



M6 GALWAY TO BALLINASLOE PPP MOTORWAY

Completion of the M6 Galway to Dublin Motorway

Officially opened on 18th December 2009 by

Mr Noel Dempsey, T.D.
Minister for Transport

in the presence of
Cllr Tom Mc Hugh,
Mayor of County Galway





Message from the Minister

A major milestone has been reached today, not only for the residents and businesses throughout the Galway and Ballinasloe region, but for the entire country. You can now travel safely from Dublin to Galway on Motorway standard road. It is the achievement of a key commitment, as outlined under Transport 21, that there would be a Major Inter-Urban route to connect the East (Dublin) to the West (Galway). It is a pivotal part of the Government's programme to upgrade the overall road network for the country. Today's opening represents the culmination of years of hard work and dedication. It will significantly benefit the Western region.

Táthar tar éis cloch mhíle suntasach a bhaint amach inniu, ní do lucht cónaithe agus do ghnóthaí ar fud réigiún na Gaillimhe agus Bhéal Átha na Sluaighe amháin, ach don tír ar fad. Anois is féidir leat taisteal go sábháilte ó Bhaile Átha Cliath go dtí an Ghaillimh ar an mótarbhealach. Is éacht é de chuid príomh-thiomantais mar atá imlínithe faoi lompár 21 ag léiriú go mbeadh bealach Idir-Uirbeach Mór ag nascadh an t-oirthear (Baile Átha Cliath) leis an iarthar (An Ghaillimh). Is cuid mhaighdeogach é de chlár an Rialtais chun gréasán na mbóithre i gcoitinne a uasghrádú don tír. Léiríonn oscailt an lae inniu buaicphointe na blianta fada d'obair dhian agus díograiseach, a bheidh mar bhuntáiste suntasach do réigiún an Iarthair.

Noel Dempsey, T.D.
Minister for Transport



The opening of the M6 Galway to Ballinasloe motorway is an historic event because this is the first Major Inter-Urban corridor connecting city to city. From Galway to Dublin we now have motorway/dual carriageway for 194 km. The benefits from a road safety standpoint and improved quality of life will be felt by all the residents of the cities, towns and villages along the entire route. It is great to see first hand this Government's plan to invest in and improve road infrastructure, under Transport 21, come to fruition. Just think, you will now be able to travel from the M50 to Galway city in just over two hours. It is fantastic for business, tourism and all road users.

**Mr Peter Malone, Chairman
National Roads Authority**



On behalf of the European Commission, I welcome the opening of the M6 Galway to Ballinasloe scheme which now completes the strategic Dublin to Galway route. The scheme will enhance connections between Ireland's regions and facilitate efficient movement of traffic to and from mainland Europe. The Commission is pleased to have part-financed the planning and design of this important project through EU Funding. A balanced regional development is pivotal to the European Union's objectives and this scheme will help open up the west of Ireland to commercial and tourism opportunities.

**Dr Pawel Samecki
EU Commissioner**



I welcome the opening of the M6 Galway to Ballinasloe Motorway, one of the most important infrastructural developments in the West and one that is vital to the economic prosperity of the region.

It provides an unbroken high speed link between Dublin City and Galway City and will further facilitate economic development in the West. It will also improve road safety on our national road network.

I wish to congratulate all involved in the design, development, project management and construction of the scheme including the Department of Transport, the National Roads Authority, N6 (Concession) Ltd., National Roads Design Office (Galway) and the Consulting Engineers, RPS. I wish to thank the landowners and those affected by the construction of the scheme for their support and co-operation. I particularly wish to thank the NRA and N6 (Concession) Ltd. for their assistance in the recent part opening of this project to maintain vital traffic links during the flooding event. It highlighted the necessity for safe and resilient transport links and strengthens the case for the completion of the M17/M18 routes.

Tá súil againn go mbeidh turas slán ag gach taistealaí ar an mbóthar seo san todhchaí.

**Ms Martina Moloney
Galway County Manager**



As Mayor of County Galway I welcome the opening of the M6 Galway to Ballinasloe Motorway. The completion of this project now completes the inter-urban road infrastructure from Galway to Dublin. By the very fact of this infrastructure being put in place it now reduces the travel time between both cities to just over two hours. It is this type of infrastructure that is beneficial to the economic life of the west of Ireland.

I congratulate the Minister for Transport, the executive and members of the National Roads Authority, the executive and staff members of the Galway National Road Design Office and the contractors who have completed the project ahead of schedule. This is an infrastructure that will provide for our County and City as we move forward.

I would like to thank the landowners and the public for their co-operation throughout this project.

Finally I wish all who use this motorway safe travel.

**Cllr Tom McHugh
Mayor of County Galway**



N6 (Concession) Ltd. and their contractors have delivered the M6 Galway to Ballinasloe Scheme, Galway County Council's first motorway, ahead of schedule and just before Christmas to offer a safer route to road users travelling in and out of the West of Ireland.

We are proud to deliver a road which is the largest infrastructural investment ever west of the Shannon, completing the Galway to Dublin motorway corridor. The project improves the accessibility of Galway City and the towns in east County Galway, and benefits communities by removing heavy traffic from the existing N6, providing significant time savings and a safe route built to the latest standards. The M6 PPP Scheme will continue to operate as a value for money benchmark from now on.

Slán Abhaile.

**Mr Roberto Gallardo
General Manager,
N6 (Concession) Ltd.**

Scheme Description

The M6 Galway to Ballinasloe scheme is one of the largest road projects ever constructed in Ireland and is the largest construction project ever in the west of Ireland. The Mainline comprises of 52 km of Motorway and 4 km of Dual Carriageway including five grade-separated junctions and a 7 km link road to Loughrea. The scheme also includes approximately 32 km of side roads and link roads.

The motorway links the recently completed Athlone – Ballinasloe section of the M6 with the eastern side of Galway City. It bypasses Ballinasloe, Kilreekill, and Craughwell and will significantly reduce journey times between Galway and Dublin. There are 50 bridges on the scheme, of which eight are river bridges, including a 120m long crossing of the River Suck at Ballinasloe, three are rail bridges and one is a pedestrian bridge at Moher, Ballinasloe.

The motorway has two lanes in each direction, with provision for a future third lane between the proposed M17/M18 interchange at Rathmorrissey and Galway City.

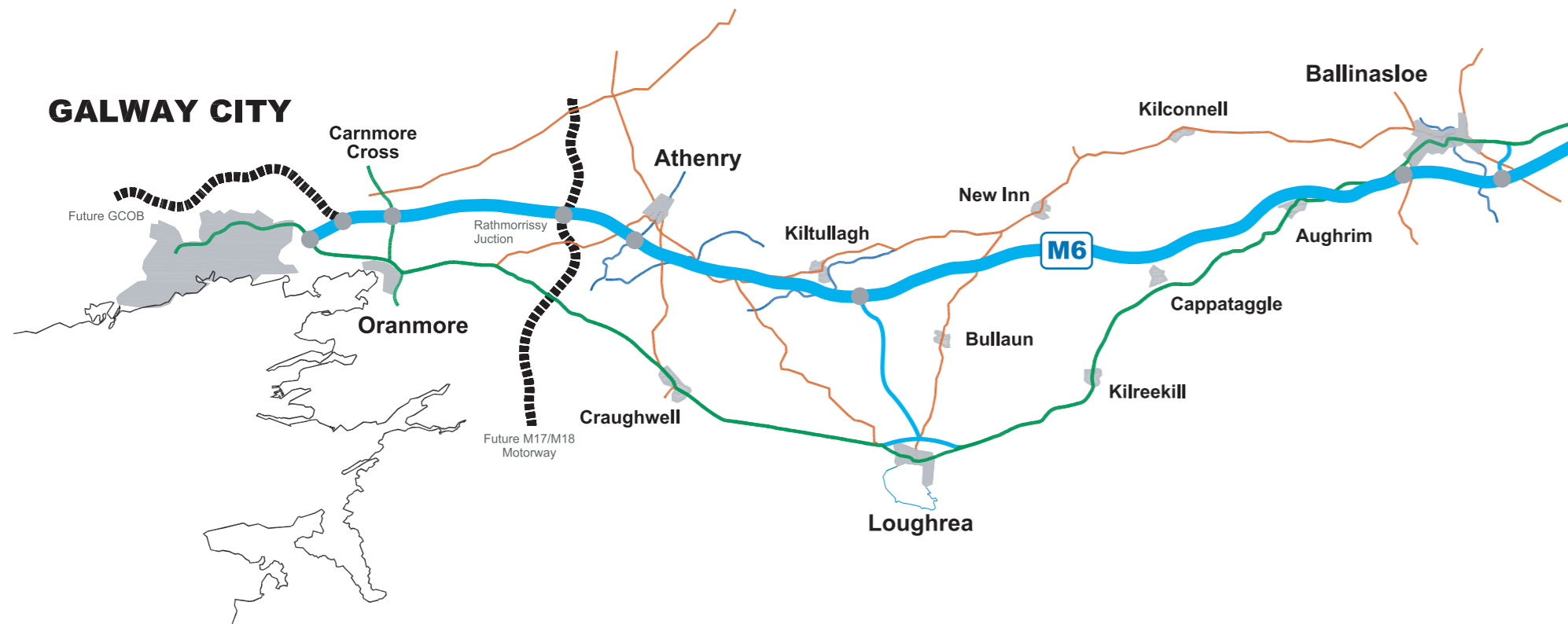
Scheme Delivery

This scheme forms part of the National Roads Authority's PPP Programme. The delivery of this scheme signifies a major milestone of the National Development Plan (NDP) 2000 - 2006 and 2007 - 2013.

Planning for the scheme commenced in 1999 and the CPO for the scheme was approved in June 2005.

The National Roads Authority signed a Public Private Partnership contract with N6 (Concession) Ltd. on April 4th 2007 for the design and construction of this road scheme and its continued operation and maintenance until April 4th 2037. Its opening marks the completion of the M6/M4 Motorway from Galway to Dublin and is the first major inter-urban corridor completed within the Republic of Ireland.

The total value of the project is approximately €700 Million, making it the largest infrastructural investment ever west of the Shannon.



M6 Motorway at Rahally



Treanbaun Bridge

Tolling

The Toll Plaza and Administration Building is located on the mainline at Cappataggle between the Carrowkeel and West Ballinasloe Junctions. Six lanes are provided in each direction to cater for all vehicle types and sizes. An Express lane is provided to cater for eToll Tag users. The remaining five lanes will be made up of a combination of eToll Tag, automatic coin machines and manually attended lanes.



Carrowkeel Junction



Coolagh Junction



Rock Cutting at Rahally

Junctions

There are five grade-separated junctions along the scheme and one major at-grade junction.

Coolagh Junction

This is an at-grade roundabout located at the start of the scheme on the eastern edge of Galway City. The roundabout links the existing N6 Dual Carriageway section between Oranmore and Galway City to the Motorway.

Glennascaul Junction

The Glennascaul junction is a dumbbell type grade-separated junction located on the N18 between Oranmore and Carnmore Cross. This junction provides access between the Motorway and the N18 serving Oranmore, Clarinbridge, Kilcolgan and Limerick to the south and Galway Airport, Claregalway and the N17 to the north.

Athenry Junction

The Athenry junction is a dumbbell type grade-separated junction located mostly in the grounds of Mellows Agricultural College to the southwest of Athenry. A network of link roads from the junction provide easy access between the Motorway and the R347 and R348 serving Craughwell and the existing N6 (future R446) to the south and Athenry town and Tuam to the north.

Carrowkeel Junction

The Carrowkeel junction is a dumbbell type grade-separated junction located in a greenfield site. The junction provides access between the Motorway and the new 7 km link road to Loughrea to the south and Kiltullagh and New Inn villages to the north. The Loughrea link road runs mostly along the abandoned baronial railway and connects to the central roundabout on the Loughrea Bypass, opened in 2005.

Ballinasloe West Junction

The Ballinasloe West junction is a dumbbell type grade-separated junction located on the outskirts of Ballinasloe. This junction provides access between the Motorway and the existing N6, R355 and R358 routes on western side of Ballinasloe town. The junction serves Portiuncula Hospital on the western side of Ballinasloe town and will provide access to Ahascragh and Portumna.

Ballinasloe East Junction

The Ballinasloe East junction is a dumbbell type grade-separated junction located east of the River Suck. This junction provides access between the Motorway and the existing N6 and R357 routes on eastern side of Ballinasloe town. The junction forms part of the Galway to Ballinasloe PPP scheme but was opened in July 2009 to coincide with the opening of the adjacent Ballinasloe to Athlone section of the M6.

Rock Cuttings

The need to quarry rock from areas outside the project boundary was minimised as much as possible. Rock cuttings were widened and steepened in order to maximise re-usable materials and a novel rock cutting process was used.

The Limestone rock is moderately to very strong and light to dark grey or black in colour. In order to produce an aesthetically pleasing rock finish and to maximise the amount and quality of rock removed, pre-split blasting was used.

Hydraulic drilling rigs fitted with dust suppression units created a continuous line of inclined holes, with depths of 15 - 20 metres. Additional holes were drilled into the mass of rock to be removed, creating a cell network. All holes were then charged with non-electric detonator initiating systems, boosters and detonating cords connected down-line to a primer charger. The holes were then column charged with a pre-determined weight of explosives.

Detonators were connected in such a way that the inclined holes at the final rock face were blasted in advance, creating a joint that separates the rock to be blasted and the remaining rock. This joint, once the broken rock is removed, forms the visible cutting slope, where half of the drilled holes can still be seen. The rock faces are deliberately left bare as a distinctive visual feature of the road scheme. Local residents were made aware of the blasting through a publicity campaign. Firing of blasts was generally carried out at a specific time each day to minimise impacts on residents.

A total of 718 blasts were carried out, without incident, resulting in a total of 2.8 million cubic metres of rock being excavated and used for the road construction without the need to exhaust local quarries and reducing the transportation of large volumes of rock along the local road network.

No slope stabilisation measures were required as the orientation of rock bedding and fractures was favourable. Rock-trap ditches were installed at the base of the rock cuttings to keep falling stones away from the road. In some places, berms were provided at the transition between soil, fractured rock and solid rock.

Benefits

The M6 Galway to Ballinasloe PPP Scheme and the completion of the M6 as a whole will deliver many benefits to Galway and the West of Ireland:

- Shorter and quicker journeys between Galway and Dublin
- Greater journey reliability and comfort
- Improved road safety for both vehicles and pedestrians on the new M6 and R446 (existing N6)
- Improved environment for the towns and villages bypassed through the elimination of through traffic
- Reduced traffic volumes on the R446 (existing N6).

Public Private Partnership

Public Private Partnership exists between public sector bodies and private enterprise and are essentially agreements to share risk and reward on large scale development initiatives. They now form a significant part of the NRA capital investment programme without which the Government would be unable to achieve its challenging infrastructure provision targets.

On a world-wide basis the partnerships increasingly extend into provision of services, health and educational facilities, construction of roads and railways, water supply and waste management.

N6 (Concession) Ltd. consists of Sacyr Concessions Ltd. and Global Via Infraestructuras S.A., both major companies from Spain, and PJ Hegarty & Sons from Ireland.

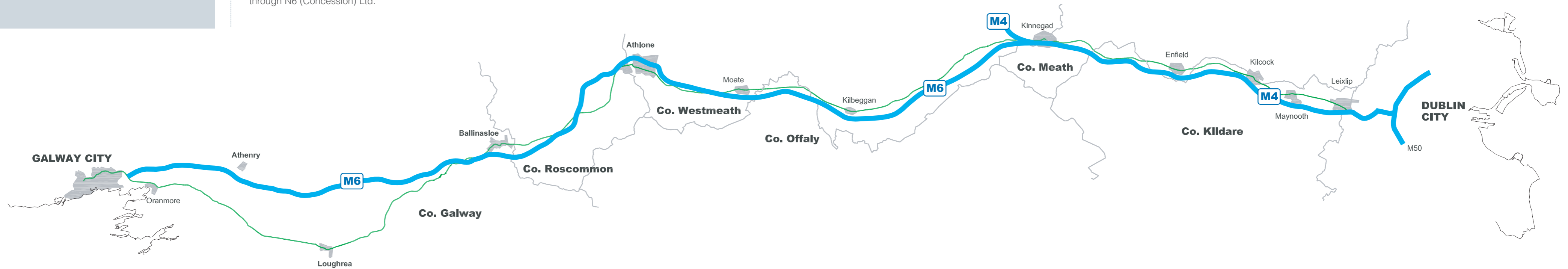
Funding has been provided by the Irish Government through the National Roads Authority and by the European Investment Bank, Ulster Bank, RBS, MCC, Banesto and Fortis Bank (Mandated Lead Arrangers) through N6 (Concession) Ltd.

Benefits of PPP Procurement:

- Improved value for money
- Risks and rewards are shared
- Alternative method of procurement and finance allows government infrastructure targets to be met in pace with public demand
- Assists in national economic development by providing essential transportation links
- Utilises private sector operational skills
- Increases the number of development projects by making private sector funding available
- Facilitates transfer of government funding into other development projects
- Provides long term high standard operation and maintenance
- Encourages high standards in design and construction.



Rock Cutting at Coolagh



TIMELINES

M6 GALWAY TO BALLINASLOE PPP
2009

M6 ATHLONE TO BALLINASLOE
2009

ATHLONE BYPASS
1990

2008

M6 ATHLONE TO KINNEGAD
2007

2006

M4 KILCOCK - ENFIELD - KINNEGAD PPP 2005

MAYNOOTH & LUCAN BYPASSES 1994



Archaeology and Heritage

An extensive programme of archaeological investigations was conducted all along the scheme in advance of the construction phase with recorded excavations at 37 sites, including the following examples:

- Early prehistoric hunter-gatherer campsite at Ballynaclogh, in the Suck valley c. 5000 BC
- Bronze Age hillfort at Rahally, c. 1000 BC
- Early medieval farmsteads at Carmore West, Coolagh and Mackney c. AD 700
- Early medieval cemetery enclosure at Carrowkeel, c. AD 800
- Pre-Famine estate cottage at Moyode, c. 1800

Metal-detecting along the route near Aughrim village also recovered some musketballs from the battle of 1691, as well as a base metal 'gunmoney' coin of the mint used by James II to pay his army.

A portable exhibition of the results of these investigations was shown at 20 public venues throughout the City and County of Galway in 2009 and a book on the excavations will be published by the NRA in 2010: *The Quiet Landscape. Archaeological investigations on the M6 Galway to Ballinasloe national road scheme.*



James II 'gunmoney' coin from Aughrim

Dum Dum bullet from Aughrim

Medieval spearhead from a cashel at Carmore West

Environmental Protection

Protection of the Environment has been a priority of this project since its inception in 1999. Environmental surveys and assessments formed an integral part of the routing, design and construction of the road. During the pre-planning phase of the project Bats, Badgers, Otters, Small White Orchid, White-Clawed Crayfish and Greenland White Fronted Geese where all identified in the route corridor.

To safeguard habitats and species during the construction and operation of the road, ecological and environmental surveys were conducted by specialists who recommended mitigation measures to be adopted in the design.

A comprehensive Environmental Impact Statement was published in 2004 which included a series of mitigation measures to protect the environment.

These measures included:

- Construction of two large Bat underpasses to facilitate safe migration of Bats under the road and installation of over 50 Bat boxes in the vicinity of the scheme to provide replacement roosts where trees were removed
- Construction of mammal underpasses inclusive of mammal-proof fencing to allow the safe passage of Badgers and Otters under the road
- Use of primarily native plant species for landscaping
- Site clearance, culvert installations, bridge crossings and other construction activities were scheduled to avoid sensitive periods for wildlife and aquatic fauna
- Extensive reinstatement of hedgerows along the road corridor.
- Use of 'fish-friendly' culverts.

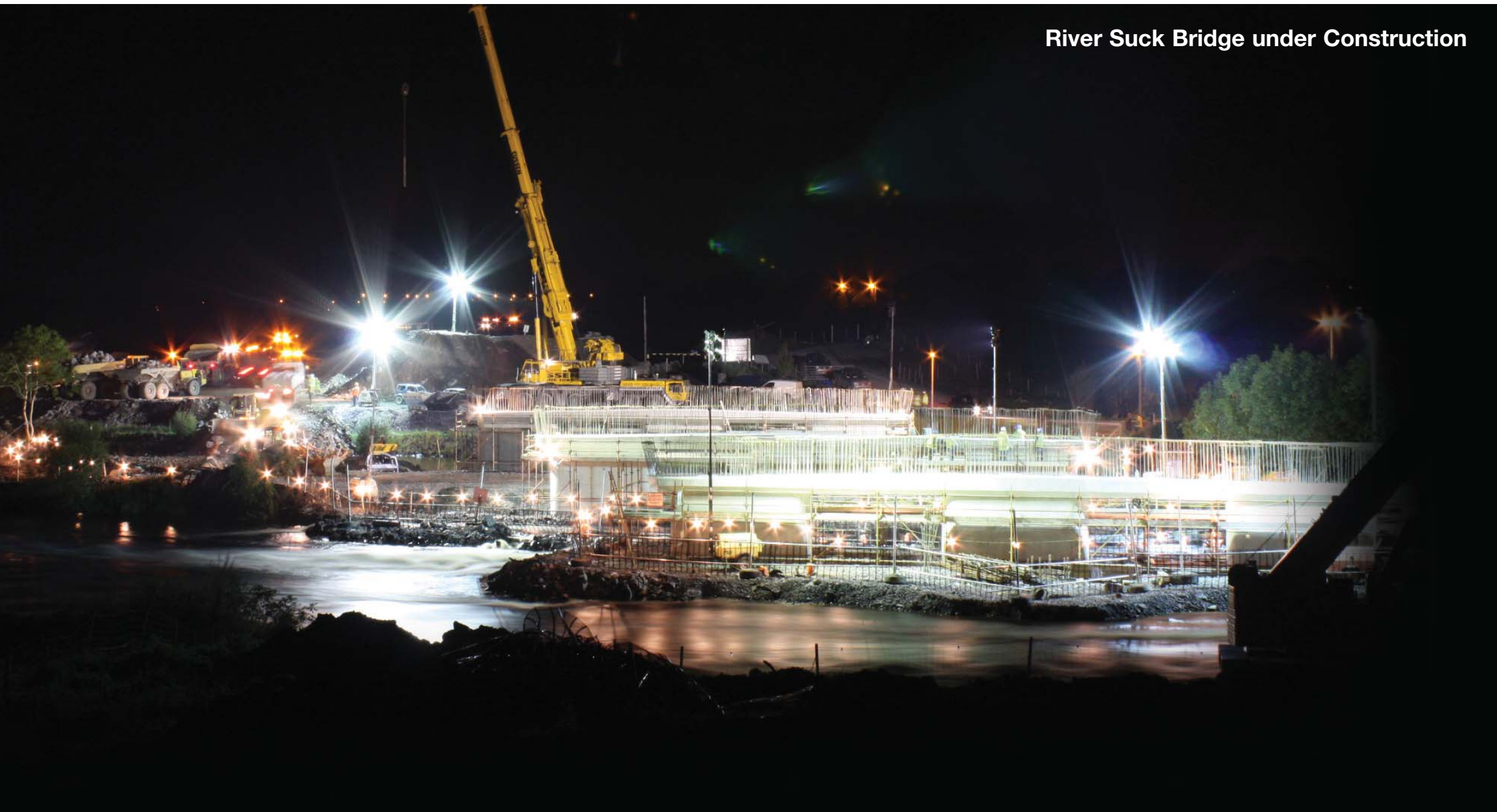
The scheme crosses a number of watercourses which are important salmonid and coarse fisheries. The White-Clawed Crayfish (*Austropotamobius pallipes*), which is the only freshwater crayfish species occurring in Ireland, was found in watercourses where the bedrock geology is limestone. Strict control measures were put in place to protect watercourses and in-stream works were limited to outside the fisheries spawning season. Bio-Engineering techniques were used to stabilise banks and in the creation of freshwater habitats.

The scheme crosses the River Suck outside Ballinasloe. The River Suck is a designated Special Protection Area for the protection of birds, in particular the Greenland White Fronted Goose (*Anser albifrons flavirostris*), which is a winter visitor to Ireland. Surveys were conducted by ornithologists to identify the proximity of the birds' feeding grounds to the new road. Noise reduction measures were put in place to minimise the disturbance to these birds during the winter months.



The Small White Orchid (*Pseudorchis albida*), which is protected under the Flora Protection Order 1999, was found close to Coolagh junction. Alternative areas of suitable habitat were fenced off and turves of vegetation were removed prior to road construction. These were transplanted to nearby areas to create a habitat along the new road that could support the species.

River Suck Bridge under Construction



Client

National Roads Authority

Local Authority

Galway County Council (Lead)
Galway City Council
Roscommon County Council
Ballinasloe Town Council

PPP Company

N6 (Concession) Ltd.

Contractor

N6 (Construction) Ltd.

**NRA & Galway County Council
Consulting Engineer**

RPS

Funding

A Public Private Partnership under the National Development Plan 2007 - 2013. The planning and design of this scheme was part funded by the European Union.

