Inter-Agency Submission to the NDP Mid-Term Review

Final Document

Economic Infrastructure for National Competitiveness

July 2003

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Executive Summary

Parties to the Submission
This is a joint Submission prepared by Forfás, IDA Ireland, Enterprise Ireland, Shannon Development, Údaras na Gaeltachta and the National Competitiveness Council (for the purposes of this document, collectively referred to as the "Agencies")

Focus of Submission
This Submission has two objectives. Firstly, drawing from the sectoral and regional development plans of the enterprise development agencies, the Submission prioritises categories of economic and technological infrastructure which are deemed vital to the medium and long term economic development of Irish industry. In this sense, the infrastructure priorities identified by the Agencies are largely "development led" rather than "demand led", in that they are intended to respond not just to existing infrastructure bottlenecks but also to the needs of future sectoral and regional development. In this context, it is imperative that the National Development Plan NDP (and any other subsequent infrastructure plans) takes account of the recommendations set out in the National Spatial Strategy (NSS), adopted by Government in November 2002, as well as the sectoral and "cluster" development plans of the Agencies.

Secondly, the Submission identifies some of the institutional issues which currently impede the rollout of infrastructure, whether through planning delays, institutional inefficiencies or financing difficulties and puts forward a number of proposals to address these bottlenecks.

This Submission is focussed on economic and technological infrastructure, which is only one small part of the NDP and the wider business environment in which firms operate. It is not the intention of this Submission to prioritise expenditure on economic capital projects at the expense of other day-to-day government supports for industry in the areas of venture capital, management training, export promotion and research and development. On the contrary, it is the view of the Agencies that adequate funding for such business and research supports is as important for the competitiveness of Irish industry as economic and technological infrastructure. Instead, the Submission aims to direct whatever resources are made available for capital spending towards those categories of infrastructure that are most important for industrial development.

Impact of Infrastructure on Competitiveness
The current infrastructural deficit is a direct result of decades of under-investment. The situation has been exacerbated by the rapid economic growth of the 1990s resulting in increased pressures on already strained resources. Inadequacies in Ireland's infrastructure undermine competitiveness in several ways. Ireland's attractiveness as an investment location is diminishing as manufacturing companies will only locate in areas that are served by adequate transport and communications links, which allow for the efficient and cost-effective movement of goods, people and information. Inadequate infrastructure leads to higher inflation, increased costs and lower productivity across the enterprise sector. Ireland's ambitions of being at the forefront of the knowledge economy are hampered due to a lack of broadband rollout. Given the combination of a weak global economic climate, rising domestic costs and increased competition for the finite pool of foreign direct investment (FDI), failure to address the issue of infrastructure will only serve to increase the risk to jobs in both the indigenous and foreign sectors.

Infrastructure Priorities

Using a set of agreed criteria (Section 1), the Agencies have prioritised three categories of infrastructure in terms of importance for competitiveness and industrial development:

- **Broadband Telecommunications**
- **Motorways / Dual Carriageways and National Routes**
- **Research Centres**

This list represents the aggregate view of the NCC and the Agencies involved in this process. It is of course the case that for certain categories of industry the priorities are somewhat different. For example, investment in Research Centres is likely to be of greater importance to the future competitiveness of indigenous industry than Motorways / Dual Carriageways and National Routes. What is clear is that there is consensus among the Agencies that broadband communications, motorways and dual carriageways and research centres are the three most important categories of infrastructure for the future development and competitiveness of Irish industry, given the sectoral and regional development plans of the Agencies.

In addition, where resources are available, there are other types of infrastructure projects that will be important to future industrial development. These fall under the following categories:

- **Business Parks, Technology Parks and Incubation Space**
- **Non-National Roads**
- **Waste Management Facilities**
- **Airports and Sea Ports**
- **Water and Waste Water Facilities**
- **Rail Network**
- **Urban Bus transportation**

Institutional Barriers to Infrastructure Delivery

The Submission highlights three key types of institutional barriers to infrastructure delivery:

1. **Inefficient planning processes, procedures and legislation**
2. **Poor administrative arrangements which inhibit good national project management**
3. **Funding and financing mechanisms which have failed to deliver the necessary finance**

Based on a cross-country comparison of infrastructure delivery in other countries commissioned by Forfás, as well as on experience of the development agencies on issues affecting infrastructure delivery, the Submission presents a number of recommendations for change in Ireland's approach to infrastructure delivery. These are grouped under the following headings:

1. **Planning Processes, Procedures and Legislation**

- **Land Costs and the Compulsory Purchase Order (CPO) Process.** The Submission seeks a re-wording of Article 43 of the Constitution designed to give greater weight to 'the common good' and 'essential public infrastructure' in decisions regarding the merits of compulsory purchase orders. The Submission also calls for the establishment of a dedicated national system for assessing CPOs (i.e. a specific court, tribunal or independent assessment board) which has the potential for streamlining and accelerating the CPO system. The introduction of clear and consistent mechanisms through which CPO-related compensation might be calculated in an efficient manner would reduce the current uncertainty, making investment in public infrastructure projects more attractive. The current method of calculating compensation when land is compulsorily acquired is defective and needs to be re-designed.

- **Development Planning Process.** As lengthy planning procedures and waiting times act as a disincentive to investment, a fast-track system for strategic national projects that are key to achieving national policy objectives should be developed. Consideration should also be given to allowing planning applications for all major infrastructure projects of national importance to go directly to An Bord Pleanala (ABP). ABP would need to be restructured to ensure that this would speed up the delivery of major infrastructure projects.

- **Planning Appeal Mechanism.** In order to shorten the time taken for, and costs of, third party appeals to go through the court system, a special division of the High Court should be established to deal with the judicial review of major infrastructural projects and planning appeals. In order to address timing delays caused by the planning appeal mechanism, ABP should ensure that all cases are decided within the statutory time frame and the current 18 week time limit for decisions by ABP should be *mandatory*, rather than recommended.

- **Community Consultation.** A more clearly focussed community consultation strategy is required earlier in the planning process than is currently the norm. Such practices should allow the community to be fully informed about major infrastructure projects and have an understanding of the complex issues involved. Incentives, in the form of infrastructure or other facilities benefiting local communities should be provided, where appropriate, for infrastructure projects of public concern.

2. National Project Management

- **Co-ordination between State Bodies**. In order to streamline the national project management process, fewer state bodies should be involved in the delivery of infrastructure. Each infrastructure project should be made the responsibility of a single department or agency and that entity should take the role of national project manager for the delivery of the infrastructure. Specific guidelines for consultation between agencies should be developed to clarify their respective remits and responsibilities. Effective co-ordination of traffic and transport management in the Greater Dublin Area requires the establishment of a Greater Dublin Area Authority with responsibility for land use and transport planning in the region.

- **Planning and Project Management Skills in the Public Sector.** The Expert Group on Future Skills Needs, in conjunction with the Institute of Public Administration, should

undertake an audit of infrastructure project management skills within relevant Government Departments and Agencies and make recommendations to ensure that the supply of staff with such skills will be necessary to meet the anticipated future growth in demand.

- **Competition and Capacity in the Construction Sector.** Capacity limitations in the construction industry are a major concern for national project management. Unless the supply side of the construction industry is managed properly, any acceleration in spending on economic and technological infrastructure projects could lead to a repeat of the cost over-runs experienced during the 2000-02 period. Three issues are crucial in this regard. Firstly, there is a need to ensure that the supply of skilled workers available to construction companies is sufficient to meet their forecast requirements. Secondly, there is a need to ensure that there is an adequate level of competition among Irish companies in the construction industry, and among their main suppliers. Thirdly, there is a need to design infrastructure projects and contracts in a way that encourages more foreign construction companies to compete in the Irish market.

3. Funding and Financing Mechanisms

- **Borrowing for Infrastructure**. Both for structural and cyclical reasons, it is not appropriate to finance increased capital expenditure on economic and technological infrastructure through tax increases. The Government should continue to borrow for capital spending on economic and technological infrastructure in 2004 and 2005, while remaining within the requirements of the EU Stability and Growth Pact.

- **Public Private Partnerships (PPPs).** In order to achieve economies of scale, infrastructure projects should be bundled together to attract PPP investors and increase interest from overseas construction companies.

- **Alternative Financing Instruments.** Other possibilities for financing economic and technological infrastructure that should be explored include:
  - Road Bonds
  - Tolling of existing infrastructure
  - Revolving Funds

Section One

Economic and Technological Infrastructure Projects
Priorities for Competitiveness and Industrial Development

1.1 Prioritisation Criteria

In order to identify categories of infrastructure that should be prioritised in the interests of national competitiveness and industrial development, different infrastructure categories were assessed by the inter-agency working group against the following criteria:

1. Does the infrastructure category address an existing bottleneck to economic growth?
2. Does the infrastructure category support the sectoral development plans of the Agencies?
3. Does the infrastructure category support the regional development plans of the Agencies?
4. Do the estimated economic benefits of the infrastructure category outweigh the costs?

1.2 Infrastructure Priorities

Using these criteria, the Agencies have identified the following three categories of infrastructure as priorities in terms of their contribution to national competitiveness and industrial development:

- **Broadband Telecommunications**
- **Motorways / Dual Carriageways and National Routes**
- **Research Centres**

This list represents the aggregate view of the Agencies involved in this process. It is, of course, the case that the priorities are somewhat different for different categories of industry. For example, investment in research centres will be of greater importance to the future competitiveness of high technology indigenous industry than Motorways / Dual Carriageways. What is clear, however, is that there is consensus among the Agencies that broadband communications, motorways/dual carriageways and research centres are the three most important categories of infrastructure for the future development and competitiveness of Irish industry, taking into account the sectoral and regional development plans of the Agencies. Key projects under these categories of infrastructure, as well as other types of infrastructure projects of importance to industrial development, are listed in Appendix A.

1.3 Broadband Telecommunications

The roll-out of broadband telecommunications services supports national economic and industrial development by:

- Enhancing the attractiveness of Ireland as a location for R&D activities
- Enhancing the attractiveness of Ireland as a location for business service centres for next generation Internet architecture
- Enhancing opportunities for rural and regional development

- Supporting the creation of a spawning ground for new software and service companies to produce broadband and mobile products and services
- Supporting the creation of an Internet literate population
- Reinforcing the image of Ireland as a technology leader
- Supporting the competitiveness of the enterprise sector as a whole by encouraging the adoption of eBusiness by firms

The economic importance of broadband is confirmed by several recent studies. A report conducted by the Brookings Institute in Washington forecasts the huge economic benefit of widespread broadband rollout to the US economy: U.S. consumers could benefit by as much as $300 billion per year, while the reward to US producers could be $100 billion per year. A study conducted by Peter Bacon and Associates suggests that similar benefits would accrue to the Irish economy, albeit at a reduced scale. Two sample Cost Benefit Analyses were performed for broadband deployment in Galway and Tullamore and both returned positive net benefits. Furthermore, data from the International Telecommunications Union shows a strong correlation between communications (represented by the level of telephone penetration) and GDP per capita.

Moreover, there is a consensus among economists that much of the productivity differential between the US and Europe throughout the 1990s is a result of faster technical progress in ICT production and distribution. Broadband is necessary to facilitate the full adoption and usage of such technology, thus accelerating technical progress and subsequently improving productivity growth – essential for sustainable growth in living standards.

For these reasons, the vision for Ireland as set out in the Government's broadband strategy[1] is that:

- *The Government wants to see the availability of open-access affordable 'always on' broadband infrastructure and services for businesses and citizens throughout the State within three years (2005-2006) on the basis of utilisation of a range of existing technologies and broadband speeds appropriate to specific categories of service and customers. We wish to see Ireland within the top decile of OECD countries for connectivity within 3 years.*
- *In the medium term, we expect that broadband speeds of 5mbit/s[2] to the home and substantially higher for business users will be minimum standard within 10 – 15 years for broadband. We will aim for Ireland to be the first country in Europe to make this level of broadband service widely available for its people*
- *The State's role in this area is confined to provision of seed capital. Actions undertaken to meet the three-year objective will ensure that any infrastructures put in place with Exchequer assistance are capable of being upgraded to meet the longer-term target.*

The reality remains, however, far removed from the vision. Despite being a leader in ICT infrastructure in the early 1990s, Ireland has recently fallen behind over the last decade, as evidenced by the following statistics:

[1] New Connections – Department of An Taoiseach
[2] The minimum speed at which video on demand becomes possible

- Ireland is currently ranked 29th out of 30 OECD countries in terms of broadband availability and use. Ireland is currently 30 months behind our main competitors in DSL take-up and this gap is expected to marginally increase over the coming year. The key issue remains the lack of a competitive broadband infrastructure at a local level in Ireland. This is evidenced through the cost of broadband services for businesses.
- Ireland also lags behind the rest of the OECD in terms of PC penetration and the percentage of the total population with Internet access.
- Ireland ranks 18th for entry-level DSL for small businesses and residential users, 17th for basic 0.5Mbit/s DSL for small businesses and 14th for advanced 2Mbit/s DSL (as used by medium-sized businesses) [3].

Outside of Dublin, national leased lines are required to avail of high capacity services. Overall competition remains poor and prices high. Key concerns include the lack of availability of higher speed line services in some parts of the country, lack of choice and cost of access.

On the positive side, Ireland is the most competitive country in the OECD for international connectivity. Government investment in Global Crossing has added substantially to the level of capacity available and the level of competition. The benefits of this investment can be seen recently through the attraction of Google and Overture to Dublin.

The reality for Ireland is that many of the jobs supported by the development agencies in the high tech and international services sectors are becoming more dependent on the provision of advance telecommunications services to enhance the value of their activities in Ireland. Higher value added functions such as R&D, Supply Chain Management, eProcurement, Marketing and headquarter function rely critically on the provision of low cost broadband.

1.3.1 Priority Broadband Telecommunications Projects

1. **Accelerate the funding for the roll-out of the Regional Metropolitan Area Networks (MANS) Programme**
   To date, €65m has been allocated for the provision of high capacity fibre-optic broadband to 19 towns in which MANs are due to be constructed under Phase One of the Regional Broadband Programme. However this funding has been split into €32.5m for 2003 and €32.5m for 2004. The Agencies recommend fast tracking the following towns and areas for MANS rollout:

   - **Waterford**

   Some 50% of employment in existing indigenous companies in the South East is concentrated along the Southern coastal area, with most of this based in and around Waterford City. The lack of a broadband loop for the Waterford area has an adverse impact on a large portion of indigenous companies and is significantly hindering the development of new high tech manufacturing and service sector start ups.

   - **Athlone and Mullingar**

[3] The nineteen countries are the EU-15, Canada, Japan, Korea and the US.

Both are designated as new gateway towns under the NSS and have large vacant office facilities ideal for back office, call centre and shared service type activities. (Six thousand people commute daily to Dublin from Mullingar). In the case of Athlone, the new Enterprise Platform Programme and the Athlone Institute of Technology's commitment to build a new Regional Innovation Centre will provide increased demand for broadband services. Under the first phase of the Regional Broadband Initiative, Athlone and Mullingar are scheduled to have broadband by Q1 2004. It is recommended that this be fast-tracked to 2003 through a re-allocation of funding from 2004 to 2003.

2. **North-west centres of Sligo, Buncrana and Killybegs, and the north east centres of Dundalk and Drogheda.**
   None of these towns are included in the first phase of the Regional Broadband Initiative. As a future gateway town under the NSS, Sligo should be equipped with high-class broadband infrastructure to help generate critical mass.

3. **Broadband linking Knowledge Network Locations**
   Knowledge Networks are world class locations for business in five locations in the Shannon region (Limerick, Birr, Thurles, Tralee and Ennis). The development of broadband infrastructure linking these locations is imperative if they are to continue to provide competitive locations for internationally trading enterprises. This should be done in conjunction with a broadband link to Dublin in order to link these towns to the international gateway locations in Dublin.

1.3.2 Recommendation on Broadband

The Government budgeted €152m for broadband development during the life of the NDP and the Agencies recommend that this budget be maintained with the provision of additional funds if necessary. Only €65m of the budget €152m has been allocated, to the first phase of the Regional MANS programme, split between €32.5m for 2003 and the remaining €32.5m for 2004. All of the projects in the first phase of the Regional MANS programme are at the building stage, the only delay being the allocation of the budget. The Agencies recommend that the funding allocated to 2004 be brought forward to 2003 to enable the rollout to be completed before the second half of 2004 as currently planned. Based on the costs incurred to date during phase one of the Broadband Initiative, the Agencies estimate that an additional €20m for broadband development will be required to fund recommendations 2&3 above.

1.4 Motorways / Dual Carriageways and National Routes

It is generally recognised that Ireland's road network is well below international standards. In the Annual Competitiveness Report 2002, the National Competitiveness Council (NCC) reported that Ireland was 13th out of 16 countries for length of motorway per 1,000 sq. km. Ireland's attractiveness as an investment location is diminished as manufacturing companies will only locate in areas that are served by adequate transport links, which allow for the efficient and cost-effective movement of goods and people. A high quality motorway network is a standard feature of the infrastructure available for business in a majority of modern economies as it is a requirement of modern logistics techniques, and its absence in Ireland results in unfavourable

comparisons when companies are selecting investment locations. Investor perception that Ireland has yet to put some of the basics in place in terms of infrastructure weakens our negotiating position and undermines investor confidence.

The NCC and the Agencies have formulated a list of priority road projects that are needed to reinforce the competitiveness of the economy. Although a different set of criteria was used, both the Agencies and the NRA's list of priority road projects generally coincide. The NDP requires that route selection be undertaken "for substantial sections of the routes rather than focusing solely on the delivery of by-passes of congested centres of population". The effect of these objectives has been to prioritise the improvement of the following five major inter-urban routes: (i) the Dublin-Border (ii) the Galway-Dublin (iii) the Cork-Dublin (iv) the Limerick-Dublin and (v) Waterford-Dublin. Of these, only the Dublin to Border (M1) route is scheduled for completion by 2006. Without reprioritisation, each of the four other major inter-urban routes will not be completed until 2010. Given the importance which the Agencies assign to these routes, this timescale is unacceptable. However, the NRA estimates that with immediate reprioritisation within the roads programme, the inter-urban routes could be delivered by 2007[4].

In addition to highlighting the need for the completion of the five main inter-urban routes, the NCC and the Agencies have identified a number of other road projects that are also deemed priorities in terms of promoting industrial development, particularly in the regions.

1.4.1 Priority Motorway/Dual Carriageway/National Route Projects

- **Completion of the M50 South-Eastern Motorway.** To date, €300m has been spent on this project. However, delays due to the planning process mean that completion of the project has been delayed by up to five years until 2008 and will cost a further €300m. Nevertheless, the speedy completion of the M50 is crucial to alleviating traffic congestion in Dublin. Current congestion adversely affects most of the major exit points from the city, and has knock-on effects on travelling times to the rest of the country.

- **Completion of N9 Waterford to Dublin to motorway/dual-carriageway standard. Southern Section to be prioritised.** Both the northern and southern sections require funding (it is estimated that the southern section will cost €515m and the northern section €315m) and will not be completed under current scheduling arrangements for another 7 years. This timescale needs to be reduced. The upgrade of the Southern Section of the N9 is crucial to providing access to and from Waterford and the South East Region. A poor rail service combined with the absence of an air service to Dublin leaves Waterford City and its hinterland at a significant relative disadvantage.

- **Completion of N2 Dublin to NI Border.** At an estimated cost of €45m, the Carrickmacross section of the N2 is due to start construction in 2003. The Monaghan section of the N2 is due for completion in 2007 subject to funding availability and Castleblaney section of the N2 is due to be completed in 2008, subject to funding availability. These routes should be prioritised for completion by 2006.

[4] The NRA estimate that 98% of the main inter-urban routes are either currently being planned or are already under construction

- **N8 Dublin to Cork. Prioritise completion of Kildare and Monasterevin Bypasses resulting in Motorway from Dublin to Portlaoise. Prioritise Fermoy By-pass.** Construction on the Fermoy Bypass (at an estimated cost of €220m including some PPP funding) is due to start in 2004 and to be completed by 2006. The Monasterevin By-Pass, costing an estimated €140m, is due to start in 2003 and be completed in 2005. The Kildare by-pass is underway and is due to be completed in 2004. The Cashel By-Pass (€49m) is due to start construction in 2003 and completed in 2005. Cullahill to Cashel is estimated to cost €330m and the Cashel–Mitchelstown route is estimated to cost €260m. Both routes need funding. Watergrasshill, at a cost of €110m is under construction and is due to open in 2004. The cumulative estimated cost of those routes where work is not yet underway is €999m.

- **N4 Dublin to Sligo. Prioritise completion of Sligo Inner Relief Road and the Castlebaldwin to Cloonamahon (Collooney) section.** The Sligo inner relief road is estimated to cost €75m and is through the planning process. Archaeological work is being carried out during 2003 and construction is expected to start in 2004 with completion in 2006.

- **Completion of N11 incorporating the Glen of the Downs to Arklow.** The N11 Glen of the Downs Dual Carriage Way is due to be completed in 2003.

- **N25 Kinsale Road Interchange.** This will facilitate access to / from Cork Airport and remove a major traffic bottleneck and stimulate growth in the area. The estimated cost of this project is €45m. Work is due to start in 2005 and be completed in 2007. The project is through the planning process but needs funding.

- **N28 Rigaskiddy By-Pass.** The Ringaskiddy by-pass should be accelerated and consideration given to traffic management in the Ringaskiddy area to adequately support new and planned business parks.

- **N18 Limerick/Shannon to Galway (Incorporating the Ennis By-pass and the 4th River Crossing in Limerick).** The estimated cost of the 4th river crossing is €400m including Public Private Partnership (PPP) funding. It is through the planning process but awaits statutory approval and CPO. Funding has not yet been allocated to this project. The work is due to start in 2005 – 2006 and be completed in 2008 -2009. The Ennis By-Pass is through the planning process, and is estimated to cost €200m in total. A funding allocation of €17m has been provided in the 2003 NRA Programme for the Ennis Bypass. Work is expected to start in 2004 and be completed in 2007.

1.4.2 Recommendation on Motorway/Dual Carriageway/National Route Projects

On the basis of NRA estimates, the outstanding cost to completion of the above priority routes is approximately €5bn, before any contribution from PPP funding is taken into account[5]. In order to ensure delivery by 2007, these routes should be prioritised for funding as part of the Medium Term Review.

1.5 Research Centres

A strong national research capability is the cornerstone of a modern economy built on the generation and utilisation of knowledge. Research centres constitute a core element of such a capability. They enable research teams to exploit opportunities in science and engineering where the complexity of research problems or the resources needed to solve them require the advantage of scale, long-term focus, facilities and the collaborative relationships that they encourage and facilitate. Industries based on science and engineering, which now dominate Irish industrial output, rely increasingly on such centres for skilled graduates, knowledge transfer and new methodologies.

Ireland has lagged behind other developed countries in the establishment of research centres. However, since 2000, two major initiatives have been put in place to urgently remedy this infrastructural gap. These are the Programme for Research in Third Level Institutions (PRTLI) administered by the Higher Education Authority and the Technology Foresight Fund being administered by Science Foundation Ireland (SFI).

Research Centres included in Cycle 3 of the PRTLI (to cover the period 2002-06), and their associated capital costs[7], are listed in Appendix B. Of these, the most significant are the following:

- Dublin Molecular Medicine Centre (TCD, UCD, RCSI)
- Centre for Cellular Biotechnology (DCU)
- Institute for Neuroscience (TCD, UCC, UCD)
- Conway Institute (UCD, RCSI, TCD)

SFI has recently announced funding for three new Research Centre programmes which will be funded jointly by industry. The centres are:

- Digital Enterprise Research Centre (UCG)
- National Centre for Human Proteomics (RCSI)
- Alimentary Pharmabiotic Centre (UCC)

These centres are designed to encourage research partnerships connecting researchers in Irish universities with their counterparts from world leading research corporations and some of

[5] The NRA cannot, for "commercially sensitive confidentiality reasons" give any information on how much funding is expected to be contributed from the private sector through PPPs.
[7] Although only capital expenditure is highlighted, current and ongoing expenditure are of equal importance to the development of these Research Centres

Ireland's most promising ICT and biotechnology companies. They will also promote research collaboration between leading research universities.

The NDP allocated a total of €2.5bn for Research, Technological Development and Innovation (RTDI). This includes spending on industry, education and science, agriculture/food, marine and environment. The specific allocation to Education & Science was €698m. A total of €261.5m of exchequer funding has been allocated to fund the capital and current and ongoing expenditure of the Research Centres in Cycle 3 of the PRTLI listed in Appendix B. Of this €140.8m is allocated to capital expenditure. The ongoing support from the exchequer is crucial to maintaining private sector commitments of a total of €58.5m of which €35.6m has been allocated to capital expenditure and €22.9m to current and ongoing expenditure.

This funding is vital for the success of these new centres and for the associated infrastructure that both PRTLI and SFI are also supporting. There was a pause in public funding for PRTLI in 2003 which resulted in delays in building programmes and deferral of equipment purchases. This has resulted in questions internationally as to the seriousness of Ireland's commitment to investment in research and has damaged our ability to attract leading researchers to this country. This has also put at risk the €58.5m committed to Research Centres by the private sector. A number of Research Centres that would improve dramatically Ireland's attractiveness for hi-tech activity, for example, to attract major biotechnology businesses, are now on hold.

1.5.1 Recommendation on Research Centres

Ireland is starting almost from scratch in building a world-class science and technology infrastructure. The process of building and staffing research centres, as well as establishing a track record and a reputation, is a long and slow one. Remarkable progress has been made in a few years. However, continuing and sustained funding must be maintained.

The NDP funding allocations are essential for continuing the evolution of these programmes which are only now getting off the ground. The pause in PRTLI funding in 2003 needs to be reversed in 2004 and subsequent years and, preferably, a mechanism devised which would make it impossible for these funds to be cut back as part of the annual Estimates process. It is crucial that the €261.5m of exchequer funding allocated to Cycle 3 of the PRTLI be maintained to ensure the development of the Research Centres outlined in Appendix B and to secure the private sector funding of €58.5m which has been committed to these centres. Similarly, investments in research via SFI need to continue to build to their projected steady-state levels.

1.6 Other Infrastructure Priorities for Industrial Development

Broadband communications, research centres and motorways/dual carriageways and national routes are the three most important categories of economic and technological infrastructure for competitiveness and industrial development. In addition, where resources are available, there are other projects under other categories of infrastructure that will be important to future industrial development.

1.6.1 Business Parks, Technology Parks and Incubation Space

Innovation and entrepreneurship are critical components in the development of a vibrant enterprise sector. Incubation space for start-up companies is critical to commercialisation of innovation. One recent example of incubation space is the Digital Media Hub which provides facilities for early stage, fast growth and established digital media companies. The project will be fully funded through a PPP. Another example is Webworks which provide high-class office facilities and a management structure for technology-based companies. Although the budgets have been allocated for the Webworks, planning procedures have to date delayed their delivery.

1.6.2 Non-National Roads

Non-national roads account for 94% of the total national road network and carry over 62% of total road traffic. For companies with a dispersed client base, regional roads can be of considerable importance. Where clustering has taken place in remote areas, regional roads are vital to get goods to markets. Good local roads are the lifeblood of rural areas and the tourist sector. Ready and easy access to Gateways and to arterial roads and, thus, to domestic and international markets, is vital if rural communities, especially smaller towns, are to diversify and develop their economic bases by attracting new enterprises in industry and services.

1.6.3 Waste Management Facilities

Due to the expansion of the economy over the past decade, the rate of waste generation has increased significantly. As many existing waste disposal sites are reaching the end of their useful lifetime, meeting future waste management needs to be urgently addressed. The investment target for waste management infrastructure in the NDP is €825 million, of which €571 million (70%) was to be secured through private finance arising from PPPs. It is estimated, however, that less than €100m has been expended to date, reflecting delays in the adoption of Waste Management Plans by many local authorities and legal challenges to the provision of infrastructure by public and private service providers. Failure to address waste capacity constraints will either force industry to scale-down its operations or will deter inward investment. This is a particularly significant issue for the pharmaceutical industry, which is the largest contributor of corporation tax to the Exchequer in Ireland (€700m in 2001) and directly employs over 20,000 people.

Stimulating greater investment in waste infrastructure does not require a re-prioritisation of funds under the NDP, but rather regulatory reforms. Local Authority development plans should include objectives for express provision, or facilitation of the provision of infrastructure associated with waste recovery and disposal facilities as specified in the Planning and Development Act, 2000. The proposed National Waste Management Agency should be implemented quickly and given legislative powers to develop planning schemes for Waste Development Centres. Consideration should also be given to planning applications for major infrastructural projects, include waste infrastructure projects, to go directly to ABP. ABP would need to be restructured to ensure that this would speed up the delivery of major infrastructure projects (see also Section 2).

1.4.4 Airports and Sea Ports

Dublin Airport. A high-speed rail link from the centre of Dublin to the Airport is necessary. Given to the relatively high cost of this project, this should be done as a PPP project. The Government should also facilitate the provision of a second terminal at the airport.

Regional Airports. All companies need to be within a 90 minute journey of an international airport. For businesses operating internationally, proximity (in terms of time to access) to an airport coupled with competitive, timely international connections is a prerequisite for a competitive location. Given its location, however, Dublin airport does not serve the rest of the country well, particularly the western half of the country. While Cork and Knock airports have international status, Shannon is recognised as the main international airport, particularly for long haul flights, outside of Dublin. Reinforcing Shannon Airport as an alternative international airport to Dublin requires greater road and rail capacity between the airport and the main population centres across the West and South-West (see Sections 1.4.1 and 1.4.6).

Sea Ports. Given the open nature of the Irish economy and Ireland's peripheral location, the availability of adequate access to seaport facilities is essential for the transport of Ireland's exports to international markets. In line with the sentiments in the NSS regarding the decongestion of Dublin, infrastructural access to the major seaports outside of the Dublin area should be prioritised once the Dublin port tunnel is completed

1.4.5 Water and Wastewater Facilities

Adequate capacity in water supply and wastewater treatment infrastructure is essential for growing population areas and for industrial development and should be viewed as necessary supporting infrastructure for enterprise development. Accelerated investment in water and wastewater treatment infrastructure should be undertaken to provide adequate capacity for future industrial development. This investment should cover both the construction of new facilities and the upgrading of existing facilities. Priority projects are identified in Appendix C.

1.4.6 Rail Network

An efficient and widespread rail network and service contributes to enterprise development, particularly in the regions, by facilitating the movement of people and goods and by relieving road congestion. The Irish rail network, however, remains marked by decades of under investment. Of most concern is the fact that the majority of the national network is single-track. Only the lines between Dublin and Belfast and Dublin and Cork are double-tracked. Future investment priorities for the rail network were identified in the Strategic Rail Study, published by the Minister for Transport in April 2003. The Study calls for the prioritisation of the development of the radial routes connecting Dublin to the other major cities in the country. Along with the prioritisation of the LUAS project, the Agencies welcome the focus on the main intercity routes.

In addition, further consideration should be given to investment in the so-called Western Rail corridor (Cork-Limerick-Shannon-Galway-Sligo). This is a necessary instrument of driving development in the West of Ireland in line with the NSS. Although the entire Western Rail link corridor from Sligo to Cork may not be economically feasible in the short term, the Agencies would like to see increased investment in the rail link between Cork and Galway which covers the more densely populated part of the West. It should be remembered that Investing in

infrastructure ahead of demand is often a requirement of driving more balanced regional economic development.

1.4.7 Urban Bus Transportation

Urban bus transport is not a major issue for the agencies from a regional perspective but is seen as a major issue for alleviating traffic congestion in Ireland's larger towns and cities, particularly in the Greater Dublin Area. Given the substantial investment in fleet expansion, however, bus services should be extended beyond the immediate suburban limits, to incorporate the business and technology parks which surround the city to ease traffic congestion on key roads such as the M50. The Quality Bus Corridor (QBC) system has proved to be very successful where continuous bus lanes have been provided. This network should be expanded to include as many of the main routes into the city as possible including sections of motorway.

Section Two

Institutional Barriers to the Delivery of Infrastructure

2.1 Introduction

This section of the Submission comments on the key institutional and "systems" barriers that have caused delays and cost over-runs in the delivery of economic and technological infrastructure projects under the NDP to date. Although the agencies are not experts in this area, they have developed insights that may be of use to Government in the efficient delivery of infrastructure[8]. For the purpose of this analysis, the institutional barriers to infrastructure delivery identified by the Agencies have been divided into the following three categories:

- Inefficient Planning Processes, Procedures and Legislation
- Poor National Project Management
- Funding and Financing Constraints

The first two address the efficient delivery of infrastructure. It is important that these issues are addressed as a matter of urgency before addressing finance issues. This is necessary to ensure better value for money for infrastructure investment for the remainder of the NDP and beyond.

2.2 Planning – Processes, Procedures and Legislation

Delays in the statutory planning process are one of the key impediments to the rollout of economic infrastructure. Greater certainty, speed and consistency in the planning process are essential to ensuring the timely and efficient rollout of economic infrastructure. The key issues identified under this category are as follows:

- Private Property, the Compulsory Purchase Order (CPO) Process and High Land Costs
- Forward Planning and the Development Planning Process
- Planning Appeal Mechanisms
- Community Consultation

2.2.1 Private Property, the CPO Process and High Land Costs

The NCC and the Agencies welcome the examination of the All-Party Oireachtas Committee on the Constitution of possible reform of property rights to allow for a reduction in the cost of land acquisition for national infrastructure projects. The work of this Committee has the potential to tackle a number of inter-related problems affecting land costs for infrastructure projects.

[8] Much of the commentary on these issues is based on a cross-country comparison of infrastructure delivery systems commissioned by Forfás from ERM Consultants. The countries examined were Scotland, Denmark, Spain, France, Australia and Hungary.

2.2.1.1 Private Property and the Common Good

As in most countries, the Irish Constitution (Article 43) supports the compulsory acquisition of land in the public interest and the Courts have consistently upheld the legislative procedures involved. The Constitution is, however, a 'living document', which is subject to interpretation by the Courts. Over time, it appears that the balance between private rights and the public good has been subject to change. During the 1960s, 70s and 80s the Courts appeared to favour private property rights at the expense of social projects. Since the 1990s the balance has been moving towards limiting the rights of private property in order to pursue desirable social objectives.

2.2.1.2 Recommendations regarding Private Property and the Common Good

Given the uncertainty surrounding the interpretation of the Constitution, Article 43 of the Constitution should be re-worded to include the phrase 'the common good' and also reference to 'essential public infrastructure'. A suggestion that might be considered by the All-Party Committee would be to revise the wording of Article 43.2.1 and Article 43.2.2 to include the following:

- **Article 43.2.1** Property rights are regulated by principles of social justice and by the need to pursue desirable national objectives including the provision of essential public infrastructure in the interests of the common good.

- **Article 43.2.2** Right of State to delimit by law the exercise of property rights in order to reconcile them with the exigencies of the Common Good and to have particular regard to desirable national objectives including the provision of essential public infrastructure in the interests of the common good.

The addition of a further article 43.2.3 would help to remove any remaining ambiguity.

- **Article 43.2.3** In particular, in reconciling the exercise of the said rights with the exigencies of the common good, the State may pay particular regard to the need to pursue desirable national objectives, including the provision of essential public infrastructure in the interests of the common good in an orderly, cost-effective, and efficient manner.

2.2.1.3 The CPO Process

Local authorities have powers to purchase land by agreement or through CPOs. Compulsory purchase procedures for public infrastructure projects such as road schemes, water supply and sewage facilities exist in all developed countries. However, the CPO process often causes considerable delays in the delivery of infrastructure projects. In 2001, for example, road projects were significantly delayed by a lengthy CPO process associated with the need to resolve compensation claims between the State and farmers for agricultural land. Farmers were unhappy with the amount of compensation they were receiving and began preventing access to their lands during the design phase of projects in the hope of delaying the delivery of road projects.

Such delays need not occur. Once a "Notice to Treat" is served, allowing the transfer of land to the local authority, any outstanding compensation issues are referred to an independent arbitrator if required. This need not prevent the works for which the lands were required to start. A recent example of this is land acquired for the South Eastern Motorway. Work has commenced despite the compensation claims being unresolved. While work can continue in this instance, the uncertainty surrounding the scale of compensation required makes investment less attractive to the private sector.

2.2.1.4 Recommendations on the CPO Process

The following actions would help streamline the CPO process:

- The establishment of a dedicated national system for assessing CPOs e.g. a specific court, tribunal or independent assessment board has the potential for streamlining and accelerating the CPO system.

- The introduction of clear and consistent mechanisms through which compensation might be calculated in an efficient manner would reduce the current uncertainty, making investment in public infrastructure projects more attractive (see Section 2.2.1.5).

- In the context of the proposed "Critical Infrastructure" bill aimed at fast tracking major national projects, consideration should be given to the inclusion of measures to freeze all rezoning after a decision has been made to build a road scheme to prevent any rezoning that is incompatible with the project or which would interfere with land required for the project.

- Consideration should be given to the inclusion of "public values" in arbitration cases where issues arise between infrastructure projects and national monuments. The National Monuments Act, 1994 allows the Minister (as final arbitrator) to adjudicate only on a project's archaeological merits. It should be possible to balance archaeological and nature conservation interests with other interests such as reasons of overriding national or regional importance including social and economic reasons, where appropriate. In the case of the delay in the completion of the M50, the Minister according to the Act cannot balance the cost invested in the completion of the M50 with the archaeological merits of the Carrickmines site. The delays to work on the M50 due to this dispute have been costing over €200,000 per week.

2.2.1.3 High Land Costs under CPOs

In recent years, there has been extensive commentary on the escalating costs of land acquired under CPOs related to public infrastructure projects, such as roads and light rail[9]. One particularly contentious issue has been the manner in which land value is calculated. The presence of an infrastructural development can bestow considerable 'hope value' on a piece of land. This has the potential to encourage private speculation, which can stifle social development.

[9] Some land (purchased) for the M50 was 3 times construction costs (*The Physical Planning Process: Issues for IDA Ireland, Submission to Forfás by IDA Ireland, April 2003)*

The normal principle for compensation in litigation is to put a party back into the position in which they were prior to the events giving rise to the litigation taking place. Similarly, the enforced procurement of land should be at prices based upon a fair-value rather than a speculative-value. This would limit hedging and restrain the excessive rate of land price growth witnessed in recent years.

2.2.1.2 Recommendations regarding High Land Costs

The following recommendations should be considered by the All-Party Oireachtas Committee and by relevant government departments:

- The current method of calculating compensation when land is compulsorily acquired is defective. A pricing mechanism should be developed that is less dependent upon anticipated land values, particularly where these values incorporate anticipated increases in the event of public infrastructure developments i.e. when the value is only an estimated value based to a large extent on future potential uses of the land. Notwithstanding, where a future potential rise in value is likely, then value should be calculated as the existing use value plus any loss the owner can prove he has incurred in buying, and since buying, the land plus a reasonable return on a speculative investment e.g. if he/she borrowed to buy the land reasonably believing (because of zoning in a development plan, proximity to a proposed new development) that it would have a higher value use. A possible model would suggest payment of cost price plus any interest on borrowings plus a given per cent over the prevailing interest rate. That way the landowner will not lose money on the investment, will get a reasonable return on the investment and will not get an exorbitant return simply because the State needs the land.

  An investor's reasonable investment-backed expectations should not be frustrated, but neither should windfall gains arise due to public action e.g. zoning/ a new road.

2.2.2 Forward Planning and the Development Planning Process

Poor consultation and pre-planning and badly prepared planning proposals are also significant factors for delays in the planning of public infrastructure projects. Delays are also caused by the planning authorities requesting further information from the applicant, the applicant requesting more time, the giving of notice to prescribed bodies and the appeals process to and the length of time taken for decision making by ABP.

The amount of time taken to process planning applications across City and County Councils varies significantly. The *Building Industry Bulletin*[10], a quarterly report published by the DELG, has found that only five of the eight City Councils were able to decide on 80% or more of their total number applications within the two month time frame outlined in the *Planning and Development Act 2000* and none of the 26 County Councils.

(1) [10] 'Benchmarking Planning Authorities' in *Building Industry Bulletin*, Jerome Casey & Co Limited December 2002

2.2.2.1 Recommendations on Forward Planning and the Development Planning Process

- As lengthy planning procedures and waiting times act as a disincentive to investment, a fast-track system for strategic national projects that are key to achieving national policy objectives should be developed. For planning purposes, such projects should be ranked and prioritised rather than subjected to the orderly queue approach. It may also be appropriate for ABP to establish separate divisions for public and private planning applications in order to fast-track projects of significant public value.

- Consideration should be given to planning applications for all major infrastructure projects of national importance to go directly to ABP. ABP would need to be restructured to ensure that this would speed up the delivery of major infrastructure projects.

- The review of Environmental Impact Statements by ABP should be within the statutory timing guidelines and the current 18 week time limit for decisions by ABP should be mandatory rather than recommended

2.2.3 Planning Appeal Mechanisms

Ireland is unique among European countries in that it has an independent third party appeals system for planning applications, which is operated by ABP. Through changes introduced in the *Planning and Development Act 2000*, only objectors to the original application are allowed to refer the decision to ABP. The proportion of third party appeals is growing and in 2001, 45% of determined planning appeals involved third parties[11]. Once ABP has made a decision on an application or issue, further appeal is only possible to the High Court, and should be made on a point of law. Although it is relatively rare for third party appeals to go to the High Court, when they do, this can cause significant delays and cost over-runs.

2.2.3.1 Recommendations on Planning Appeal Mechanisms

- A specialist judge or judges should be appointed to the High Court to deal specifically with the judicial review of national infrastructure projects and planning appeals and legislation should be enacted to the effect that this judge or judges will only deal with other cases if there are no judicial reviews of decisions related to national infrastructure projects awaiting hearing.

- The rationale for allowing third party appeals on the basis of "point of law of exceptional public importance" needs to be better defined and reviewed in order to prevent speculative opposition/frustration of proposed developments. While there is recognition of the need for broad rights of appeal under the Aarhus accords, we believe a more robust assessment of the merits of cases and the motivation behind applications for leave for judicial review would be beneficial. Delays in the implementation phase of projects is often blamed on legal

(2) [11] An Bord Pleanala

challenges, reflecting the ease with which the Irish legal system permits challenges to projects even after the relevant statutory approvals have been obtained.

- In order to address timing delays caused by the planning appeal mechanism, ABP should ensure that all cases are decided within the statutory time frame and the current 18 week time limit for decisions by ABP should be *mandatory*, rather than recommended. The Public Display consultation periods for development plans should be lowered from ten weeks to six. In Denmark, the period is eight weeks, whereas in France and Spain the period is four weeks. The State of Victoria also has a four week period, but this is the minimum required in the case of a radical change being made to a development plan.

2.2.4 Community Consultation

Community consultation, although an important part of the democratic process, can result in significant delays to the rollout of infrastructure projects if not managed properly. Ireland is relatively weak in regard to non-statutory and 'pre-consultation' processes as it tends to start very late in the planning process compared to other countries e.g. at the route selection stage for roads and railway projects. Consultation at the early planning stage will allow the community to have a greater understanding of the decision making process and of the complexity of issues that are required to be considered in the planning and design of any project. Considerable up-front consultation undertaken by the Government can be used to drive the planning and design stage of major road projects, resulting in projects that are generally acceptable to the community. Critically, it is also provides an opportunity to address potential third party concerns before they become actual objections, a particular concern in Ireland given the ability of such appeals to interrupt detailed design at a later stage in the project.

One example in Ireland where community consultation has operated particularly well is the case study of the **Dublin Bay Project.** Many major infrastructure projects provide positive benefits to the community yet still attract considerable objection and opposition from some sector. This does not have to be the case. In this case, there was a high level of community interaction in the consultation process:

- Monthly meetings with residents
- A quarterly newsletter distributed to organisations and individuals in areas affected
- Public exhibitions and the production of a video
- The distribution of a questionnaire to affected homes across Dublin
- Presentations and tours of the site for members of Dublin City Council and Fingal County Council

In Scotland, planning authorities are legally required to consult community councils and certain statutory bodies before granting planning permission. In addition the wider public has a right to view and comment to the planning authority on any application or policy. Public interest in planning extends beyond those most directly affected by a proposal to the wider community. The case of the "Baldovie Waste to Energy Plant" demonstrates the use of 'Good Neighbour Charter' in relation to a waste infrastructure facility. The charter, believed to be the first of its kind in the

UK, provides for regular meetings between community groups and the operating company; access to information about the plant and the right to visit the facility.

2.2.4.1 Recommendations relating to Community Consultation

- A more clearly focussed community consultation strategy is required earlier in the planning process. Such practices should allow the community to be fully informed about major infrastructure projects and have an understanding of the complex issues involved. The *Planning and Development Act 2000* clearly seeks to apply this practice. Guidelines as to what constitutes good practice in terms of public consultation are required.

- Community incentives, in the form of infrastructure or other facilities benefiting the affected local community should be provided, where appropriate, for infrastructure projects of public concern and criteria for the provision of such incentives should be developed. Research should be carried out, in the case of projects where community incentives are relevant, to identify the benefits that will be most effective from a community point of view.

- In addition, arrangements should be made for the use of tools such as the Good Neighbour Charter (as used in Scotland). An agreement at an early stage as to the future consultation and communication methods likely to be undertaken may allay the communities fears that avenues will be available to redress unforeseen impacts. This may in turn play a role in the reduction of objections to the project.

- A top-class communications and public awareness campaign should be considered, based on the current NDP campaign, involving all infrastructure providers, development agencies, Government Departments and members of Government to explain the critical importance of rapid investment in infrastructure for economic and social development.

2.3 National Project Management

The issues identified under this category are as follows:

- **Co-ordination between State Bodies**
- **Planning and Project Management Skills in the Public Sector**
- **Capacity and Competition in the Construction Industry**

The poor administrative arrangements which inhibit good national project management of economic infrastructure delivery under the NDP have been the subject of much criticism and are seen as the cause for significant cost over-runs and time delays to the delivery of economic infrastructure projects. In Ireland, as in most developed countries, the provision of infrastructure tends to be delivered through local authorities or state agencies. It is vital to ensure that the necessary planning and delivery capabilities and co-ordination mechanisms exist within the public sector for large public economic infrastructure projects.

2.3.1 Co-ordination between State Bodies

Ireland has an institutional framework for the delivery of infrastructure that has developed around a central system of government departments, local and regional authorities and state agencies charged with particular delivery of infrastructure projects (Appendix C). Because of the large number of Government Departments and Agencies co-ordinating the delivery of infrastructure projects in Ireland, effective communication and co-ordination between these bodies is crucial to the timely delivery of projects, both at the level of strategic planning and operational infrastructure delivery.

The NSS provides a strategic direction that is beginning to be integrated with service/operational planning of local/state providers of infrastructure as evidenced by the development of Broadband and the publication of the Strategic Rail Review. It is imperative that Irish development agencies and other state bodies contribute to the delivery of the NSS through their own strategic and operational plans.

While Ireland is moving in the right direction with the NSS, Australia and Denmark demonstrate best practice in terms of integrated forward planning. In Denmark, responsibility was granted to the Municipal Council's for planning within their boundaries including detailed forward planning, permits for construction and changes in land use and zoning. In Australia, the Planning Scheme contains considerable State and Local Government policy. The result is considerable certainty in the planning system in that process and procedures are defined within the *Planning and Environment* Act 1987, and the land use definitions, zonings and decision making criteria are consistent across the State.

There are also communication and co-ordination problems between Irish Government Departments and Agencies at the level of operational infrastructure delivery. In some extreme cases, poor inter-Agency co-ordination and consultation has resulted in completed projects remaining unused for considerable periods. The Shannon/Foynes Port Access Route remains closed eight months after completion and more than two years after the commencement of the planning and design stage because of a dispute between Limerick County Council and Iarnrod Eireann. Similarly, the Waterford By-Pass was delayed in part because of the failure of the planning authority to accurately reflect the preferred route corridor in the Waterford County Development Plan. While this is a reflection of poor management, it also reflects the importance of communication between agencies, in this case the NRA and the County Council, at the forward planning stage.

In addition, consultation between different Government Departments and Agencies often occurs too late in the planning process resulting in delays. Many infrastructure projects in Ireland are still subject to Ministerial approval or other additional statutory obligations. This is often not factored into the planning approval process and subsequently delays construction.

2.3.1.1 Recommendations on Improving Co-Ordination between State Bodies

- There is a need for greater emphasis on the co-ordination in relation to forward planning for all public bodies. Lessons could be learnt from the Victorian State Planning system in Australia where forward planning from all agencies is incorporated into the Development

Plan. Processes and procedures should be defined within the Planning Development Act and the land use definitions, zonings and decision making criteria should be consistent across the State. The introduction of a similar system in Ireland may reduce planning delays by promoting consistency in approach and definition by local authorities. Local authorities need to focus on forward planning which involves preparing and reviewing development plans, contributing to regional policy, having regard for national policy guidelines, the NSS and the adoption of County/City integrated strategies. Regional Planning Guidelines (RPGs) should reflect the compromise between promoting development in large urban areas and the need to establish realistic settlement patterns which will maintain the rural population.

- Regional planning guidelines should be informed by regional economic plans and should be reflected in the County/City Development Board Strategies and the corporate/business plans of local authorities. The actual presentation of physical development proposals related to infrastructure should be set out in County/City Development Plans in line with the appropriate stage of planning. For example where a site for a treatment plant is identified this should be accurately reflected in the development plan of the planning authority to avoid unnecessary delays in implementation.

- In order to streamline the national project management process, fewer Government Agencies and Departments should be involved in the delivery of economic infrastructure. Each national infrastructure project should be made the responsibility of a single Government Department or Agency and that entity should take the role of national project manager for the delivery of the infrastructure.

- Consideration should be given to the feasibility of increasing the NRA's direct involvement in road project planning, design and construction at the local as well as national level.

- Effective co-ordination of traffic and transport management in the Greater Dublin Area requires a management structure dedicated to this task. The proposed Greater Dublin Area Authority, which would have responsibility for land use and transport planning in the region, should be established.

- Specific guidelines for consultation between agencies should be developed to clarify the remits and responsibilities of agencies and address:
    - Timing of consultation between agencies
    - Roles and responsibilities in relation to particular types of projects
    - Timelines for providing feedback
    - Co-ordination in forward planning

2.3.1.2 Recommendations Relating to Broadband-Specific Issues

- The Dept. of Communications, Marine and Natural Resources (DCMNR) should make best use of the state owned backbone networks of ESB, CIE and Bord Gáis to enhance competition in the backbone network and competition for connectivity to regional towns.

- DCMNR should examine the provision of external co-location space using public buildings or other facilities close to key Eircom exchanges to facilitate local loop unbundling.

- All new roads should be ducted and laid with fibre during construction and all new county development plans should mandate the building of duct as part of the planning permission for new residential and industrial centres.

2.3.2 Planning and Project Management Skills in the Public Sector

The skill of planning and project management has become both more critical and more complex in recent years. This development reflects the fact that the scale of many infrastructure projects, especially in civil engineering, is significantly greater than projects traditionally commissioned by the public sector and undertaken by the industry in Ireland, and involves a high number of stakeholders from both the public and private sector. The limited availability of such skills within Government Departments and other public bodies is a significant impediment to the efficient roll-out of economic and technological infrastructure into the medium-term. This should be addressed as a matter of urgency.

2.3.2.1 Recommendations Relating to Planning and Project Management Skills

- The Expert Group on Future Skills Needs, in conjunction with the Institute of Public Administration (IPA), should undertake an audit of infrastructure project management skills within relevant Government Departments and Agencies and make recommendations to ensure that the supply of staff with such skills will be necessary to meet the anticipated growth in demand.

- Project managers with significant experience in public infrastructure projects will always be in short supply. Accordingly, it will be important not to spread the available skills base too thinly across the public sector, but rather to concentrate it within a limited number of public sector bodies, such as the NRA and the Rail Procurement Agency.

2.3.3 Capacity and Competition in the Construction Industry

In response to the rapid growth in demand since the mid 1990s for social and economic infrastructure, as well as residential, industrial and commercial property, the construction industry has expanded rapidly in recent years in terms of both output and employment. Output increased by over 75% in real terms between 1995 and 2002 and is now valued at over €20 billion. Similarly employment has increased rapidly from 96,600 in 1995 to 190,000 in the 3rd. quarter of 2002 - a doubling of employment in just 7 years. Notwithstanding this impressive increase in output, it has been clear that the capacity of the construction industry over this period has been, up until the recent downturn in activity, unable to keep pace with the fast growth in demand, as reflected in the double digit construction cost inflation experienced during the first two years of the NDP.

Capacity limitation in the construction industry is a major concern for national project management. Unless the supply side of the construction industry is managed properly, any acceleration in spending on economic and technological infrastructure projects could lead to a repeat of the cost over-runs experienced during the 2000-02 period.

A number of actions are necessary to ensure that this does not occur. Firstly, there is a need to ensure that the supply of skilled workers available to construction companies in Ireland is sufficient to meet their forecast requirements. A recent report by the Expert Group on Future Skills Needs makes some valuable recommendations in this regard[12]. Secondly, there is a need to ensure that there is an adequate level of competition among Irish companies in the construction industry, and among their suppliers. The Competition Authority should be resourced to carry out such a study. Thirdly, there is a need to design major infrastructure projects and contracts in a way that to encourage more foreign construction companies to compete in the Irish market.

2.3 Finance and Funding Mechanisms

The Government has committed to spending 5% of GNP on all capital projects[13], which for 2003 equals approximately €5bn. Given that this includes capital spending not directly related to economic infrastructure e.g. schools, hospitals and social housing, it seems extremely unlikely, on the basis of current policies, that Exchequer funding alone will finance the outstanding economic and technological infrastructure projects identified as priorities in this report. Therefore, in order to deliver the priority projects of the Agencies, it will be necessary to raise additional funds through taxation, borrowing or alternative funding mechanisms. These financing alternatives should be considered in the context of the other reforms proposed earlier designed to ensure that infrastructure is delivered in a more efficient and cost-effective manner.

2.4.1 Taxation

Tax revenues for the year to the end of May 2003 have risen by only five per cent versus a forecast of seven per cent compared with the same period last year. Due to the contraction of the economy, any counter-cyclical fiscal policy through the introduction of higher direct taxation will be to the detriment of the macro economy. Higher indirect taxes risks fuelling inflation, which in turn would exacerbate Ireland's already worsened cost competitiveness position.

2.4.2 Borrowing for Infrastructural Projects

As a matter of principle, it is appropriate for countries to finance capital investments through borrowing rather than taxation, as it is unrealistic to expect current tax payers (both individual and corporate) to pay for investments the benefits of which accrue mostly to future residents. On the assumption that the capital investments have been made for sound economic and social reasons, government debt repayment is made from the higher tax revenues from the expansion in the economy facilitated by the infrastructure improvements.

[12] Expert Group on Future Skills Needs, *Report on the Construction Industry*, July 2003
[13] Ireland's Stability Programme Update - December 2002

As part of Ireland's commitments under EMU, the Stability and Growth Pact (SGP) requires Ireland to stay close to balance or in surplus and not to exceed the 3% of GDP deficit limit for borrowing at any stage. The SGP therefore provides the overall framework for Ireland's budgetary policy. The General Government Balance (GGB) is the level by which Ireland's compliance with the SGP is measured and includes the National Pension Reserve Fund contribution, Non-Commercial State Sponsored Bodies, Local Authorities and Social Insurance Fund. The GGB is therefore a wider measure of the budgetary position than the Exchequer balance. Budget 2003 projects that the GGB will be in deficit by €1,781m in 2004 and €1,792m in 2005. It also states that there will be Exchequer deficits in those years of €3,442m and €3,715m, respectively.

Given the tighter public finance position, and the resultant need to reprioritise investment, it seems reasonable to advocate an increase in public borrowing, so long as this money is ring fenced and used only to fund key infrastructure projects required to boost long run economic growth. Furthermore, provided that the Government can effectively manage the supply side capacity of the economy (and thus avoid the rapid increases in construction inflation which were evidenced at the end of the 1990's) then, according to the ESRI *'the low interest rate environment creates opportunity for economically justifiable investment to be undertaken while respecting the constraints of the Stability and Growth Pact'*.

2.4.2.1 Recommendations for Borrowing for Infrastructural Projects

- The Government should continue to borrow for capital spending in 2004 and 2005, to invest in viable economic and technological infrastructure, while remaining within the requirements of the Stability and Growth Pact

- The National Development Finance Agency (NDFA) has been established to advance moneys (debt and/or equity) and enter into other financial arrangements for approved public investment projects including the establishment of Special Purpose Companies (SPCs). The ramifications for the stability and growth pact of the borrowing for investment in infrastructure in the name of NDFA need to be clarified by Eurostat and the CSO as the guidelines for funding mechanisms open to the NDFA cannot be established.

2.4.3 Public Private Partnerships (PPPs)

A PPP is a partnership between the public and private sector for the purpose of delivering a project or service traditionally provided by the public sector. The arrangement recognises that both the public sector and the private sector have advantages relative to the other in the performance of specific tasks. By allowing each sector to do what it does best, public services and infrastructure can be provided in the most economically efficient manner.

Given current budgetary constraints, PPPs are beginning to play a role in progressing infrastructure projects in Ireland, with an even greater role envisaged in the future. A number of major infrastructure projects have been identified as being suitable for PPP funding. Considerable uncertainty remains, however, regarding the provision of Government finance for projects as funding is provided on an annual rather than the multi-annual basis needed to provide certainty to potential PPP investors. The NRA has made a Submission to the Department of Transport in this

area and a cross-departmental team has been established to look at funding options. This process is underway for public transport (although relatively limited) but is yet to be confirmed for other categories of infrastructure.

2.4.3.1 Recommendations on Public Private Partnerships

- In order to achieve economies of scale, infrastructure projects should be bundled together to attract PPP investors and increase interest from major international construction companies.

- In order to attract PPP investors and private contractors to work on infrastructure projects, it is essential that public sector project funding to PPP projects is committed on a multi-annual basis.

- The Government should provide increased certainty to potential investors. Government approval of a project is crucial to attracting private sector investment. The approval demonstrates the Government's willingness to undertake a project and signals its intention to be involved over the life of the project. One of the criticisms of the PPP process is often the considerable upfront cost to the private sector in preparing initial tender documents. If firm Government support is not established in the very early stages, many private companies may not be willing to shoulder this risk and therefore choose not to become involved.

- There may be a role for the private sector in operating infrastructure on a franchised basis, rather than designing or building. The State ownership, private management system is often used for infrastructure projects in France. The process involves the State providing the infrastructure, including the design, building and funding, then leasing the infrastructure to a private operator for operation and management. This system may provide opportunities for increased revenue to the State and better value for money.

2.4.4 Alternative Financing Instruments

A number of other, alternative financing instruments which potentially allow for increased spending on public infrastructure projects without breaching Ireland's commitments under the Stability and Growth Pact should be explored further. These include.

- **Road Bonds.** Bond issues could be structured to part-finance road programmes which would be targeted at institutional investors, who could in turn create retail bonds in smaller denominations for retail investors, perhaps with tax advantages to the investor. Private sector companies and individuals have shown their willingness to the development agencies to contribute directly to the provision of physical infrastructure to enhance their local economic environment. In order to bring this process forward, there will be a need to provide greater certainty to private sectors investors regarding the State's financial contribution to particular projects. A guaranteed budget covering the lifespan of the present NDP, as opposed to the current annual funding through the Estimates process, would create greater certainty and would allow the NDFA and the inter-departmental group on funding options for public

infrastructure to assess the option of debt financing through bond issuance in a more serious manner.

- **Tolling of Existing Routes.** One form of bond issuance that should be considered is the securitisation of future revenues from the tolling of existing and new roads projects within a special purpose company. This method of financing has already been used successfully in Stockholm to provide funding for Social Housing. Tolling could be introduced on specific routes with heavy traffic flows in order to fund future roads projects and maintain existing ones. Revenues generated should be spent on road projects in the same region in order to gain the support of the local community. For example, revenue from a toll introduced to the Jack Lynch tunnel in Cork could be used to fund the Kinsale Interchange. Any introduction of tolls to existing routes should ensure minimal traffic disruption and delay.

- **Revolving Funds.** A Revolving Fund is essentially a renewable fund and works via a system of loans on the back of initial capital. In relation to infrastructure, it works similar to a grant system in that specific criteria should be met before any funds are released. This money is repaid over time (perhaps through user charges or tolls) and then available for use on other infrastructure projects. In terms of introducing this type of system, legislation is likely to be required, as will detailed instructions/guidelines on how the process is to operate. A number of US States use revolving funds to underpin borrowing for infrastructure.

  The use of funds from the National Pension Fund might provide the initial capital to establish such a mechanism but clearly this requires in depth evaluation as a policy option. Further investigation into this issue is certainly warranted, and should consider the opportunities and constraints provided by this concept, particularly in relation to use of the pension fund. The National Pension Fund should be viewed as a commercial entity that already invests in the financial markets i.e. bonds and equities, and any investment in bonds or equities structured to fund infrastructure investment would therefore be a commercial decision for the managers of the National Pension Fund.

Appendix A

Within each infrastructure category, the Development Agencies have identified outstanding projects which they have ranked in order of priority A, B or C. Those projects specified on the A list need to be completed by the end of the NDP. The priority projects on the B list should be completed by the end of the NDP using alternative funding mechanisms if necessary. Those projects listed on the C list should be delivered as soon as possible, either before or soon after the end of 2006, again using alternative funding mechanisms if possible. With regard to technological infrastructure, it should be noted that Enterprise Ireland has secured funding of €27m for 12 research centres in Institutes of Technology around the country. As these projects are already in train they are not listed in the table below.

"A List" Project Priorities (to be completed before 2006)

No	Category	Project
1	Broadband	Accelerate the funding for the roll-out of the Regional Metropolitan Area Networks (MANS) Programme, particularly for the Waterford area and Athlone and Mullingar
2	Broadband	In phase II of the broadband initiative, prioritise the inclusion of the north-west centres of Sligo, Buncrana and Killybegs, and the north east centres of Dundalk and Drogheda.
3	Broadband	Provide broadband funding to link Knowledge Network Locations of Limerick, Birr, Thurles, Tralee and Ennis
4	Motorways / Dual Carriageways	Completion of the M50 South-Eastern Motorway
5	Motorways / Dual Carriageways	Completion of N9 Waterford to Dublin to motorway/dual-carriageway standard. Southern Section to be prioritised
6	Motorways / Dual Carriageways	Completion of N6 Dublin to Galway to motorway standard
7	Motorways / Dual Carriageways	Completion of N2 Dublin to NI Border
8	Motorways / Dual Carriageways	N8 Dublin to Cork: Prioritise completion of Kildare and Monasterevin Bypasses resulting in Motorway from Dublin to Portlaoise. Prioritise Fermoy By-pass
9	Motorways / Dual Carriageways	Completion of the N7 Dublin to Limerick to motorway/ dual carriageway standard. Prioritise Naas road widening scheme.
10	Motorways / Dual Carriageways	N4 Dublin to Sligo Prioritise completion of Sligo Inner Relief Road and the Castlebaldwin to Cloonamahon (Collooney) section
11	National Routes	Completion of N11 incorporating Glen of the Downs to Arklow
12	National Routes	N25 Kinsale Road Interchange
13	National Routes	N28 Ringaskiddy By-Pass
14	National Routes	N18 Limerick/Shannon to Galway (Incorporating the Ennis By-pass and the 4th River Crossing in Limerick)
15	Research Centres	Maintain funding for Cycle 3 of PRTL1 to support the following research centres: • Dublin Molecular Medicine Centre (TCD, UCD, RCSI) • Centre for Cellular Biotechnology (DCU) • Institute for Neuroscience (TCD, UCC, UCD) • Conway Institute (UCD, RCSI, TCD)

16	Research Centres	Maintain funding for the SFI research Centre programme to support the following research centres: • Digital Enterprise Research Centre – NUI Galway • National Centre for Human Proteomics-Royal College of Surgeons in Ireland • Alimentary Pharmabiotic Centre-UCC
17	Airports and Sea Ports	Metro link to Dublin Airport
18	Airports and Sea Ports	2nd Terminal at Dublin Airport
19	Water and Waste Water Facilities	Construction of Effluent Plant proposed for Belview, Waterford (PPP Project)
20	Rail Network	Completion of the Luas project as planned
21	Rail Network	Up-grading of Inter-City rolling stock and implementation of enhanced business-friendly services on the following routes: Dublin to Galway; Dublin to Waterford; Dublin to Sligo
22	Bus Network	Extension of bus services to key locations the beyond the current city limits.
23	Bus Network	Extension of the Quality Bus Corridor (QBC) system

"B List" Project Priorities (to be completed before 2006 using alternative funding mechanisms if necessary)

Non National Roads Projects

Route No.	**Route Name**	**Reason for prioritisation**
N56	Donegal	Maintaining good access from major Gaeltacht areas to the larger urban areas
N59	Galway/Mayo	Maintaining good access from major Gaeltacht areas to the larger urban areas
N86	Connecting Dingle to Tralee	Maintaining good access from major Gaeltacht areas to the larger urban areas
N22	Upgrading the N22 between Mallow and Ballyvourney	Maintaining good access from major Gaeltacht areas to the larger urban areas

"C List" Project Priorities (to be delivered as soon as possible)

1	Roads	N1 Dublin to Dundalk; Completion of Western by-pass
2	Roads	N5 Westport / Castlebar to Longford; Road improvements
3	Roads	N59 Ballina to Sligo
4	Roads	N11 Gorey and Enniscorthy bypasses
5	Roads	N80 Moate to Carlow portion
6	Roads	Parts of the Western Road Corridor which have not already been prioritised e.g. N13-15, N17, N18, N24 and N25 be completed to minimum C standard i.e. the route from Letterkenny to Rosslare via Limerick. This would facilitate access from the West to the ports of Cork, Waterford and Rosslare.
7	Rail	Western Rail Corridor

Appendix B
Priority Projects for Research Centres

PROGRAMME FOR RESEARCH IN THIRD LEVEL INSTITUTIONS - CYCLE 3		
BREAKDOWN OF FUNDING		
		Capital
Inst	Project	Expenditure*
		€000
DCU	NICB	18,538
DIAS	**CPND-Grid**	**3,682**
NUIG	Marine Science	10,421
NUIG	BMES	7,140
NUIG	ECI	287
NUIG	HSHC	43
NUIG	Structural Change	901
NUIG Total		**18,792**
RCSI	PHG	8,569
RCSI	DMMC	9,969
RCSI Total		**18,538**
Sligo IOT	**Biosolids**	**1,460**
TCD	IITAC	5,018
TCD	IAMS	457
TCD	IIIS	2,748
TCD	Bioengineering	2,393
TCD	Neuroscience	18,208
TCD	Mediterranean	
TCD	Irish-Scottish	
TCD	TRIP	
TCD Total		**28,824**
UCC	5th floor Biosciences	4,752
UCC	BSU	1,101
UCC	Eco-electronics	3,999
UCC	Postgrad Library	27,206
UCC	Nanoscience	13,370
UCC	Boole Informatics	3,493
UCC	Analytical Chem	6,192
UCC	Environmental Risk	1,066
UCC	Bioscience	1,324
UCC	Food and Health	1,365
UCC Total		**63,868**
UCD	Conway	1,790
UCD	CSCB	15,360
UCD	HII	3,927
UCD	Integrative Biology	
UCD	ISSC	
UCD Total		21,077
UL	**Material Sc.**	
Waterford	**M-Zones**	**1,592**
Total		**176,371**
*** Capital Expenditure can be broken down into €140.8m Exchequer Funding and €35.6m private sector funding**		

Appendix C

Water and Wastewater infrastructure

Locations Requiring Additional Water Treatment Capacity and Indicative Costs

Locations	**Expand Existing Plant (€m)**	**New Plant (€m)**	**Total Cost of Required Capacity (€ m)**
Arklow	-	2.9	2.9
Athlone	15.1	-	15.1
Ballinasloe	2.6	-	2.6
Drogheda	8.9	-	8.9
Galway	34.2	-	34.2
Letterkenny	-	33.9	33.9
Sligo	1.9	-	1.9
Total (€m)	**62.7**	**36.8**	**99.5**

Locations Requiring Additional Wastewater Treatment Capacity and Indicative Costs

Locations	**Expand Existing Plant (€m)**	**New Plant (€m)**	**Total Cost of Required Capacity (€m)**
Arklow	-	11.3	11.3
Athlone	3.3	13.6	16.9
Ballina	4.4	-	4.4
Ballinasloe	2.6	8.6	11.2
Carlow	3.0	-	3.0
Cavan	-	9.3	9.3
Galway*	-	14.9	14.9
Letterkenny	-	16.7	16.7
Sligo*	-	13.6	13.6
Mullingar*	2.5	-	2.5
Tralee	8.3	13.6	21.9
Waterford*	12.8	-	12.8
Total (€ m)	**36.9**	**101.6**	**138.5**

***** Funding has been approved under the water services programme.

Appendix D

Government Departments and Agencies responsible for infrastructure delivery

Department Name	**Area of Responsibility**
Department of Transport	Rail, Airport and Public Transport
Department of Communications, Marine and Natural Resources	Broadband
Department of Environment and Local Government	Roads Infrastructure, Environment, Waste, and Water
Agency Name	
NRA	Assist in siting, design and forward planning of new road schemes.
EPA	Environmental protection and conservation, CORINE land cover and land cover changes
Local Authorities	Input to the County Development Plan, EIS's, Town management plans and housing strategies, Water/Waste water management
An Bord Pleanala	Assisting in decision making in planning applications, EIS's, CPO's and sustainable development.
Commission for Communications Regulations	Assisting in regulating the communication industry.
Iarnrod Eireann	Identification of appropriate transport routes
Department of Communications, Marine and Natural Resources	Foreshore Licences