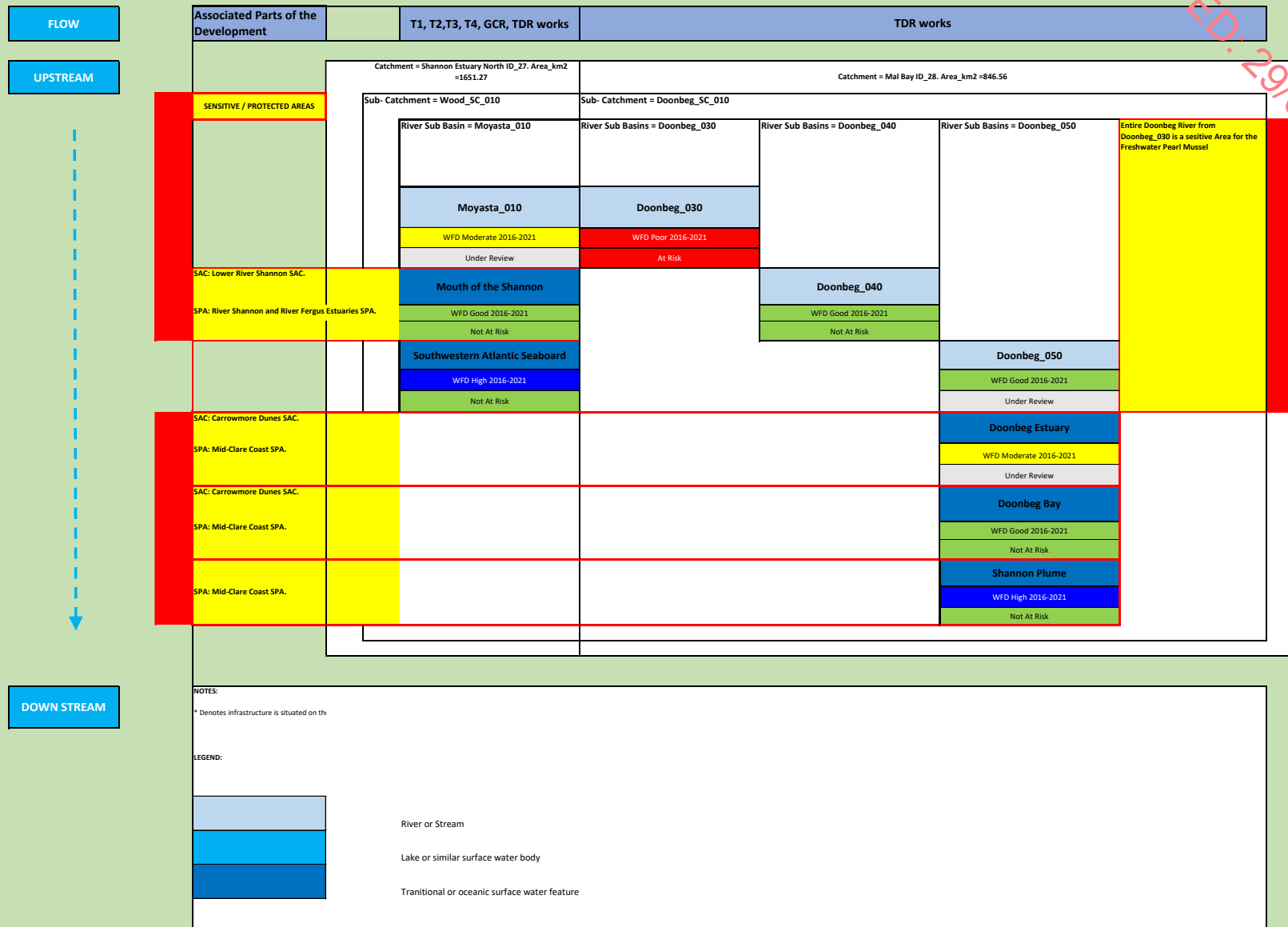


ElAR Figure 9.10 - Surface Water & Designated Area Flow Chart WF, GCR and TDR works

File Ref. 604008-00- Fig 9.10 Fixed and Variable Data - Surface Water Flow Chart. JS 20/10/23



RECEIVED: 29/03/2024



Entire Doonbeg River from Doonbeg_030 is a sensitive Area for the Freshwater Pearl Mussel

SAC: Lower River Shannon SAC.

SPA: River Shannon and River Fergus Estuaries SPA.

SAC: Carrowmore Dunes SAC.

SPA: Mid-Clare Coast SPA.

SAC: Carrowmore Dunes SAC.

SPA: Mid-Clare Coast SPA.

SAC: Mid-Clare Coast SPA.

NOTES:

* Denotes infrastructure is situated on th

LEGEND:

River or Stream

Lake or similar surface water body

Tranitional or oceanic surface water feature

Designated & Protected Areas WF and GCR

Legend

Project data

Site data

Wind Farm Layout

Temporary Road Widening

Redline Boundary

Grid Route to Tullabrack Substation

TDR Haulage Route

Turbine Delivery Route

Constraints

Hydrology

River Waterbodies Cycle 3 (EPA)

Subcatchments (EPA)

Cloon[Clare]_SC_010

Doonbeg_SC_010

Wood_SC_010

Designated Areas

SPA 2023 (NPWS)

SAC 2023 (NPWS)

Base layers

Google satellite

OpenStreetMap

Project ID	604008
Project Name	Ballykett Wind Farm, Co. Clare
Projection	ITM
Drawn by	CCa
Reviewed by	JS & DW
Version	08/02/2024

References/Sources:
Environmental Protection Agency (EPA)
Geological Services Ireland (GSI)
Bing Aerial / GeoHive / Open Street Map / Google Roads
Global Digital Elevation Model (GDEM)

RSK

The map displays the Ballykett Wind Farm area in Co. Clare, Ireland, overlaid on a Google satellite background. Key features include:

- Designated & Protected Areas:** The River Shannon and River Fergus Estuaries SPA (Special Protection Area) is shown in light green, covering the lower portion of the map. The Lower River Shannon SAC (Special Area of Conservation) is shown in brown along the river's edge.
- Subcatchments (EPA):** Three subcatchments are outlined: Cloon[Clare]_SC_010 (blue), Doonbeg_SC_010 (pink), and Wood_SC_010 (cyan).
- Project Layout:** The wind farm layout is shown with a red line for the Redline Boundary, a green line for the Turbine Delivery Route, and a yellow line for the Grid Route to Tullabrack Substation. A temporary road widening is indicated by a grey line.
- Hydrology:** River Waterbodies Cycle 3 (EPA) are shown as blue lines.
- Base Layers:** The map uses Google satellite imagery and OpenStreetMap data.
- Scale and Orientation:** A scale bar at the bottom left indicates distances from 0 to 1.5 km. A north arrow is located in the top right corner.
- Geographic Labels:** The map includes labels for 'DOONBEG_040', 'MOYASTA_010', 'WOOD_020', 'WOOD_010', and 'TONAVO'.
- Watermark:** A large, diagonal watermark reading 'RECEIVED: 29/03/2024' is visible across the upper right portion of the map.
- Inset Map:** A small inset map in the bottom right corner shows the location of the project area within the Republic of Ireland, marked with a red dot.

Note: Data points presented are georeferenced using open source data and/or a handheld GPS. This drawing / map is considered a conceptual model with reasonable accuracy for the purposes of environmental assessment. This drawing should not be relied upon for detailed design puporses.

Designated & Protected Areas Overview

Legend

Project data

Site data

Wind Farm Layout

TDR Haulage Route

Constraints

Hydrology

Subcatchments (EPA)


Designated Areas

Base layers

OpenStreetMap

Project ID	604008
Project Name	Ballykett Wind Farm, Co. Clare
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Drawn by	CCa
Reviewed by	JS & DW
Version	08/02/2024

References/Sources:
Environmental Protection Agency (EPA)
Geological Services Ireland (GSI)
Bing Aerial / GeoHive / Open Street Map / Google Roads
Global Digital Elevation Model (GDEM)



The map displays the Ballykett Wind Farm area in Co. Clare, Ireland, overlaid on a Google satellite base layer. The map is bounded by coordinates 495001E to 505001E and 655001N to 665001N. A large red diagonal watermark reads "RECEIVED: 29/03/2024".

Subcatchments (EPA): Labeled in blue text with corresponding colored outlines: BALLARD_010 (blue), DOONBEG_050 (blue), DOONBEG_030 (blue), DOONBEG_040 (blue), CREEGH_030 (blue), CREEGH_020 (blue), MOYASTA_010 (red), WOOD_020 (blue), WOOD_010 (blue), TARMON_010 (blue), TONAVOHER_010 (blue), CROMPAUN (WEST)_010 (blue), and TERMONEAST_010 (blue).

Designated Areas: Shaded regions include Carrowmore Dunes SAC (green), Mid-Clare Coast SPA (green), Kilkee Reefs SAC (brown), Tullagher Lough and Bog SAC (brown), Lower River Shannon SAC (brown), and River Shannon and River Fergus Estuaries SPA (green).

Infrastructure: A red line indicates the Redline Boundary. A green line shows the Turbine Delivery Route. A white line represents the Temporary Road Widening. A pink line marks the Grid Route to Tullabrack Substation.

Other Features: A north arrow is located in the top right corner. A scale bar (0 to 1.5 km) is in the bottom left. An inset map of Ireland in the bottom right shows the project location with a red dot.

Note: Data points presented are georeferenced using open source data and/or a handheld GPS. This drawing / map is considered a conceptual model with reasonable accuracy for the purposes of environmental assessment. This drawing should not be relied upon for detailed design puporses.

Sensitive Receptor Areas WF and GCR

Legend

Project data

Site data

Wind Farm Layout

Site Entrance

Temporary Road Widening

Redline Boundary

Turbine Locations

Access tracks and Hardstands

Substation Compound

Spoil Storage Areas

Borrow Pit

Temporary Construction Compound

Verge Strengthening

Met Mast

Enhancement Area

Blade Set Down Area

Grid Route to Tullabrack Substation

TDR Haulage Route

Turbine Delivery Route

Topography

Elevation 10m Contour

Constraints

Sensitive Receptors Areas

Groundwater in Shellfish Areas

Base layers

Google satelite

OpenStreetMap

Project ID	604008
Project Name	Ballykett Wind Farm, Co. Clare
Projection	ITM
Drawn by	CCa
Reviewed by	JS & DW
Version	08/02/2024

References/Sources:
Environmental Protection Agency (EPA)
Geological Services Ireland (GSI)
Bing Aerial / GeoHive / Open Street Map / Google Roads
Global Digital Elevation Model (GDEM)

RSK

500001E

501001E

502001E

659001N

658001N

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Sensitive Receptor Areas TDR

Legend

Project data

Site data

Wind Farm Layout

TDR Haulage Route

Topography

Constraints

Hydrology

Sensitive Receptors Areas

Margaritifera Sensitive Areas (NPWS)

Salmonid River Regs (S.I. 293 only) - Latest Cycle

Nutrient Sensitive Areas - Rivers

Drinking Water - Rivers - Latest Cycle

Drinking Water - Lakes - Latest Cycle

Groundwater in Shellfish Areas

Shellfish Areas - Latest Cycle

Base layers

Google satellite

OpenStreetMap

Project ID	604008
Project Name	Ballykett Wind Farm, Co. Clare
Projection	ITM
Drawn by	CCa
Reviewed by	JS & DW
Version	08/02/2024

References/Sources:

Environmental Protection Agency (EPA)

Geological Services Ireland (GSI)

Bing Aerial / GeoHive / Open Street Map / Google Roads

Global Digital Elevation Model (GDEM)

RSK

500001E 501001E 502001E 503001E 504001E 505001E 506001E 507001E 508001E

660001N 659001N 658001N

500001E 510001E 520001E 530001E 540001E 550001E

670001N 660001N 650001N

0 10 20 km

DEEL (NEWCASTLEWEST)_140

CLOVERHILL STREAM_010

FERGUS_070

Fergus

Shannon-Cloon

Doonbeg

Creegh

Annageeragh

Kilrush

Doonbeg

RECEIVED: 29/03/2024

Note: Data points presented are georeferenced using open source data and/or a handheld GPS. This drawing / map is considered a conceptual model with reasonable accuracy for the purposes of environmental assessment. This drawing should not be relied upon for detailed design puporses.

Constraints Map Wind Farm and GCR

Legend

Project data

SW and WCCs

Site data

Wind Farm Layout

TDR Haulage Route

Drainage

Unmapped Drainage

Forestry Drainage

Survey Result

Peat Data 2022-2023

Topography

Constraints

Hydrology

Hydrogeology

Groundwater

Well (GSI)

Groundwater Vulnerability 1:40000 (GSI)

Subcatchments (EPA)

River SubBasins Cycle 3 (EPA)

Base layers

Google satellite

OpenStreetMap

Project ID	604008
Project Name	Ballykett Wind Farm, Co. Clare
Projection	ITM
Drawn by	CCa
Reviewed by	JS
Version	16/02/2024

References/Sources:
Environmental Protection Agency (EPA)
Geological Services Ireland (GSI)
Bing Aerial / GeoHive / Open Street Map / Google Roads
Global Digital Elevation Model (GDEM)

RSK

500001E

501001E

502001E

658001N

659001N

0

250

500 m

RECEIVED: 29/03/2024

MOYASTA_010

MOYASTA_010

MOYASTA_010

WOOD_020

SW2

WCC1

WCC2

WCC3

WCC4

WCC5

WCC6

WCC7

T1

T2

T3

T4

Substation Compound

Spoil Storage

Borrow Pit

Temporary Construction Compound

Met Mast

Enhancement Area

Blade Set Down Area

Grid Route to Tullabrack Substation

Temporary Road Widening

Redline Boundary

Turbine Locations

Access tracks and Hardstands

Spoil Storage Areas

Borrow Pit

Temporary Construction Compound

Verge Strengthening

Site Entrance

Flow direction

Existing Soil Berm

Non-mapped Drainage (Inferred)

Significant - Non-mapped Drainage Features (Observed)

15m Buffer Unmapped Drainage

Oversaturated zone

Forestry Drainage

Wells1km_500B

Wells 250m Buffer Total

Wood_SC_010

MOYASTA_010

WOOD_020

X

E

River Waterbodies Cycle 3 (EPA)

Lake Segment (EPA)

Surface Water 50m Buffer

Lakes 50m Buffer

Tullnabrack Lough

0

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350

360

370

380

390

400

410

420

430

440

450

460

470

480

490

500

510

520

530

540

550

560

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580

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670

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710

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730

740

750

760

770

780

790

800

810

820

830

840

850

860

870

880

890

900

910

920

930

940

950

960

970

980

990

1000

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Constraints Map TDR

Legend

Project data

SW and WCCs

Site data

Wind Farm Layout

Topography

Constraints

Hydrology

Hydrogeology

Groundwater

Well (GSI)

Groundwater Vulnerability 1:40000 (GSI)

Subcatchments (EPA)

River SubBasins Cycle 3 (EPA)

Base layers

Google satellite

OpenStreetMap

Project ID

Project Name

Projection

Drawn by

Reviewed by

Version

References/Sources:

RSK

0 75 150 m

0 60 100 200 m

0 2 4 km

RECEIVED: 29/03/2024

497001E 498001E 499001E 500001E 501001E 502001E 503001E 504001E 505001E 506001E 507001E 508001E

657001N 658001N 659001N 660001N

Moanmore Lough

Gower Lough

Tullnabrack Lough

Knockerra Lough

CROMPAUN (WEST)_010

DOONBEG_030

DOONBEG_040

DOONBEG_050

MOYASTA_010

WOOD_010

WOOD_020

SW1

SW2

SW3

SW4

WCC_07

WCC_08

WCC_09

T1

T2

T3

T4

Note: Data points presented are georeferenced using open source data and/or a handheld GPS. This drawing / map is considered a conceptual model with reasonable accuracy for the purposes of environmental assessment. This drawing should not be relied upon for detailed design puporses.