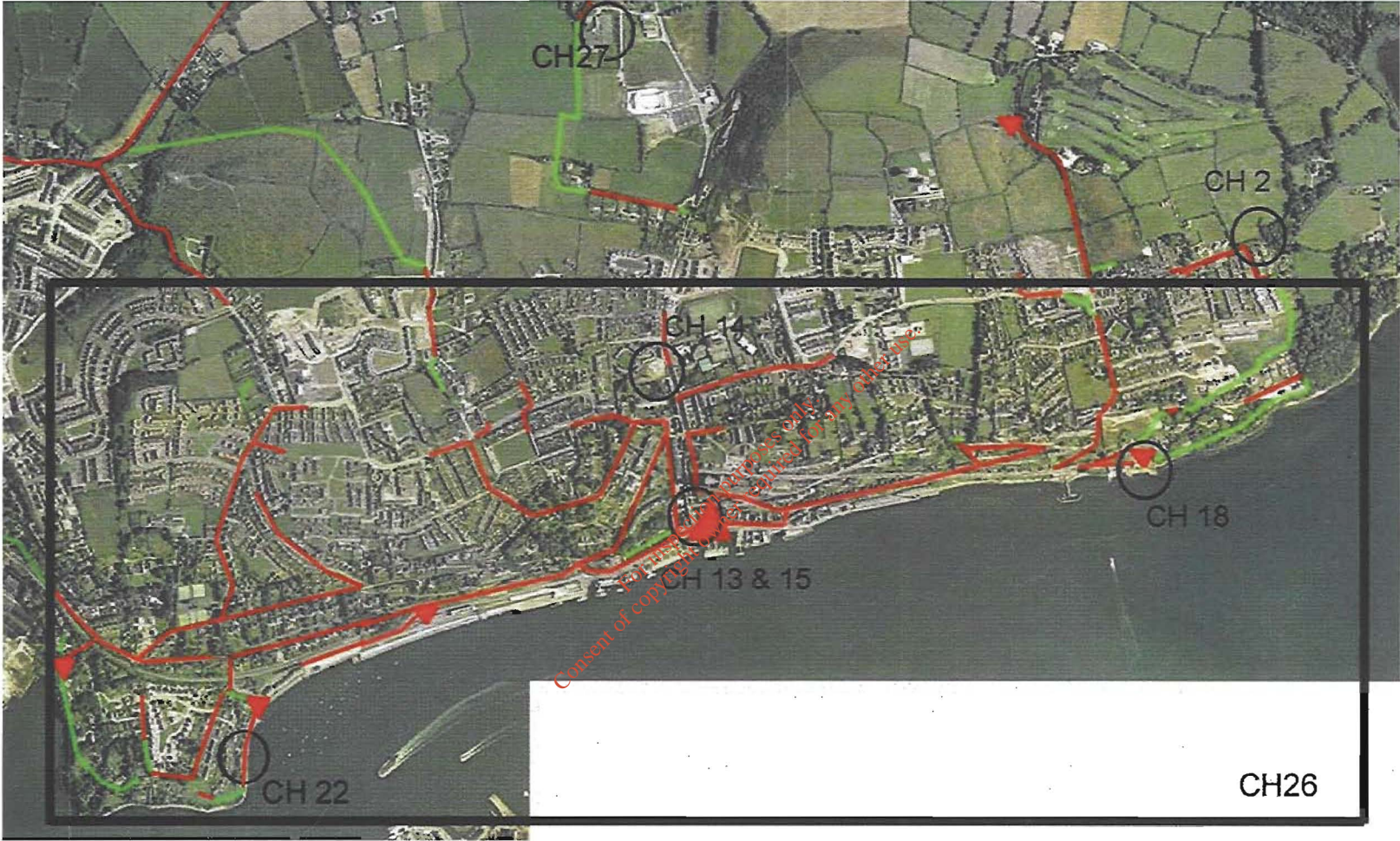


FIGURE 3.8.11 AERIAL PHOTO SHOWING CH LOCATIONS FOR COBH AND ENVIRONS

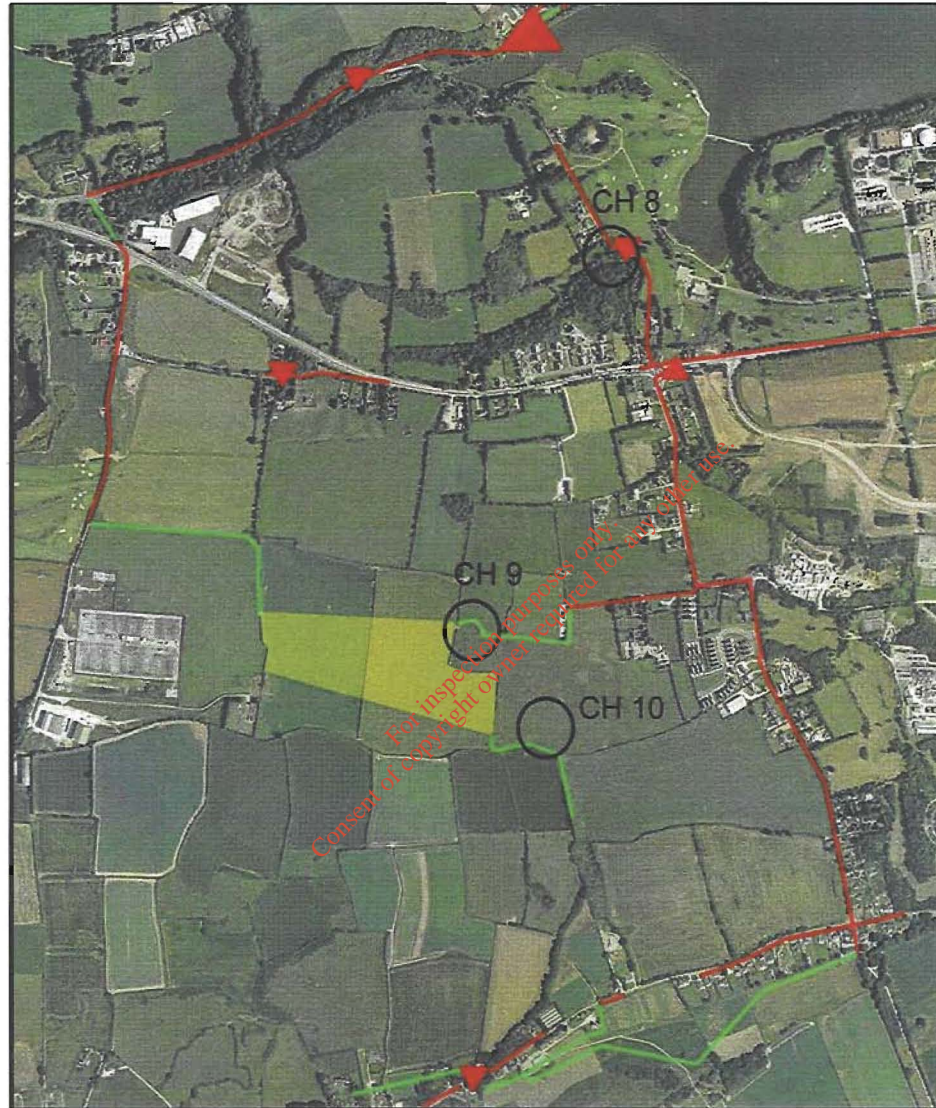


FIGURE 3.8.12 AERIAL PHOTO SHOWING CH LOCATIONS ALONG PIPELINE ROUTES IN THE PROPOSED WWTP SITE AREA



FIGURE 3.8.13 AERIAL PHOTO SHOWING CH LOCATIONS ALONG PIPELINE ROUTES IN THE RINGASKIDDY AREA



PLATE 3.8.1 NORTH-FACING VIEW OF THE ESTUARY  
MOUTH, RIVER LEE SURVEY AREA IN DISTANCE



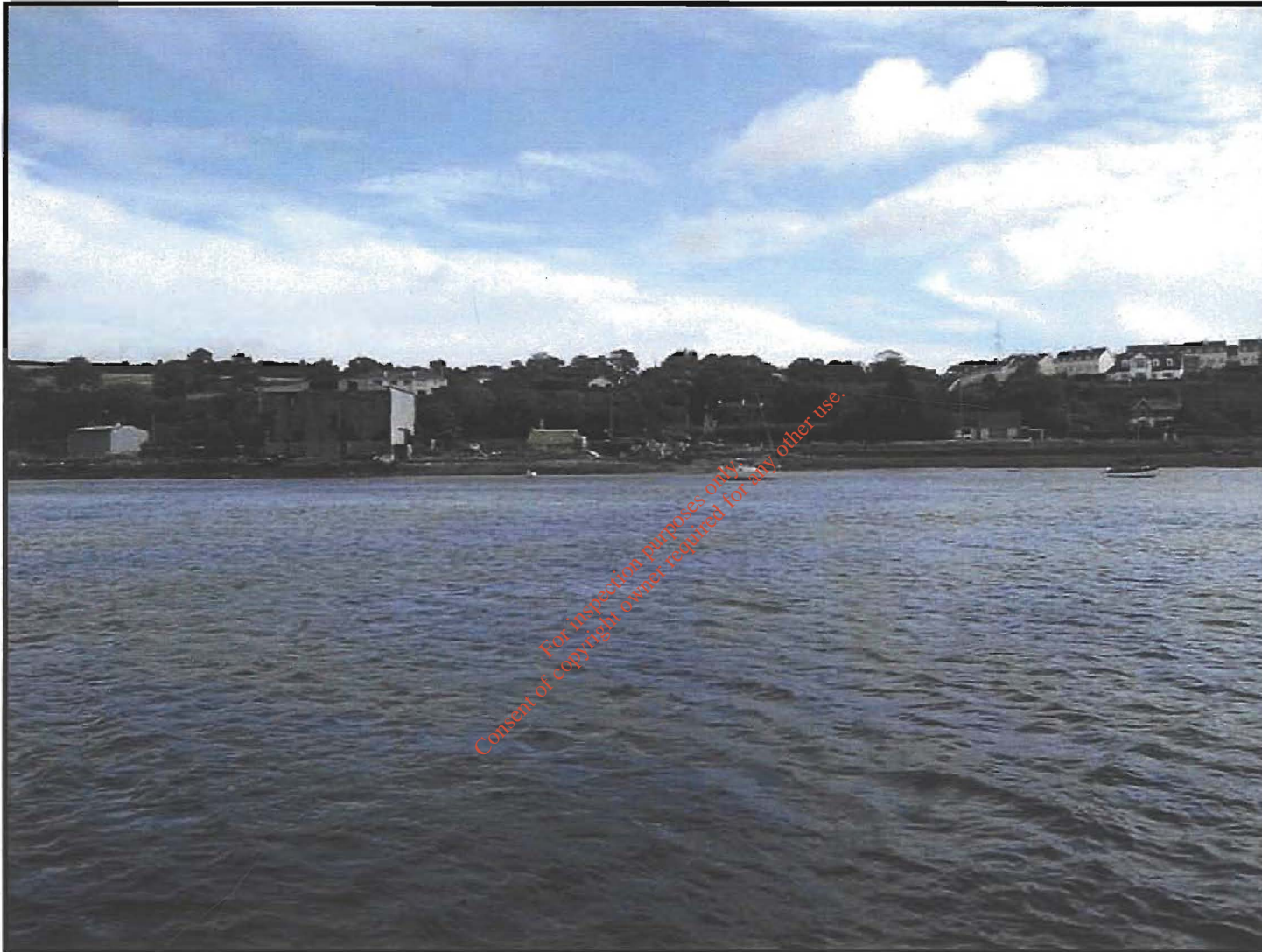


PLATE 3.8.2 EAST-FACING VIEW ACROSS MARINE  
PIPELINE SURVEY AREA, RIVER LEE ESTUARY



PLATE 3.8.3 WEST-FACING VIEW ACROSS MARINE  
PIPELINE SURVEY AREA, RIVER LEE ESTUARY



PLATE 3.8.4 WEST-FACING VIEW OF DOWNSTREAM  
(SOUTHERN) MASONRY FACADE FROM THE SOUTH WING  
OF THE ROYAL VICTORIA BATHS



PLATE 3.8.5 NORTHWEST-FACING VIEW OF WESTERN SIDE  
OF SURVEY AREA, ADJACENT TO THE REMAINS OF THE  
SWIMMING AREA OF ROYAL VICTORIA BATHS

## 3.9 Landscape and Visual Assessment

### 3.9.1 Introduction

This landscape and visual assessment was completed by Brady Shipman Martin, Landscape Architects on behalf of MMP.

The purpose of this study is to evaluate the landscape and visual impacts associated with the proposed Cork Lower Harbour WWTP (Cork Harbour Main Drainage Scheme) at Shanbally, Co. Cork. In doing so, assessments are made regarding the likely impacts to the landscape and visual character of the development, the appropriate mitigation measure required to complement these impacts and mitigation requirements associated with the future for large scale industrial development.

### 3.9.2 Methodology

#### General

The following publications have been referenced in the Landscape and Visual Impact Assessment:

- Cork County Council, Cork County Development Plan, (2003)
- Carrigaline Electoral Area Local Area Plan (Public Consultation Draft), (January 2005)
- Cobh Town Council, *Draft Development Plan*, (2005)
- Environmental Protection Agency, Guidelines on the Information to be contained in Environmental Impact Statements, (March 2002)
- Department of Environment and Local Government, Landscape and Landscape Assessment, Consultation Draft of Guidelines for Planning Authorities, (June 2000)
- The Landscape Institute/Institute of Environmental Management and Assessment, *Guidelines for Landscape and Visual Impact Assessment (2nd Edition)*, Spon Press, (2002)
- National Inventory of Architectural Heritage ([www.buildingsofireland.ie](http://www.buildingsofireland.ie))

#### Visual Assessment

The visual assessment of the site was carried out in July 2007. The methodology used for the landscape assessment entailed:

- A desktop study of the site in relation to its overall context both locally and regionally
- Visiting the site and its environs to assess the following
- Quality and type of views in the area
- The extent of the visual envelope, i.e. the potential area of visibility of the site in the surrounding landscape

The Visual Envelope Map is determined by assessment of the proposed height of the development relative to existing contour levels in the surrounding landscape. A desk top assessment is further refined on site to clarify local visual obstructions from land cover and settlement.

The character and quality of the surrounding landscape was assessed in relation to the proportion of residential and agricultural development, special landscape features, cultural and historical elements and landforms associated with the site.

### Character and Visibility

Effects on character and views are considered separately in the impact assessment. Impacts on character relate to changes in the particular identity of coherent landscape areas. Impacts on views are considered where there are particular or noticeable views, which would be affected by the development.

Impacts on the character of the landscape include responses, which are felt towards the combined effects of the new development. The significance of impacts on the perceived landscape character will depend mainly on the visual experience of the landscape and on the number of people affected, but also on judgements about how much the change will matter. Other factors will also affect the experience, including sounds, smells, feelings, etc., experienced by those concerned.

### Impact Assessment

The impact assessment for this Section of the report is based on the Guidelines on the Information to be contained in Environmental Impact Statements and the Advice Notes on Current Practice (in the Preparation of Environmental Impact Statements) published by the EPA in March 2002 and September 2003 respectively. The criteria used include the quality, magnitude and duration of impacts.

Criteria for assessing impact quality, magnitude and duration are described in Tables 3.9.1, 3.9.2 and 3.9.3 respectively.

**Table 3.9.1: Criteria for assessing the quality of impacts**

Impact type	Criteria
Positive impact	A change is likely to improve the quality of the environment.
Neutral	No effect.
Negative impact	The change is likely to adversely affect the quality of the environment.

**Table 3.9.2: Criteria for assessing impact magnitude**

Impact Magnitude	Definition
No change	No discernible effect on human beings.
Imperceptible Impact	An impact capable of measurement but without noticeable consequences.
Slight Impact	An impact which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Impact	An impact that alters the character of the environment in a manner that is consistent with existing and emerging trends.
Significant Impact	An impact which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Profound Impact	An impact which obliterates sensitive characteristics.

**Table 3.9.3: Criteria for assessing impact duration**

Temporary Impact	≤ 1 year
Short-term Impact	1 – 7 years
Medium-term Impact	7 – 15 years
Long-term Impact	15 – 60 years
Permanent Impact	≥ 60 years

### Study Limitations

The impact assessment was undertaken in the summer when foliage is in full leaf and therefore provides greater screening than in the winter. However given the density of the local hedgerows there is not likely to be any notable reduction in screening over the winter.

### 3.9.3 Existing Environment

#### General

The proposed Cork Lower Harbour WWTP site is located at Shanbally, Co. Cork, approximately 1.06km east of Carrigaline, 2.24km west of Ringaskiddy, and directly east of Barnahely. The village of Shanbally is located 1km to the northeast. The N28 Ringaskiddy Road currently runs east to west approximately 625m to the north, however the proposed route for the N28 Road Improvement Scheme will re-direct the road to run north of the site.

The site covers an area of approximately 7.36ha and is situated on a south facing hillside at approximately 30m high (Malin Head Datum). The site is currently pasture land and is located within two large fields bound by tall hawthorn hedgerows. The north and south boundaries of the site are not contained by the field hedgerows but are defined by the high voltage lines that run overhead north and south of the site that connect to an ESB sub-station immediately to the west of the site.

The topography in the local area is defined by ridgelines that typically run east west to form a rolling landscape. To the north primary visual ridgeline runs through Raheenaring and Monkstown on to Passage West. To the south another ridgeline runs from Crosshaven eastwards through Frenchfurze. Two lower ridgelines further define the visible extents of the local area, one immediately north of the site extending from Carrigaline through Shanbally to the “Golden Rocks” headland at Ringaskiddy, and a second ridge to the southeast along the Currabinny headland with the Owenboy River to the south and Lough Beg to the north. These ridgelines define the extents of the visual envelope and are illustrated on Figure 3.9.1 *Visual Envelope and Photo Locations*.

The local landscape is heavily influenced by the existing pharmaceutical complexes in the Ringaskiddy and Lough Beg area. Of these the newly developed Centacor site and the Novartis site are visible immediately to the east at Barnahely. Immediately west of the site there is a substantial ESB Substation and Bord Gáis pumping station which introduce an industrial element to the very edges of the site. The site is accessed by a gravel lane-way that leads to the Bord Gáis facilities. The lane passes between the ESB sub station to the north and a small industrial complex with two warehouses of approximately 10.0m height to the south. Beyond the warehouses the fringes of Carrigaline are clearly visible.

### **Historic / Cultural Landscapes**

The proposed site is situated in an agricultural landscape, and is not directly associated with any historic landscapes or areas of recreation and amenity. However the surrounding area contains historical references.

Historic Landscapes as designated by the National Inventory of Architectural Heritage (NIAH) are situated at Coolmore in the grounds of Coolmore House, and at Raffeen.

The landscape at Coolmore is largely intact though much of the peripheral landscape is indistinguishable from the surrounding farmland and some modern agricultural buildings have been constructed within the site of the walled garden. The proposed WWTP will not have any direct or indirect impact on the character of Coolmore House and grounds. The historic landscape at Raffeen is associated with Raffeen House and Raffeen House Lower, a large extent of quarrying has been undertaken on the site and all that remains of the historic landscape is Raffeen House and the woodland along the Monkstown Road. The WWTP will have no direct or indirect impact on the landscape at Raffeen. However the mitigation planting will reflect the character of woodland at Raffeen and Monkstown Creek.

### **Recreation and Amenity Landscapes**

The proposed development site has the potential to impact on two areas of amenity or recreation. There are playing pitches at Shanbally within a short distance of the site, but they will not have views of the site. There are also public walks along the Owenboy River and at Currabinny. Currabinny is screened from all views to the site, but there are direct views to the site from the public amenity walk between Carrigaline and Crosshaven for a short distance at Frenchfurze.

### **Site Significance**

The site is contained within a large area Zoned as I-03 on zoning map no. 26 in the *Cork County Development Plan (2003)* and reads as follows in the Zoning Objectives section for Ringaskiddy:



“Suitable for large stand alone industry with suitable provisions for a buffer tree planting, minimum 20 metres wide along the northern boundary to residential areas and provision for Public Open Space and to include three playing pitches.”

There are also a number of scenic routes and scenic landscape designations in close proximity to the site which are discussed below.

### Designated Scenic Landscape

There are large areas surrounding the site, particularly to the North, East and South, which are designated as ‘Scenic Landscape’ (refer to Figure 3.9.1 *Visual Envelope and Photo Locations*). Much of the scenic landscape in close proximity to the site is in agricultural usage with no public access. From the local road network in the area, views of the site are largely screened by high hedgerows. There are partial views to the site from within designated scenic landscape along a section of the road out to Coolmore Cross from Carrigaline. The Owenboy valley is designated as scenic landscape but views to the site are restricted by local topography and vegetation. Distant, partial views are possible from the Myrtleville Road and the back road from the Carrigaline Industrial Estate, at Frenchfurze on the opposite side of the Owenboy River, but distance and intervening vegetation restrict the extent of views. The policies relating to these areas (Volume 1, Chapter 7, *Cork County Development Plan* (2003)) read:

*‘ENV 3-4      Scenic Landscape*

*It is a particular objective to preserve the visual and scenic amenities of those areas of natural beauty identified as ‘scenic landscape’ and shown in the scenic amenity maps of Volume 4 of this plan.*

*‘ENV 3-5      General Views and Prospects*

*It is a general objective to preserve the character of all important views and prospects, particularly sea views, river or lake views, views of unspoilt mountain, upland or coastal landscapes, views of historical or cultural significance (including buildings and townscapes) and views of natural beauty.’*

Zoned lands that also have designations such as ‘scenic’ or ‘heritage’ are considered as follows:

*‘9.1.5 As a point of clarification, where particular zoned lands have a scenic landscape designation or adjoin a scenic landscape designation, there is still a presumption in favour of development for the specified land use, but special attention may need to be paid to design, siting and landscaping depending on the individual area and the type of development proposed.’*

### Designated Scenic Routes

The policy reads: (found on maps 15 and 16 in the *Cork County Development Plan*)

*‘ENV 3-5      Scenic Routes*

*‘It is a particular objective to preserve the character of those views and prospects obtainable from scenic routes identified in this plan. Those routes are shown on the scenic amenity maps in Volume 4 and listed in Volume 4 of this plan.’*

Scenic Route A-54 (Road between Passage West and Ringaskiddy): Views from the Ringaskiddy road will not include the proposed site which is on the south side of an intervening ridgeline.

Scenic Route A-56 (Road from Carrigaline and Crosshaven): This route runs from between 2 – 4km to the south of the site. There are long range views along sections the R612. The views across the Owenboy estuary include; Coolmore Estate, Novartis and the proposed site to the west, distinguished by the overhead powerlines (refer to Figure 3.9.1 *Visual Envelope and Photo Locations*).

## Visual Envelope

The Visual Envelope is the extent of potential visibility of the site to or from a specific area or feature in the landscape and is defined by topography and vegetation. The visual envelope of this site is indicated on Figure 3.9.1 *Visual Envelope and Photo Locations*.

From the north, the site is visible from elevated lands at Raheenering and also from lands above Strawhall southwest of Monkstown. From the east, views are limited to the local landscape in the area of Barnahely, though there are no views from Novartis car park and grounds due to screening by local topography and vegetation. To the south, the site is visible from the road above Loughbeg past the Coolmore Crossroads, and further south from the Crosshaven and Myrtleville Roads at Frenchfurze. To the west, the site is visible from the eastern fringes of Carrigaline, however there are no clear views from the local roads due to screening from high roadside hedges and housing east of the roads. Views will be achieved from the rear of properties, particularly from upper floor windows on the eastern extents of Carrigaline.

## Views from the North

Shanbally: Shanbally is located on the N28 north of the site. The proposed site however is on the opposite side of the low ridge line and is not visible from Shanbally.

Monkstown: There are no views from Monkstown to the site.

Strawhall: Strawhall is a small cluster of housing at a junction on the R610 Monkstown to Raffeen road, from an elevated position on the back road to Monkstown there are views to the site, which is distinguished by the overhead powerlines (refer to View 1 on Plate 3.9.1 *View 1 & View 2*)

Loughbeg: Loughbeg is located approximately 1.5km southeast from the site. This area has been designated as Scenic Landscape in the CCDP. The area sits lower than the site, at approximately 10m high, and there are views looking across the landscape and up towards the site, but it is not possible to look into the site due to existing vegetation. It is possible that the higher elements of the proposed development up to 12m above ground-level would be visible from this location. There are views of Novartis and Buckeye buildings at this point as well.

Currabinny: Currabinny is located approximately 2.5km to the southeast of the site. There are views towards the site from the small road that runs along the ridgeline of the area. The overhead powerlines are visible over the site, although the site itself is screened by existing vegetation it is possible that the higher elements of the proposals up to 120.0m would be visible over existing vegetation. The existing pharmaceutical complexes of Glaxo SmithCline, MOOG, Novartis and Pfizers are all visible in the foreground. There are also Scenic Landscape designations for this area in the *Cork County Development Plan*.

Coolmore: Coolmore is located approximately 2.3km to the southeast of the site and lies below the level of the site at an elevation of approximately 12 to 15m (Malin Head Datum). There is a Scenic Landscape designation to this area also, as laid out by the *Cork County Development Plan*. The intervening topography, vegetation and buildings at Novartis generally limit views to small glimpses of the overhead powerlines in the location of the site.

Barnahely: The power lines over the site are visible from Barnahely but views into the site are screened by the topography and vegetation. The site will also be visible from the upper floors of the Novartis building, but there are no views from the local roads in this area (refer to View 2, Plate 3.9.1 *View 1 & View 2*)

Frenchfurze: Frenchfurze is located approximately 3km to the south of the site, along the R612. It sits at an elevation of approximately 60m OD and overlooks the Owenboy River. There are Scenic Landscape designations placed on this area. The site is partially visible from the Myrtleville Road, and clearly visible from the back road between the Carrigaline Industrial estate and Frenchfurze. The site is also visible from the Carrigaline – Crosshaven Road due south of the site and from the public walk way along the estuary edge between Carrigaline and Frenchfurze (refer to Plate 3.9.2 *View 3*).

Carrigaline: Carrigaline is located approximately 1.06km from the site and is typically at an elevation of 20m OD. There are views of the site and Novartis from the residential area at Bridgemount to the eastern fringes of Carrigaline. A number of roads also go through Carrigaline including, the R611, R612 and R613, but views in the direction of the site from these roads are generally screened by existing vegetation and buildings (refer to View 4, Plate 3.9.3 *View 4, View 5 & View 6*).

## Landscape Character

As the site is located near Ringaskiddy in Cork Harbour any description of the landscape character should be cognisant of the strong identity of the harbour. A pilot study of the Landscape Character of Cork Harbour has been undertaken by Mosart on behalf of Cork County Council. The study assesses the landscape thus:

*“Notwithstanding the rural character around much of the greater harbour area, the tell-tale signs of urban intensity are evident everywhere through the prevalence of infrastructure such as roads, bridges and electricity power lines and the frequency of urban clusters. Overall, the City and harbour comprise a balance of intensely urban form, rural character and seascape”.*

The mixture of industrial development, agricultural land and low density housing areas comprise the overall character of the area. Carrigaline town is a substantial urban settlement, and the eastern fringes of Carrigaline also influence the character of the site. The site therefore remains fundamentally rural in character but heavily influenced by the urban and industrial developments in the surrounding area and the character can therefore be described as a Rural Fringe landscape.

Strawhall is a small cluster of housing at a junction on the R610 Monkstown to Raffeen road, from an elevated position on the back road to Monkstown there are views to the site, which is distinguished by the overhead powerlines (refer to Photograph View 1, Plate 3.9.1)

## Character of Development

The proposed development consists principally of the construction of a large sized urban WWTP to serve the population centres of Cork Lower Harbour and its' environs. The proposed WWTP is an essential element of the Cork Harbour Main Drainage Scheme. Associated works, which will be carried out as part of the proposed development, include:

- The widening and upgrading of the site access road
- Marine crossing
- New waste water pumping stations
- The laying of rising mains, surface water sewers and gravity waste water sewers to direct the waste water to the new treatment works
- New waste water treatment works

## Treatment Processes

There will be primary, secondary and sludge treatment facilities which will include a series of process and storage tanks, the tanks will have a maximum height of 12.0m above ground, the tanks will be coloured in a neutral dark green colour.

## Buildings

The number of buildings and the facilities will depend upon the final process design selection. However a typical arrangement of buildings would include a preliminary treatment building, a main administration building, a secondary treatment building and sludge treatment building. The buildings will have a maximum height above ground of 10.0m.

## Pumping Stations

Other elements of the scheme essential to the proposed WWTP include rising mains, pumping stations and gravity sewers.

The proposed locations of the major pumping stations are:

- Carrigaloe, Great Island, adjacent to the ferry terminal
- Monkstown, at the car park off the Glen Road
- Raffeen on the foreshore at Strawhall next to the junctions with the Rochestown Road and the back road to Monkstown
- West Beach Pumping Station, Cobh
- Church Road Pumping Station (existing)

There will also be minor pumping stations at various locations within the serviced area. Minor pumping stations are expected to be submersible type stations with typically only a kiosk located above ground.

The proposed works are discussed in detail in Section 2.5 *Description of the Development*.

### 3.9.4 Impact Assessment

#### (i) Construction Phase Impacts

As construction proceeds there will be a requirement to provide for:

- Builder's compound and car-park
- Stockpile mounds of subsoil and topsoil
- Small scale re-grading works
- Upgrading the access road
- Collection Pipelines across the catchment area
- Pumping Stations located in Raffeen, Monkstown, Carrigaloe, Cobh and Church Road

The construction of the WWTP will give rise to an appearance of disruption over the proposed site. The upgrading of the access road will require widening and surfacing. There are wide grass ditches to the access lane so there should be minimal impact on the hedgerow south of the lane and the ESB substation fencing north of the lane. At the eastern end of the lane there are some ornamental trees and shrubs associated with the Bord Gáis sub station, these can be retained. Widening of the local road to provide access may require the loss of some sections of hedgerow, where this is necessary new hedgerows should be planted. The construction of the collection pipelines will result in short term impacts on the landscape due to the preparation the trenches which will leave a visible scar on the land. These impacts will be temporary and will only be visible for a few weeks until the pipes are laid and the ground re-instated. Impacts to hedgerows will be longer in duration as replacement planting of any gaps in the hedgerow may take 3 to 4 years to establish. Short term, slight negative impacts will occur as a result of construction of the pipeline.

#### Duration of Impact

By their nature construction impacts are short term/temporary and relate only to the building period. On completion of the works there will be long term, permanent operational impacts which are dealt with in the following section.

**Table 3.9.4: Summary of Construction Impacts on the Landscape**

Landscape Change	Impact Description	Type of impact	Magnitude	Duration
LANDFORM	The site will need to be levelled requiring local earth movement.	Negative	Slight	Permanent
LANDUSE	Introduction of new buildings and structures into the agricultural landscape.	Negative	Moderate	Permanent
LANDCOVER	Loss of some hedgerow and pastureland	Negative	Slight	Permanent
LANDSCAPE CHARACTER	The construction activities will cause disturbance to the pastureland.	Negative	Slight	Temporary
LANDSCAPE QUALITY	Temporary change to the landscape quality of the local	Negative	Slight	Temporary

	area, resulting from construction activities.			
<b>LANDSCAPE FEATURES</b>				
Loss of hedgerow	A central hedgerow will be removed within the site. Small gaps will be lost along the route of the collection pipes.	Negative	Slight	Permanent
Trees	No trees are to be felled	Neutral		
Walls and Features	No walls or man made features of notable quality are to be lost	Neutral		
Historic Landscape	The site is located near to (2-3km) historic landscapes but will not impact on them.	Neutral		
<b>CONSTRUCTION ACTIVITIES</b>				
Excavated material	Temporary mounds of excavated and demolished material stored on site.	Negative	Slight	Temporary
Plant and machinery activity	Views of mobile cranes and plant machinery involved in the building works.	Negative	Slight	Temporary
Working area	The working area will be within the existing site boundary.	Negative	Slight	Temporary
Site compound	The site compound and site parking will be within the existing site area.	Negative	Slight	Temporary
Pipelines	Temporary excavations to lay pipes	Negative	Slight	Temporary
Pumping stations	Construction works on the various pumping stations as listed in detail below	Negative	Moderate to Significant	Temporary

**(ii) Operational Phase Impacts**

**Impact on Landscape Character**

Upon the completion of the proposed works, there will be a change in the appearance of the site, from the existing pasture land to the industrial elements of the treatment plant. In order to avoid impact on the surrounding landscape and degrading of the local rural landscape, woodland planting is included in this application to the perimeter of the site to provide increased screening and minimise visual impact. Initial impacts will be moderate negative impact on the local rural landscape reducing to slight negative impacts as planting matures. Impacts on the character of the greater Cork Harbour Area will be slight and negative due to the existing mix of industrial elements and agricultural landscape within the area of the proposed development. Overall the greater surrounding area is deemed capable of absorbing the development without changing the character of the Urban Fringe Landscape.

**Designated Scenic Landscape**

The impact on areas designated as ‘Scenic Landscape’ will vary depending on their locations in relation to the site, but will generally be affected as follows:

Views from the ‘Scenic Landscape’ surrounding the Owenboy River valley:

The Owenboy River runs approximately 2–3km from the site. Due to its proximity, views will be affected differently throughout this area. In general, the proposed site is set low enough in the landscape that it will not interfere with views of the skyline and will be only partially visible through existing vegetation in adjoining fields and hedgerows. The woodland planting proposed at the boundaries of the site will provide adequate screening. Initial slight negative impacts will be reduced to imperceptible impacts as the planting matures.

### Designated Scenic Routes

Scenic Route A-54 (Road between Passage West and Ringaskiddy):

Views from the Ringaskiddy road will not include the proposed site which is on the opposite side of a hill defined by the ridgeline immediately north of the site.

Scenic Route A-56 (Road from Carrigaline and Crosshaven):

Views of the site from the A-56 scenic route are restricted to a short section of the road at Frenchfurze. The site is over 2.0km from this route and partially screened by undulating topography and existing vegetation. The development proposals will result in slight to moderate negative impacts depending on the exact viewing point on the road and the adjacent public footpath. Impacts will reduce to imperceptible on maturity of the mitigation planting in 7-10 years.

**Table 3.9.5: Summary of Operational Impacts on the Landscape**

Landscape Change	Impact Description	Type of impact	Magnitude	Duration
Landform	The land will be levelled to accommodate the WWTP, the scale of level changes will not be readily apparent within the greater landscape	Negative	Slight	Permanent
Land Use	Introduction of new buildings and structures into the agricultural landscape.	Negative	Moderate	Permanent
Land Cover	Replace pasture land with buildings and structures, in keeping with mixture of industrial development in the Cork Harbour area.	Negative	Slight	Permanent
Landscape Character	The surrounding landscape will remain as urban fringe in character	Neutral		
Landscape Quality	The overall quality of the Cork Harbour area will remain intact	Neutral		
Scenic Landscape	There are limited views to the site Scenic Landscape and Scenic Routes will experience only partial glimpses of the site, until mitigation planting matures.	Negative	Slight	Short Term
Historic Landscape	The WWTP site is located near to (2-3km) historic landscapes but will not impact on them.	Neutral		

## Visual Impacts of the WWTP

Shanbally: Shanbally is located on the N28 north of the site. The proposed site however is on the opposite side of the low ridge line and is not visible from Shanbally and will not cause any visual impact.

Playing pitches at Shanbally are adjacent to the site, these are also on the opposite side of the ridgeline to the site but due to their proximity to the site there is potential visual impact from the higher elements of the proposed development. As the proposed screen planting on the northern boundary of the site matures, visual impacts will reduce from slight negative to imperceptible.

Monkstown/Strawhall: The views from elevated lands above Monkstown and Strawhall, towards the site will have an initial slight negative impact. The R610 which runs through Monkstown will not have views into the site. The proposed site will be seen in the context of the pharmaceutical plants in the Ringaskiddy area and in conjunction with the ESB sub station adjacent to the site. The cumulative impacts of the treatment plant with the existing industrial elements and the proposed re-alignment of the N28 are to be off set by the mitigation measures of planting dense woodland screening along the northern boundary of the site. Providing a greater cover of woodland in keeping with the wooded lands over Monkstown Creek, resulting in a long term slight positive impact on the views from the Monkstown and Strawhall area. (refer to View 1, Plate 3.9.1 *View 1 & View 2.*)

Loughbeg: Loughbeg is located approximately 2-3km east from the site. This area has been designated as Scenic Landscape in the *Cork County Development Plan*. Views of the site are partially obscured by existing hedgerows and the topography of the land. There are views of Novartis, Centacor and Buckeye buildings at this point as well. The proposed mitigation measures will provide screening of the treatment plant, which overtime will cause initial slight negative impacts to become imperceptible visual impact.

Currabinny: Currabinny is located approximately 4km to the southeast of the site. There are views of the site from the small road that runs along the ridgeline of the area. The existing pharmaceutical complexes of Glaxo Smith Cline, MOOG, Novartis, Centacor and Pfizers are all visible. There are also Scenic Landscape designations for this area in the CCDP. The site is partially visible in the distance beyond Coolmore Estate for only a short distance from the road leading out to Currabinny. The initial slight negative impacts will be reduced to imperceptible visual impact when the proposed planting matures to provide screening of the site.

Coolmore: Coolmore is located approximately 2.3km to the south of the site and lies at an elevation of approximately 12 to 15m high. There is a Scenic Landscape designation in this area also. The intervening topography, vegetation and buildings at Novartis generally limit views.

Barnahely: Views from the Barnahely area are limited by existing vegetation and existing development. Views from the Novartis grounds will be screened by intervening hedgerows, views would be more likely from the building itself or from elevated lands around the building, the road ways and car parking are too low to experience views of the Treatment Plant. Views from the Centacor site are distant and screened by intervening hedgerows, again views are likely from the upper floors of the buildings but will be distant. The proposed planting on the treatment plant site will, as it matures, provide further screening. Slight Negative Visual Impact will reduce over time to Imperceptible Visual Impact (refer to View 2, Plate 3.9.1 *View 1 & View 2.*)



**Frenchfurze:** Frenchfurze is located approximately 3km to the south of the site, along the R612. It sits at an elevation of approximately 60m and overlooks the Owenboy River. There are Scenic Landscape designations placed on this area. In general when viewing the area surrounding the site there is a greater sense of the rural landscape as viewed from the south, as opposed to views from the north and east which encompass Ringaskiddy and the various pharmaceutical industries. Therefore views from the south are more sensitive and the impact of the proposed site will be moderate negative as it will be visible in the middle ground with the Novartis building also visible. Impacts will reduce to imperceptible on maturity of the mitigation planting in 7-10 years (refer to Plate 3.9.2 *View 3*).

**Carrigaline:** Carrigaline is located approximately 1.06km from the site and is typically at an elevation of 20m. There are views of the site from the residential area at Bridgemount on the eastern fringes of Carrigaline. The site is situated on the south facing hill side and will be a dominant feature of the views from the rear of the closest properties, causing moderate negative visual impacts. The mitigation planting will provide a high level of screening to lessen the impact to a slight negative visual impact (refer to View 4, Plate 3.9.3 *View 4, View 5 & View 6*).

### **Potential Impacts from the Proposed N28 re-alignment**

The proposed re-alignment of the N28 will run along the northern boundary of the field in which the site is located. Any views of the site will depend on the elevation of the road at this location. The road will however be on the opposite side of a low ridgeline on the northern boundary of the site. Proposed woodland planting along the northern boundary of the site in conjunction with any planting undertaken as part of the road development will provide adequate screening of the treatment plant and visual impact from the road can be expected to be slight negative to imperceptible.

### **Potential Impacts from the Proposed Housing east of the site**

There is a planning application (PA 06/6928) for new housing directly east of the site. The site of the proposed housing is slightly lower than the proposed WWTP site and is well screened by existing vegetation. It is likely that the higher elements of the proposed WWTP (up to 12.0m in height) would be visible prior to the woodland planting maturing. Impacts could be expected to be slight negative initially reducing to imperceptible.

### **Cumulative Impacts**

Consideration has been given to the impact of the proposed WWTP in conjunction with the proposed re-alignment of the N28, the proposed development of housing and with the existing pharmaceutical complexes. The landscape of the Greater Cork Harbour Area has many designated scenic landscapes and it is necessary to preserve these and maintain a balance between the natural and the man made environment. It is important that the massing and scale of development does not conflict with the rolling topography, views of skylines, coasts and rivers. The setting of the proposed WWTP is well located to avoid impact on the landscape due to the natural screening of the local topography and hedgerows. Taller elements of the WWTP (up to 12.0m) can be screened by the planting of woodland belts. Cumulative impacts will be avoided as the WWTP will not converge with existing or proposed developments, but will remain a small singular element within the urban fringe landscape.

## **Visual Impacts of the Pumping Stations**

### Carrigaloe Pumping Station

Carrigaloe pumping station will be required to pump waste water across the River Lee Estuary to Monkstown. The pumping station will be situated on the fore shore in the shipyard area next to the ferry terminal and boat slips. The pumping station will be largely housed below ground level with a small building at ground level. The building will be finished in the style of a boat house in keeping with the ship yard activities in this location.

**Construction Impacts:** During construction there will be impacts from the works, as the pumping station is largely below ground level there will be significant ground disturbance and removal of materials, this is likely to entail large machinery and the extent of construction works will appear disproportionate to the size of the completed building. The site will be enclosed by hoarding which should limit the extents of visual impact to temporary slight negative visual impact.

**Operational Impacts:** The building will be visible from the Cobh Road (R624) (scenic route A53), however the single storey building will be in keeping with the marine related industry buildings in the immediate vicinity and will not cause the loss of any views across the estuary. From the estuary and from the Monkstown side of the estuary the building will not protrude above the ridgelines of neighbouring buildings and will be seen as an element of the existing marine related buildings along the shore front. Mitigation measures will include an appropriate architectural treatment to ensure the building is in keeping with the local buildings. On completion visual impact will be neutral, as the building will neither cause a deterioration nor improvement to the local view.

### Monkstown Pumping Station

Monkstown pumping station will be located in the centre of Monkstown off the Glen Road. The pumping station will again be largely underground with a small single storey building at ground level. The building will be located in the south eastern corner of the car park at Glen Road. The building will be placed next to rear garden walls backing onto the car park. The pumping house will be overlooked from houses on Glen Road and from the small public park, play area and the car park, there will also be views of the proposed building (particularly the roof) from houses on Castle Terrace. The proposed pumping station will be visible but will not cause the loss of any views, it will be lower than surrounding residential properties and will not break the skyline. Mitigation measures will include a style of architecture in keeping with adjacent buildings and stone walls. The boat house style of the other pumping station buildings would be less appropriate in this location and stone facing of the walls should match existing rear garden walls.

**Construction Impacts:** During construction there will be impacts from the works, as the pumping station is largely below ground level there will be significant ground disturbance and removal of materials, this is likely to entail large machinery and the extent of construction works will appear disproportionate to the size of the completed building. The site will be enclosed by hoarding which should limit the extents of visual impact to temporary moderate negative visual impact.

**Operational Impacts:** Visual impacts of the operational building will be neutral from Castle Terrace where only the roof of the building will be visible and will not obscure any views. Slight Negative Visual Impact will be experienced from houses on Glen Road and from the public park and play area as a result of the introduction of a new building to the previously open space. However, the building will not result in the loss of any views and will overtime become an accepted element of the townscape (refer to View 5, Plate 3.9.3 *View 4, View 5 & View 6*).

### Raffeen Pumping Station

Raffeen pumping station will be located on the foreshore of Monkstown Creek on reclaimed land at Strawhall south of the junction with the R610 Monkstown Road and the back road to Monkstown. The reclaimed land will be in a small channel between the road and an outer embankment, so the works will not change the existing shore line. The pumping station will be of a similar design to the other pumping stations and will be largely housed underground with a small single storey building at ground level. There are several residential properties located at Strawhall facing onto the R610 with scenic views across Monkstown Creek. To the north of the proposed pumping house there is a boat yard and slip. The design of the pumping station is likely to resemble a boat house in keeping with the boat yard 200m to the north.

**Construction Impacts:** During construction there will be impacts from the works, as the pumping station is largely below ground level there will be significant ground disturbance, this is likely to entail large machinery and the extent of construction works will appear disproportionate to the size of the completed building. The site will be enclosed by temporary hoarding which will screen the unsightly construction works but increase the extent of visual disturbance resulting in temporary substantial negative visual impact from Strawhall.

**Operational Impacts:** Visual impact will be experienced from the R610 (scenic route A54), and from properties at Strawhall. The building will not result in the loss of views but will intrude upon previously un-interrupted views across the Creek. There are two properties directly overlooking the pumping station, and several properties will have angled views. Mitigation measures will include an appropriate architectural treatment to ensure the building is in keeping with the local buildings.

On completion, visual impact will be moderate negative, as the building will continue to disrupt views across Monkstown Creek, but will be in keeping with the adjacent boatyard (refer to View 6, Plate 3.9.3 *View 4, View 5 & View 6*).

### West Beach, Cobh, Pumping Station

The West Beach pumping station will be located in reclaimed land between the piers along the shorefront at West Beach in Cobh town centre. The location of the proposed pumping station is in close proximity to the Post Office Building (Listed building, Cobh Town Council *Draft Development Plan*, 2005). The pumping station will consist of underground holding tanks and a single storey building at ground level. The surface over the holding tanks will form a paved area with railings to the edge. The single storey building will provide access to the tanks and house generators and administration. The site is located in the town centre, which is an Architectural Heritage Area as designated in the Cobh Town Council *Draft Development Plan* (2005).

**Construction Impacts:** During construction there will be impacts from the works. As the pumping station is largely in reclaimed land and below the proposed ground level there will be significant ground disturbance, this is likely to entail large machinery and the extent of construction works will appear disproportionate to the size of the completed building. The site will be enclosed by temporary hoarding which will screen the unsightly construction works but increase the extent of visual disturbance resulting in temporary significant negative visual impact from West Beach (refer to View 7, Plate 3.9.4 *View 7 & View 8*).

**Operational Impacts:** On completion, the proposed pumping station building would be a prominent feature in views from West Beach and from Pearse Square. It would partially obscure views of the harbour and would be dominant in views from West Beach promenade resulting in permanent significant negative visual impact. However, following the implementation of mitigation measures and provision of improved views from the public amenity area, the negative impacts will be reduced to 'slight'.

**Mitigation:** The impacts are to be mitigated by the appropriate design of the building and the paved open space over the holding tanks which present an opportunity to extend the public amenity along the shore front. The detailed design of the pumping house and associated paved area will be in accordance with the *Draft Development Plan (2005)*, to reflect and respect the scale, massing, proportions, design and materials of existing neighbouring structures in particular the old Post Office, and reflect the character of the shorefront area and historic streetscape. It is proposed that the architectural style of the building should be contemporary and a key feature of the improved streetscape and quay side. The paved area would be public open space inspired by the adjacent promenade but also of a contemporary nature, using local paving materials and metal handrails to tie in with the existing quay side footpaths. There is an opportunity to incorporate existing features of the quayside to improve and upgrade existing facilities. The loss of views from West Beach is to be mitigated by provision of improved views from the new public amenity area. The overall aim of the detail design will be to enhance the West Beach Promenade area and maintain public access to the waterfront.

Details of the pumping stations are at a specimen design stage only and finalised proposals will be subject to planning approval (refer to Plate 3.9.4 *View 7 & View 8*).

### (iii) 'Do Nothing' Scenario

In the event of no development occurring, the site will continue as agricultural lands. The lands will none the less be impacted in the future by the proposed re-alignment of the N28. The overall character of the area will remain as rural fringe landscape heavily influenced by the adjacent pharmaceutical plants, infrastructure and residential development.

### (iv) 'Worst Case Scenario' Impact

The worst case scenario would be in the event of the mitigation measures failing. In order to guard against this scenario it should be noted that stringent specifications will be employed with regard to all the planting works (refer to Appendix A of *Volume III, Appendix 7A*). The landscape contract will include a 12 month maintenance period during which all plants which fail will be replaced.

In the unlikely event the mitigation measures do fail, the impacts would remain as slight to moderate and would not be reduced over time as described in the impact assessment above.

## 3.9.5 Mitigation Measures

### Project Layout

The primary objectives of the proposed mitigation measures include to:

- Reduce visual impact through minimising negative impacts on the character and views from adjoining residential properties, roads and other public areas.

- Assist a visual integration of future development on the site into the surrounds with an appropriate scale of planting.

### Proposals for this application

The mitigation measures associated with the current proposals of the WWTP site are to plant a belt of native woodland around the perimeter of the site (refer to Figure 3.9.2 *Planting Schedule* and Figure 3.9.3 *Landscape Proposals Boundary Treatment, Section A-A & Detail 1*). In particular, planting will be required to the north as specified in the *Cork County Development Plan* and to the west to provide screening from the fringes of Carrigaline. This planting will occur during the first planting season (November – March) after all of the construction works have occurred, and will quickly screen the development on site. Within 7-10 years, this planting will form a 10-12m high dense cover, thus screening the majority of the buildings and structures which are to be no greater than 12.0m height. Existing hedgerows/trees are also to be retained to the outer perimeter of the existing fields; however the internal hedgerow currently dividing the site into two fields will be partially removed where it is within the site boundaries.

The mitigation measures include choosing an appropriate low key building colour and additional landscape works associated with the facility administration buildings, roads and car parks. It is recommended that low level lighting is chosen for external lighting around the treatment plant.

### 3.9.6 Residual Impacts

Residual impacts should be assessed when the proposed planting has reached a level of maturity at 7 – 10 years. At this stage the woodland planting to the boundaries will have reached heights over 10.0 - 12.0m, as the planting will be planted to an earth ditch 2-3m height this will afford a screening of 12.0 – 15.0m height around the site. Therefore there will only be potential views of the tallest elements of the treatment plant at the highest elevation of the site as viewed from the south. As there are no short range views (within 2.0km) from the south then distant views will result in barely noticeable glimpses of the treatment plant. The boundary planting will represent a noticeable change in the landscape, but the selection of native woodland species will be in keeping with woodlands at Monkstown Creek and Currabinny and cause neutral impact to the surrounding rural fringe landscape.