

Environmental Report August 2024 Glashaboy Flood Relief Scheme

Prepared by: Rory O Connor Date of issue: 06/09/2024 Document code: FFEC-GFRS-2024-008 The following is the clients Ecological Clerk of Works (ECoW) monthly review of the Glashaboy River (Glanmire/Sallybrook) Drainage Scheme. It details observations made on site regarding environmental and ecological factors involved in the scheme. This formulates a monthly review to be submitted to the Environmental Monitoring Group (EMG).

The main work areas for August 2024 included:

- Hazelwood bridge E fishing, dewatering, concrete works, abutment fabrication, excavations.
- Sallybrook JKW (Japanese knotweed) management, flood defence bund, headwall installations, contaminated material storage.
- Meadowbrook Instream works, JKW management, river diversion, capping works,
- Copper Valley Vue (CVV) River diversion, Glenmore river over-pumping, abutment works.
- Brooklodge culvert Excavations and culvert bedding, adding precast culvert parts and joining, steelwork on roof of culvert.
- New Line river diversion, abutment works, concrete pouring, steel works for concrete.
- Funeral home RC wall construction, ground water pumping.

General Comments

August was a busy month on-site. The rock armour works proved to be among the most challenging tasks, as instream excavation produced an unavoidable large amount of silt. These works continued in a start-stop manner for much of the month, with various silt mitigation strategies employed depending on the specific location involved. Trial and error were inevitably part of the process, leading to some minor mistakes and a few instances where large amounts of sediment were generated. Throughout the rock armour works, efforts were made to minimise silt migration as much as possible. IFI visited the site in response to observations of unacceptable turbidity levels in the main channel caused by the rock armour works. To address this, increased measures were implemented, primarily focusing on working in dry conditions as much as possible to minimise disturbance to the riverbed. This approach also enabled more comprehensive silt curtains configurations, effectively containing the excavation areas and allowing the generated silt to be released gradually. This method prevented the problematic thick plumes that had slowly moved through the system earlier in the month.

Two site ecologists were present full-time for most of August. Additionally, a dedicated environmental team of two general operatives were available full-time to carry out tasks such as installing silt curtains and silt fences. Collaboration between the main contractor's ecology team and the client's ecology team were enhanced through an Environmental Tour which was conducted on August 8th, as well as the effective use of a shared WhatsApp group. An Environmental Workshop took place on August 29th which allowed the ER team and the main contractor to discuss in detail current environmental issues on site.

No otter sightings from the camera monitoring were reported in August at the following target locations: N2, C2, N6C and N6D.

Item No	Issue	Action to be carried out
140.		
5.1	The original stone culvert at Cois na Gleann was providing a nesting	Add dipper nest box to new culvert once complete to maintain the habitat
	will not provide a babitat for this bird as there will be no ledges or	for this species. Not actioned yet.
	nlatforms in the interior	
5.2	Drainage ditch at Sallybrook House. Area 1. This is due to be filled in and	Contractor to survey this habitat for aquatic species before replacement
	replaced with an underground porous drainage pipe. Ecological	with underground pipe, though potential for species abundance and
	potential here is low as the water is stagnant and disconnected.	diversity is low. This work will not be completed in August 2024.
5.9	Excavation has appeared at Grandon's. The black liquid on the surface	The responsibility for this pollution is with Grandons and not the main
	of the water is used motor oil which has escaped from a faulty holding	contractor Sorensen. The ECoW will continue to monitor the situation.
	tank beneath the car showroom. This type of pollution is especially	This situation would go unchanged during August 2024 with visible signs
	damaging as it contains polycyclic aromatic hydrocarbons, heavy	of hydrocarbon pollution leaking into the Glashaboy emanating from
	metals and residual fuels.	underneath Grandon's showroom and four courts.
7.19	Little robin Geranium purpureum discovered on old stone wall nearby	To be transplanted prior to work. No change in this situation during August
	circus field.	2024.
7.41	Iree damaged at New Line.	The damaged tree at New Line is to be tidled up and cleanly cut with a
		saw. To prevent a recurrence, the works area will be clearly delineated
		from the vegetated non-work area. This was actioned during the month.
7.48	Contaminated boulders temporarily stored to undergo treatment.	Boulders due to receive treatment with Bioversal HC. It is not clear if this
		was actioned this month.
7.54	Rubbish in river at Area 1.	To be removed. This was actioned this month.
7.58	Downstream sondes at CVV have a delayed transmission time.	Investigate delay/check sondes supplier/ update ECoW accordingly.
		Capital water was on site this month to service and improve the operating
		of the monitors.

ltem	Date	Comment	Image	ECoW	Sorensens's Action
number				Action/Recommen	response
				dation	
8.1	01/08/2024	Following the drying of a section of the Glenmore River for the Brooklodge culvert, the river gravels that remained were either sidecast or left in place for future use in the reinstatement of the riverbed.		If river gravels are to remain in place for the duration of the work until reinstatement, the gravel extent could be GPS-mapped for future checking.	River gravels will be retained for future use in the reinstatement of the riverbed. The gravels were retained on-site during construction and later incorporated into the riverbed during the reinstatement process in September. Although no GPS mapping was conducted on the gravels, this was deemed unnecessary as their position remained unchanged throughout the process.

Table 2. Main table of the months ecological and environmental related activities

Date	Comment	Image	ECoW	Sorensens's Action
			Action/Recommen	response
			dation	
01/08/2024	Rubbish downstream of New		Raised with site	Rubbish was removed
	Line diversion.		ecologist to remove	later in the month.
			asap.	
		Ball Contractor		
01/08/2024	The installation of a	01/08/2024 11:44	Good mitigation	Supervision unheld for
0170072024	headwall drainage system	THE OWNER OF THE OWNER OWNER OF THE OWNER OWNE	biosecurity	the duration of the
	and filter drain in Sallybrook		implemented	works here
	potentially affected by		imptomotio	
	Japanese knotweed, was			
	overseen by an invasive plant			
	species specialist.	01/08/2024 14:42		
01/08/2024	It was observed that the		The observation was	The pump was
	water generated from the		discussed with both	immediately shut off to
	pumping activities in the		the site ecologist	facilitate discussions.
	Hazelwood Bridge work area		and the workers. It	The pumping
	was causing discoloration in		was recommended	arrangement was
	the main channel. However,		to reposition the	subsequently modified
	this was not considered a	AIMOU7/2024_16-12	nose outlet further	in accordance with the
	major concern due to the			before being restorted
				The new numping
				arrangement was
	Date 01/08/2024 01/08/2024	DateCommentD1/08/2024Rubbish downstream of New Line diversion.D1/08/2024The installation of a headwall, drainage system, and filter drain in Sallybrook, potentially affected by Japanese knotweed, was overseen by an invasive plant 	DateCommentImageD1/08/2024Rubbish downstream of New Line diversion.ImageD1/08/2024Rubbish downstream of New Line diversion.ImageD1/08/2024The installation of a headwall, drainage system, and filter drain in Sallybrook, potentially affected by Japanese knotweed, was overseen by an invasive plant species specialist.ImageD1/08/2024It was observed that the water generated from the pumping activities in the Hazelwood Bridge work area was causing discoloration in the main channel. However, this was not considered a major concern due to the minimal level of siltation.Image	DateCommentImageECoW Action/Recommend dationD1/08/2024Rubbish downstream of New Line diversion.Rubbish downstream of New Line diversion.Raised with site ecologist to remove asap.D1/08/2024The installation of a headwall, drainage system, and filter drain in Sallybrook, potentially affected by Japanese knotweed, was overseen by an invasive plant species specialist.Good mitigation biosecurity implemented.D1/08/2024It was observed that the water generated from the pumping activities in the Hazelwood Bridge work area was causing discoloration in the main channel. However, this was not considered a major concern due to the minimal level of siltation.ImageECoW Action/Recommendation activities in the Hazelwood Bridge work area was recommended to reposition the hose outlet further into the field to achieve a higher level of attenuation.

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					successful in achieving
					a significant reduction
					in sediment.
8.5	06/08/2024	At the holding cell in Area	State - Hillerson -	These were small-	Personnel had been
		One, the Japanese knotweed		scale works carried	previously briefed by a
		(JKW) bund was reshaped.		out over a short	Sorensen ecologist,
		There was no supervision		period. The workers	which was deemed
		from the invasive plant		had been briefed on	satisfactory by the
		species specialist during this		biosecurity risks and	Ecological Clerk of
		inspection.		had extensive prior	Works (ECoW). The
				experience working	works were
			06/09/2024 11:08	with the specialist in	subsequently reviewed
				this area.	by a specialist.
8.6	06/08/2024	Sallybrook Area one scour		Silt fencing in river to	Silt fencing was
		protection was added to	A CONTRACTOR OF A PARTY OF A	be removed. Grass	removed Sorensen to
		recently installed headwall in		seed required.	seed with grass seed.
		the form of limestone			
		boulders.			
			05A00/2020 10 101		

Item	Date	Comment	Image	ECoW	Sorensens's Action
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8.7	06/8/24	Evcore Gym, Upstream Grandons. Silt curtain being installed prior to rock armour works taking place.		Discussed plans with site ecologist.	Positive deployment of silt control measures.
8.8	06/8/24	At Copper Valley Vue where the Glenmore river is being overpumped during an ECoW site inspection, it was observed that water was flowing around and above fish protection measures in stream		Informed site ecologist.	Sorensen carried out maintenance works once this was brought to their attention.

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8.9	07/08/2024	Area 1: Rock armour		Discussed works	Silt measures were
		installation works have		and silt mitigations	implemented using
		commenced. Silt curtains		with site ecologist.	multiple silt curtains.
		have been deployed			Water turbidity levels
		downstream to manage			and other parameters
		unavoidable silt generation			were monitored in situ
		from the excavations for the	07/109/902/ 11-27		via instream sondes.
		rock armour base. River	CLOOLEDT TO SE		Delays in transmission
		gravels were placed along			of up to 30mins were
		the base of the sheet piles,			noted with the d/s
		and additional river gravels			sondes. In
		were stockpiled nearby for			compensation for this,
		later use.			the works were
					continually supervised
					to monitored turbidity
					levels by the site
					ecologist using a
					stop/start system if silt
					levels got too high.
8.10	07/08/2024	A drainage trench that was	A CALL AND A	Discussed works	Good practise of
		dug in the temporary cell at		with knotweed	biosecurity protocols.
		Area 1, was supervised by a		specialist.	
		Japanese knotweed			
		specialist. The excavated	and the second sec		
		material will be backfilled.			
			07/08/2024 12:15		

ltem	Date	Comment	Image	ECoW	Sorensens's Action
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8.11	07/08/2024	Fish guard fencing in place above pumps at Brooklodge where culvert is being demolished and removed. Guards were effective at time of inspection.	07/08/2024-13:19	Inspected fish guard fencing. Stressed the need for ongoing daily maintenance to site ecologist.	Fish guard fencing was, maintained successfully today.
8.12	07/08/2024	Concrete pouring at New Line. No ground water pumping was occurring at the time from the area received concrete.		Recorded activities and inspected current concrete wash out.	Ensure correct concrete wash out procedures being followed by the driver.

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8.13	07/08/2024	Silt screen not bedded in at the location of coffer dam pumping at hazelwood bridge works area.		Recorded and discussed with site ecologist.	The site ecologist will remind the environmental general operatives installing the silt fencing to bed in the base of the screen according to the manufacturer's guidelines. This silt fence was later corrected.
8.14	07/08/2024	At the hazelwood bridge works area the contractor has altered the ground adjacent to the basketball court. Depending on the final design, the contractor may be required to reinstate this grassed area.	CVIDE/2024 18:59	Checked the design which include a post works planting schedule for this area. Discussed with site ecologist need to reinstate area.	Works proceeding in this area are utilising this area for essential storage and parking. Area to received grass and tree planting at a later stage of the project.

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8.15	07/08/2024	Repeated turbidity spike		Visual inspection	Low flow here, possible
		recorded by downstream		was conducted.	dry out of monitor or
		sondes at Cois na Glean was		Discussed erratic	dirt on the sensor
		investigated. However, water		readings with site	reports site ecologist
		appeared clean when		ecologist.	who was also
		inspected.			investigating the matter.
					Sondes was later
					confirmed to behaving
					erratic due to drying out
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		of sensor as reported by
					Capital water.
			and the second second		
			No. AND A SAME		
			07//08/2024, 15:32		
8.16	08/08/2024	Excavations in JKW zone for		Discussed with JKW	Contaminated material
		the installation of a headwall		specialist during	placed, as per RE
		and drainage line at		Environmental Tour	instruction, to
		Sallybrook, has been shaped		016.	facilitate the works.
		into a bund along the			Biosecurity objectives
		riverside. Inquiries have been	The second		were upheld. Material
		raised regarding the long-	09/09/2024 11:19		can be relocated to the
		term management plans for			temporary holding
		this material.			facility once extended.

ltem number	Date	Comment	Image	ECoW Action/Recommen	Sorensens's Action response
				dation	
8.17	08/08/2024	Concerns have been raised about the biosecurity measures at the Sallybrook temporary cell area along the riverside, which lacks barriers to prevent accidently spreading of possibly contaminated material (the barriers in place at the time were to designate the manhole excavation works).	08/08/2024 11:39	Discussed with JKW specialist during Environmental Tour 016.	Silt fencing and barriers were promptly put in place achieving high standard of biosecurity control around the holding cell.
8.18	08/08/2024	An additional pump is being installed at the Hazelwood Bridge works area, with spill matting placed underneath as a precautionary measure.	08/08/2024 12:49	Noted positive environmental action.	Current precautionary measures to be upheld for the duration of pumping at this works area.
8.19	08/08/2024	Turbid water was observed in the main channel from Hazelwood Bridge. An investigation determined that the source of the turbidity was the rock armour works.		Discussed with site ecologist during Environmental Tour 016. Water levels causing silt to move very slowly though main channel taking hours to reach	For rock amour works review silt control measures and work methods to ensure a minimisation of silt generation. Sorensen deployed all its existing silt curtains; however, silt was still

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				downstream	visible downstream
				sections.	despite these
					measures.
8.20	09/08/2024	High silt generation from rock	and the second sec	Supervised and	Site ecologist was
		armour works Area one.		discussed works	supervising constantly
				with site ecologist	while the
				and engineer.	environmental team
					adjusted instream silt
			1000		fences as required.
					Stop/start system in
			10010012024 TT 012		place. Works were
					stopped numerous
					times to allow silt to
					settle and pass through
					the system.
8.21	09/08/2024	Continued excavations in the		Supervision of works	Additional silt curtains
		river generates large		with site ecologist.	were installed after a
		amounts of silt.			temporary pause in
					work. Operations
					resumed once the silt
					had cleared the work
					area, with the site
					ecologist continuously
					supervising and
			· · · · · · · · · · · · · · · · · · ·		employing a stop/start
			09/08//2024 13:19		approach as needed.

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8.22	09/08/2024	Turbid water was observed in the main channel behind the main compound. The silt is estimated to have been generated approximately two hours earlier during excavation for the rock armouring works. The silt is moving very slowly through the system, creating significant challenges for effective silt control.		Discussed with site ecologist and engineers.	Unacceptable turbidity levels observed from hazelwood bridge also. Emphasis on contractor to make changes in work methodology and silt management next week to avoid a repeat of the this.
8.23	12/08/2024	Queries were raised regarding silt curtain deployment in main channel at gym car park into Grandon's car wash area, if fish pass were considered?		Discussed with site ecologist.	Gaps were intentionally left between curtains and riverbank to allow fish passage. This gap in silt curtains was increased with later silt curtain set up.

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8.24	12/08/2024	Digging out clay material between sheet piles from the dry to avoid additional movement and associated silt generation.		Good adjustment of work methodology in light of the silt control challenges associated with rock armour works.	To reduce silt mobilisation from the rock armouring works, a stone platform was constructed, enabling the excavator to operate from a dry area. This setup allowed for a more effective silt curtain installation, which enclosed the excavation site and significantly slowed the movement of silt downstream.
8.25	12/08/2024	Sallybrook: Blinding of rock armour with river gravels, put aside during digging in the river. Emphasis put on upper section. This action will aid natural seed placement during seasonal flooding and thus natural regeneration of river side vegetation.	12/00/12/24 15:31	Discussed this with the site ecologist and foreman.	Good use of river gravels that were side cast before excavations for the toe of the rock armour.

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8.26	12/08/2024	JKW temp cell being extended. Fencing going around in line with best practice and biosecurity plan.		Discussed with site ecologist.	Positive action taken.
8.27	12/08/2024	Adjacent to Eurofins: Check		Discussed with site	Stone to be removed
		dam of gravel was added to	and the second of the second o	ecologist.	post works in this area.
		the main channel to form a		Silt lovels raised	Informed works were
		combination with silt		with Sorensen	matted earlier in the
		curtains.	12/08/2024 17:12	Foreman.	being adapted.
8.28	12/08/2024	Waste from construction	and the state	Informed site	Waste was shortly
		works observed at headwall	N ASSA	ecologist.	removed.
		works site at Area 1.	29/00/2024 14:40		

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number				Action/Recommen dation	response
8.29	13/08/2024	Fish guards down as CVV over pumping location.		Informed site ecologist.	Fence was promptly repaired. The area around the sump was E fished.
8.30	13/08/2024	Deployment of silt curtains effectively separated turbidity generated within the instream excavation area from the surrounding water, allowing a clean channel for fish movement.		Liaised with the site ecologist to determine the optimal configuration of silt curtains.	Silt curtain configuration was moved upriver in line with the pace of the rock armour works.
8.31	13/08/2024	Extended the Japanese knotweed holding cell at Area One, with work conducted under supervision. Fencing and silt curtains were installed in accordance with biosecurity measures.	14/08/2024 111-58	Discussed with site ecologist.	Effective implementation of biosecurity measures.

ltem	Date	Comment	Image	ECoW	Sorensens's Action
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8.32	14/08/2024	A pipe outlet discharging into		Discussed with site	The issue was raised by
		the Springmount stream,	1 1 1 2	ecologist and Arup	an Arup engineer to the
		likely originating from the		engineer.	local authority.
		nearby butcher shop, was			
		observed to contain blood			
		and guts on multiple			
		occasions. This discharge			
		raises significant			
		environmental as well as	14/08/2024 13 10		
		health and safety concerns.			
8.33	14/08/2024	The issue of fish passage		Discussed with site	Visual checks were
		through the area semi-closed		ecologists.	conducted from above
		off to contain silt was			during both installation,
		discussed. Area was too			with gaps left between
		extensive and deep to E fish			them to allow fish to
		and given the need to			escape and that
		continually adjust the			upstream and
		curtains during works, E	1		downstream curtains
		fishing was impracticable.	14/08/2024 12:36		were partially opened at
					the end of each day.

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8.34	15/08/2024	Some young trees and vegetation, that were included in the clearance plans, were cleared along the reinstated stream at Springmount to facilitate work.	15 August 2024 09:56	Liaised with the site ecologist regarding bird and bat surveys prior to the clearance.	No nesting birds or bat roosting potential were found in the trees removed.
8.35	15/8/2024	Continued work placing rock armour from the dry.		Discussed with site ecologist.	To reduce silt mobilisation from the rock armouring works, the excavator was positioned to operate from a dry area as much as possible.

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8.36	16/08/2024	Pumping at Brooklodge: Pumps were maliciously stopped by a third party, causing the work area to flood. Fortunately, the fish guards did not overtop.		Discussed with site ecologists.	Two eels were rescued from the work area through supervised dewatering.

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8.37	16/08/2024	The removal of silt curtains following rock armouring works at Sallybrook led to the unavoidable generation of silt. Despite these efforts, a noticeable layer of silt was deposited on the gravel in this section of the river.		Liaised with site ecologists prior to silt curtain removal. Supervised curtain removal.	The curtains were removed gradually to minimise and spread out the dispersal of silt into the main channel.
8.38	20/08/2024	Works to install headwall at Sallybrook. Silt curtain not sufficient to contain works area. Silt washed in from open works area which is being disturbed by GO's.	ENGRIPTION 157-02	Improve silt retention measures.	Silt curtains were supplemented with sandbags which were effective to creating a works area that could be dug without silt entering the river.

ltem number	Date	Comment	Image	ECoW Action/Becommen	Sorensens's Action
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8.39	20/08/2024	Hazelwood bridge works: Two pumps are operating to dewater the two abutment work areas. Sumps are in place. No silt bags on the end. Silt fence in place at top pipe. pH readings should be taken here during concrete pour.		Silt bags could be added.	Silt bag added to lower pipe under instruction from site ecologist.
8.40	21/08/2024	Hazelwood bridge works site: Evidence of concrete washout outside designated wash out area.		Spoke with site foreman who reported it was Morris who said it was a mistake. This topic was raised in the environmental workshop.	Sorensen's reported that drivers were spoken to, and additional efforts will be made to ensure that this event does not happen again.
8.41	22/08/2023	Works at north Sallybrook, for drainage line and flood defence bund were being supervised by an invasive plant species specialist as the area is in a JKW zone.		Discussed biosecurity mitigation measures with the specialist.	Biosecurity measures were implemented for the duration of the works. All material was backfilled and contained on-site.

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8.42	22/08/2024	Flagstones added to both channels in the new Brooklodge culvert. River gravels were added to the downstream channel which is designed to receive the main flow.		Supervised the works for a portion of the duration liaising with site ecologist.	The site ecologist supervised and checked for the presence of JKW and clay content.
8.43	22/08/2024	At Brooklodge, efforts to create a fish-navigable culvert included the formation of a Talweg. This involved choosing shallower flagstones and reducing the size of the flagstones down the center, of the channel and adding a raised section of stone on the upstream side of the main channel entering the culvert. This design encourages water to pool on the lower side during low flow conditions, facilitating fish passage.		Supervised the works for a portion of the duration liaising with site ecologist.	The site ecologist was present throughout the works, liaising with engineers and ground crews to achieve the best possible results. IFI did not inform the layout which was not included in the original project design.

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8.44	22/08/2024	The fish guard was inspected and observed to be effectively maintained and operational.		Recorded observations.	Continue to check the fish guards as frequently as necessary to maintain their functionality.
8.45	23/08/2024	Shuttering installed for concrete pour at hazelwood bridge works site.		Queried the site ecologist about pH monitoring during concrete pouring, as the work area is being dewatered via attenuation into the main channel.	Sorensen's monitoring pH during concrete pouring.

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8.46	26/08/2024	Rock armouring works continued using a silt curtain configuration that effectively contained silt generated from in-stream digging. This approach allowed for the gradual release of silt, keeping it within acceptable limits.		Discussed with site ecologist.	The silt curtains remained in place for the duration of the rock armouring works along this section of the river, allowing silt to settle. The curtains were removed gradually, and the silt deposited on river substrates is expected to be gradually dispersed and moved through the system depending on water levels over the next few weeks.

ltem	Date	Comment	Image	ECoW	Sorensens's Action
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8.47	26/08/2024	Silt screens downstream of Riverstown's Bridge were removed before the yellow rainfall event to prevent potential washout. These curtains were no longer needed at that point.		Communicated with the site ecologist about the need to remove these screens from the river as soon as possible.	Action was carried out that day.
8.48	26/08/2024	It was observed that dredging works were occurring at bridges near the Sarsfield GAA Club along the Butlerstown River, which joins the Glashaboy River at John O'Callaghan's Park. These activities were unrelated to the flood relief works.	GFBS 26 August 2024 0945	Recorded observations and assessed whether these dredging works could impact the flood relief water monitoring systems, which was not the case	No action required.

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8.49	27/08/2024	After removing all silt curtains from the work area yesterday evening in anticipation of a yellow rain warning, the silt curtains were reinstalled this morning to prepare for further excavation in the river for the placement of riprap. Efforts were made to keep construction vehicles out of the river, which was successfully achieved in this section by establishing a temporary raised stone platform.		Adjust silt curtains as they have narrowed the river too much, which is causing more silt to escape. Silt curtain with hole to be removed also.	Silt curtains adjusted during works.

Item	Date	Comment	Image	ECoW	Sorensens's Action
number				Action/Recommen	response
				dation	
8.50	27/08/2024	Following the rains from the	Transfer to the second s	Continue to monitor	Additional gravel may
		yellow rain warning, water		the situation over	need to be added
		began flowing into the Cois	1 Last Re-2.	next weeks and	depending on flow rates
		na Gleann culvert. This was	WC-ALL C	months.	into the new culvert.
		aided by the additional	Keller - Keller		This will be determined
		placement of river gravel at	Martin Contraction		based on instructions
		the culvert entrance to fill	53 - 2		from the ER team.
		any voids.			
			A CALL AND		
9 51	27/08/2024	Ongoing in stream digging for		Handbeld turbidity	Site ecologist taking
0.51	27700/2024	the tow of rock armour is		monitoring to build	handheld readings
		presenting challenges for		un a nicture of silt	nandheta readings.
		controlling silt Silt curtains		volumes at various	
		are in place and the work is		noints of the	
		heing supervised with a	administration of the second	migration	
		ston/start approach to			
		manage the situation			
		manage the situation.			

Item	Date	Comment	Image	ECoW	Sorensens's Action
number				Action/Recommen	response
				dation	
8.52	27/08/2024	Rainwater at CVV was		Good use of space	Gradual percolation of
		dewatered to an area of the		and management of	pumped water into the
		site to prevent immediate		silty water.	ground avoids pumping
		discharge into the river.	Call Print St.		directly into the river
			and the state of the		and is cost effective.
			and the second s		The percolation area
					was not directly
					ediciping river on it was
			A CALL AND A		located in a depression
					where no run off was
					nossible
			27 August 202412:02		
8.53	27/08/2024	Over pumping of Glenmore		Informed site	Fences were later
		River at Brooklodge culvert:		ecologist.	repaired and the area
		Fish screens not functioning			around the sump e
		effectively. The lower plastic			fished as a precaution.
		mesh fish screen is being			
		undercut.	a have a strategy		
8.54	27/08/2024	At Grandon's Mill Race,		Maintain flows into	Flows into the Mill race
		where the penstock is being	The states and	the Mill race for	was established in the
		Installed, a small area was		health of stickleback	evening to allow water
		aried out to facilitate		population.	for the duration of the
		tabrication work in a dry			night. This procedure
		environment. E Tisning			continued for a few
		which were releasted from			work was completed
		which were relocated from			work was completed.

ltem	Date	Comment	Image	ECoW	Sorensens's Action
number				Action/Recommen	response
				dation	
		the area. The dug-out			See also Item 8.59
		material was inspected for			below for further
		eels and contamination.			information on this
					issue.
8.55	27/08/2024	The oil booms along the		Standing oil behind	Liaised with Grandons
		Grandon contamination site		the oil booms were	regarding the older oil
		were discussed, including		treated with	booms, which were
		plans for replacing the older		Bioversal HC as a	originally installed by
		booms which were now		precaution before	them. New oil booms
		ready to be replaced. New oil		sheet piling works,	were added outside the
		booms were added alongside		in case of oil escape	older ones which
		the older ones to good effect.		resulting from	working in combination
				vibrations. However,	to contain oil residues.
				there was no such	
				incident.	
8.56	28/08/2024	Silt curtains were removed	at the second se	Discussed with site	The river will be allowed
		along the gym area as the		ecologist.	to rest for the next week
		rock armouring was			to allow the silt buildup
		completed in this section.			on the river gravels to
		The removal of the curtains			dissipate before
		generated some silt, which			carrying out the final
		were removed as gradually as	28 08 2024		section of rock
		possible to minimise silt			armouring.
		release.			

Item	Date	Comment	Image	ECoW	Sorensens's Action
number				Action/Recommen	response
9.57	28/08/2024	Subcontractor P&C Sorvices		dation	Thoroworo minimal
8.57	28/08/2024	operated in the river without		ecology team	trins up and down river
		ecological supervision or		Recommended talk	mostly static works of
		input and failed to		with sub-contractor	welding capping
		communicate with the ER	6-0.	regarding the	supports.
		team.		sensitivity of working	Sorensen's
				in the river which	acknowledged their
				was subsequently	failure to communicate
				carried out.	regarding this work and
					corrected going
					forward.
8.58	28/08/2024	Bank seeded with grass along		Recorded.	Monitor for growth.
		Grandons.			
			38-06-2024-		
8.59	28/08/2024	Steps taken to prevent harm		Checked water level	Freshwater flows into
		Mill race by allowing water to		and temperature.	maintained for a
		enter the Mill race at end of			portion of each day
		day after that day drying out.			until normal flows were
		Good levels at time of			restored. These
		inspections.	- 28.09.2024		measures were
			20 00 2024		

Item	Date	Comment	Image	ECoW	Sorensens's Action
number				Action/Recommen	response
				dation	
					successful in protecting
					the stickleback
					population, ensuring
					the ecological stability
					of the stream during the
					interim period.
8.60	28/08/2024	At Springmount, the river was		Consider adding	Improvements were
		dredged, the banks were		boulders and rock	made with boulders
		graded, and a new, levelled		mattresses to	and gravels.
		stream bed was created to		further improve the	
		facilitate reconnection.	A CARACTER AND A CARACTER ANTER ANTE	hed	
			A CARLER AND A CARLE	beu.	
			All and a second second		
8.61	28/08/2024	The stockniling activities at	28 08 2024	Discussed with site	Bowser and tractor
0.01	20/00/2024	the Circus Field location near		ecologist.	deployed as necessary
		the Hazelwood Bridge works	PORER	000108/011	to reduce dusty
		site have resulted in dusty			conditions. Challenges
		conditions. A dust			persist due to the
		management plan is			unpredictable weather,
		currently being implemented			which alternates
		to address this issue.			between dry and hot
					conditions and wet
			28 08. 2024		periods. The plan
					requires careful
					balancing to avoid
					creating muddy

Item	Date	Comment	Image	ECoW	Sorensens's Action
number				Action/Recommen	response
				dation	
					conditions from
					excessive water use
					while still mitigating
					dust emissions
					effectively.
8.62	29/08/2024	Trees were removed at	A Carlo Martin Charles	Discussed with site	Trees were checked for
		Rivertown Bridge to facilitate		ecologist.	nesting birds prior to
		the works. Although these			their removal.
		trees were part of the original		Trees removed here	
		design, less was removed	EN CAT	to be compensated	
		initially in the hope of		as part of Planting	
		preserving them. However, as		Plan with native	
		construction progressed and		hedgerow mix.	
		the wall and outlet footprint	August 2024 (bat)		
		were outlined, it became			
		clear that the trees			
		obstructed the works.			
8.63	30/08/2024	River gravels and boulders		Liaised with site	Positive enhancements
		have been incorporated into		ecologist on	incorporated into the
		the reinstated stream at	A TOTAL	placement of	reinstated stream.
		Springmount to enhance the		boulders and	
		ecology for both aquatic and		gravels. The addition	
		bird species. IFI were not		of pools was	
		consulted about the		recommended by	
		placement of boulders.		the placement of	
			A REAL STREET	gravels across the	
			36 - 98 - 2024	channel.	

Item	Date	Comment	Image	ECoW	Sorensens's Action
number				Action/Recommen	response
				dation	
8.64	30/08/2024	Sandbags removed in advance of the weekend to increased water flow though the newly installed penstock and into the millrace in the interests of population of stickleback observed to be inhabiting one section of the Mill race.		Documented positive action.	Area to be E Fished in advance of rock armour works at this location.
8.65	30/08/2024	There was a pump failure at Brooklodge overpumping area, causing partial flooding of the works area. The fish fences remained intact throughout the event, making it unlikely that fish entered the flooded area. Dewatering was monitored for aquatic species as a precaution, though the pumps were off for only 30 minutes.		On site at time of pump failure. Informed site ecologists.	The site ecologists responded rapidly by arriving on-site with fish rescue materials. The flooded works area was monitored until it was dry.

Item	Date	Comment	Image	ECoW	Sorensens's Action
number				Action/Recommen	response
				dation	
8.66	30/08/2024	The pump failure caused		On site at time of	The site ecologists
		downstream of the hose		Informed site	arriving on-site with fish
		outlets resulting in a series		ecologists	rescue materials
		of pools that contained small		000108.0101	However, these actions
		fish. Actions were promptly			were not necessary as
		initiated to relocate these			the pumps quickly
		fish and facilitate their			resumed operation, and
		downstream passage			the stream was
		through hand digging.	10 OB 3024		significantly rewetted,
					preventing any harm to
					the fish.
8.67	30/08/2024	Following the sheet piling		The main contractor	The main contractor is
		works, preexisting oil	Carlos and the	is carrying out works	carrying out work in this
		contamination at this site		in this area,	area, implementing
		Continues to seep into the		implementing	miligation measures to
		Grandon's adjacent to the		measures to prevent	from reaching the main
		car showroom. Oil booms		contamination from	channel. A discussion
		are currently in operation to	a series of the	reaching the main	with the landowner is
		contain the spill. A long-term	A. F. Mestal	channel.	needed to agree on the
		solution is required from the	j.		handover of the
		landowner, Grandons.			contamination area
					after the work is
					completed.

Table 3. Outstanding items to be addressed by Sorensen.

Item	Issue	Action
No.		
8.1	River gravels will be retained for future use in the reinstatement of the riverbed between Brooklodge and CVV bridge.	Reuse river gravel in this area.
8.6	Exposed grounds from headwall works at Sallybrook would benefit from grass seeding.	Grass seed these areas.
8.16	Contaminated material placed on riverbank, Area one. Material can be relocated to the temporary holding facility once extended.	Relocate material into the holding facility.
8.28	Gravel check dam added into the main channel for rock armour works need to be removed.	Remove stone before the end of September.

Appendix A. Sorensen's Environmental Audit 29/07/24 To 26/08/24:

Attached separately.

Appendix B. Comments on Sorensen's August 2024 Environmental Audit:

The audit covered the main environmental and ecological events on site throughout the month; however, the reporting lacked detail. The audit did not include information on pH and turbidity measurements from the handheld monitoring conducted throughout the month.

Appendix C.

Minutes of Environmental Workshop in August 2024. Attached separately.