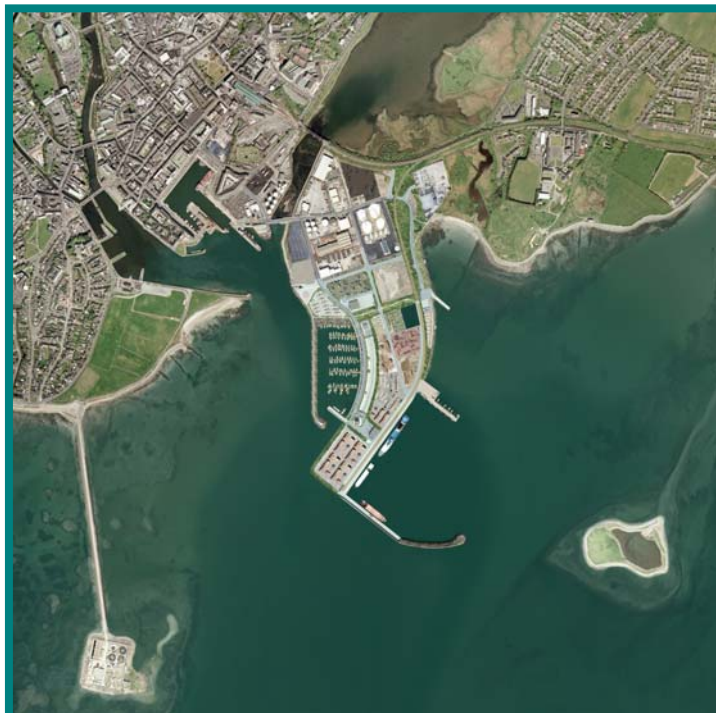




Galway Harbour Company

Galway Harbour Extension



**Proposed Compensatory Measures in relation to the proposed
Galway Harbour Extension,**

Summary of V2.3B

An Bórd Pleanála (Ref: 61.PA 0033)

August 2017



DOCUMENT AMENDMENT RECORD

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Project:	Galway Harbour Extension
Title:	Proposed Compensatory Measures – Summary of V2.3B

PROJECT NUMBER: 7476				DOCUMENT REF: Compensation			
A	Summary of V2.3B	BOC	01/08/17	JPK	04/08/17	JPK	04/08/17
Revision	Description & Rationale	Originated	Date	Checked	Date	Authorised	Date
TOBIN Consulting Engineers / AQUAFAC International Services Ltd							

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1 INTRODUCTION

This is a brief, overview report on proposed compensatory measures for habitat loss arising from both the Galway Harbour Extension (GHE) project and the Galway Harbour Enterprise Park (GHEP). It is based on a request from An Bord Pleanála (ABP) dated 29/9/2015 for such a report, a 15 page responding document from National Parks and Wildlife Service (NPWS) dated 27/5/2016 and minutes of the meeting between ABP and NPWS dated 3/08/2016 on an initial report (November 2015).

2 COMPENSATION AREAS

ABP in a letter dated 29/9/2015, deemed that the impacts on the integrity of the European Site due to the proposed project were as follows:

Intertidal habitats (mud and sand flat and reefs): 5.93 ha
Stony bank: 0.35 ha

In addition, it has been calculated by the developer's consultants that "Legacy" losses from previous works at Galway Harbour were as follows:

Intertidal habitats (mud and sand flat and reefs): 8.58 ha
Stony bank: 0.28 ha
Salt marsh: 7.39 ha

The total compensation proposed to be provided for is therefore:

Intertidal habitats (mud and sand flat and reefs): 14.51 ha
Stony bank: 0.63 ha
Salt marsh: 7.39 ha.

None of these 3 habitats are listed as Priority Habitats in the EU Habitats Directive (EU 1992).

3 IROPI PRECEDENTS

Nied TGV Compensation, 2004 EU Commission Opinion C (2004) 3460 (9/9/2004). Salt meadow reserve Precedent.

Project Mainport Rotterdam, 2003 EU Commission Opinion C (2003) 1308 24/04/2003). Marine Reserve precedent

4 PROPOSED COMPENSATION PLAN

The Developer submitted its Phase 1 initial compensation proposals on 23rd November 2015.

Following discussions with relevant authorities, the proposals have evolved to take account of the views of these authorities and revised proposals were submitted in December 2016 concentrating on 3 sites on the Tawin headland in the eastern central part of the Galway Bay cSAC where all three habitat types i.e. stony bank, saltmarsh and intertidal muds, sand and reefs occur.

In the same letter from ABP referred to above dated 29/9/2015, the Board proposed that the development of the proposed compensation measures be addressed in two phases:

Phase 1:

The proposals for compensatory measures should be set out by Galway Harbour Company (GHC) for initial consideration. The Board advised that GHC should liaise with NPWS in this regard. The Board envisaged that once proposals were received that it would also seek the views of NPWS with respect to the acceptability in principle of the emerging proposals. The Board would advise in due course whether the compensatory measures should be developed in more detail, or other wise

Phase 2:

Pending the outcome of Phase 1, the applicant will be afforded further time to develop the compensatory measures in more detail leading to the submission of a completed proposal for consideration by the Board.

As the proposals for compensatory measures have been set out by GHC for initial consideration, the Harbour Board now considers that the process is moving into the Phase 2 stage.

As part of this Phase 2 stage, the developer and its consultants have carried out qualitative studies on the various habitats throughout Tawin Island to determine its suitability for compensation and have identified the area considered most suitable to yield compensation habitats.

4.1 TAWIN - EXISTING CONDITION

Substandard areas of salt marsh and stony bank habitats have been described in places as being of “unfavourable/inadequate” (NPWS Saltmarsh Monitoring Programme Project, 2006, Tawin Island). The management plans outlined below have been designed to improve the quality of these habitats in Tawin.

This form of compensation in the form of ecological restoration is specifically described in the EU (2007) Guidance document Section 1.4.3 on Article 6(4) of the Habitats Directive 92/43/EEC i.e. “biological improvement of substandard habitat within an existing designated site”.



Locations of three areas at Tawin selected for qualitative survey work.

The compensatory report V2.3B proposes Site 1 “Mweenloon Lagoon” as the preferred option.

4.2 MANAGEMENT PROPOSALS

4.2.1 *Stony Bank and Saltmarsh*

In relation to the proposed management plan for the sites to be selected, this will include the following 18 components:

1. Manage the salt marsh and stony bank habitats that can be subject to possible purchase / long term agreements to manage them in accordance with organic principles.
2. Control (in saltmarsh) and curtail (in stony bank) grazing levels by horses, cattle and sheep to give the level of seasonal grazing that best suits the plant species of the habitat and in Salt Marsh to eliminate poaching.
3. Cease fertilizer and slurry spreading in areas of salt marsh and eliminate dunging in stony bank habitats by fencing off animals from these areas.

4. Cease the use of herbicides within or close to the habitat types.
5. Ensure that livestock are not allowed on the lands during the withdrawal period for medicines and anthelmintics.
6. Ensure no shooting.
7. Control access by tractors to the habitats to eliminate rutting.
8. Eliminate the use of round feeders and winter feeding and supplementary feeding to curtail the related poaching and rutting of lands at feeding and gate sites,
9. Ensure no removal of cobbles (stony bank) / ensure no further construction of drainage channels (salt marsh).
10. Limit the construction of any further land protection sea defence works or dumping of materials to act as a sea defence unless approved for ecological reasons.
11. Cease repair of any sea defence works to allow for erosion / ingress by the sea, unless required for ecological reasons.
12. Arrange for regular removal of flotsam and jetsam and other refuse.
13. Carry out annual biological surveys of the habitats to document any changes in their extent and in their characterising species.
14. If extreme events such as the storm in January 2014 occur, carry out surveys immediately to document the impact.
15. In the light of the results of the annual biological surveys and surveys required as noted in Bullet 14, adjust/modify the management plan.
16. Commission annual independent audit of the progress of the management plan.
17. In the light of the results of these independent audits, adjust/modify the management plan.
18. Erect signage including drawings at chosen vantage points demonstrating what the project comprises and what species are contained within each habitat.

In relation to Bullet 11 above, the ecological reasons for allowing for sea protection measures is to ensure the status of the “lagoon” remains in favourable ecological condition.

4.2.2 Intertidal sands, muds and furoid-dominated reef complex

In relation to the proposed management plan for the sites to be selected, this will include the following 18 components:

1. Manage the intertidal areas that can be subject to possible purchase or purchase of the adjacent lands / long term agreements to manage the adjacent lands in accordance with organic principles and for the protection of the intertidal lands.
2. Control (in saltmarsh) and curtail (in stony bank) grazing levels by horses, cattle and sheep and eliminate the use of round feeders and winter feeding and supplementary feeding to curtail the related poaching and rutting of lands at feeding and gate sites.

3. Cease fertilizer and slurry spreading.
4. Cease the use of herbicides within or close to the habitat.
5. Ensure that livestock are not allowed on the foreshore during the withdrawal period for medicines and anthelmintics.
6. Ensure no shooting.
7. Control access by tractors to the habitats to eliminate rutting.
8. Cease aquaculture use.
9. Ensure no further construction of land protection sea walls.
10. Limit the repair of sea defence works or dumping of materials to act as a sea defence unless approved for ecological reasons (for the same reason as noted above).
11. Arrange for regular removal of flotsam and jetsam and other refuse.
12. Ensure area preserved free from *Didemnum* – see 3.2.3 below for further detail.
13. Carry out annual biological surveys of the habitats to document any changes in their extent and in their characterising species.
14. If extreme events such as the storm in January 2014 occur, carry out surveys immediately to document the impact.
15. In the light of the results of the annual biological surveys and surveys required as noted in Bullet 14, adjust/modify the management plan.
16. Commission annual independent audit of the progress of the management plan.
17. In the light of the results of these independent audits, adjust/modify the management plan.
18. Erect signage including drawings at chosen vantage points demonstrating what the project comprises and what species are contained within each habitat.

4.2.3 *Control of non-native species*

An additional and separate part of the management plan relating to the complex of intertidal reef, mud flat and sand flat habitat is to develop a programme to eradicate the non-native *Didemnum* in the selected site.

4.2.4 *Compliance with EU guidance on 6(4)*

This proposed suite of compensatory measures are in line with the range of options and recommendations contained in the EU Guidance document (EU 2007).

This suite of plans for the 3 **non-priority** habitats that require compensation due to impacts arising from the proposed expansion of the proposed Galway Harbour Expansion relative to the respective scales of the project, far outweighs those proposed by the developers for the TGV line and the infilling of marine habitats at Rotterdam for **priority** habitats and that were accepted by the Commission.

5 COLLATERAL BENEFIT

One of **the** most important findings of this survey work is that the marine waters within Tawin can be defined as “lagoon” which is a priority habitat within the EU Habitats Directive. This is because:

1. The seaward openings at Ballaghbristy Glasheen on the south shore of Tawin and Ballaghbristy East and West on the north shore are cilled,
2. Sea water is retained in the landward areas of the water body and
3. Sections of these areas never dry out at Low Water.

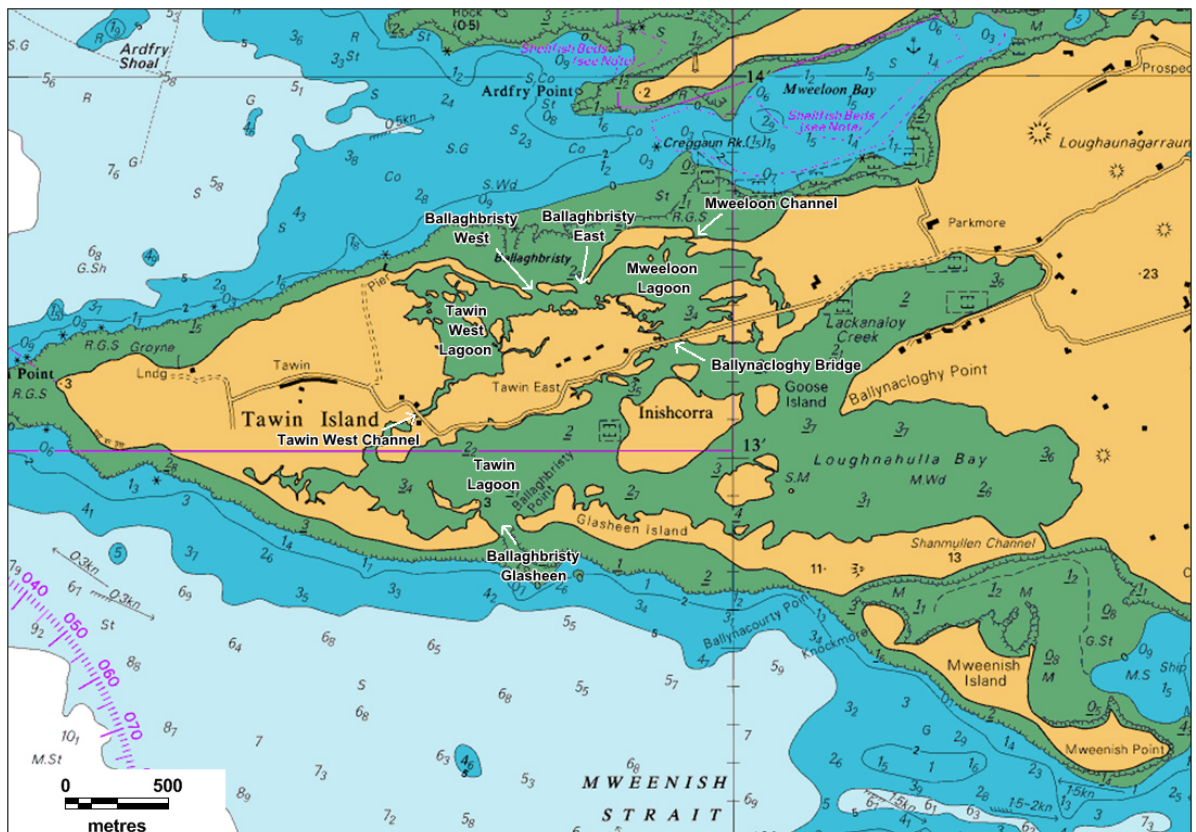
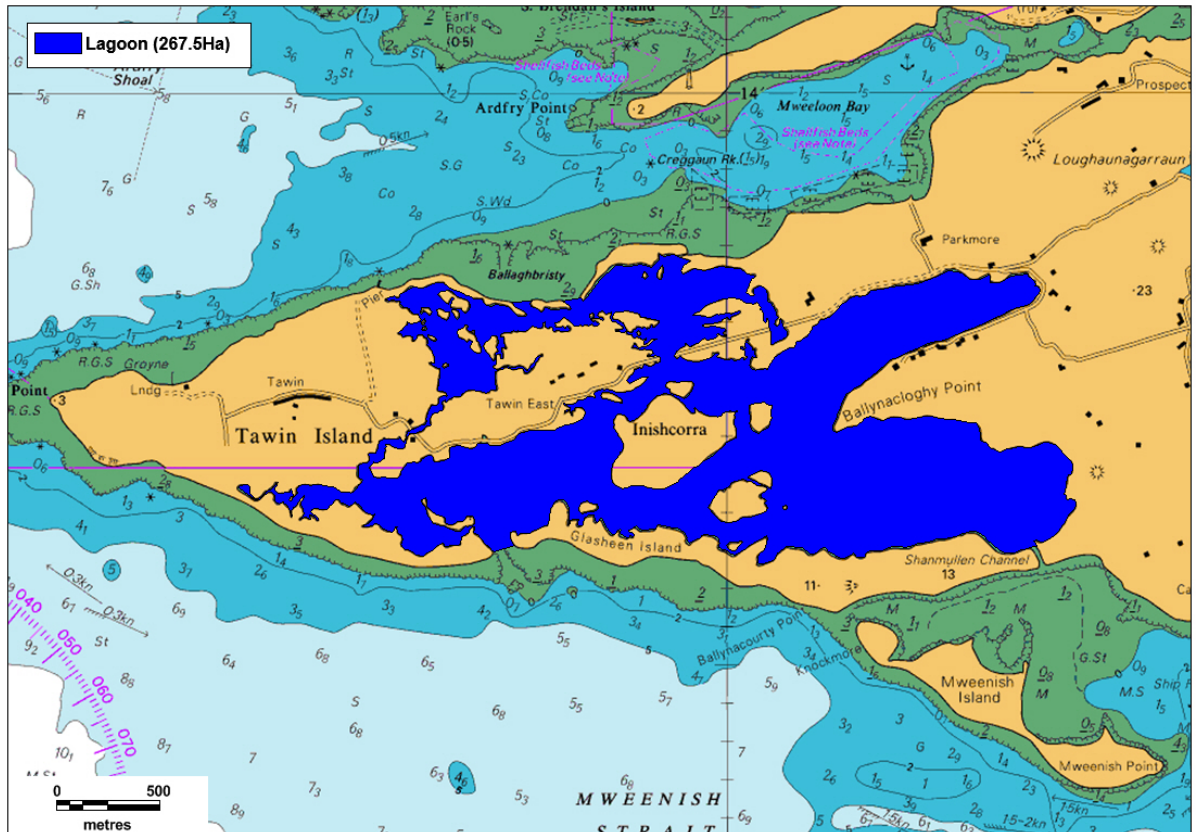


Figure showing place names referred to above.

The total area of lagoonal habitat at Tawin has been estimated at 267.5 ha making it the fourth largest lagoon in Ireland. This habitat is mapped on the figure below. This is seen as an important collateral benefit.



Extent of lagoonal habitat at Tawin (shown in blue).

6 CONCLUSION

Having identified what is considered to be suitable compensation areas, the developer proposes to continue the Phase 2 studies as outlined in An Bord Pleanála letter dated 29th September 2015 and carry out further detailed qualitative and quantitative studies on the most suitable area of Tawin Island as shown on Drawing 7476-1031D Fig. 6.1 Appendix 2 and leading to the submission of a completed proposal for consideration by the Board.

APPENDIX 1

Generic Compensatory Management Assessment Tables

- Intertidal [EU Codes: 1140 and 1170]
- Stony Bank [EU Codes: 1210 and 1220]
- Saltmarsh [EU Codes: 1330 and 1410]

Compensation – Intertidal Management Proposals

		Ownership		Management				Total score
		Control	Damaging impacts	Constraining works	Litter	Monitoring		
	Subtopic as per Sect. 1.5 “Criteria for Designing Compensatory Measures” of Guidance Document on Article 6(4) of the ‘Habitats Directive’ 92/43/EEC Jan. 2007	1: Purchase if private or “commonage”. If not, State owned. (50)	2, 3, 4 and 5. No run-off due to controlled grazing, no fertilising and no use of herbicide and medications.(6) 6:Prohibit shooting(1) 7 Reduce/remove tractor access.(2) 8:Remove aquaculture & related structures(10)	9:No new land protection sea walls.(2) 10:Repair of sea walls for ecological reasons only (2)	11:Pick litter quarterly.(4) 12 Didemnum Removal (8)	13:Annual survey(4) 14: Special survey (1) 15:Adjust plan(2) 16: Indep. Audit(2) 17:Adjust plan(1) 18:Signage(2)		
	Score allocated	50	20	6	12	12	100	
1	Targeted Compensation	When location agreed : 14.28%	As per Management Plan agreed 14.28%	As adjacent 14.28%	As adjacent 14.28%	As above 14.28%		
2	Effective Compensation	When management proposal accepted : 14.28%	Shooting controls 13.57%	As owned / approved bar time lag for approval of repairs if required 12.85%	Litter cannot be perfect 2/4, Didemnum 8/8 Total 10/12 11.90%	Effective 12.85%		
3	Technical Feasibility	When purchase agreed : 14.28%	Shooting controls 13.56%	As owned 14.28%	Feasible 14.28%	Feasible 14.28%		
4	Extent of Compensation	When purchase agreed 14.28%	On areas agreed / purchased 14.28%	As adjacent 14.28%	As adjacent 14.28%	On area purchased 14.28%		
5	Location of Compensatory Measures	Mweeloon Lagoon, Tawin 14.28%	On purchased lands and adjacent intertidal and adjacent Mweeloon Lagoon 14.28%	As adjacent 14.28%	As adjacent 14.28%	Mweeloon Lagoon, Tawin 14.28%		
6	Timing of Compensation	Commence on Grant of Planning Permission 14.30%	As adjacent 14.30%	As adjacent 14.30%	As adjacent 14.30%	Annually 14.30%		
7	Long Term Implementation	Assured by purchase: 14.30%	As adjacent 14.30%	As adjacent 14.30%	As adjacent 14.30%	Assured 14.30%		
	Score Achieved	50 x 100% = 50 50/50	20 x 98.57% = 19.71 19.71/20	6 x 98.57% 5.91/6	12 x 97.62% = 11.71 11.71/12	12 x 98.57% 11.83/12	99.16/100	

Compensation – Stony Bank Management Proposals

		Control	Damaging Impacts	Damaging works	Constraining works	Litter	Monitoring	Total score
	Subtopic	1:Purchase / Management agreement.(50)	2: Control grazing(4) 3: Nil fert./slurry(4) 4: Nil herbicide(4) 5: Nil meds./anthel(4) 6: No shooting (2)	7:Limit tractor access(2) 8: No Winter feeding(4) 9:Protect cobble(4)	10:No new land protection sea walls (2) 11: Repair of sea walls for ecological reasons (4)	12:Pick litter quarterly.(4)	13:Annual survey(4) 14: Special survey (1) 14:Adjust plan(2) 15: Indep. Audit(2) 16:Adjust plan(1) 17:Signage(2)	
	Score allocated	50	18	10	6	4	12	100
1	Targeted Compensation	When location agreed : 14.28%	If existing condition of 2 equals 2/4 and shooting 1/2, total value of enhancement available 15/18 83.33% x 14.28% = 11.90%	As above 14.28%	As above 14.28%	As above 14.28%	As above 14.28%	
2	Effective Compensation	When management proposal accepted : 14.28%	As adjacent 11.90%	Minor cobble loss 12.85%	Time lag for approval of repairs if required 12.85%	Litter not perfect 50% x 14.28 = 7.14%	Effective 12.85%	
3	Technical Feasibility	When purchase agreed : 14.28%	Bar shooting 17/18 x 14.28% 13.49%	Minor cobble loss 12.85%	Time lag for approval 14.28%	On purchased lands 14.28%	Feasible 14.28%	
4	Extent of Compensation	When purchase agreed 14.28%	As adjacent 14.28%	As adjacent 14.28%	As adjacent 14.28%	As adjacent 14.28%	On area purchased 14.28%	
5	Location of Compensatory Measures	Mweeloon Lagoon, Tawin 14.28%	On purchased lands 14.28%	As adjacent 14.28%	As adjacent 14.28%	As adjacent 14.28%	Mweeloon Lagoon, Tawin 14.28%	
6	Timing of Compensation	Commence on Grant of Planning Permission 14.30%	As adjacent 14.30%	As adjacent 14.30%	As adjacent 14.30%	As adjacent 14.30%	Annually 14.30%	
7	Long Term Implementation	Assured by purchase: 14.30%	As adjacent 14.30%	As adjacent 14.30%	As adjacent 14.30%	As adjacent 14.30%	Assured 14.30%	
	Score achieved	100% 50 x 100% = 50 50/50	94.45% 18 x 94.45% = 17.00% 17.00/18	97.24% 10 x 97.24% = 9.72% 9.72/10	98.57% 6 x 98.57% = 5.91% 5.91/6	92.86% 4 x 92.86% = 3.71% 3.71/4	98.57% 12 x 98.57% 11.83/12	98.17/100

Compensation – Salt Marsh Management Proposals




	Ownership		Management					Total Score
	Control	Damaging Impacts	Damaging Works	Constraining works	Litter	Monitoring		
Subtopics	1: Purchase / Management agreement	2 : Control grazing (10) 3 : Nil fert / slurry (2) 4 : Nil herbicide (2) 5 : Nil med / anthelmin(2) 6: No shooting (2)	7: Limit tractor access (2) 8 : No winter feeding (4) 9 : No drainage (4) Repair field walls	10 : No new land protection walls (2) 11 : Repair of sea walls for ecological reasons (4)	12 : Pick litter quarterly (4)	13 : Annual survey (4) 14: Special survey (1) 15 : Adjust plan (2) 16 : Indept audit (1) 17 : Audit adjust (1) 18 : Signage, view (2)		
Score Allocated	50	18	10	6	4	12	100	
1. Targeted Compensation	When location agreed : 14.28%	Subject to qualitative studies of item 2 as above. If existing condition equals 8/18 Total value of enhancement available 10 / 18 = 55.5% 55.6% x 14.28% = 7.94%	As above 14.28%	As above 14.28%	As above 14.28%	As above 14.28%	As above 14.28%	
2. Effective Compensation	When management proposal accepted : 14.28%	2-5 fully and 6 as much as possible 17/18 = 94.4% 94.4% x 14.28% = 13.49%	As per management plan agreed 14.28%	Time lag for approval of repairs if required 12.85%	Will never be 100% 7.14%	Effective 12.85%		
3. Technical Feasibility	When purchase agreed : 14.28%	As above 13.49%	As much tractor control as possible 12.85%	Feasible 14.28%	By hand 14.28%	Feasible 14.28%		
4. Extent of Compensation	When purchase agreed 14.28%	As adjacent 14.28%	As adjacent 14.28%	As adjacent 14.28%	Quarterly 14.28%	Area purchased 14.28%		
5. Location of Compensatory Measures	Mweeloon Lagoon, Tawin 14.28%	Purchased lands 14.28%	As adjacent 14.28%	As adjacent 14.28%	As adjacent 14.28%	Mweeloon Lagoon, Tawin 14.28%		
6. Timing of Compensation	Commence on Grant of Planning Permission 14.30%	As adjacent 14.30%	As adjacent 14.30%	As adjacent 14.30%	As adjacent 14.30%	Annually 14.30%		
7. Long Term Implementation	Assured by purchase: 14.30%	As adjacent 14.30%	As adjacent 14.30%	As adjacent 14.30%	As adjacent 14.30%	As assured 14.30%		
Score Achieved	50 x 100% = 50 50/50	18 x 92.08% = 16.57 16.57/18	10 x 98.57% = 9.86 9.86/10	6 x 98.57% = 5.91 5.91/6	4 x 92.86% 3.71/4	12 x 98.57% 11.83/12	97.88/ 100	

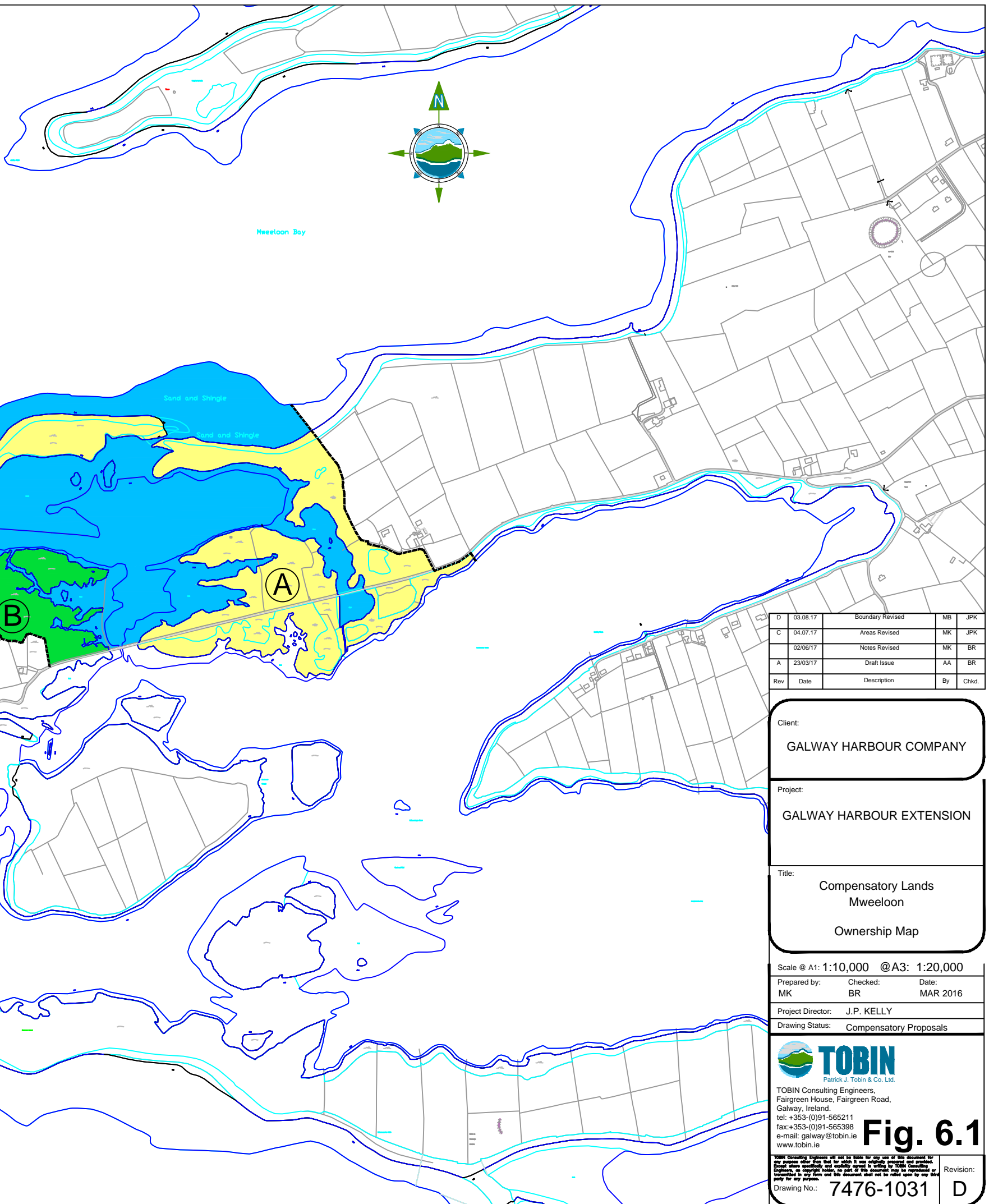
APPENDIX 2

- Lands Proposed to be acquired / managed

Option 1

Areas A & B

Ref	Colour	Folio No.	% Owned	Name	Location	Area
A		GY 44409	100.00%	Church / Grealy	A	c.19.932 ha
B		GY 11234	100.00%	Michael Harty	B	c.4.496 ha
Total						c.24.428 ha
		State Owned		Intertidal & Lagoonal Waters		c.34.436 ha
Total						c.58.868 ha



Rev	Date	Description	By	Chkd.
D	03.08.17	Boundary Revised	MB	JPK
C	04.07.17	Areas Revised	MK	JPK
	02/06/17	Notes Revised	MK	BR
A	23/03/17	Draft Issue	AA	BR

Client:
GALWAY HARBOUR COMPANY

Project:
GALWAY HARBOUR EXTENSION

Title:
**Compensatory Lands
Mweeloon
Ownership Map**

Scale @ A1: 1:10,000 @A3: 1:20,000

Prepared by: MK Checked: BR Date: MAR 2016

Project Director: J.P. KELLY

Drawing Status: Compensatory Proposals


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Fig. 6.1

Drawing No.: **7476-1031** Revision: **D**