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Roads Ireland

THE BUSINESS OF ROADS DEVELOPMENT

INSIDE

10
years of the NRA

1994 to 2004 - A SPECIAL ISSUE CELEBRATING A DECADE OF ACHIEVEMENT BY THE NATIONAL ROADS AUTHORITY WITH CONTRIBUTIONS FROM THE EPA, IBEC, SIMI, NATIONAL SAFETY COUNCIL, AA, DR. SEAN BARRETT AND OTHERS.



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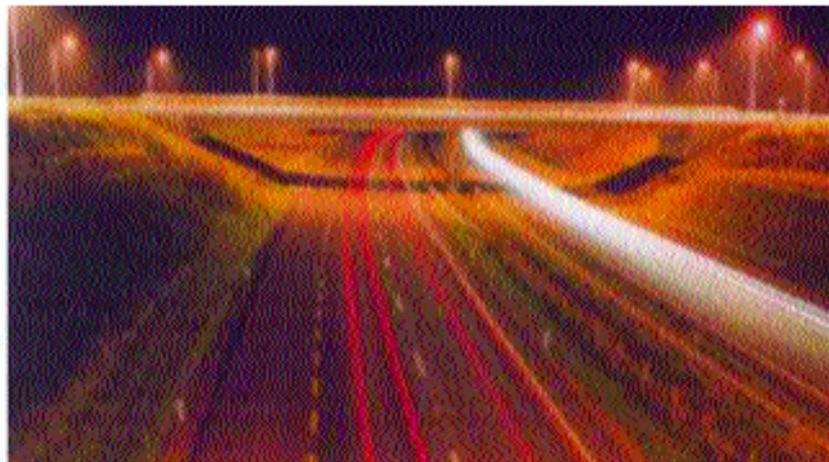
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- Dungarvan Sewerage Scheme



WELCOME

Welcome to Roads Ireland an invaluable new resource for everyone involved in road development and construction or transport in Ireland. Builders, developers, engineers, designers, local authorities, semi-State agencies, Government Departments, financiers, logisticians and the motoring public will all find the publication of interest and value.

This first edition of Roads Ireland focuses on the National Roads Authority, the semi-State body charged with overseeing roads development in Ireland and which has recently celebrated its first decade of operation. The NRA plays a pivotal role in improving our roads infrastructure and has been the subject of increasing scrutiny and controversy.

To reflect on the first 10 years of the NRA we have invited a broad selection of guest contributors to offer their opinions on the Authority, its performance and the state of the nation's roads in general. We know you will find the views expressed informative and provocative.

Roads Ireland is a new concept which aims to document the extraordinary revolution in road building and development in Ireland. Our objective is to make Roads Ireland a quarterly publication and while this first edition is retrospective - looking back at 10 years of achievement by the NRA – future editions will deal with issues of the day and look to future agendas.

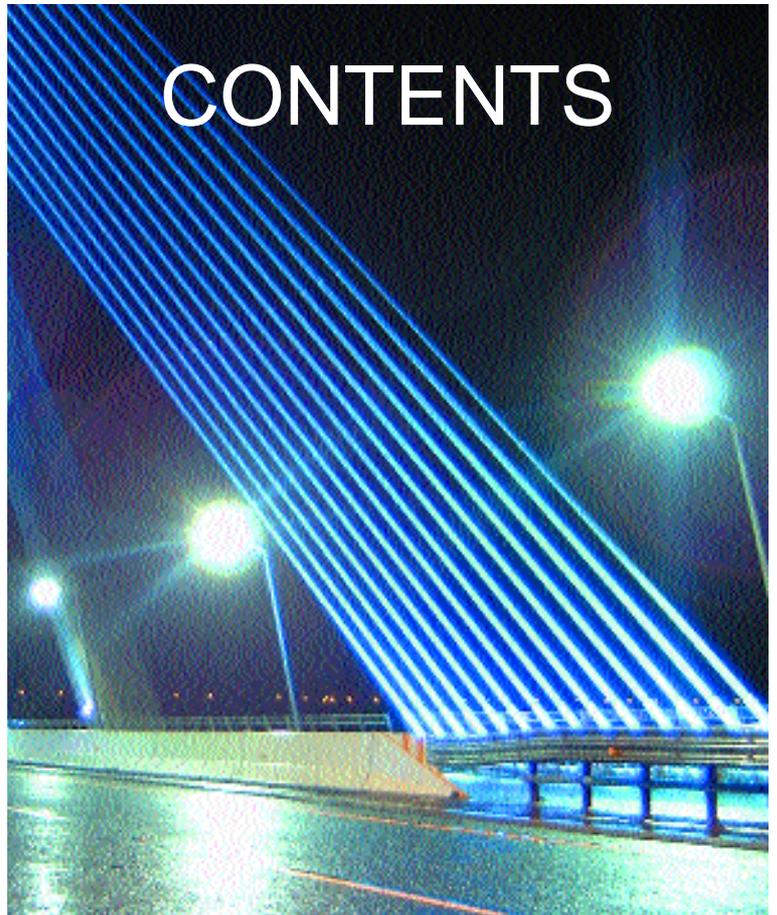
To emphasise our commitment to the subject and as an earnest of how we intend to provide a unique information resource, Roads Ireland is simultaneously launching a partner website – www.roadsireland.ie – which will be updated daily and which will be unrivalled in its presentation of up-to-date news combined with commissioned opinion pieces.

We look forward to your company along the exciting road ahead.

Tony O'Brien,
Editor

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Ivor Callely T.D. - Photo courtesy of the Department of Transport

FOREWORD

Introductory message
from **Mr Ivor Callely TD**,
Minister of State at the
Department of Transport

Having a modern, safe and efficient roads network in Ireland is a prerequisite for the economic and social development of our country. If we are to encourage foreign industrialists to do business with us or welcome more tourists to come and enjoy all that our country has to offer, then getting around has to be made as easy as possible.

The Government, I am happy to say, recognises the urgent need to bring our roads and other infrastructure up to the standards enjoyed by many of our EU neighbours. This has been demonstrated over many years by funding through the National Development Plan and other means. In 2005 alone Exchequer investment in the national roads programme will exceed €1.32b.

Of course, roads do not get built on their own. The work of the National Roads Authority and local authorities around the country has to be recognised. The massive strides which have been made can be seen nationwide as major upgrade projects, including new motorways and high-quality dual-carriageways, are opened on a regular basis.

It is timely then as the National Roads Authority enters its second decade, that I should pay tribute to the work of the Authority over the years and acknowledge the contribution it has made. It has been to the forefront in developing our national road network.

With over €1.3b a year now being spent on road building, it is important that all involved in this area are well informed of what is happening in the sector. The general public (and motorists in particular) will also be keen to be kept informed of the latest plans and developments.

Thus I am very happy to welcome the arrival of "Roads Ireland". The new publication - along with its sister medium, www.roadsireland.com - will be a valuable source of information for everyone from Government Departments and semi-State agencies to local authorities, construction companies, engineers, motorists and many others.

I wish the venture well and look forward to reading future issues as well as keeping an eye on the website.

Ivor Callely, TD



Tony O'Brien - Editor, Roads Ireland - Copyright Fennell Photography 2005

DRIVING ROADS DEVELOPMENT IN IRELAND

From bohreens to by-passes, it has been a long journey for roads development in Ireland. Over the past decade the transport landscape has changed dramatically, particularly since the establishment of the National Roads Authority, but not without some pain, writes **Tony O'Brien**, Editor, Roads Ireland.

Thirty years ago we continually lamented the poor state of Irish roads. The Naas dual-carriageway seemed to be the height of our ambitions and, apart from the odd bit of road widening and straightening, there seemed little hope for much better.

Now, in the fifth year of the new Millennium, we can survey with some satisfaction an ever-increasing network of motorways and dual-carriageways stretching across the country, cutting journey times, improving safety and allowing better access.

It is almost hard to believe for those engineers, local authorities, business bodies and motoring groups who made the case for better roads all those years ago. It is as if what once appeared to be impossible dreams have begun to come true, if a little belatedly.

There were, of course, plenty of plans, reports and recommendations back in the early '70s. The then Department of Local Government (along with agencies such as An Foras Forbatha) was aware of the needs and published a Blueprint for Road Development in the '80s but had little or no money to implement a coherent strategy.

As a result of our peripheral and under-developed status at that time, we began to qualify for extensive funding from Europe. The Operational Programme on Peripherality covering the period 1989-1993 provided the framework for the first phase of a major Government programme to modernise the national roads network. This, under the first National Development Plan, allowed blueprints which had lain on Departmental and local authority drawingboards for so long to begin to become concrete reality.

In those early days, then Minister for the Environment, Mr Michael Smith TD, was happy to report in his Department's first Roads Bulletin in 1993 that the Government would invest £240m (€304m) in the roads programme – this contrasts with spending for 2005 of €1.3b.

Progress began to be made as the Department of the Environment and local authorities used the new money to finally implement long-shelved plans. New by-passes and dual-carriageways began to spring up as well as the first stages of the M50 motorway ring around Dublin, including the West Link Bridge.

“ *It can safely be argued that without the NRA, much of the progress we have experienced in road building would not have happened* ”

But local councils struggled at times to implement the plans, even as some far-sighted county engineers and managers saw the need for improved road infrastructure. The uncertainty of annual funding from central Government did not help development of a sustained programme.

A long-held argument that the business of building national roads should be undertaken by a single statutory agency had been developing support for some time.

Some local authorities saw the move as taking away more of their every diminishing powers. But the overall consensus was that the issue was too important - as Ireland struggled to catch-up in terms of economic development - to be left to local haggling and a more strategic, focused view had to be taken.

The National Roads Authority was established under the Roads Act 1993 by Minister Smith with the new body being given a mandate to build a safe and efficient network of national roads. As it formally set to work in 1994, the new Authority's responsibilities included the planning, construction supervision and maintenance of those roads.

Its initial objectives now seem modest: "to secure the provision of a safe and efficient network of national roads." This was interpreted by the first Chairman, Mr Liam Connellan, and the young NRA as bringing our national roads up to a standard which enabled "an inter-urban travel speed of 80 kph (50 mph) to be achieved.

Looking back now as the NRA's first decade has been completed, it is possible to issue a score-card for the NRA of "well done but could do better" or, to borrow a popular political slogan, "a lot done, more to do." Under the Authority's supervision – but with the actual work being done by individual local authorities, it should be remembered – a total of 650 kilometres of new or upgraded road have been completed. The cost of this programme since 1994 runs to a remarkable €6b.

Only the most closeted of environmentalists, the fussiest economist or perfectionist engineer will find fault to any great degree with the achievements of the National Roads Authority in its first decade. It can safely be argued that without the NRA, much of the progress we have experienced in road building would not have happened, or at least not with such speed or in such a strategic manner.

But, of course, this decade of achievement has not been all sweetness and light. There have been frustrating planning delays, clashes with environmentalists, protracted compensation rows with farmers and, up to a recent Budget, uncertainty over funding.

The eco-warriors in the Glen of the Downs in Wicklow; the snail which delayed the Kildare By-pass; the interminable Carrickmines wrangle which leaves the M50 unfinished decades after it was first planned and now what is shaping up to be the biggest battle yet, the M3 and the Hill of Tara, have all played a part in holding up key projects.

There is too the mess that is the M50 and the need now to spend over €800m in providing a third lane and free-flowing interchanges. The much-delayed Dublin Port Tunnel – at a cost of €625m the biggest civil engineering project ever in Ireland – remains a nagging headache which the NRA, and Dublin City Council, would like to see the end of.

Further battles are lining up on the fraught issue of tolling on new motorways and, of course, the unseemly increase in tolls for the West Link Bridge at the



beginning of this year. The NRA is strongly in favour of tolls and believes that several highways could carry the levies: motorists and pressurised politicians argue otherwise.

The mothballing for the present by Environment Minister, Dick Roche TD, of the Critical Infrastructure Bill, long-promised by his predecessor, is another blow to the Roads Authority in its aim to speed up development of the roads infrastructure.

Much of this was not of the NRA's making, it is after all an agent of the State and is prone to the side-effects of Government decisions. But what can be laid at the Authority's door in St Martin's House in deepest Dublin 4 is a degree of arrogance and unconvincing self-righteousness which has done their cause and public image no good.

The Authority has been accused of working on the old engineer's principle of "we know best" and shrugging off the objections and observations of ordinary citizens. There have been questions too about the accountability and transparency of the workings of the NRA which caused the Authority to be called before the Oireachtas Committee on Transport and the Public Accounts Committee last year.

Indeed, it is probably of some small significance that the National Roads Authority has done without the services of an outside Public Relations agency for many years, preferring to do everything themselves but, in the process, losing out on valuable independent advice.

It may be time for the NRA – as it enters its second decade and with a new Chief Executive at the helm – to re-appraise its role, its objectives and how it goes about its work and, perhaps, for the Government to do likewise.



Photo courtesy of Irish Shell - Copyright Fennell Photography 2005

THE LONG ROAD FOR THE NRA

The long-overdue improvement to the country's roads now evident everywhere is testimony to the work of the National Roads Authority which is fulfilling a mandate given to it in 1994.

The dramatic improvement in Ireland's roads network over the past decade can be attributed in large part to the work of the National Roads Authority (NRA).

The NRA was formally established as an independent statutory body under the Roads Act 1993, with effect from 1st January, 1994 by then Minister for the Environment, Mr Michael Smith TD.

But the Authority had been in existence in non-statutory form since 1988. The old Authority held its first meeting on 21st July 1988 under the Chairmanship of Dr Con Power. Mr Michael Tobin, the retired Chief Executive of the NRA, was a member of the first body.

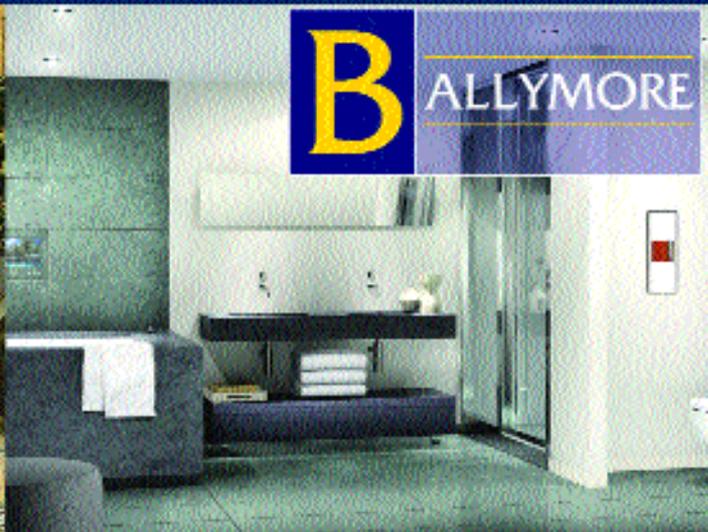
At that first meeting, the Minister at the time, Mr Pádraig Flynn TD, outlined the main functions of the interim Authority as:

- A review of the Department of the Environment's draft Blueprint for Road Development
- Supervision of the development programme for National Roads, and recommending road grant applications
- The future strategic planning of National Roads, including the preparation of medium-term plans for National Roads after 1992 and
- The promotion of private investment in National Road projects.

The Chairman, Dr Power, acted as part-time executive chairman up to December 1989 with Michael Tobin being appointed as Acting Chief Executive in January 1990.

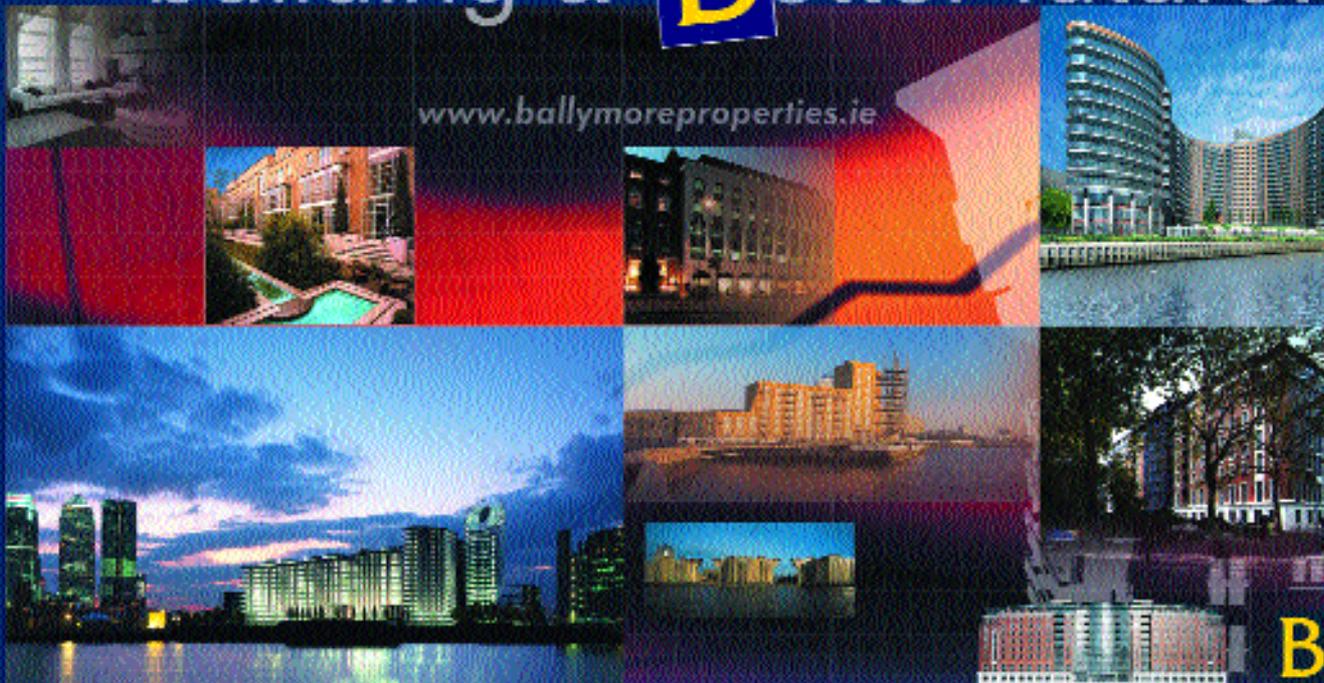
At that time, the NRA had no staff of its own and services were provided to the Authority by staff from the Road Works Section and the Roads Engineering Inspectorate of the Department of the Environment.

IRELAND UK CENTRAL EUROPE

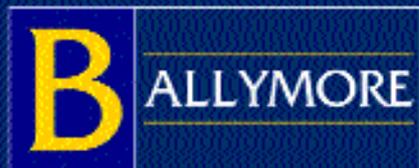


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When the statutory Authority was established in 1993, its primary function was to "secure the provision of a safe and efficient network of national roads".

In addition to its general mandate, the NRA was assigned a number of specific functions under the Roads Act, including:

- Preparing or arranging for the preparation of road designs, maintenance programmes and schemes for the provision of traffic signs on national roads
- Securing the carrying out of construction, improvement and maintenance works on national roads
- Carrying out the work itself where it considers it would be more convenient
- Training, researching or testing activities in relation to any of its functions
- Preparing medium term plans for the development of the national road network
- Promoting the case for EU assistance for national roads
- Promoting the provision for private funding for roads (including the power to borrow up to £500m and to levy tolls, both with Ministerial approval)
- Making toll schemes

“ *In the National Development Plan the Authority was set the ambitious overall objective of completing the development of the national primary road network by 2005...* ”

In the National Development Plan the Authority was set the ambitious overall objective of completing the development of the national primary road network by 2005 and ensuring a minimum level of service which, on completion of the network, will enable an inter-urban travel speed of 80 kph (50 mph) to be achieved.

Chaired for many years by Mr Liam Connellan, the NRA over the decade of its formal existence has achieved much and seen its influence grow while its budget has gone from a £194m (€246m) in its first year of operation to the 1b€-plus it hopes to spend in 2005.

It's focus initially was on bringing main routes to Belfast, Cork, Limerick, Galway and Waterford up to an international standard in order to achieve the desired speeds while the elimination of accident blackspots, improved road safety and traffic calming measures followed.

The NRA, for instance, has played a key role in the Government's overall strategy for infrastructure improvement contained in the National Development Plan 2000-2006, under the guidance of new Chairman, Mr Peter Malone.

Working with local authorities, the National Roads Authority now oversees a huge portfolio of road-building projects worth billions of euro and which, when completed, will see major improvement in road transport in Ireland. The biggest project it is currently involved with is the Dublin Port Tunnel which has a cost figure of €625m.

The Authority - which now operates under the aegis of the Department of Transport - is governed by a Board whose members include:

*Mr Peter Malone, Chairman
Ms Frances Boyle
Mr Frank Convery
Mr Jimmy Farrelly
Mr David Holden
Ms Jenny Kent
Ms Eimear McAuliffe
Mr Bernard McNamara
Mr John Murphy
Mr Ted Murphy
Mr John Newell
Ms Connie Ní Fhátharta
Mr Brendan O'Mara
Mr Raymond Potterton*



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NRA REPORTS PROGRESS IN 2004 AND PROMISES MORE FOR 2005

The National Roads Authority has just reported on another busy year in 2004 with more projects completed ahead of time and within budget and with another batch of new highways due to open in 2005.

The national roads programme has moved to a higher plane with past criticisms about piecemeal activity no longer applying and with cost-effective projects now being delivered ahead of time, according to the National Roads Authority's Director of Corporate Affairs, Mr Michael Egan.

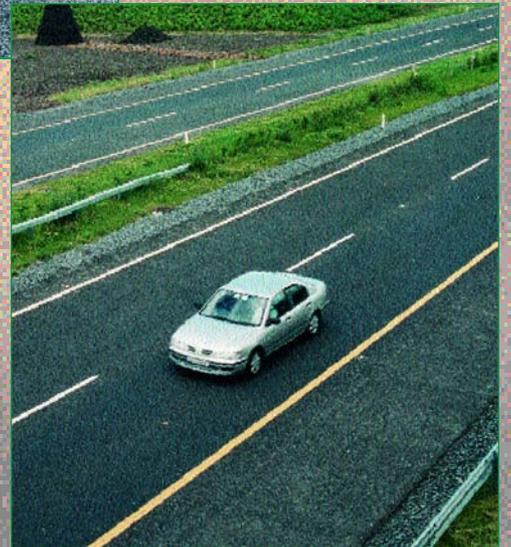
Looking back over achievements in 2004 and activity promised for 2005, he stated: "The Authority has concluded another highly productive year in the delivery of the ambitious programme for the development of national roads with the completion in 2004 of 10 major schemes comprising new high quality road infrastructure."

As a consequence of the completion of the M7 Heath-Mayfield (Monasterevin By-Pass) motorway last November, drivers could now travel on continuous motorway/high quality dual- carriageway from Dundalk on the M1 to south of Portlaoise on the M7, a distance of

170km. Similarly, on the N11 Dublin/Wexford Road, the opening of the By-passes of Ashford and Rathnew meant roadusers could travel on over 50km of motorway/high quality dual carriageway from Donnybrook in south Dublin to beyond Rathnew in Wicklow.

"It can be said with conviction that the national roads programme has progressed to a higher, more effective plane. Past criticisms – that traffic congestion was being addressed in a piecemeal fashion, without an overall coherent strategy, and in a manner that simply moved the problem down the road to the next town – no longer apply," Mr Egan stated.

The progress made in 2004 builds on the work of recent years and is maximising the return on the investment involved through the completion of critical missing links in the network, thereby delivering long continuous lengths of high quality and much safer national roads, he said.



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Mr Egan added: "Our new roads are being built to a standard that will cater for their intended transport function for many years into the future. The ultimate impact of the Authority's efforts is the improvement in the quality of people's lives and the enhancement of economic performance through shorter journey times, greater certainty of journey durations and the creation of safer driving conditions. In this way, the national roads programme is helping to underpin Government policy in a range of areas, including road safety, regional economic development and national spatial strategy."

A welcome feature of 2004, he said, was the extent to which infrastructure of this standard opens up the country to business and tourism alike. "Projects are now opening to traffic significantly ahead of scheduled contract completion dates as a result of initiatives undertaken by the Authority in recent years to ensure value for money and efficiency of delivery as well as enhanced project management performance by contractors."

“*Our new roads are being built to a standard that will cater for their intended transport function for many years into the future.*”

The Authority is now making extensive use of the "Design-Build" form of contract, which it developed some time ago. This new format is achieving greater certainty of scheme outturn costs and completion times. "In addition, the Authority is exploring the potential benefits under Early Contractor Involvement and target price arrangements. The initiative will facilitate contractor innovation and input as regards the buildability of road schemes and is expected to achieve cost efficiencies and better value for money", stated Mr. Egan.

He added that significant progress was achieved during 2004 in advancing the Authority's Public Private Partnership programme with the commencement of construction on the M1 Dundalk Western By-Pass and the M8 Rathcormac/Fermoy By-Pass projects. The private investment associated with these schemes and PPP contracts previously awarded (M50 Second West-Link Bridge and M4 Kilcock/Kinnegad scheme) represents funding in excess of €480m in the national roads programme.

The Authority is also progressing tendering for three other PPP schemes at present - M3 Clonee/Kells, N7 Limerick Southern Ring Road, Phase 2, and the N25 Waterford City By-Pass - as part of a broader strategy to attract significant private funding, thereby accelerating progress on the development of an efficient and safe national network of motorways and main roads.

NRA Chairman, Mr Peter Malone, said the Exchequer allocation of €1.32b to the Authority for 2005 will allow substantial progress to continue on the implementation of the policy objectives of the National Development Plan.

"Coupled with the Government's decision to implement a multi-annual funding arrangement entailing a commitment to continued major investment in national roads over the next five years, this level of funding will enable the Authority to manage the programme more effectively and will bring greater certainty regarding the planning and scheduling of projects to the advantage of local authorities, contractors, consultants and affected property owners," he added.

A high level of road construction activity will be achieved by the Authority in 2005, Mr Malone promised. Work will continue on schemes such as the M1 Dundalk Western By-Pass, M4 Kilcock/Kinnegad scheme, N7 Naas Road widening upgrade, M8 Rathcormac/Fermoy By-Pass, N15 Ballyshannon /Bundoran By-Pass and N18 Ennis By-Pass. The M50 South Eastern Motorway will be completed by the autumn of 2005.

"This activity will be supplemented by the commencement of construction on 19 major schemes involving 215km of new road. The schemes concerned represent a good geographical spread between the Southern and Eastern Region and the Border, Midlands and Western Region," Mr. Malone stated.



FRED BARRY TAKES OVER AS NRA CHIEF EXECUTIVE

Michael Tobin, who guided the fledgling National Roads Authority as its first Chief Executive, retired last year. Fred Barry now takes over this key role.

The new Chief Executive of the National Roads Authority, Mr Fred Barry, brings a wealth of experience to his post which he takes up in April. He replaces Mr Michael Tobin who retired at the end of 2004 having served with the NRA since 1990 when the Authority was still a non-statutory body.

Mr Barry was named as Mr Tobin's successor by the Board of the National Roads Authority at the beginning of January. Currently Managing Director of Jacobs Engineering Ireland, he previously worked on construction projects in Canada and Nigeria before joining Jacobs in 1980. He has also worked in the US and UK with the company.

Commenting on the appointment, NRA Chairman, Mr Peter Malone, said it underlined the Authority's commitment to deliver on the Government's ambitious development programme creating a spine of high quality national routes.

"Fred will lead the NRA team in delivering on this mandate with an investment of up to €10b over the next five years, through a combination of the public purse and private investment, to develop an efficient and safe national network of motorway and main roads," Mr Malone stated.

Mr Michael Tobin was a member of the non-statutory NRA and was appointed Acting Chief Executive in January 1990 before the Authority was put on a statutory basis in 1993. A former senior official in the roads section of the Department of the Environment, Mr Tobin has been a guiding hand at the NRA for almost a decade and a half.

Mr Tobin moved to Dublin from his native Dungarvan, Co Waterford, in December 1964 when he joined the then Department of Local Government. He worked in various sections before moving to the roads division in 1977 until the establishment of the NRA.



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- the construction of 150MW West Offaly Power Plant
- the construction of Social Housing Schemes for South Dublin County Council, BRL and Fingal County Council
- 220kV Corduff substation for ESB
- the civil works and mechanical installation of the Huntstown Power Plant
- the construction of GAMA's European headquarters in Dublin

Current Projects

- the construction of Ennis Bypass for Clare County Council
- the construction of Tynagh Energy 400MW gas-fired power plant in East Galway
- the construction of Social Housing Schemes for South Dublin County Council and BRL

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Reflecting on his years with the Authority and the achievements to date, Mr Tobin said: "We are at a point in the programme now where we are starting to get a joined up network.

"For example, in 2003 we saw the completion of the two projects between Dublin Airport and Balbriggan along with the By-pass of Drogheda, the effect of which was that from just north of Dublin city all the way to just south of Dundalk, you have a continuous motorway."

Talking about the environmental/heritage issues which have plagued some NRA projects in recent times, Mr Tobin said: "An early consultation process is the key – telling people very early on what it is we're trying to do, what the local authorities are trying to do, the issues that they're dealing with and the constraints that they are trying to get through.

"The desired result is a road line that best meets everybody's concerns. We try and identify all of the environmental issues early so that people can have their say on them," he stated.

But what the NRA wanted to avoid, Mr Tobin added, was a situation such as the Glen of the Downs in Co Wicklow "where we were ready to go ahead with the road and suddenly people start raising major environmental issues."

He also rejects criticism of the NRA over apparent lack of forward-planning for the M50 arguing that 20 years ago nobody could have envisaged the levels of traffic currently using Dublin's unfinished motorway ring while the State had not been in a position at the time of construction to pay for a full grade-separated interchange at the Red Cow.

"Our view is that on our inter-urban routes we are building a sufficiently good network that will last pretty much indefinitely, subject to being maintained properly," said Mr Tobin.

As regards future funding of the Authority's road-building programme, he pointed to the multi-annual funding agreed by the Government which will give the NRA around €1b a year to spend. With funding under the PPP scheme already reaching around €500m and expected to reach €1.3b in the coming years.

ROADSIDES BUS ÉIREANN

Bus Éireann welcomes the continuing improvement in the network of national and regional roads, as all road improvement and development measures have the potential to benefit customers. However, the company's experience has been that the potential for reduced journey times from road improvements has been offset by worsening levels of traffic congestion in country towns and on the entry and exit routes of cities, especially Dublin.

Traffic congestion affects the standard of service to bus customers and also imposes significant additional operating costs on Bus Éireann. A study by independent consultants – BDO Simpson Xavier – estimated that in 2003 traffic congestion imposed additional costs of €19.2m on Bus Éireann over comparable European costs (€17.8m in 2002 and €12.6m in 2001).

These costs emphasise the need for a much wider range of road improvements and bus priority measures so that customers can benefit from the substantial investment which Bus Éireann has made in fleet and facilities. In particular, there is need for bus priorities on dual carriageways and motorways through utilising the "hard shoulder" as has already been done on the N4 between Lucan and Dublin, and for adequate provision for bus stopping points on national and regional roads.



DRIVING THE ECONOMY

While the NRA has been responsible for major roads improvement over the past decade, it must ensure that future projects are delivered ahead of time and below budget, says **Dr Sean Barrett** and **Niall Kelly**, Economics Department, Trinity College, Dublin

As Ireland entered the last decade of the 20th century it was faced with the harsh reality of possessing an infrastructural system that lagged severely behind fellow EU member states. Furthermore it was noted in the National Development Plan 1989-93 that the most significant reason for high transport costs was the deficient state of the national roads and access roads to the principal ports and airports. Ireland was thus faced with a situation that unless large-scale investment in all areas of national infrastructure was undertaken the economy would continue to stagnate. The importance of transport to the vitality of any economy cannot be understated; in particular modern economies are increasingly reliant in road-based modes of transport.

The importance of roads is further endorsed under the Economic and Social Infrastructure Operational Programme (ESIOP) introduced under the National

Development Plan 2000-2006. Out of a budget of approximately €26b, National Roads were allocated €6.7b or 17 per cent of the total spend; only housing received more. Due to the necessity to upgrade the national road network, the National Roads Authority was established in 1993. The stated function of the NRA is to "secure the provision of a safe and efficient network of national roads."

Time Savings

The elimination of time spent queuing to travel through "bottlenecks" across Ireland represents one of the primary motivating forces behind upgrading the national network. Barrett (1982) notes that the "time saved permits the beneficiaries to engage in further activities. The savings of working time allows more goods and services to be produced with the labour released.

The saving of leisure time permits existing activities to be extended or new activities to be undertaken". The NRA has adopted a piecemeal approach to the construction of national primary routes linking Dublin to regional hubs. The foundations for these routes have been laid in the last 10 years and the fruits of this strategy will be realised in 2007. The time savings road users can expect to achieve when travelling on these high quality dual carriageway/motorway corridors are highlighted in Table 1, below

Table 1:

Travel Time Savings	(2007)
Route Time Savings	(minutes)
Dublin to Dundalk	24
Dublin to Galway	36
Dublin to Limerick	31
Dublin to Cork	58
Dublin to Waterford	31

Source: National Roads Authority, www.nra.ie

These projects stand to deliver substantial time savings to road users. They are valued at wage and salary costs for work trips and at 25 per cent of that value for nonwork trips.

Road Safety

The increased level of personal mobility that has become commonplace in modern society has been compromised by the occurrence of road traffic accidents. Road traffic accidents impose substantial costs on the economy, both in terms of human suffering and material damage. It is noted by the OECD (1997) "per hour, the risk of injury in

road traffic is approximately thirty times that of a worker in industry", while Rottengatter (1993) observes that in regard to road fatalities "in peacetime there is no parallel for this enormous toll of lives." Table 2, below, highlights the road fatalities in Ireland.

A number of factors, including improved vehicle and design and increased advertising to promote responsible driving, can all be seen to contribute to a reduction in road fatalities. The economic cost of each fatality is approximately €1.35m, while the human suffering experienced is incalculable. The NRA has played its part via the introduction of numerous engineering oriented countermeasures. Table 3, opposite, highlights the success of the engineering measures deployed by the NRA in 1994 and 1995 to tackle the problem of road fatalities.

While a reduction in road fatalities is a desirable policy objective, a cautionary note should be sounded in that "however perfect the road infrastructure, however perfect the vehicle, if the driver is incompetent, an accident is likely to occur." The questions of stricter enforcement and heavier penalties are again urgent following the recent upsurge in accidents which had been reduced by the introduction of penalty points.

Value for Money

The improvements to the national road network require vast sums of money. It is essential to deliver projects on time and on budget. The Comptroller and Auditor General (C&AG) sounded a warning, noting that the spend by the NRA on primary routes improvement programme, run under the auspices of the National Development Plan 2000–2006, had seen a substantial increase in costs. The C&AG cited "a quarter of this was due to underestimation of prices at the beginning of the programme", while "a further 16percent of the increase was due to the systematic failure to cost certain elements of schemes at planning stage."

Table 2:

Road Fatalities 1992-2004 (Ireland)

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004*
Fatalities	415	431	404	437	453	472	458	413	415	411	376	336	269

Source: National Safety Council, www.nsc.ie *2004: figures from January 2004 – September 5th 2004

Table 3:

Impact of Engineering Countermeasures

	Fatal	Serious Injury	Minor Injury	Total
Annual Accidents Before	9	28	43	80
Annual Accidents After	3	19	43	65
Estimated Annual Reduction	6	9	0	15

Source: National Roads Authority, www.nra.ie



Therefore, as Barrett (1991) notes, "for society as a whole the important consideration is that the flow of benefits from a project should represent an adequate return on the investment cost." It is important that stringent early budgetary controls are introduced such that the return on investment is attainable. A situation where projects were sanctioned on the basis of misleadingly low initial cost estimates, and then proved impossible to stop, would lead to serious resource misallocation. To ensure efficiency at this stage the brief of the Comptroller and Auditor General should be extended to include the quality of the cost-benefit analysis for each project.

The NRA has played a key role in improving the overall standard of the national road network. These improvements are realised in reduced journey time and in accidents where specific engineering measures have been deployed. Since the vast bulk of public transport journeys are by road, the NRA is a major part of public transport in Ireland.

Deregulated bus routes such as Dublin-Galway and Dublin-Waterford have frequency of service over four times that on monopoly routes, (Barrett, 2004). The notion that roads are merely the preserve of private automobiles must be debunked and the potential of buses as an alternative mode of transport must be exploited to the nth degree via the removal of barriers to entry in this market.

As the NRA moves forward it should be conscious of its obligation to the people of Ireland to deliver projects ahead of time and below budget emulating the success of the deregulated Irish airline sector. That would make a telling contribution to the continued growth and vitality of the economy.



Photo courtesy of Irish Shell - Copyright Fennell Photography 2005

BUILDING ROADS - PROTECTING THE ENVIRONMENT

Improved road and transport infrastructure is essential but this has to be balanced with protecting our environment, says **Mary Kelly**, Director General, Environmental Protection Agency

Edmond Leahy a county surveyor in Cork, wrote over 160 years ago that "In whatever country a well arranged system of communication has been established, it has invariably been found to be productive of the greatest advantages commercial and agricultural...[and] some of the most obvious natural advantages would be wholly valueless without good roads as a means of intercommunication".

An efficient and flexible transport system is indeed essential for Ireland's economy and our quality of life. Enormous changes are taking place in relation to transport and related traffic in Ireland. The country is undergoing a phase of major infrastructural development designed to radically upgrade roads and public transport networks to meet the massive demand for improved mobility.

The development of national road infrastructure has the potential to cause a number of environmental impacts including the division of ecological habitats (called

habitat fragmentation), impacts on archaeology as well as contributing to excessive levels of air pollutants, greenhouse gases and noise.

The National Roads Authority (NRA) is Ireland's largest developer and it has the difficult task of trying to balance economic growth while at the same time ensuring that its activities have minimum impact on the environment. The NRA has been under the spotlight on several occasions over the last 10 years and challenged about its approach to integrating environmental considerations into the planning and design of some road schemes.

Controversies such as the widening of the N11 at the Glen of the Downs and the Kildare By-pass on the M7 centred on achieving adequate protection for important flora and fauna. The NRA has demonstrated a willingness to achieve consistency and improve standards when assessing and reporting on the ecological impacts of road schemes.

This is evident with the publication of guidelines on the treatment of ecology during the planning and design of national road schemes. The hierarchical approach adopted is to be welcomed and is one of avoidance, mitigation and thereafter compensation. The lessons learned from Glen of the Downs and the Kildare By-pass have been reflected in the NRA guidelines and provide for a better framework for ecological protection.

The EPA highlighted in its State of the Environment Report the fact that a compensation habitat built as part of the Kilmacanogue road scheme in Co Wicklow featured in a best practice European handbook for identifying ecological conflicts and designing solutions. Good examples of mitigation measures for ecology are the provision of otter and badger underpasses during the construction of schemes such as the Youghal By-pass.

Learning Lessons

The potential impact of roads on Ireland's substantial archaeological heritage has caused delay to some road building projects. At the time of writing the debacle of the remains of Carrickmines Castle and the M50 appears to be coming to a conclusion. No doubt many lessons have been learned during this process. Those against the destruction of the castle wall can point to an inadequacy of legislation to deal comprehensively with archaeology and thus the recent need for a change in legislation to complete the road.

“What we build now is an expression of who we are...”

The NRA can point to the Code of Practice agreed with the Department of Arts, Heritage, Gaeltacht and the Islands for the conduct of archaeological work on national road schemes and the investment in archaeological research which has followed as a direct result of the publication.

Noise is unwanted sound and road transport is a significant source of noise. Noise is generated by the type, number, and speed of vehicles and secondly by the interaction of vehicle tyres with the road surface. The recent EU Directive on the assessment and management of environmental noise will have a major impact on NRA activities in future years.

The Directive places a strong emphasis on the integration of noise policy into strategic planning policies, the development of strategic noise maps and the preparation of action plans to address environmental noise issues. Although the EPA welcomes the recent NRA guidelines on noise as a positive step, the current levels of exposure to noise from road traffic in certain areas of the country is unacceptable.

What we build now is an expression of who we are and a legacy to leave to our children. Good architecture can be a positive aspect of road building and an opportunity not to be wasted. In years to come The Boyne Bridge, on the M1, will invariably contribute to our generation's statement of 21st century architecture and is also an excellent example of habitat avoidance and ecological protection. The design of the cable-stayed bridge was influenced by the need to protect Yellow Island (located in the river Boyne) an area identified as ecologically important.

The EPA welcomes the increased investment in road infrastructure by the government in recent years and the leadership the NRA has demonstrated while working with local authorities to redress our transport deficiencies. Nonetheless, we are equally concerned that as Ireland's economic prosperity grew during the 1990s so also did the number of vehicles on our roads increase by unsustainable figures.

Technology and fuel improvements have resulted in marked decreases of emissions of certain pollutants. Nonetheless, urban air quality in Dublin and other urban centres is under threat from emissions from the transport sector. The contribution of road traffic to our levels of greenhouse gases has made the task of achieving our Kyoto target extremely difficult. Roads of the standard built by the NRA in recent years are very much part of a modern transport system. Such roads will hopefully make public transport more attractive and thus reduce our reliance on private car usage.

On behalf of the EPA I wish to congratulate the NRA on reaching its 10th birthday and for its contribution to improving our transport system. I hope in the years to come we can forge even closer links and work with other stakeholders such as the general public, the Railway Procurement Agency, Iarnrod Eireann, Dublin Transportation Office and Bus Eireann to provide future generations with a modern transport system which reflects equally the three pillars of sustainable development, economic, social and environmental.

ROUNDBABOUTS

ROAD TOOLS

The Aran

The Aran or Automatic Road Analyzer, is a specially customised vehicle which looks like a souped up Hi-Ace van, travels at normal traffic speeds and which records the evenness and surface texture of a road. It also records a forward view video of the road surface for visual analysis.

The Scrim

The Scrim (Sideways Coefficient Routine Investigation Machine) is another customised vehicle which travels the roads. It measures skid resistance. The data on road condition is combined with information collected from site visits by roads inspectors in order to identify the priorities for maintenance funding. The information is circulated to road authorities to allow maintenance programmes to be planned in advance.

The FWD

The Falling Weight Deflectometer or FWD is towed along after the roads inspector's car to determine the structural condition of pavements.

The Circumferenter

This was a surveying instrument on a tripod used by early road-builders Alexander Taylor and his contemporaries. It was like a compass and was used to measure angles. The surveyor would look through marks on the circumferenter to get his bearings and his angles. The circumferenter is now consigned to history.

The Level

A Level is really a sophisticated telescope with a spirit level on the top of it to make sure that it is level. Two people are required to take levels – one to look through the telescope and the other to hold a

long metre ruler (scale) called the staff. The person looking through the level reads the figure on the ruler and notes it before asking his colleague to move the staff to another point which he also notes. Levels are used to measure differences in heights e.g. before excavation and after excavation.

The Theodolite

A Theodolite is another kind of a telescope which is used to measure angles. The surveyor looks through the eyepiece fixes it at zero on a fixed point and then moves the Theodolite to focus on the next point from which he reads the difference in degrees e.g. 20 degrees from point A and so on. For example, the centre of the road may have to be at a 180 degree angle to the front wall of a building so that drivers can see the oncoming bend in the road.

The Scraper

The Scraper is a huge tractor excavator with a blade or wide shovel that cuts through the raw earth to form the first shape and width of the road surface. It is often used in conjunction with bulldozers, which are used to first move large mounds of earth out of the way to prepare for its work.

The Finisher

The Finisher is a huge treatment plant on wheels that organises, controls, heats, measures and spreads each layer of one or two or three layers of Asphalt or Tarmacadam (Bitumen) onto the road area to be surfaced. As the Asphalt or Tarmacadam passes through the Finisher, it is heated and then cools before it hits the area to be covered providing a new, clean, black, waterproof blanket that soon becomes a hardwearing road surface. A giant heavy roller is used to compact the layers and provide a smooth surface.



ROADS - THE ROLLERCOASTER YEARS

We are on the path to progress with major road projects but time-consuming objections need to be curtailed, argues **Reg McCabe**, Director of IBEC's Transport and Logistics Council

With the benefit of hindsight what started out as the predictably bland "NDPRoads Programme" could easily have merited a racier description - one which caught the excitement, suspense and even, theatricality, of infrastructure build in this age of uncertainty.

A more apt description of events as they were to unfold might be, "Roads - the Rollercoaster Years."

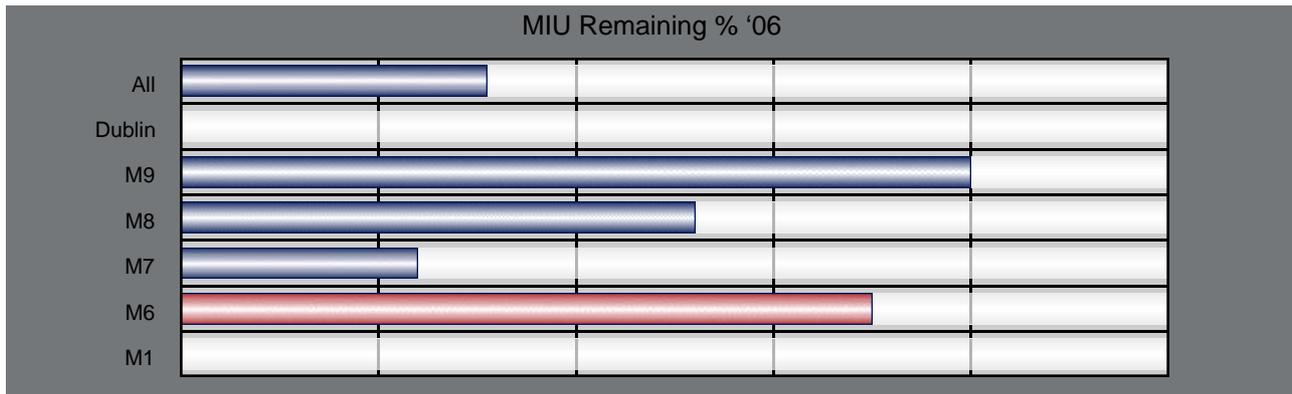
Consider 2002. With the threat of recession looming large, the Government - its post-election majority secure - responded with an unaccustomed zeal for rectitude and retrenchment. Budgets were slashed and an ever-cautious NRA put on the brakes. Within the ranks of the roads lobby, there was disenchantment as it seemed we were back to the old "stop-go" on the roads programme. So it was delay, cutbacks and cost overruns, all played out against a background of ever worsening traffic congestion.

This was in stark contrast to the heady days of 1999 when, with the inauguration of NDP, we celebrated the prospect of six interurban motorways in nearly as many years. At that point it seemed the rollercoaster, its momentum fuelled by a booming economy, was on an unstoppable upward trajectory.

It all seemed too good to be true and, throughout those uncertain months of 2002, it looked an odds-on certainty that the sceptics would once again have their day.

But the advent of 2003 brought us back on the upswing – Mr McCreevy relented and, galvanised by an increase in its budget to €1.2b, NRA was back in the motorway business. As the year progressed, projects frustratingly stuck in the mire were rolling out - Cashel, Monasterevin, Ennis, Sligo - all commenced construction or moved up to the starting blocks.

Chart 1: Road Priorities NDP



And, of course, the Minister for Transport's diary filled with road opening photo opportunities - Youghal, Glen of the Downs, Skibereen - all bottlenecks no longer.

National Motorway Network

And what of the Holy Grail for industry – the national motorway network?

2004 was to prove a landmark year, especially with the inauguration of the M1 as a major interurban linking the capital with Dundalk. The Minister cut the tape on the Kildare By-pass and promised that on completion of the Monasterevin section, another 90 Km of interurban motorway would be a reality. Dublin to Portlaoise in an hour – legally and safely – was within our grasp and, for once, this was not a politician's idle promise. This was because of a budgetary innovation: the introduction in Budget '04 of five-year capital expenditure "envelopes".

Resulting from this, the lamentable practise of funding major infrastructure projects on a year-to-year basis is now consigned to history.

Of course, in politics nothing is ever completely certain. But, we can now assert with confidence that, for the period 2004-08, the NRA will have an Exchequer capital budget of €8.6b. To this can be added a projected €1.4b in private funding under the roads PPP programme. It's enough to see the programme through to completion in 2010 or so.

Out of all this, what is the message for industry in terms of our bottom-line – kilometres delivered?

The chart is based on the NDP Mid-term review (Indecon Associates 2003) and predicts the percentage of the motorway programme that will remain to be completed by 2006, the original NDP deadline. The "Dublin" figure relates to the Dublin Port Tunnel and the M50 upgrade. By this stage, it appears, very little progress will have been achieved with both the M9 (Waterford) and the M6 (Galway). In relation to the latter, it has to be pointed out that the target construction figure does not take account of earlier upgradings on this route – at year zero (2000) a dual carriageway was already in place from St John's Road at Heuston station to the Lucan By-pass.

Overall the forecast indicates that around 70 per cent of MIU (Motorway Interurbans) target kilometres will be delivered or under construction by 2007, which must be regarded as a positive outcome.

Of course, we have to acknowledge that while the business sector fully endorses the current road plan, this level of support is not reflected across the community. A significant and vocal minority are opposed either to the development of the programme as a whole, or to particular aspects of the process. The objectors are a motley crew and include within their ranks some who are faced with the prospect of relocation of farm, business or residence, and sometimes all three.

FOCRs

Naturally this breeds understandable resentment. Others of the "road refusniks" are more extreme in their opposition and form a uniquely flexible counterculture. Flexible because its adherents find common cause under a range of

"flags of convenience" (FOC's). On one scheme the opposition focus will be wildlife, on another it's woodland preservation. Still another will spawn a protest group exhibiting an unaccustomed passion for archaeology.

Archaeology is currently the issue of the day on the M50. At time of writing legal actions taken by the "Carrickminders" will cause further delay, expense and frustration for everyone except themselves. What we can say with some certainty is that the phenomenon of the "FOC refusnik", (or FOCCR) will persist.

In due course, whatever the final outcome on Carrickmines, the FOCCR's, will transfer their attentions to another cause celebre. Right now the N3 upgrade at the Hill of Tara seems the most likely candidate.

The Government, tired of these attrition tactics, is desperate to find a way forward. There has been much talk from Ministers about introducing critical infrastructure legislation, which will short-circuit the planning appeals process for major projects. This legislation was announced almost a year ago but as yet the promised details have yet to emerge.

In my view the statutory process for roads, as it stands, is reasonably efficient. It performs an essential function and does it well. The real problem is the openness of a process that allows any party to seek injunctions, even in cases where the statutory process has been scrupulously observed. It is not even necessary for the appellants to have been party to the original proceedings. This right of resort to the judiciary is in need of reform.

Two lines of reform should be considered. One would set a time limit for appeal, once the necessary project consents are in place. The second would confine the right of appeal to individuals or groups which had been party to the process at commencement.

The outcome would preserve the rights of individuals and groups to object but would also inject a new sense of confidence into a process that is currently fraught with uncertainty.

It's a simple choice - either reform the process, or marvel at the FOCCRS on a roller coaster to nowhere - and for decades to come.

Having witnessed so much construction underway one cannot but be impressed by the miles of pristine motorway sweeping through the country over the past two decades or so.

The new lease of life brought to many traffic-strangled communities is just one of the many benefits from the accelerating phase of road building. So too is the sense of freedom for long-distance motorists.

The Irish route network is beginning to reflect that of a modern, highly-mobile nation as opposed to the inheritance of roads full of bottlenecks, bad bends and broken surfaces.

Behind the scenes has been a complex process of planning and delivery involving national government, the National Roads Authority and county and city councils. Local councillors have played their part too bringing the benefit of local knowledge.

Progress, however, is seldom an unqualified bonus. The new roads radiating out of the capital, although intended as long distance corridors, have to a degree become commuter routes feeding people in and out of distant dormitory towns.

And while impressive efforts have been made to mitigate environmental impacts the balance between building new roads and retaining the nation's environmental and heritage assets, will always be problematic.

All of that said, Ireland is now over two decades into the motorway era and nobody could even dream of turning back the clock.



FROM ROMAN ROADS TO SUPER HIGHWAYS

Dramatic improvements in our roads network have helped people and goods move around the country more smoothly and efficiently, says **Philip Mahony**, Chief Executive, The Chartered Institute of Logistics & Transport

The ancient Romans certainly knew a thing or two about roads. From earliest times they displayed remarkable skill at building and engineering. As they expanded their power across Italy, they linked the capital with the provinces and other countries that they conquered by a network of roads so well designed that many still lie beneath the motorways of Europe.

In addition, the Romans classified their roads in order of importance. The most important roads were public roads, funded by the state. Of secondary importance were military roads, built at the expense of the army. These subsequently became public roads. Local roads came after this and finally there were private roads, built and maintained by the owners. There was very little private travel and the primary purpose of Roman roads was to facilitate trade and military movement.

Ireland's first roads generally followed the lines of eskers; long, gravelly ridges created at the end of the last ice age by the melt-water of receding ice sheets. Because any low-lying land in Ireland was usually boggy, flooded or wet, eskers provided well-drained, naturally gravelled roads that would not get too muddy after a shower of rain. Many eskers still carry roads and some, like the Esker Riada, are so big and wide in parts that it is difficult for anyone travelling on them to realise that they may be travelling on an esker road. The N4 / N6 from Dublin to Galway still follows the line of the Esker Riada in places.

The British made some improvements in the 18th and 19th centuries but until the advent of the motor car in the 20th century, Ireland's road infrastructure remained relatively undeveloped. Indeed this situation continued well into the 1950s and 1960s as private car ownership was only for the privileged few.

EU Funds

It wasn't until Ireland's accession to the European Union in 1973 that things began to change. I began working in 1974 and my first job involved driving to every corner of the country. Traffic volumes were still relatively low but the state of Ireland's road infrastructure was such that trips to Cork, Galway, Limerick, Waterford or further afield were major expeditions.

However, the impact of EU accession began to make itself felt in the 1980s. At the time I was working for a large US multinational involved in the distribution of industrial, commercial, medical, office and domestic supplies. From 1984 to 1988 the sales graph showed an annual growth rate of 10 to 12 per cent and the warehouse was stretched to capacity dealing with inbound and outbound freight.

This situation was mirrored across the country. With a growing economy came increased prosperity, a growing population, huge suburban expansion in the major cities (particularly Dublin) and an explosive growth in private car ownership. Trade activity accelerated rapidly. Large industrial estates appeared and more and more commercial freight vehicles were required.

And still the roads, with the exception of the Naas dual carriageway, remained more or less unchanged. Trips that were previously considered as expeditions were now looked on as nightmares with coach roads totally unable to cope with the demands of the 20th century.

NRA Arrives

At long last in the 1990s sanity began to prevail. EU funding was made available and the National Roads Authority came into being with the brief of managing those funds in order to bring about a planned and prioritised development plan for the improvement of the country's road infrastructure.

Over the last 10 years the National Roads Authority, like all public bodies involved in transport, has had its critics. Some criticism has probably been deserved but much has been misinformed and, it could be argued, sensationalised to sell column inches.

But people's memories are short. Just look at what has happened to the nation's roads over the last ten years.

How many of today's travellers on the Galway to Dublin road still remember the excruciating stop/start crawl at all times of the day or night through Kilcock, Maynooth, Leixlip and Lucan? On the Cork to Dublin road the Cashel By-pass has opened, the never ending Kildare traffic jam is no more and the Portlaoise bottleneck has been consigned to history. Major improvements have been made on the roads from Dublin to the South East and Dundalk is now a forty minute drive from Dublin airport.

A huge amount of progress has taken place over the last 10 years and there is more in the pipeline with further improvements planned for infrastructure in the less populated regions of the country.

What has all of this meant for members of The Chartered Institute of Logistics & Transport and particularly for those involved in road freight and the road passenger business? As with the Romans, trade has been facilitated. Except at peak hours in the major population centres time has been saved. Less fuel is used. Vehicle wear and tear has diminished. Costs have been reduced. Better customer service is possible. From a personal point of view attending evening Institute events outside Dublin invariably involved the expense of overnight accommodation. Now more often than not I can return to home comforts once the meetings have concluded.

And whither the National Roads Authority in the next 10 years? Certainly there is no let up in the demand for cars and the demand for more and better quality roads will continue apace. But already questions are beginning to be asked about the environmental impact of these demands. Also arising is the question of money. EU funding has now come to an end and constant updating of the country's transport infrastructure has to be funded from internal resources either from the state or through Public Private Partnerships. And if roads are to be funded and built through PPP's then the companies involved will naturally seek a return on their investment.

Which leads to the dreaded 'T' word. Tolling is a concept which Irish politicians, motoring organisations, truckers and most private motorists fervently wish would just go away. But it is a reality in very many countries and the Irish cannot go on long fingering it forever. It is an issue which is going to provide one of the greatest challenges to both the National Roads Authority and the Government in the not too distant future.

ROUNDBABOUTS

ROME TO ROOSKEY

If the Romans of 300 BC had their way, the national roads of Ireland would be built in straight lines from Dublin to Cork, Dublin to Wexford, Dublin to Galway, Limerick, Sligo, Donegal, Belfast. There would be no delays, no appeals and no court cases.

Their most famous road, the Appian Way running south-east of Rome, would reach Curracloe beach, Fethard-on-Sea, Tramore, West Cork, the Dingle Peninsula, the Cliffs of Moher, Rooskey and the Giant's Causeway and end at the beautiful Antrim coast line as quickly as straight lines would allow.

The Romans were the first great road builders. Their objective of more than 2000 years ago was a military purpose – to get the greatest number of Roman

legions of soldiers to a trouble spot as quickly and as safely as possible while withstanding the march of thousands of feet and hundreds of chariots.

Their roads were scientific, long, structured, many layered and strong. First they dug trenches of up to three feet deep. They widened the trenches to 20 feet. Next came at least five layers - big stones laid two feet deep, concrete made from volcanic ash combined with larger stones, more concrete made from volcanic ash, small stones and sand and finally a summum dorsum or top surface made from big stones that were flattened and set in more concrete. Drains were made on each side of the road.

The Appian Way still exists, albeit surfaced with layers of asphalt. It is the model on which the roads of Rooskey and the roads of the world are built today.



WELL DONE NRA AND HERE'S TO THE FUTURE

Hauliers are the lifeblood of commerce but they need good roads to ensure the wheels of trade stay oiled, says **Jimmy Quinn**, Director of Communications, Irish Road Hauliers' Association

The Romans were among the first people to realise the importance of well-maintained road networks in order to move their legions from place to place in the most expedient way possible. It may be tempting to sneer at them now but often the difference between victory and defeat on the battlefield hinged on the ability of leaders in the field to whistle up re-enforcements in a hurry. Thirty minutes gained counts for a lot when you are up to your tonsils with rebels!

Napoleon similarly laid out roads, which were long, straight and planted with trees on each side, so that an army on the march would be sheltered from the blistering heat. He also said that an army marches on its stomach so you can be sure the quality of the food in the Service Areas was top notch. It is worth remembering that the Germans had an extensive Autobahn network in place before the Second World War.

America also placed great importance of Interstate highways in order to facilitate trade and industry. Given the vast distances involved, it is easy to see that high average speeds for cars and freight means scarce economic resources are used to best advantage in order to maximise economic output.

Given the remarkable progress the NRA has made since it was established just over 10 years ago it is hard to believe that we had "pothole" candidates elected to the Dail on the strength of the atrocious state of the roads. It has at last dawned on the political leaders in this country that you cannot run a First World economy with Third World infrastructure. The allocation of Multi-Annual funding has been a major breakthrough for the Board of the NRA and this will eliminate the stop-start element of road construction.

It will promote the urgent completion of ambitious targets, which have been set by the Board, and this is to be welcomed by all stakeholders in the transport sector.

Those of us who live along the new M1 Motorway section sometimes take for granted this very important North-South link. When travelling from Dublin to Belfast it is only when you hit the Border that you realise how much progress has been achieved in the Republic and how little progress has been made on the Northern side in the past 10 years. The stagnation in industrial output caused by the Troubles is reflected in this lack of investment.

“*It is true to say that freight, just like water, will take the path of least resistance and least cost*”

The many new By-passes which have been completed are an obvious boost to towns like Roscrea and Nenagh and the residents of towns like Cashel and Fermoy have these improvements to look forward to in the near future. In addition, the elimination of "accident blackspots" has been a tremendous help in reducing road traffic accidents and fatalities. The extensive traffic calming measures and establishment of ghost islands at right-turning junctions is frequently forgotten about. These features attract much less headlines than the fatalities which occur when these basic works are not attended to.

The thorny issue of tolls is one which gives many of us in the Road Transport Sector much cause for alarm. There seems to be a notion that there is a vast pool of money that is there for the asking from road transport. The exact opposite is true. It is a sector which runs on wafer thin margins and very delicate economics. It is true to say that freight, just like water, will take the path of least resistance and least cost. This is a universal observation valid all over the world.

It is acknowledged by hauliers that the massive investment, which has been made in roads, must be repaid. Road hauliers have no problem in paying their share, but it is the calculation of this share that gives rise to difficulty. As it is the various Government Departments (Finance, Environment and Transport) have shown little interest in pulling together to achieve a coherent traffic pricing policy. It is long past time that "transport" is regarded as a critically important function of the economy rather than a consolation prize to ministers who didn't make it to a more glamorous portfolio. Our attitude contrasts strongly with the Dutch Government who regard Transport as a sector as important as IT or agriculture. The result is that the Dutch control some 35 per cent of the entire EU transport business.

At present hauliers pay three strands of taxation. Basic road tax at €2,000 (approx) per annum; Fuel Tax at €367/1000 litres and road tolls. Hauliers have consistently said that if the Government "take" is rebalanced to ensure no additional cost to them that the concept of tolling would be much easier to digest. Hauliers are no strangers to tolling. They have been paying them for many years on the continent of Europe. It is much easier to see the advantages of a solid 80kph/hour output from a vehicle when this can be sustained days at a time, rather than hours at a time, which is the case in Ireland.

Road improvements benefit all sectors of the economy. Manufacturers can import and re-export efficiently to European markets; tourists can get from inbound ports and airports and spend more quality time at their destinations. Hauliers can deliver to customers in the most cost efficient way possible and so keep the cost of goods down for the ultimate benefit of the consumer. The import content of road construction projects is minimal and the multiplier effect in terms of money re-spent in the community is tremendous.

It is of vital importance that the impetuous built up over this past few years is maintained and the benefits of modern transport infrastructure will continue to assist growth rates and eliminate pinch-points in the economy. I look forward to the day that it will be possible to drive from Belfast to Cork without seeing a traffic light. I have great faith in the ability of the NRA to deliver this ambitious programme in the time frame provided. It is my sincere hope that the Critical Infrastructure Bill is of assistance in fast-tracking the many projects in the pipeline to completion.

ROUNDAABOUTS

ROAD TERMS

Camber

Road surfaces are sloped from their centre towards either side for the purpose of shedding rain- water quickly. This slope is called a camber.

Layer

Roads are usually built in four layers – a subsoil or bottom layer, a capping layer, a middle layer and then the top or surface layer.

1. The bottom layer is usually of the clay that is already present when the site for the road is identified. Large heavy rollers are used to level it and pack it so that it forms a sound base for the capping layer.

2. The capping layer usually comprises heavy rocks which are locked into place using the heavy rolling machines.

3. The middle layer comprises a mixture of sand and gravel.

4. The top layer may be a combination of a number of layers of asphalt or Tarmacadam or concrete.

Drain

Rainwater flows off the road into gullies and then into drains which carry the rain-water to rivers and the sea.



BUILDING SAFER ROADS - THE FOUR E'S

Safety on our roads remains a critical issue, even as new motorways and dual-carriageways spring up. Engineering initiatives and action by the NRA play a key role in cutting down on accidents, says **Eddie Shaw**, Chairman of the National Safety Council.

The first Government Road Safety Strategy was passed by Cabinet in May 1998. It followed from a number of years where road fatalities increased sharply to an average monthly death toll of 39 in 1997.

This Strategy was based on research and experience from many Departments and Agencies involved in road safety. For the first time, without any structural change, these Departments and Agencies were able to focus on the issue of road safety with a common aim, targets, plan and actions. They all worked together within the High Level Group on Road Safety to achieve these targets

Despite many challenges and budgetary difficulties by 2003 the average monthly death toll on the roads had fallen to 28. This was the lowest fatality rate since 1963. It is worth noting that for every fatality we estimate that seven to eight times that number are seriously injured. Apart from

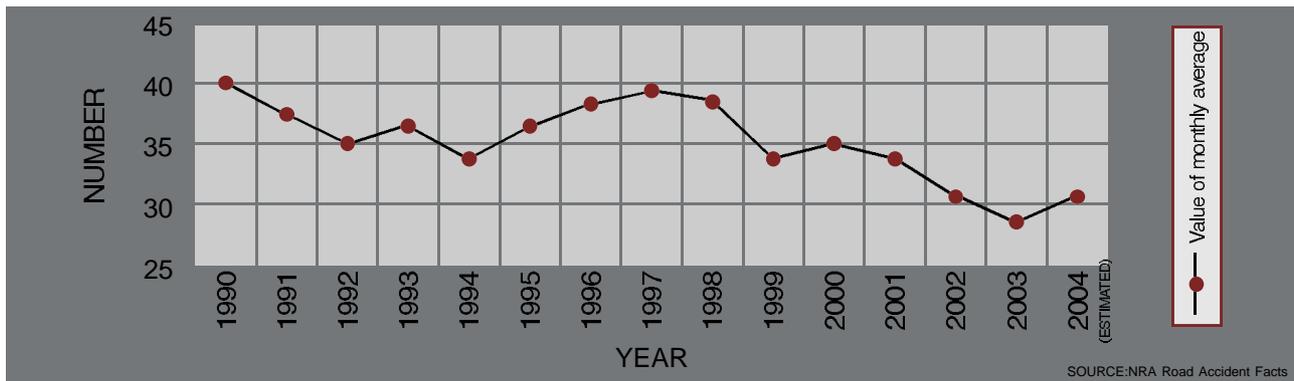
the pain and suffering avoided for unknown thousands who escaped death or serious injury, the crude monetary value of this reduction is estimated at €325.5m.

After the introduction of penalty points on October 31st, 2002 road fatalities initially reduced by 30 per cent and one of the consequences reported by Health Boards was a reported reduction in admissions to A&E Departments of 20 per cent to 30 per cent. In the first six months of 2003 admissions to the Mater Spinal injuries unit fell by 50 per cent. This was not sustained.

The Four E's

The model on which these activities are based is known as the 4E's – Engineering, Enforcement, Education and Evaluation. It is a well-developed and evolving model used by all of the "best practise" countries – those who have achieved a road

Chart 1: The annual average number of Irish Road Fatalities per month 1990 - 2004



fatality rate of six per 100,000 of population. At this time, in terms of road safety that is as good as it gets. Research from Bacon (1998), Wegner (2002) and others indicates that, in addition to the reduced pain and suffering to the community, investment in road safety by Government is ranked at the highest level of return on investment.

This brief article, given the context of 10 years of the NRA, will focus on Engineering. In Ireland this is represented, primarily, by the pioneering road safety work of the NRA and also by some local authorities.

In the NRA this work had been quietly developed and applied for decades under the guidance of dedicated people who built a safety research database and actions from both international and local practise. In 2002 the Board of the NRA recognised the importance of this work and created a sub-committee on road safety.

This affirmed the importance of safety standards in the design and construction of new roads and the redesign and reconstruction of existing roads and high risk collision locations. There was clear leadership and support from the Chairman and Chief Executive. In any organisation this sends a powerful message across the organisation on the importance attached to a (safety) topic.

The paradox of road collisions

Collisions from the perspective of the individual road user, as expressed by Finbarr Crowley of the NRA, "are rare, random, multifactor events, where a road user failed to cope."

In contrast "the collision experience of a road network is stable, predictable and strongly determined by underlying risk (i.e. the road user, the vehicle and the road)".

So his conclusion from this is that individual collisions are:

Table 1:

• Rare	1 in 6 drivers can expect to be involved in an injury accident in their life: ie 1 accident per 3,840,000 Km driven	
• Random	It is impossible to predict where or when the next collision will occur	
• Multi-factor	Road and environment	25 %
	Vehicle Factors	5 %
	Human Behaviour	95 %

This helps explain the difficulty in alerting the road-using public (us!) of the personal risk of setting wheel or foot on the road.

Road Safety Activities by the NRA

During the 10 year period 1994 to 2004, which includes the first and second Road Safety Action Programmes, the activities reported by the NRA were as follows:

This work has a direct and measurable impact on the incidence of collisions, deaths and injuries on the road network. The estimate by the NRA, based on the results

here and overseas, were calculated in their research document "Making Ireland's Roads Safer, Achievements at NRA 1994-2004", and presented by Finbarr Crowley to the NSC conference, "An International Road Safety Conference on Engineering, Enforcement, Education and Evaluation", held in June 2004 are as follows:

Table 2:

- **Engineering Countermeasures**
80 schemes per year
1994 –2004: 800 schemes
- **Traffic Calming**
20 schemes per year
1994-2004: 127 schemes
- **Safety Audit.**
90 schemes per year on National Roads
2001-2004: 270 safety audits.

Conclusion

All of the actions under the 4E's programme are designed as a complementary, integrated and sustained set of activities. By changing the attitude and behaviour of many road users they directly contribute to a sustained reduction in collisions, fatalities and serious injuries on the road network.

Table 3: Estimated Saving in 2004

- Low Cost Measures 60 (F&SI) collisions
- Traffic Calming 42 (F&SI) collisions
- Road Safety Audit 25 (F&SI) collisions

Unnecessary tragedies are avoided. Scarce resources in the acute hospital sector are released to the benefit of the seriously ill. Citizens who would otherwise be dead or seriously injured are alive, working, paying taxes (life isn't perfect), contributing to society. Disability payments are not made. Young people grow to maturity and beyond who otherwise would be a picture on a mantelpiece. It is such a worthwhile investment.

ROADSIDES

SOCIETY OF THE IRISH MOTOR INDUSTRY

Over the past two decades, the face of Ireland's infrastructure has been massively changed. From the construction of motorways and By-passes across the country to general road improvements such as the widening of roads and removal of accident blackspots, the benefits to the population of Ireland have been immense.

The dynamic rate of economic growth in the mid-nineties and the resultant employment and population surge highlighted our infrastructural deficit. The NRA, through the National Development Plan, has made phenomenal progress in rectifying this and the results of this effort are now beginning to bear fruit. Today journey times have been halved by motorways which by pass towns and villages. Our roads with their vast improvements can be seen as corridors of economic progress helping Ireland maintain its economic development into the future.

For the motorist travelling across Ireland the dramatic enhancement of the country's roads and advancements in the design of new vehicles can be seen as playing a major part in improving road safety. While we still see high levels of accidents on our roads, these figures, when compared with those of the 1960s and '70s are substantially reduced and reflect the increased investment in our roads network. Overall the development of our national road network by the NRA has greatly contributed to the wellbeing and prosperity of modern Ireland.



DON'T FORGET



Speed limits are

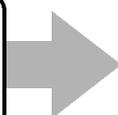
old
mph limit

changes to

new km



Special Speed Limits



Special Speed Limits



FORGET

we are **NOW** Metric

Check the signs.
Check your speed.
From Thursday 20th
January 2005.

km/h **limit**

approximate
mph
equivalent

Towns & Cities

31
mph

Regional (R) & Local Roads (L)
(White Signs)

50
mph

(Green Signs)

62
mph

(Blue Signs)

75
mph



Special Speed Limits

37
mph

REMEMBER: A driver must not drive a vehicle at a speed exceeding that which will enable him or her to stop within the distance he or she can see to be clear. This rule applies irrespective of the speed limit.



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THE BAD OLD DAYS ARE BEHIND US

Miles of red tail lights stretching into the distance on main routes out of Dublin are now mostly a distant memory but there is still a "Could do better" message for road planners, says **Eddie Cunningham**, Motoring Correspondent, Irish Independent

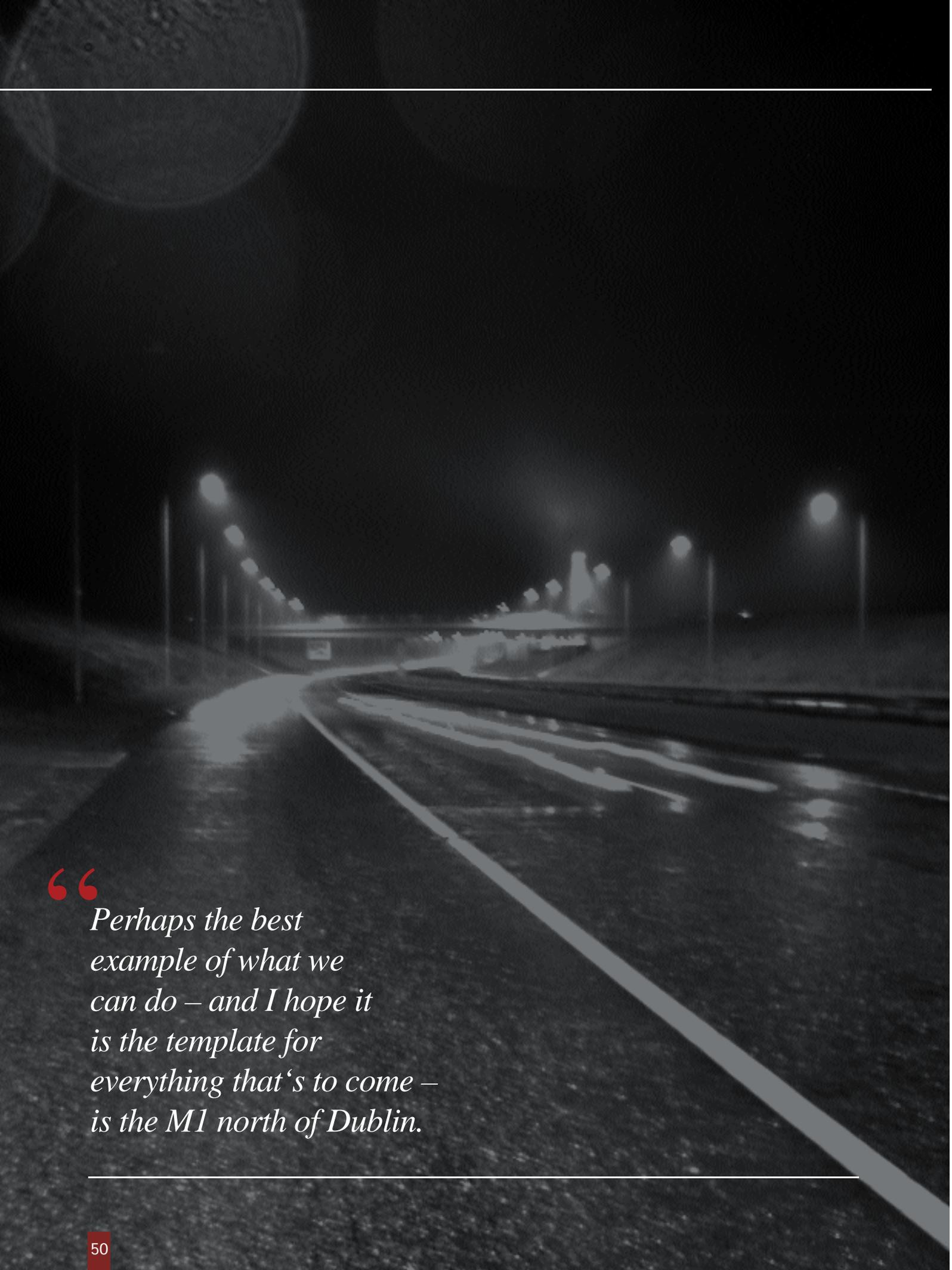
I don't know whether to approach this in a mood of praise or criticism. You see, I'm of an era when driving to and from Dublin involved snaking through the narrow apertures of Chapelizod, Palmerstown, Lucan, Leixlip, Maynooth and Kilcock on a Friday evening. I'll never forget it.

The sight of an eternal crescent of brake lights from the top of the hill overlooking Lucan village will never leave me. So I'm inclined to be favourably disposed towards the powers that be who removed those bottlenecks almost at one fell swoop and replaced them with dual carriageways and a motorway.

But I'll hold off for a minute. I like my money to be well spent and I still have a reservation or two. I am tempted, however, to bestow kind words on

those same powers for finally obliterating the penance of grinding through Kildare town virtually at any time on a Friday or Saturday. I had become increasingly familiar with the country roads in the environs which provided me with longer but quicker alternative routes

Portlaoise is another I remember. Grim and grimy November nights jolting yard-by-yard through its innards. Again, it is a delight to skip by it on the new bypass – until you come off it. And going to Wexford, through Wicklow was in every sense the scenic route. No point in even thinking about it. The serpentine roads simply did not permit reasonable speed or overtaking those dedicated to driving cars at more than two miles a fortnight. I still feel that way along stretches of the road between Ballinasloe and Galway. More of my money to be spent there I think.



“

Perhaps the best example of what we can do – and I hope it is the template for everything that’s to come – is the M1 north of Dublin.

Yes, we have made great, if belated, advances. Driving to Sligo or Limerick, or even north Kerry, has been transformed. Granted, the roads are still splintered by poor and narrow stretches here and there but in just a few years the difference is palpable from behind the wheel.

“*...we can hardly be boastful of the fact that significant stretches of roads between the capital and the country’s major cities and towns still comprise single lanes.*”

Perhaps the best example of what we can do – and I hope it is the template for everything that’s to come – is the M1 north of Dublin. That is the way and the means of the future. I know people have decided to leave Dublin and live way up in Louth directly as a result of the access this road now provides. That is the social as well as industrial benefit of a good infrastructure, something we often overlook.

Could do Better

Yet I think I share, with many drivers, a lack of enthusiasm to rush in with too much praise for the general effort. This feeling stems from a number of factors. Firstly, we have been, and everyone admits to this now, lamentably slow in addressing our problems. Despite past and promised rapid progress, we can hardly be boastful of the fact that significant stretches of roads between the capital and the country’s major cities and towns still comprise single lanes.

Secondly, we have become, to an extent, victims of our own success. Car usage and ownership have increased in tandem, it seems, with better and wider roads; so we are unlikely to rid many blots from our landscape in the absence of a realistic public service alternative. The NRA cannot be blamed for that.

But the accusing finger has been pointed at them, and others, for not foreseeing the calamitous side-effects of commuter growth. Should we have planned better for it? We probably should have. Yet it is too easy to say that, even if, on the face of things, the evidence is compelling.

The M50 is a prime example. It is grossly ill-equipped to deal with its daily volume of traffic. There are plans to widen it to three lanes, open up approaches and speed up the throughput at the Westlink Toll Bridge. Good news indeed.

I’m sure you’ve heard commentators decrying the lack of vision that this wasn’t done at the outset. Yes, it is a great pity. But back when they were planning it in the mid-to-late eighties, house prices looked as if they would fall further rather than rise, jobs were as scarce as Dublin city centre parking slots are today and nearly as many people left the country each year as now buy a new car. It would have taken a very persuasive genius to convince us we needed a six-lane motorway circling Dublin.

So we’ll mute criticism on that but hope lessons have been learned. The main one being that we really do need to respond more quickly to change, economic and demographic.

That is the central lesson. Making sure we don’t underestimate our capacity to grow and expand. Planning for roads is a bit like heeding the old adage for buying a house. Go as far as you possibly can and then a little bit more. It is an investment that may hurt initially but obviates the need to expensively add on and patch up later.

Lucan tail lights will be forever etched in my memory. For those who made them just a memory, even if it was long overdue, I acknowledge a job well done. Driving to Tipperary with dual carriageway or motorway from Newlands Cross to south of Portlaoise is an anticipated pleasure. For those who will make it belatedly possible, again well done. But they are just the broad strokes. We still have too many accident blackspots, too many dangerous sections, too many towns clogged by through traffic.

So I’ll not jinx you powers-that-be with any more kind words. You have started, so you’d better finish. But just remember, it’s my hard-earned money you are spending.



Photo courtesy of Irish Shell - Copyright Fennell Photography 2005

A SMOOTHER PASSAGE FOR MOTORISTS

Better roads bring many benefits for the private motorist and for the country, says **Conor Faughnan**, Public Affairs Manager, AA Ireland

By almost any measure the last decade has seen momentous changes in Irish life and Irish prosperity. The Tiger era came upon us so quickly and affected us so profoundly that it can be hard to remember the country that we used to live in. New wealth and new confidence has flooded into the nation's bloodstream.

I recall a country pre-occupied with its huge national debt, unemployment and emigration. Money for infrastructure just wasn't there. Crossing the Border was an embarrassment as the pot-holed and cratered surfaces gave way to the smooth reddish colour of a pristine Northern road.

One of my regular journies is the drive from Dublin to Sligo for long weekends and short summer breaks. That drive used to be horrific. Traffic snarl ups in places like Maynooth, Kilcock and Longford meant that you were lucky to do it in less than five hours.

Today that same journey takes me less than three hours of comfortable cruising.

As Ireland turned the corner and began to develop to its potential, the infrastructure deficit has been a major obstacle. Most of our European colleague countries have road and rail systems far superior to ours. Ireland, like Portugal and to a lesser extent Spain, has been playing catch-up. There is no doubt that establishing the NRA as a statutory agency 10 years ago has been central to enabling Ireland to carry out the enormous road building programme required.

Prioritising road projects has been a skill in itself. The NRA approach has been to tackle the worst problems first. This has meant that bottleneck towns become motorway By-passes; the relatively uncongested stretches in between have had to wait their turn.

“Designed at a time when maximum flows on the M50 were not expected to exceed 45,000 vehicles per day those interchanges, and indeed the motorway itself, are strained to breaking point.”

For the time being this gives our road network a kind of patchwork quilt feel. An inter-urban drive sees a motorist on a brand new motorway one minute and a poor quality, single carriageway stretch the next. For critics of the roads programme this has provided plenty of ammunition: no point in spending such huge sums of money removing the traffic jams in Naas and Newbridge when all that is achieved is that the enormous traffic jam forms in Kildare instead.

Worth the Money

However, as the ongoing programme provides more and more continuous stretches of quality road, that argument falls away. Roads like the magnificent M1 provide us with a degree of safety and efficiency and go a long way towards convincing the doubters that it is a worthwhile investment.

It certainly does not come cheaply. €1.2b per year is now being invested in the national roads programme at a time when there are many other demands on the nation's resources.

But the thing about investing in infrastructure is that it pays you back many times over. New road connections become engines for economic growth. Development flourishes along motorway corridors. Falling journey times enhance the attractiveness of peripheral locations and make inward investment far easier to secure.

The AA is also in favour of the current strategy of building in what appears, at first glance, to be overcapacity on the network. Dublin is to be linked to five major cities by a combination of motorway and high quality dual carriageway. These new structures are capable of handling traffic volumes far in excess of what exists currently on those routes and, indeed, is well ahead of the requirements identified by the NRA in its road needs survey of 1999.

Nevertheless we have to future-proof our developments. The construction of the M50 and its notorious interchanges at Red Cow and at the N4 are cases in point. Designed at a time when maximum flows on the M50 were not expected to exceed 45,000 vehicles per day those interchanges, and indeed the motorway itself, are strained to breaking point. With flows reaching close to 100,000 vehicles per day we can now regret not having built bigger and better at the time.

Challenges Ahead

The scale of the challenges facing the NRA is enormous. The investment and control of such vast amounts of taxpayer's money brings a great burden of responsibility. The NRA has had to grow, develop and refine its project management skills to make sure that we get full value for the investment. Cost overruns and delays brought about by planning requirements and land acquisition have been unacceptable in the past. Exchequer investment in the roads programme between 2000 and 2003 turned out to be 31 percent ahead of what was forecast in the National Development Plan.

Cost estimation and control procedures in the NRA have been strengthened. This coupled with greater use of design and build lump sum contracts should ensure more certainty around out-turn costs. At the same time, the government is considering changes to legislation to reduce the planning timescale and to streamline the process.

While the building of roads has been the most obvious function of the NRA, the AA has taken at least as much interest in the agency's contribution to road safety. The NRA is now the body responsible for the correlation and publication of accident data. It has become an active and centrally important contributor to the road safety strategy, and its input has been enormously helpful.

For example, the pooling of expertise in the NRA has enabled Ireland to work more closely with other European countries to compare and assess the relative safety of new types of road designs. The work of bodies like the European Road Assessment Programme, in which the NRA has been closely involved, has led to the development of safer road designs like the '2 + 1' format.

We remain a small country. With four million citizens and close to 100,000 kilometres of road we are also a sparsely populated one by European standards. But we are beginning to have a primary road network that we can be proud of. Certainly we can now cross the border without shame.

However, we are a long way from having infrastructure which genuinely matches countries like Sweden or Holland or the UK. The design, funding and construction of that infrastructure will be of major strategic importance for many years to come, and it will be the responsibility of the NRA. There is a long road to be travelled yet.



Photo courtesy of Irish Shell - Copyright Fennell Photography 2005

NEW ROADS MEAN LAND LOSS FOR FARMERS

New roads – especially greenfield site schemes – often run through land which was previously farmer's fields. The rural community is amongst those most directly affected by road building and while improved access brings benefits, compensation for land taken remains a major issue, writes **Sean MacConnell**, Agricultural Correspondent, Irish Times

It is hard to find a farmer who has anything good to say about the road building programme, even those who have managed to get decent compensation from the system negotiated by the former IFA leader and now a Junior Minister, Mr Tom Parlon, with the Government in 2001.

Most of those who have been involved in the process say no amount of money could compensate for the disruption and loss of land and privacy which the system brings.

With around 8,000 farmers currently involved in the system, Tom Dunne, who is the chairman of IFA's Industrial and Environment Committee, is a busy man. "When a project starts we set up a group and at the last count, I think we have about 40 groups going across the country," he said.

"It has been my experience that about five percent of farmers who have gone through the system are totally dissatisfied with what has happened and the other ninety five per cent are seldom overjoyed either," said Mr Dunne.

Most farmers find the system wears them out and can last up to eight years from the first mention of a road being built to the handing over of the compensatory cheque.

The process starts with rumours and then notices in the papers followed by engineers and planners descending on the farm. "It is a long and exhausting experience for a farmer who can find himself up against a battery of engineers, planners and officials of all kinds," explained Mr Dunne.

“*As the pace of road building quickens, many farmers believe that they are being asked for an inordinate contribution to the rest of society.*”

"The bottom line is, however, the kind of compensation that is paid. For openers when there is a Compulsory Purchase Order placed on land, the 'powers-that-be' want to value the land from that date," he said, "The big problem is that by the time all the haggling is done and a price fixed, the replacement cost of alternative land has probably increased many times".

He went on: "We also have the difficulty that there is no tax relief on land which has been CPO'd and when the farmer goes to replace his land, he will be forced to pay stamp duty. It is very tough on a farmer who sees his asset being broken up and its even tougher when the farmer goes looking for replacement land and discovers there is none because very little land goes on sale annually".

As the pace of road building quickens, many farmers believe that they are being asked for an inordinate contribution to the rest of society.

A Co Laois man said that like most farmers, the news that a motorway was about to be built through his land sent shivers down his spine. "This crack has been going on for over six years and I have given too much to it. Had I known it was going to be this tough, I would have sold out the minute I heard the rumour that a road was going to be built," he stated.

"The truth is that motorways devalue farms and farmland and create bloody havoc. I got what appeared to be decent compensation at the time but my land is in five different pieces now and the road had interfered with the water table and I am seeing flooding where there was never any before," he said.



Photo courtesy of Irish Shell - Copyright Fennell Photography 2005

ROADSIDES

IRISH FARMER'S ASSOCIATION

The Laois farmer added: "I have to say the only people who came out of roadbuilding with any kind of money were people who had land on By-passes around towns where there was incredible development potential".

"People are also unaware that even with special tunnels that I and others had to get built to move cattle across the road, one of these motorways can leave a family totally isolated from their natural community, from shops, schools and churches," he pointed out, "There was building potential on my land until it was CPO'd and now no one will want to build here because they do not want to live within a mile of a motorway because of the noise".

The quickening pace of development will mean that more and more landowners will be coming into the system and Tom Dunne argues for more openness from the road builders.

"A lot of them just simply don't understand the trauma involved for the farm family which literally finds that it is being invaded by a road," he said. "Apart from the economic matters, the whole idea of a family farm suddenly being surrounded and covered and being dug up by squads of workers and heavy machinery is stressful for the farmer and his family".

The trauma of attempting to find replacement land or farm fragmented pieces, puts additional strain on families not enough thought is given to this. "Our group was set up to help farmers cope with the new realities because they only get one shot at this and many of them are not at all resourced to cope," he said.

Another emerging problem is the size of roads which are getting bigger and as a result more land is being taken from farmers.

While the IFA accepts the fact that the country needs better roads, farmers would argue that they suffer more disadvantages from new roads than advantages.

Late last year, the IFA was gearing up for another look at the 2001 agreement on the basis that circumstances have changed and the Government's failure to allow rollover tax relief on compensation. It was widely felt amongst the farming community that the issue should be reopened.

While there may not be a re-run of the blockades which were placed in front of NRA personnel or contractors as happened in 2001, with an IFA election due this year, the issue has not gone away and could come back.

IFA, representing the rural economy and supporting its 85,000 members, is a pro-development association and recognises the benefits for the common good of having an efficient and effective infrastructure.

Under the National Roads Programme 2000–2006 the Government has put in place a programme to construct approximately 2,000 km of new roads: the equivalent of building a road from Dublin to Budapest!

The programme adversely affects some 8,000 property-owners and requires the compulsory acquisition of some 40,000 acres of land. The vast tracks of land required are generally "greenfield sites" resulting in the carving up of individual holdings.

IFA recognised the major impact a road has on individual property-owners and took action early in 2001 to address shortcomings in current legislation around CPOs for national roads.

Agreement was eventually reached with the Department of Environment and Local Government and the National Roads Authority which provides for the timely, fair and reasonable treatment of property-owners.

However, IFA acknowledges the benefits which result from better roads, including improved quality of local life with the removal of heavy vehicles from local roads; relief from congestion for local towns and villages and increased access to wider markets for both livestock and farm produce as well as encouraging regional development.

ROUNDBABOUTS

ALEXANDER TAYLOR – ROADS BUILDER OF THE 1800S

Alexander Taylor, an army officer and native of Aberdeen, had a significant role in roadbuilding in Ireland in the late 1700s and early 1800s.

In Peter O'Keeffe's book, "Taylor's Roadworks in Ireland 1780 to 1827", Chris Lycett, Chairman of the Institute of Asphalt Technology, describes him as the most prominent surveyor in the country in the first two decades of the 19th century saying:

"He was made head of the Post Office Mail Coach Road Surveys in 1805 and in 1807, Chief Paving Commissioner in Dublin, two of the most important road posts in the Kingdom..."

He was a contemporary of two other famous Scots roadbuilders, Thomas Telford and John Loudon McAdam.

Telford (b1757), a stonemason from Dumfriesshire who became known as the father of civil engineering, John Loudon McAdam (b1756) from Ayr showed how small stones covered by smaller stones could carry traffic. McAdam gave his name to Tarmacadam.

Taylor was 10 years older, having been born in 1746. He and his brother George, who had an office with a colleague named Skinner in Parliament Street in Dublin produced many maps of the then roads of Ireland.

He achieved greatest fame (or notoriety) however, for his development between 1800 and 1809 of the 36 mile, 12 feet wide County Wicklow Military Road which linked Rathfarnham in Dublin with Aughavanna, near Aughrim in Wicklow.

This road passed through Ballyboden, Sally's Gap and Laragh, which were then virtually inaccessible. It is notable that many British army barracks lined the route including Glenree, Laragh, Drumgoff and Aughavannagh Barracks.

The primary objective for the building of the road was to flush out the 1798 rebels led by Wicklow's Michael Dwyer. The British forces succeeded because of the access that his road granted.

Peter O'Keeffe's book quotes Alicia Taylor, great grand-niece of Alexander, writing in 1912 when she said that Alexander and his brother George "had been granted tolls as rewards for their services during the Rebellion".

MAJOR ROAD COMPLETIONS – 1994-2004

1994

N4 Lucan/Kilcock Motorway
 N4 Mullingar By-Pass
 N5 Swinford By-Pass
 N7 Newbridge-Kilcullen Link
 N20 Cork-Mallow (Phase 2)

1995

N2 Broomfield/Castleblayney (Phase 1)
 N4 Longford By-Pass
 N9 Bolton Hill, Kildare
 N28 Mulcon Valley
 N71 Bandon Road, Cork

1996

N2 Broomfield/Castleblayney Phase 2
 N2 North Road Finglas
 N4 Drumsna/Jamestown
 N6 Galway Eastern Approach Road
 N7 Roscrea By-Pass
 N8 Cork Southern Ring Road
 N18, Setrights Cross
 N22, Minish/Curraglass, Phase 1
 M50 Northern Cross Dublin
 N52 Dundalk Inner Relief Road
 N86 Blennerville Bridge
 N24 Clonmel Relief Road

1997

M50 Northern Cross Route Extension
 N7 Portlaoise By-Pass
 N22 Sliabh Riach
 N25 New Ross/Wexford (Barntown)
 N25 Dunkettle/Carrigtwohill

1998

N4 Collooney/Sligo
 M1 Balbriggan By-Pass

1999

N2 Ardee-Rathory
 N3 Cavan By-Pass
 N3/A509 Road Re-alignment and New Bridge at Aghalane
 N4 Curlew Mountains Road
 N4/N6 Kinnegad Relief Road
 N7 Naas Road Widening (Newlands Cross/Rathcoole)
 N7 Rathcoole Interchange
 N11 Arklow By-Pass
 N15 Donegal By-Pass
 N24 Clonmel Inner Relief Road
 N25 The Jack Lynch Tunnel, Cork
 N80 Carlow Northern Relief Road

2000

Nenagh By-Pass
 N9 Moone/Timolin
 M50 Free Flow Slips (to allow left-turning traffic to access or exit from the M50/C-Ring without entering interchanges)
 N4/M50 Palmerstown Interchange,
 N7/M50 Naas Road (Red Cow)
 Interchange, M50 Ballymount Interchange and M1 Airport Roundabout.
 N72 Killarney Northern Relief Road State II

2001

M1 Dunleer-Dundalk Motorway
 M1/N2 Dunleer-Ardee Link Road
 N4 Downs-McNead's Bridge to Mullingar
 N4 Joanstown to County Boundary (Rathowen)
 N15 Clar-Barnesmore Gap
 N20 Blackpool By-Pass (Phase 2)
 N20 Croom By-Pass
 N20/N21 Adare-Limerick
 N24 Bearys Cross to Grange Cross
 N21 Ballycarty to Killally
 N25 Kilmacthomas By-Pass
 M50 Southern Cross Route

2002

N4 Enfield Relief Road
 N9 Grannagh-Waterford (Phase 1 B)
 N15 Bunduff/Drowes River (Leitrim)
 N17 Knock/Claremorris Phases 1&2
 N18 Ballycasey to Dromoland (Phase 1 Newmarket-on-Fergus By-Pass)
 (Dan George – public art projects)
 N22 Bealagrellagh/Gortatlea (Tralee/Killarney Road)
 N4 Piltown/Fiddown
 N25 Camaross
 The Boyne Bridge

2003

M1 Dublin Airport to Balbriggan Bypass
 M1 Cloghran/Lissenhall
 M1 Drogheda By-pass
 M50 Second West Link Bridge
 M4 Celbridge Interchange
 M7 Kildare By-pass/N8 Watergrasshill By-pass
 N11 Glen of the Downs
 N18 Hurlers Cross/N19 Shannon Access
 N25 Youghal By-pass
 N71 Skibbereen Relief Road

2004

M7 Heath/Mayfield (Monasterevin By-pass) Motorway
 N8 Cashel By-pass
 N7 Limerick Southern Ring Road (Phase 1)
 N7 Parkway
 N11 Ashford/Rathnew By-pass
 N22 Ballincollig By-pass
 N4 Rockingham to Cortober
 N5 Scramoge to Cloonmore
 M50 Wyattville Interchange
 N26 Ballina-Bohola (Phase 1)

ROUNDBABOUTS STRAIGHT TO SLANE

The 30-mile "Derry" road on the N2 from Finglas in Dublin to Slane in Co Meath has long been regarded as the longest straight road in Ireland. Why it is so straight for so long has been a mystery to many.

The answer lies in the visit of King George IV to Dublin in the 1820s. He was then King of Great Britain and Ireland and his visit to Ireland in 1821 was met with great anticipation and excitement.

The King and Queen stayed at the Round Room in the Mansion House (today the Lord Mayor of Dublin's home) at Dawson Street in Dublin, which was built specially for their visit.

However, it seems that the gamey King George had more in mind than visiting his Irish subjects or

seeing the sights of Dublin with his beautiful Queen Caroline. He also had his eye on the equally beautiful Lady Conyngham (the Marchioness Conyngham) of Slane Castle in far away Co Meath.

He had met her previously on the royal social circle in London and was smitten. His subjects knew the story and so that the lovelorn King, his horses and carriage and entourage, would have an unhindered and direct trip to dinner at Slane, they eliminated the twists and turns on the 30 mile stretch up through Finglas and Ashbourne.

Today, the thousands of motorists, including rock music fans on their way to Slane Castle, must thank the planners and workers who made easy the path of King George in his quest for (lust) love.

BUDGET BOOST FOR ROAD SPENDING

Over €1.6b will be spent on improving the country's roads in the year ahead.

This is one of the highest road building budgets ever and will see a string of new road completions, ongoing projects and commencement of several new road schemes in 2005.

Altogether, it is estimated that some 367 kms of new roads will be provided over the next 12 months.

Projects to start in 2005 include:

- M1 Drynam Interchange
- N1 Border/Dundalk
- N3 Clonee/Sth of Virginia By-pass
- N4 Edgeworthstown By-pass
- N6 Kinnegad/Athlone
- N8/N73 Mitchelstown Relief Road
- N11 Enniskerry Junction Improvements
- N25 Kinsale Road Interchange
- N25 Waterford City By-pass
- M50 Improvements (Phase 1)
- N56 Mountain Top

Projects continuing in 2005 include:

- M1 Dundalk Western By-pass
- N2 Ashbourne By-pass
- N2 Carrickmacross By-pass
- N4 Kinnegad/Enfield By-pass
- N4 McNeads Bridge-Kinnegad
- N4 Sligo Inner Relief Road
- N6 Loughrea By-pass
- N7 Kingswood Interchange
- N7 Naas Road Widening
- N8 Fermoy By-pass
- N15 Ballyshannon/Bundoran By-pass
- N18 Ennis By-pass
- N21 Ballycarthy/Tralee
- N22 Gortatlea/Farranfore
- N30 Enniscorthy/Clonroche
- M50 South Eastern Motorway
- M50 Dublin Port Tunnel
- N52 Mullingar By-pass
- N55 Cavan By-pass

The total spend on the national roads development programme sees an increase of seven per cent to €1,319b. Added to this is a carryover of €50 m from 2004 and some €245m of Public Private Partnership funding.



Photo courtesy of Louth County Council

Motorway and infrastructure development and operation



Egis Projects and **Transroute International** are among the world leaders in toll motorway development and operation. Within Groupe Egis, they are developing, implementing and operating roads, motorways, tunnels and other types of infrastructure projects (airports, ports, mass transit systems,...) within global schemes (BOT, PPP, turnkey,...) over the world.

The roles of **Egis Projects** in such projects are:

- >>> Developer and concessionaire as a partner in consortia promoting and bidding for BOT/PPP projects and thereafter shareholder in concession companies,
- >>> Designer and project manager, with its sister engineering companies (Scetauroute, Isis, Semaly,...),
- >>> Turnkey systems integrator for the design, supply and installation of all fixed operating equipment (toll system, telecommunication equipment, traffic management system,...).

and for **Transroute International**:

- >>> Operation and maintenance contractor, through local companies in charge of operation and maintenance of road facilities (toll collection, traffic and safety management, service to users, regular highway and equipment maintenance, winter maintenance,...).

Egis Projects and **Transroute International** are partner/operator of various large projects among the world, such as in France (A28 Motorway Rouen-Alençon, Lyon North Ring Road), Poland (A2 Motorway, A4 Motorway), Australia (Melbourne City Link, M15 East, M2 Motorways), England (M40 Motorway), Portugal (Scut 2 Interior Norte), Greece (Athens Ring Road), Korea (Daejeon Riverside Expressway), Philippines (Manila North Tollway),...

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