UISCE ÉIREANN : IRISH WATER

Water Supply Project

Eastern and Midlands Region

Preliminary Options Appraisal Report

Volume 6

Appendix H

Options Working Paper-Consultation Submissions Report

November 2015

Water Supply Project
Eastern and Midlands Region

Preliminary Options Appraisal Report

Appendix H: Options Working Paper– Consultation Submissions Report

October 2015 **A01**

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List of Acronyms

BREEAM	Building Research Establishment Environmental Assessment Method
CER	Commission for Energy Regulation
CSO	Central Statistics Office
DCC	Dublin City Council
DECLG	Department of the Environment, Community and Local Government
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
ESRI	Economic and Social Research Institute
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IBEC	Irish Business and Employers Confederation
IFA	Irish Farmers' Association
IFI	Inland Fisheries Ireland
IW	Irish Water
Mld	Mega litres per day
NGO	Non Governmental Organisation
NTS	Non Technical Summary
OWP	Options Working Paper
PNR	Project Need Report
POAR	Preliminary Options Appraisal Report
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SELL	Sustainable Economic Level of Leakage
SPA	Special Protection Area
UWWTD	Urban Waste Water Treatment Directive
WFD	Water Framework Directive
WI	Waterways Ireland
WSP	Water Supply Project Eastern and Midlands Region
WSSP	Water Services Strategic Plan
WTP	Water Treatment Plant
WWTP	Waste Water Treatment Plant

1 Introduction

1.1 Introduction

On 1st January 2014, Irish Water assumed responsibility for managing Ireland's water and wastewater investment and maintenance programmes. On that date, Irish Water also took over the management of the Water Supply Project Eastern and Midlands Region (WSP) from Dublin City Council / Department of Environment, Community and Local Government. The project is currently in the project planning phase.

Management of the planning stage of the project is currently focused on achieving a planning submission to An Bord Pleanála by mid-2017 with a view to delivering a new source of water to the Eastern and Midlands Region by 2022.

As the project develops there will be a number of Stakeholder and public consultation opportunities. This report sets out the activities undertaken and feedback received from the public consultation on the Options Working Paper which was undertaken during the period 9th June – 4th August 2015. This was the second consultation stage of the WSP; this is the stage above the current one highlighted in '*pink*' in Figure H.1, which shows the Project Road Map.

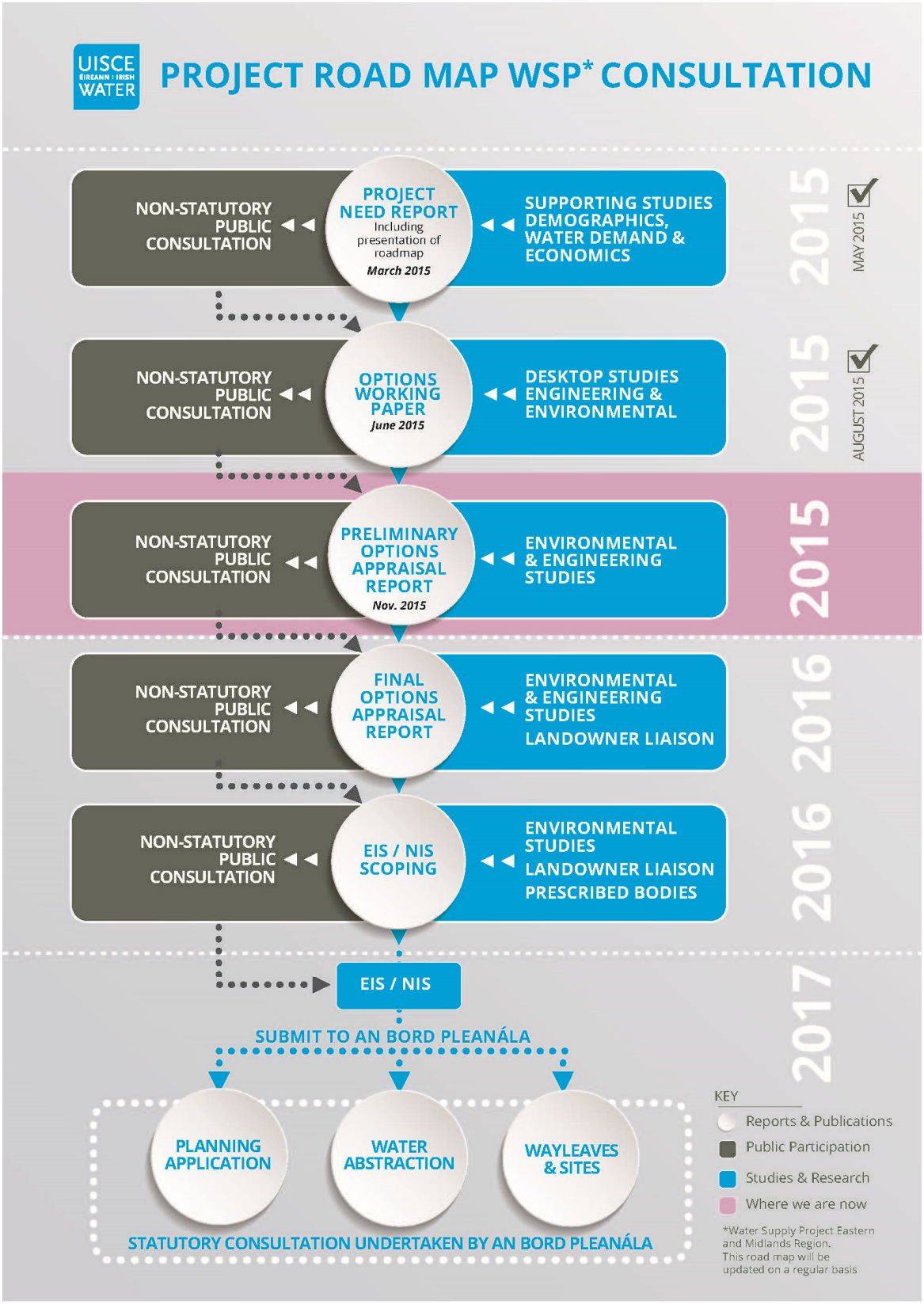


Figure H.1: Project Road Map

1.2 Structure of the Consultation Submissions Report

This Consultation Submissions Report is structured as follows:

- Section 1: This section (Introduction);
- Section 2: Summarises the Public Consultation process and Media input / output;
- Section 3: Outlines the content of the submissions received during the Public Consultation period from the 9th June 2015 to 4th August 2015 and categorises them into Submission Themes;
- Section 4: Includes the formal responses to the feedback received during the Public Consultation period;
- Section 5: Next steps in the Public Consultation process.

2 Consultation

2.1 Introduction

Early engagement with Stakeholders is an important aspect of infrastructure development. At critical points in the development of the WSP, Irish Water (IW) has invited feedback from specific Stakeholders, organisations and members of the public to assist them in shaping the project (see Figure H-1 Project Road Map).The publication of the Options Working Paper (OWP), and associated public consultation which took place for eight weeks between the 9th June 2015 and the 4th August 2015, represented a second opportunity in the development of the WSP for the submission of feedback.

The OWP confirmed four technically viable options as appropriate for further consideration in the formal planning process. These options were:

- Desalination
- Lough Derg (direct)
- Lough Derg (with storage)
- Parteen Basin (direct)

The OWP also set out to establish a robust methodology and assessment criteria, together with a range of 'constraints'[1], paramount in the siting of WSP infrastructure. There was no recommended or preferred option at this stage and no decision had been made in respect of the options. Public input via the consultation process, in combination with 'on the ground' investigations, formed a key part of the 'emerging preferred option' selection process.

The objective in taking this approach is to determine, from the four technically viable options, one that is least constrained compared to the others, which best satisfies the assessment criteria, and which can be classified as an 'Emerging Preferred Option'; the latter is discussed in the Preliminary Options Appraisal Report

Public Consultation on the Options Working Paper, (and continuing on the Preliminary Options Appraisal Report), is a fundamental consideration in the development of an 'Emerging Preferred Option'. All input from this Public Consultation process on the OWP has been reviewed and, where relevant, incorporated into this next stage of the process, i.e. Preliminary Options Appraisal Report.

This Consultation Submissions Report sets out a summary of the feedback received on the Options Working Paper, and the project team's response to these submissions.

2.2 Terms of Reference

The consultation sought comments and/or opinions on the following questions:

[1] A 'constraint' is any limiting factor on site selection for infrastructure. It can be related to human settlements, or environmental, or technical factors. The selection of the location for infrastructure sites and the routes for pipelines is therefore approached primarily through avoidance of impacts, by avoiding constraints, wherever possible.

1. What other national, regional or locally important Constraints should Irish Water take into account when locating the infrastructure associated with each water supply option?
2. Have you any comments on the proposed Constraints and the approach to their use?
3. Are there any Assessment Criteria other than those proposed which should be used in the next phase of options appraisal?
4. How would you like to be communicated with as the project progresses?

2.3 Publicising the Consultation

As part of the consultation phase, advertisements, press releases and other forms of distribution of the key messages were used to help promote consultation and to ensure that as many stakeholders and interested parties as possible were made aware of the project and its consultation opportunities.

2.3.1 Advertisements

As part of the process to ensure the widest number of people among the target audience were made aware of the OWP, and the messages these documents presented, IW placed advertisements in National and Regional newspapers. The advertisements provided a summary background on the consultation and also details of where the Reports could be accessed. It invited any individual or groups who wished to provide comment, to do so, and it advised on how to make a submission. A copy of the advertisement can be found in Appendix A.

The advertisements were placed in the following National and Regional newspapers as outlined in Table 2.1 below.

Table 2.1 Advertisements – National and Regional Newspapers

National Print	Date
Irish Times	10/6/2015
Irish Independent	10/6/2015
Sunday Independent	14/6/2015
Irish Examiner	10/6/2015
Sunday World	21/6/2015
Regional Print	**Date**
Clare Champion	12/6/2015
Clare People	20/6/2015
Connaught Tribune	11/6/2015
Kildare Post	13/6/2015
Liffey Champion	13/6/2015
Leinster Express	16/6/2015
Limerick Leader	13/6/2015
Limerick Post	13/6/2015
Meath Chronicle	20/6/2015
Offaly Independent	13/6/2015
Tullamore Tribune	11/6/2015
Nenagh Guardian	13/6/2015
Tipperary Star	11/6/2015
Western People	15/6/2015
Westmeath Independent	13/6/2015
Westmeath Examiner	17/6/2015
Wicklow People	17/6/2015
Wicklow Times	16/6/2015

2.3.2 Press Releases

In order to raise awareness of the consultation process and to ensure stakeholders and members of the public were aware of the opportunity to engage, a Press Release was issued to national print, online media, national broadcast, regional newspapers and regional radio current affairs shows. The Press Release was issued on Monday 8th of June 2015 with an embargo stating that no media outlet could publish prior to 9th June 2015. A list of the media outlets that received the Press Release, and a copy of the Press Release itself, can be found in Appendix B. In order to reinforce the ongoing Public Consultation process, a further Press Release (reminder) was issued through all the same media outlets on Monday 13th July 2015 by the Irish Water press team. This reminder is also included in Appendix B.

2.3.3 Libraries and Local Authority Planning Counters

In order to have the OWP readily accessible within the public domain, a copy was sent to County Libraries and the planning counters of each County Council Office in the study area. In addition to the OWP, a Non-Technical Summary (NTS) and Newsletter No. 2 were included. The NTS is designed to help understanding of the more comprehensive document (OWP) by briefly describing the project and giving an overview of the work being proposed, whilst the newsletter outlines the Public Consultation process.

Table 2.2 lists the Local Authority Planning Offices where the documentation was lodged.

Table 2.2 Local Authority Planning Offices and Libraries

• Clare County Council • Dublin City Council • Dun Laoghaire Rathdown County Council • Fingal County Council • Galway County Council • Meath County Council • Tipperary County Council	• Offaly County Council • South Dublin County Council • Westmeath County Council • Wicklow County Council • Kildare County Council • Laois County Council • Limerick City & County Council

A copy of the template letter sent to Librarians and County Planning Offices is attached in Appendix C.

Following the launch of the OWP consultation stage, there was follow up contact to ensure the documents were received by each library and/or local authority planning counter. Additional copies of the Options Working Paper, Non-Technical Summary and Newsletter No. 2 were sent upon request.

2.3.4 Registered Individuals

Individuals who had previously registered their interest as part of the WSP received correspondence via email describing the Options Working Paper and inviting comments on this stage of consultation. There were 6 individuals who expressed their interest in receiving information regarding the WSP.

2.3.5 Online

Website

A dedicated project website was provided at **www.watersupplyproject.ie**. The project website detailed the need for a new water supply and outlined the consultation process around the Options Working Paper and provided all relevant information on this stage of the project. A synopsis of this consultation stage was given on the website as well as downloadable copies of the Options Working Paper, Non-Technical Summary and Newsletter No. 2 and associated appendices. Previous reports such as the Project Need Report (PNR), the Non-Technical Summary and Newsletter No. 1 were still available for download from the website.

A page on the website was also dedicated to explaining the Constraints and Assessment Criteria, which formed the basis of the OWP consultation stage. Another page outlined, with an indicative map, the four technically viable Options.

2.3.6 Information Services

At the launch of the Public Consultation, information services for engaging with stakeholders and members of the public were put in place. The information services included:

- Lo-call phone line: ROI 1890 252 8481 NI: 084 524 65059
- Email service: watersupply@water.ie
- Postal service: Water Supply Project, Merrion House, Merrion Road, Dublin 4

Stakeholders and members of the public utilised all available methods of engagement throughout the consultation period. Details of all the submissions received are discussed in Section 3; and have been duly considered within this report.

2.4 Consultation Events

2.4.1 Oireachtas and Local Authority Elected Members

Oireachtas Members Briefing Day

All 225 Oireachtas members were invited to an Open Day in Buswells Hotel, Molesworth Street, Dublin 2 on Tuesday 9th June 2015 (61 Senators, and 164 TDs). The Open Day aimed to brief elected members on the purpose of the Consultation and elicit their views on the OWP. Of those invited, 8 Oireachtas members attended the open day.

Written Briefings

A specific briefing email was sent to the following Ministers, inviting them to comment on the OWP. The Ministers contacted were:

- An Taoiseach
- The Minister for Communications, Marine and Natural Resources;
- The Minister of Transport;
- The Minister of Arts, Heritage and Gaeltacht Affairs;
- The Minister of Justice and Equality;
- The Minister of Enterprise, Trade and Employment;
- The Minister of Agriculture, Food and Marine.

A briefing email outlining the OWP and its consultation process was sent to all Councillors from the following County Councils:

- Dublin City Council
- Clare County Council
- Dun Laoghaire-Rathdown County Council
- Fingal County Council
- Kildare County Council
- Galway County Council
- Limerick County Council
- Laois County Council
- Meath County Council
- Offaly County Council
- South Dublin County Council
- Tipperary County Council

- Westmeath County Council
- Wicklow County Council

A template of emails sent to Ministers, Senators, TDs and other elected members is provided in Appendix D.

2.4.2 Stakeholder Briefings

Face-to-face Briefings

Stakeholder face-to-face briefings were offered to both Statutory Stakeholders and non-statutory Stakeholders. Organisations that were offered face-to-face briefings are listed in Table 2.3. A copy of the email / letter invitation to a Briefing can be found in Appendix E.

Table 2.3 Briefing Invitations- Stakeholder Groups

An Taisce - The Natural Trust for Ireland	Chief Executives of the following County and City Councils: • Clare • Dublin City • Dun Laoghaire Rathdown • Fingal • Kildare • Meath • South Dublin • Galway • Laois • Limerick • Offaly • Tipperary • Westmeath • Wicklow
Bord na Móna	
Chambers Ireland	
Dublin Chamber of Commerce	
Waterways Ireland	
EPA	
ESB	
IBEC	
Inland Fisheries Ireland	
Irish Environmental Network	
Lough Derg Science Group	
National Parks and Wildlife Service	
River Shannon Protection Alliance	Eastern and Midlands Regional Assembly
SWAN - Sustainable Water Network	Northern and Western Regional Assembly
NUI Maynooth	Southern Regional Assembly
Fáilte Ireland	Dublin City Business Association

Organisations that accepted the offer of Stakeholder briefings on the Options Working Paper are listed in Table 2.4; and represent engagements up to August 10th 2015.

Note: This list is not exhaustive and Irish Water continues to engage Stakeholders to the present time and onwards.

Table 2.4 Stakeholder Briefings

Stakeholder
Dublin City Business Association
DCC North Central Environmental Strategic Policy Committee
Shannon Fisheries Partnership
ESB
National Stakeholder Forum
Dublin Chamber of Commerce
River Shannon Protection Alliance
Killaloe District Councillors (Co. Clare)
Fáilte Ireland
Tipperary Co Co
Deputy Marcella Corcoran Kennedy
EPA

Written Briefings

Table 2.5 lists the organisations and groups who received written briefings by email on the day of the Options Working Paper Public Consultation launch (9th June 2015).

Table 2.5: Stakeholders – Written Briefings

List of Stakeholders	
Birdwatch Ireland	Local Enterprise Offices
Local County Chambers of Commerce	Landscape Alliance Ireland
Dr. Catherine Dalton – University Limerick	Bord Iascaigh Mhara
Environmental Pillar	Friends of the Irish Environment
Golden Eagle Trust	GAA
Irish Farmers Association	GMC Contractors
Afloat	Fáilte Ireland
Ballyjamesduff & District Angling Club	Irish Wildlife Trust
Shannon Airport	Irish Peatland Conservation Council
Marine Institute	Lisheen Mines
County and City Management Association	Lough Derg Anglers Association
Coillte	Lough Derg Yacht Club
Eastern River Basin District	ERSI
Shannon International River Basin District	St Flannans Fishing Club
Northern Ireland Environmental Agency	SOLD (Save Our Lough Derg)
Eircom	RPA
ESB	South Eastern River Basin District
EirGrid	The Heritage Council
Geological Survey of Ireland	CIE
Health and Safety Authority (HSA)	VOICE (Voice of Irish Concern for the Environment)
Marine Institute	The Arts Council
Met Éireann	Enterprise Ireland
Irish Hotels Federation	Trinity College Dublin
Department of the Environment Northern Ireland	Health and Safety Authority
NRA	Shannon Foynes Port Company
OPW	IDA Ireland
Teagasc	Restaurant Association of Ireland

List of Stakeholders	
IBEC	Chambers Ireland

A copy of the emailed OWP briefing can be found in Appendix E.

In addition, a number of the key Stakeholders received follow-up phone calls to reaffirm the OWP consultation phase. Chambers Ireland, Dublin Chamber of Commerce, IBEC and ESB all received calls.

2.5 Media

A press release was issued (see Section 2.3.2) on the day of the launch of the OWP and all subsequent requests for briefings and queries were responded to during the course of the consultation period. All interactions with media were dealt with through Irish Water / Ervia Press Office. A reminder press release was issued on the 13th of July 2015.

2.5.1 Newspaper Articles

A range of articles referring to the OWP were published in a variety of Newspapers throughout Ireland. Table 2.6 lists the 42 articles published, referencing the OWP, during the consultation period 9th June - 4th August 2015.

Table 2.6: Relevant Newspaper Articles – 9th June 2015 to 4th August 2015

Media Outlet	Event Date	Headline
Irish Times	09 June 2015	Irish Water starts consultations on best option for new supply
Irish Independent	10 June 2015	Delay in city water could cost €78m a day
Athlone Topic	11 June 2015	Four water supply options being considered by Irish Water
Tullamore Tribune	11 June 2015	Irish Water Might Use Lough Derg To Solve Dublin Water Crisis
Midland Tribune	11 June 2015	Irish Water Might Use Lough Derg To Solve Dublin Water Crisis
Clare Champion	12 June 2015	Direct Lough Derg abstraction to Dublin 'catastrophic'
Westmeath Independent	13 June 2015	Dublin water won't be coming from Lough Ree
Offaly Independent	13 June 2015	Dublin water could be stored on Offaly/Laois border site
Leinster Express	16 June 2015	Garryhinch water park moves a step closer
Wicklow Times - North	16 June 2015	Irish Water invites you to have your say
Wicklow Times	16 June 2015	Irish Water invites you to have your say
Tipperary Star	18 June 2015	Water plan for lake is dismissed
Meath Topic	18 June 2015	Irish Water seeking views on water extractions
Westmeath Topic	18 June 2015	Irish Water seeking views on water extractions
Ballyfermot Echo	18 June 2015	Public consultation opened up on Water Supply Project
Clondalkin Echo	18 June 2015	Public consultation opened up on Water Supply Project

Media Outlet	Event Date	Headline
Lucan Echo	18 June 2015	Public consultation opened up on Water Supply Project
Tallaght Echo	18 June 2015	Public consultation opened up on Water Supply Project
Nenagh Guardian	20 June 2015	Dublin water plan progresses
Limerick Post	20 June 2015	Irish Water seeks Lough Derg Solution to Dublin water crisis
Tipperary Star	25 June 2015	Morris calls on ESB to explain drop in lake's water levels
Nenagh Guardian	27 June 2015	Group objects to Derg plan
Nenagh Guardian	27 June 2015	Morris concern over water levels in Lough Derg
Tipperary Star	02 July 2015	Lake lowered to facilitate maintenance
Tullamore Tribune	02 July 2015	Only Time Will Tell If Midlands Action Plan For Jobs Will Deliver
Tipperary Star	09 July 2015	ESB confirms it lowered lake levels
Limerick Post	11 September 2015	Boat users concerned about drop in water levels
Daily Mirror	13 July 2015	Tell us where to find water
Leinster Express	14 July 2015	Public Opinions on Irish Water
Westmeath Examiner	18 July 2015	Irish Water - Midland Project Submissions
Westmeath Independent	18 July 2015	Irish Water seeks submission on Water Supply Project
Athlone Topic	16 July 2015	Irish Water Calls for Submissions on Water Supply Project
Clare Champion	17 July 2015	Irish Water Seeks Submissions on Water Extraction Proposal
Clare Champion	17 July 2015	Support for Lough Derg Extraction could drown out local opposition
Limerick Post	18 July 2015	Drain on Lough Derg
Offaly Independent	18 July 2015	Irish Water Seeks Submissions on Water Supply Project
Clare People	21 July 2015	Water Row is David vs Goliath
Midland Tribune	23 July 2015	Irish Water Calls for Submissions on Water Supply Project
Tullamore Tribune	23 July 2015	Irish Water Calls for Submissions on Water Supply Project
Clare Champion - Living	24 July 2015	Water Body to Address Abstraction Concerns
Leinster Express	28 July 2015	Views Sought on Waterpark
Daily Mail Eire	03 August 2015	Plan to Pipe Clare water to Dublin

2.5.2 Radio

A number of broadcasts, from national and local radio stations, referred to the WSP and the OWP during the consultation period; and are referenced in Table 2.7.

Table 2.7: Relevant Radio Broadcasts – 9th June 2015 to 4th August 2015

Media Outlet	Event Date	Headline
Clare FM - 9am news	09 June 2015	Shannon Water extraction plans move closer
Limerick 95FM - 9am news	09 June 2015	Water extraction from River Shannon looking increasingly likely
FM104 - 9am news	09 June 2015	Public is being given a chance to identify a new long-term water supply for the city
Tipp FM - 10am news	09 June 2015	Public opinion being sought on proposals to secure water supplies for Dublin and Eastern Regions
RTE 1 - News at 1	09 June 2015	Four options for Dublin water supply boost
Limerick 95FM - 11am news	09 June 2015	Public opinion being sought on proposals to secure water supplies for Dublin and Eastern Regions
Clare FM - Morning Focus	09 June 2015	Irish Water Publishes Options Working Paper On The Proposed Water Supply Project For The Eastern and Midlands Region
Tipp FM - 1 o'clock news	09 June 2015	Irish Water say Lough Derg has enough water to supply Dublin
Clare FM - 1 o'clock news	09 June 2015	Campaign representing landowners and water users around Lough Derg and the Shannon
Tipp FM - Tipp today	09 June 2015	Lough Derg has enough water to supply Dublin
RTE 1 - News at 1	09 June 2015	Four options for Dublin water supply boost
Limerick 95FM - 5 o'clock news	09 June 2015	Irish Water claims Shannon extraction will have minimal impact on river in Limerick
Clare FM - 5 0'clock news	09 June 2015	Public will have their say on water extraction plans
RTE 1 - Six One News	09 June 2015	Proposals for Dublin water supply boost to go to public consultation
Tipp FM - 5 o'clock news	09 June 2015	Irish Water say Lough Derg has enough water to supply Dublin
RTE 1 Drivetime	26 June 2015	Review Of Regional Newspapers By John O'Connor
Limerick FM - 9am news	15 July 2015	Meeting to discuss water extraction from Lough Derg
Clare FM - News	16 July 2015	Renewed concerns over plans to extract water from River Shannon
Clare FM - Morning Show	16 July 2015	Irish Water expected to use Shannon to solve Dublin Crisis
Tipp FM - Tipp today	31 July 2015	Irish Water's plans to abstract water from the River Shannon
Limerick 95 FM - 1 o'clock news	06 July 2015	Councillors at loggerheads over water extraction proposals
Limerick 95 FM - 5 o'clock news	06 July 2015	Councillors at loggerheads over water extraction proposals

2.5.3 Television

A number of television broadcasts referred to the WSP and the OWP during the consultation period, these are listed in Table 2.8.

Table 2.8 Television Broadcasts – 9th June 2015 to 3rd August 2015

Media Outlet	Event Date	Headline
RTE TV - News at 1	09 June 2015	Four options for Dublin water supply boost
RTE TV - Six One News	09 June 2015	Proposals for Dublin water supply boost to go to public consultation
RTE1 Prime Time	30 July 2015	Proposal to Pipe Water to Dublin from River Shannon

2.5.4 Online Coverage

There were 39 online media references to the WSP, 15 had a negative opinion and 24 were of neutral opinion. There were also re-tweets and re-posts of some social media content. The full list and content of the online media coverage can be found in Appendix F.

3 Feedback

3.1 Introduction

There were 46 submissions received on the OWP. Each and every submission received during the OWP Consultation was acknowledged and logged (see Appendix G for the Submission Summaries). In addition 16 submissions from the previous consultation period, regarding the Project Need Report, were brought forward into this consultation stage as they referenced the Options, giving 62 submissions in all. All submissions were then compiled and reviewed.

Many submissions had common themes (see Table 3.1) illustrating a wide range of views on the project. A small number of submissions raised issues that were not directly related to the OWP 'Terms of Reference', however these were the exception. Appendix G summarises each submission with reference to specific themes.

This Section discusses the general collective content, and context, of the submissions in terms of these common themes; Section 4 outlines Irish Water's responses to the issues and views expressed.

Table 3.1: Submission Themes

Options • Desalination • Lough Derg (Direct) / Lough Derg and Storage / Parteen Basin • Other options and alternatives
Water Conservation and Leakage Control • Leakage • Conservation Initiatives
Constraints and Assessment Criteria
Economic Development
Water Demand
Environment • Biodiversity • Climate Change • Fisheries • Alien Invasive Species
Water Framework and Habitats Directives • Water Framework Directive • Habitats Directive
Communities / Benefitting Corridor • Benefitting Corridor Demand & Source Consolidation • Farming
Tourism and Amenity • Tourism & Raw Water Storage
Planning • Planning Policy • Planning Horizon • Legal Issues
Other • Plumbosolvency • Recommendations • Questions raised

3.2 Options

Following an independent review of all previous studies, Irish Water determined that there are four technically viable options. The Options Working Paper outlined this review and gave details of the four technically viable options for a new source of drinking water for the Eastern and Midlands Region. Although there were specific questions set out to guide the consultation on the options appraisal process (see Section 2.2), many of the submissions received made general comments on the four options themselves, while other submissions identified alternative options for consideration, as outlined in Sections 3.2.1, 3.2.2 and 3.2.3 below.

3.2.1 Desalination

Many submissions received identified both advantages and disadvantages associated with desalination, referencing *inter alia* intensive use of energy, carbon footprint, and ease of modular expansion.

There were a number of submissions which supported this option over any Shannon based option as “it would have little or no environmental impact and would be the least costly to construct and maintain”.

The shorter treated water pipeline required for desalination, “just 25km” was recognised by one submission as “beneficial” as it reduces the “negative impact on communities whose livelihoods are dependent on agriculture and tourism”.

Concerns were expressed with regard to the “insufficient weight” given to the desalination option “relative to the Shannon Options”, with another submission stating that the “report is imbalanced”.

The high capital and operational costs of desalination compared to the other options were referenced in a number of submissions. One submission suggested that it “is not the solution due to the huge cost of the process, including high carbon emissions”, and another suggesting that it is the least attractive option “on an economic and ecological basis”, especially “in a country with typical 1,000mm rainfall annually”. This concept was supported in another submission which stated “desalination in an Irish context would be significantly energy intensive and reliant on fossil fuels adding to the challenge of our emissions targets”.

In contrast, it was noted in another submission that desalination costs have declined considerably as a result of advances in membrane technology, with the costs expected to be reduced further. It was also suggested that the desalination of brackish / estuarine water, and potential co-location with energy production may further reduce the cost of this option.

3.2.2 Lough Derg (Direct) / Lough Derg (Storage) / Parteen Basin

A number of stakeholders objected to “the extraction of water from Lough Derg under any conditions”. One submission cited “evidence from rivers around the world” where the inter-catchment transfer of water has “proven to be detrimental for the river and the life of various river species, and for the people who live in the vicinity of the river”.

Similarly another submission “objected in principle to abstracting water from one catchment and transferring it to be used in another”. Reference was made by the same submission to “the month of May 2015, the ESB dropped the water level in Lough Derg to a very low level” and this “brought home the likely scenario of what the lake may be like on an ongoing basis in summertime/drought conditions if 330Mld are to be abstracted”.

This point was also reiterated in another submission which stated that there is a “reasonable fear, not just among environmental scientists, but among communities living close to Lough Derg” that the extraction of water from Lough Derg or the Parteen Basin would impact “negatively on tourism, fishing, agriculture and the local water supply”.

The River Shannon and its lakes such as Lough Derg were highlighted as a "*finite resource*" by one stakeholder who raised concerns that, "if permission is granted for abstraction for the WSP, a precedent would be set for further abstraction in other areas, apart from those identified for this project".

Conversely, one submission asked that Irish Water "please use the wonderful supply of fresh water that we have" (in the Shannon) "to benefit the people who need water", referring to the "ample supply of water in the Shannon" whilst favouring abstraction from "Lough Ree".

Many submissions were supportive of the Parteen Option over the other Shannon Options and various submissions asked that the Parteen Option be explored in more depth, with one submission stating that the "Parteen Basin solution should be pursued" as, after an initial review, it appears to be "the most cost effective, bringing benefits, not just to the Dublin area, but also to the benefitting corridor underpinning economic development in these areas".

A number of submissions favoured the Parteen Option as it is likely to have fewer ecological impacts than an abstraction location in northern Lough Derg, with one submission explaining that "the removal of water from the north eastern part of Lough Derg might contribute to the ecological stresses of the lake". Some of these views were expressed further in the context of a lake ecosystem which many stakeholders believe is naturally undergoing change due to improving water quality with effluent treatment, and the presence and propagation of invasive species, including zebra mussels, Asian clams and invasive vegetation species.

A Statutory Authority expressed the recommendation that the Parteen Option be explored in more depth as "there may be fewer potential ecological issues arising here, than may be the case for other options such as those which *a priori* apply to abstraction from Slevoir Bay or from other designated sections of the eastern shore of Lough Derg".

Conversely one submission requested further proof that a Parteen abstraction can be managed in a way that "will allow replenishment of the reservoir in a time frame adequate to meet the demand".

3.2.3 Other Options and Alternatives

Alternative options, including new and previously assessed options, to the four technically viable Options, were outlined by a number of submissions.

Groundwater

One submission suggested that groundwater is "largely unexplored on the East Coast and aquifers such as the Curragh and Nevit have untapped potential" and that "the midland corridor along the proposed pipeline is more than self-sufficient requiring only improved infrastructure, less waste and polluting discharges".

This was supported by another submission, which commented that "consumption over the above estimates can be sourced primarily from underground aquifers". It suggested that "major underground supplies occur in north Co. Dublin and the Blessington area of Wicklow / Kildare, as per investigations of high profile hydrogeologists including Kevin Cullen and Eugene Daly". The submission added that "recently a test bore near Newbridge was reported as yielding the largest waterbore flow rate in the state".

A submission outlined that Lisheen Mine had ceased production and IW may be able to use the previously extracted "100ML per day, of which 70ML per day was captured clean at source and 30ML per day was treated in on site facilities before all 100ML was discharged to local streams and rivers". Tara Mines was also highlighted as having a similar operation and the submission suggested that "as this water needs to be extracted anyway, it might be suitable for Irish Waters requirements."

Rainwater Harvesting

Rainwater harvesting options were suggested as alternative solutions that will result in fewer environmental impacts. One stakeholder referenced studies carried out by the Dublin Institute of Technology and expressed the view that "20-30% of the requirement could be met" from rainwater harvesting with the bonus of "potentially creating employment and alleviating flooding in the process".

This was supported by another submission which explained that "a typical household could save up to 50% of its mains water by adopting a rainwater harvesting system".

A "new system that treats water to drinking quality using harvested rainwater" was described in one submission. This submission also made recommendations to "the creation of hybrid treatment networks where harvested rainwater can be augmented with partially treated municipal supply" which would address "the strategic goal set by Irish water to reduce levels of rainwater run-off into combined sewer systems".

Treated Wastewater Reuse

Some submissions suggested the option to use "grey/recycled water for toilets", and that people must be encouraged to "use water butts to trap rainwater and install plumbing circuits to recycle grey water". This was supported by views that new houses be designed in such a way as to facilitate the effective use of rainwater and greywater, considering that standards in this regard should be enshrined in Building Regulations.

One stakeholder questioned if current treated water discharges could "not be extended to other east coast treatment plants?" suggesting that "industrial users do not always need water quality at drinking level quality and could be charged a lower cost for accepting such". The same submission suggested "the current Ringsend WwTP works could be re-engineered to generate/collect methane as a by-product, and that the methane could be sold to either the new Waste to Energy plant or the ESB" and that the "resulting electricity could be used to power a desalination plant on the east coast".

The collection, treatment and re-use of wastewater was raised by a number of stakeholders as an option that should have been examined. A respondent cited the use of recycled water, "including sources from Ringsend plant and other municipal sources, as used in London and Kolkata/Calcutta for many years". This was supported by the view that the option of "reprocessing and reusing water from wastewater facilities in major urban areas has not been considered in previous studies and assessments".

A submission from the environmental regulator referenced effluent re-use and explained that "the majority of Member States do not engage in this practice and in

some cases it is prohibited. Where it is practiced, its use is limited to use in recreational areas (parks etc.) or agriculture (irrigation water) or street cleaning. The use appears to be restricted to a small number of Mediterranean countries".

Environmental Flow Replacement

One submission proposed consideration of dedicating the existing compensation flow on the lower Liffey at Leixlip to water supply, and replacing it with a recirculated pumped flow of freshwater in the section of lower Liffey from Leixlip dam to Islandbridge.

Multiple Sources

It was suggested in one submission, dealing with the possibility of using several sources other than a single source, that "the ability to provide the necessary supply from one (single) source regardless of treatment overhead, seems to be presented as outweighing the option of drawing from multiple sources or from a lower volume source but higher quality source combined with other solutions".

3.3 Water Conservation and Leakage Control

3.3.1 Leakage

The environmental sustainability of the WSP was addressed in the context of leakage in a number of submissions, with one submission stating that it was "compromised by the fact that the current estimated rate of leakage in Dublin city is at 40%", and therefore it seems unsustainable to pump water from the Shannon until "such time as this leakage has been adequately addressed and reduced". This submission did recognise the recent IW proposals to tackle leakage in Dublin City, however it felt the "timeline for addressing this issue has "not been fully developed to date and will in all probability, be a slow process".

One submission felt that money could be better spent fixing the existing leaks, while a number of submissions identified the need for the project to be developed "alongside" efforts to reduce leakage rates or "in tandem" with whatever system is adopted.

IW's targets for reducing leakage demand were also referenced. There were a number of submissions supporting the "commitment to significantly reduce water leakage levels" as a method to meet demand in the short and medium term, with one submission stating that even if these "extremely ambitious" targets of reducing leakage to 25% are met by 2021 "existing sources are not capable of providing enough resources to meet the region's needs".

Similarly, another submission recommended that IW should "reduce the level of leakage in the Dublin region to an economically sustainable level", however it did recognise that this effort for leakage reduction "must take place in tandem with the development of a new water supply, not as an alternative". Many recognised that "leakage reduction is a long, inexact and costly process".

The criticism was expressed in some contributions that there was "no serious commitment toward a system of repairs" included in the IW proposal, and that if water was taken from the River Shannon it would be a "disincentive to eliminate profligate waste of hundreds of millions of litres per day", stating that Dublin City Council has been "throwing half of it {sic water} away through years of leak ridden

supply pipes and creaking treatment facilities, all of which have suffered from decades of neglect and under investment" and that reducing leakage rates to international standards would "double existing supplies".

This was supported by a view that there is "an inherent unjustified assumption that the leaks, which are deemed not cost effective to fix, will remain static and effectively "sustainable".

Similarly another submission stated that "high national leakage levels must be addressed before planning any new infrastructure". However, this submission also recognised that that "Current leakage levels in Dublin are the lowest in Ireland, at 33%" and that it is "clear that leakage reduction alone will not be enough to solve headroom issues or address increased water demand".

A number of submissions raised queries on the quantity of water which can be saved by remediation of old pipework and through customer side leakage reduction.

3.3.2 Conservation Initiatives

Methods to improve water conservation in order to reduce demand were referred to in several submissions, with one stating that "there is no indication in the proposal as to what steps will be made to address the issue through water conservation methods". "The importance of an enhanced national water conservation ethos" was also highlighted in a submission, stating that there is a need to "introduce regulation or other incentives to encourage people to invest in modernisation of equipment with a view to conserving water". Similarly one stakeholder highlighted the provision of grants "to house owners to save water from their rooftops" and that this water "could be used for flushing toilets, watering gardens, washing cars and other non-essentials".

A suggestion was put forward that "A Code of Sustainable Homes, similar to the BREEAM (BRE Environmental Assessment Method), adopted in the UK could help Ireland to achieve a reduction in demand from 125 litres/person/day to an average of 80 litres/person/day".

One submission highlighted the need for a "softer sustainable solution moving us towards new ways of protecting, preserving and exercising more efficiency in the use of our precious water resources", while another submission highlighted the need for more ambitious, progressive and imaginative strategies to encourage water conservation, "both commercially and domestically in the Eastern and Midlands area before the assumptions for this project can be deemed accurate". Rainwater harvesting and the treatment and re-use of wastewater to produce portable drinking water was another option put forward, referencing the Singapore model of water conservation.

One submission stated that "the impact on water usage that can be achieved in the next 35 years by ensuring that all new houses are built to store and use rain water and brown water where appropriate and by ensuring that appliances are suitably careful about water usage" has not been taken into account.

This was supported by others who indicated that "we can live within our current resources if we reduce our wasteful consumption and minimise leakage. Modern day water usage in showers, toilets, washing machines, gardens etc. is excessive and can come down significantly with water metering". Reference to an article published in the Irish Times (26.02.15) was made in support of water metering-

"Water consumption plummeted across the Dublin region when charges were introduced last October, but rose again the following month when the Government changed its charging plans".

Finally a submission expressed the view "that *Need* in the first instance should be revisited based on the requirement to address fundamental obligations of the WFD to ensure sustainable use of water resources" where the respondent considers "IW has not engaged in any meaningful conservation exercise".

3.4 Constraints and Assessment Criteria

Many of the submissions welcomed the publication of the OWP and noted that the assessment criteria outlined in the OWP were comprehensive and appropriate. One submission outlined "support for Irish Water's assessment of preferred options using the criteria outlined in the OWP, particularly those pertaining to Sustainability and Capital and Operating Costs". Another outlined that the list of Assessment Criteria was considered comprehensive and suggested that when "detailed route options mapping is available, consideration be given to sourcing mapped resource and investment information from each local authority and state agency with interests along the route, such that a composite interactive map can be generated".

Furthermore, another submission noted that "identification of the initial grouping of key constraints (as outlined in section 7.1.4 of the OWP) is appropriate and consistent with best practice for this type of assessment".

In contrast, a number of submissions found the assessment criteria to be unclear or lacking. One submission stated that the "assessment criteria are not clear on the website" and suggested "that they be published and also include the measurement method for the criteria, any weightings, etc".

Another submission suggested that "Shipwreck Inventory of Ireland" be "included in the constraints and assessment criteria".

A submission suggested that "National Monuments in State ownership or guardianship and monuments subject to Preservation Orders should be identified and zones of visual amenity defined for them" and emphasised the importance of World Heritage Sites.

A submission suggested adding a constraint to "reflect potential coastal zone management and maritime impacts" arising from the desalination option, while another highlighted the timescale of the project as a constraint. A view was expressed that the preferred option should "be the one that ensures speed and efficiency of execution while minimizing environmental impacts and cost-inefficiencies".

A number of submissions suggested additions and alterations to the constraints and assessment criteria specified in the Options Working Paper (OWP), as summarised below.

One submission recommended that identified "state owned land or lands within the stewardship of the state" should be utilised as white space, the "advantage of utilizing state owned lands for siting/routing of infrastructure would be to minimize disturbance and impact on third party lands and individual land owners". This was echoed by a statutory consultee who "advocated exploring the use of this publicly owned property as a route to transport water and / or other associated infrastructure

compatible with the canal structure across the midlands and to Dublin". Another submission identified the following additional national, regional or locally important constraints which, in the view of the author of the submission, do not exist in the case of the desalination option:

- Loss of amenity;
- Tourism;
- Community disharmony – cost;
- Future development; and
- Economic loss.

A submission from a statutory consultee recommended that "consideration should be given to potential significant impacts on:

- Water quality
- Surface water hydrology
- Fish Spawning and nursery areas (fisheries habitats)
- Passage of migratory fish
- Areas of natural heritage importance including geological heritage sites
- Biological diversity
- Ecosystem structure and function
- Sport and commercial fishing and angling amenity and recreational areas"

Submissions which have advocated greater prominence for the WFD in constraints, are referenced under Section 3.8.1.

A submission from one stakeholder suggested that the "most fundamental deficit in the assessment criteria – is the necessary credibility and objectivity to be applied to the exercise and the associated scoping, documentation, evaluations etc." A second issue with the assessment criteria, in the view of that submission, is the "failure to require robust and transparent record of all assumptions and data underpinning the evaluations and comparisons in the Options Working Paper and indeed in the underlying Needs Report. It added that the cost burden for IW needs to be explicit and transparently covered in the assessment criteria."

The submission also stated "that the WSP in fact should be informed first and foremost by the obligations in respect of ecological water quality and also the aquatic and terrestrial ecosystems dependent on it; together with the sustainable use of water; and the protection of water sources; and limitation of pollution".

A submission referenced the Regulations and Guidelines relating to abstraction of water from the River Shannon and the need to comply with them, while highlighting the requirement to "ensure the stability of the embankments at Ardnacrusha Headrace and upstream of Parteen Weir", must be "considered constraints in the assessment of options.

Similarly a number of the submissions referenced the need for Capital and Operational Costs to be considered as part of the assessment criteria. Ultimately, it is argued "the cost of the Eastern and Midlands project will feed into customer tariffs" and it is appropriate that the cost of delivery including "any potential or likely delays is considered carefully when making a final decision".

Several submissions referenced the need for cost benefit analysis in options appraisal, with one commenting that a "rigorous cost benefit analysis of the Shannon project and other alternatives has never been published and that taxpayers are entitled to see such analysis".

Submissions advocated the inclusion of tourism benefits and whole life costs in the cost benefit analysis. Energy cost, usage and security were also recommended for inclusion in assessment criteria.

One submission from a statutory consultee commented that "the impacts and interactions with the national roads network are unclear and require significant clarification", as there would be "numerous locations where a potential scheme would interface with both the existing and future national road network".

A submission from a statutory consultee outlined that the tourism and amenity value of areas of Lough Derg and the north Dublin coastline "associated with the final four options, and any weightings associated with these factors, should be sufficiently and appropriately developed in the methodology so that any potential impacts on tourism can be rigorously assessed". The submission further developed an approach to weighting of potential impacts on tourism and amenity for example "water based (participatory) activities should be afforded a greater weighting in the assessment, than potential impacts on landscape and cultural heritage, where it is considered that potential impacts could be alleviated through strong mitigation measures in any project EIA". Furthermore, this submission outlined that "water levels in relation to the navigability and water quality of Lough Derg are key to ensuring the amenity value of the lake is maintained for the wide variety of water based activities which it supports". This submission also outlined the importance of conserving and enhancing "Blueways" ("a Blueway is a recreational area with water activities at its core"). The "landscape impacts should also be considered appropriately as part of the evaluation process, particularly in relation to Option H, desalination".

One submission queried how people-related, technical and risk criteria would be weighted. It also queried the sensitivity of the preferred option to the population growth assumptions, and how risk was defined or applied in the assessment.

Another submission queried whether the assessment criteria should include the number of, and potential impact on, higher lying areas by lowering water levels.

Finally, a contributor recommended the inclusion of "an Integrated Spatial Planning Criteria under which specific economic development opportunities associated with the options, and opportunities to schedule works to coincide with works by other state agencies could be recognised".

3.5 Economic Development

The economic impact of the project was commented on in a number of submissions. Some submissions saw the project as a positive economic development especially in terms of Foreign Direct Investment (FDI) while others saw it as possibly adversely impacting on the Mid-West area.

A key theme throughout the submissions related to the importance of a secure water supply for the future, in particular to ensure that existing businesses can continue to grow and new businesses can invest without concern. It was pointed out that "companies considering development or expansion depend upon the knowledge that the quality of their water supply is assured for years to come" and that "security of supply of high quality water is essential for Irish businesses to plan their future". Submissions further commented that if Ireland is to remain an "attractive location for Foreign Direct Investment (FDI), the country needs to retain every possible competitive advantage and a lack of certainty over the future price of water is

weakening the country's hand. FDI companies that may choose to commit to Ireland in the long-term, need assurances on the cost of water and security of its supply".

Reference was made to the lack of headroom in the Eastern region, considering that it has the potential to result in "significant losses to the economy if additional supply is not provided as soon as possible", and that it is crucial that "water supply constraints do not act as an impediment to overall development which is necessary to drive economic development in the future".

Taking a different perspective, concerns were highlighted regarding the "high and unsustainable cost on the Mid-West region, in terms of the economic and social cost, ecologically and environmentally if an option of abstracting from Lough Derg was to go ahead". A submission commented that "the abstraction proposals are being costed as "free abstraction" which is wrong.

The view was expressed that the WSP would, by "diverting a finite resource from the Shannon Region", cause economic development to be "stifled in the area". The same submission also suggested that "community disharmony" has the potential to "create additional extra costs for that project" and that "such prospects of additional costs should be anticipated in the estimation of costs should abstraction from Lough Derg be chosen". This submission concluded that "the potential for loss, if abstraction from Lough Derg proceeds, would see a decline" in the use of the waterways "with a consequent loss of jobs in the marine and leisure sectors".

A submission from a statutory consultee commented that "the abstraction of water from the Shannon RBD area should make provision for a level of commercial/environmental compensation", noting that "fishery rights are property rights and that the value of the inland fisheries resource (including sea angling) to Ireland is estimated at €750 million".

Potential economic harm to prospects for re-opening the Erinagh Canal were referenced, and the view was expressed that increased costs of "dredging the Shannon Estuary would be enormous and a further drain on the taxpayer", as, in the view of the respondent, increased silt deposition would occur.

3.6 Water Demand

Concerns were raised in some submissions relating to future water demand for both domestic and non-domestic use. One submission had concerns around some of the assumptions / figures used in projecting future demand. The concern is that the "projected demand to 2050 is understated even allowing for 15% headroom and 20% for peaking and it is felt that the base projections should be as realistic as possible".

Another submission noted that there are differences between metered records and figures for non-domestic consumption and domestic consumption. It was recommended that the "baseline non-domestic consumption be reviewed in the light of metered consumption" in domestic and non-domestic and that the "figures be kept under review during the planning phase of the project".

The environmental regulator in its submission has commented in relation to the supply resource to meet demand, that:

"The current supply to the Greater Dublin Region is critical and the addition of a new source, at the earliest opportunity, is essential. The current capacity of the supply

has already been reached and incidents, such as algal blooms on the Vartry reservoir in recent years, result in water shortages. The development of a new source should ensure that the existing shortage in capacity and future anticipated capacity is addressed in a sustainable and secure manner".

3.7 Environment

There were several submissions dealing with the environment in general, and some of which have been further categorised below under the headings of biodiversity, climate change, fisheries and alien invasive species.

A submission from a statutory consultee referenced "the need for the sustainable development of the inland and marine fisheries resource, including the conservation of fish and other species of fauna and flora, aquatic habitats and the biodiversity of inland and marine water ecosystems".

With regard to the environment, this same submission suggested that a desalination option "could be environmentally attractive and sustainable", as disruptive construction works will be reduced.

3.7.1 Biodiversity

A number of submissions expressed concern, on biodiversity impacts, on the premise that water level lowering on Lough Derg would take place under the proposal. Collectively, the view was that "Biodiversity must be considered in economic and social development policies particularly in relation to key strategic infrastructural projects such as the Water Supply Project".

A submission suggested that "drawing down of water during low flow in the predicted dryer summers could result in significant changes to the ecology of the lake" and that there is insufficient information to conclude that there will be no impact.

Another submission suggested that ecological surveys should be conducted by an independent body prior to the consideration of grant of permissions, and that surveys should extend to the Shannon Callows in addition to the current surveys in Lough Derg. The view was expressed that a "full habitat and Roxanne (sediment structure) survey is needed in order to get a fuller understanding of the Lough".

A number of specific species were referenced in the submissions. One submission stated that "whilst the focus in the Options Report on Freshwater Pearl Mussel is welcome, there is a need to focus on other protected aquatic species and their habitats in particular other Annex IV species such as otter, *Lutra lutra*.

White-tailed Sea Eagle in particular was referenced a number of times, with one submission drawing attention to how sensitive this species is "to environmental change and disturbance". Another highlighted how important the area is for this species "where fish supplies as much as 90-95% of the White-tailed Eagles diet at the nest". One submission stated that it would be "completely opposed to any work and schemes that would impact in any way on these birds.

One submission considered that the "options of greatest risk to the biodiversity and ecological integrity of Lough Derg in descending order would be":

1. Option F2 – Lough Derg and Storage Option (WTP); and

2. Option C- Parteen Basin (WTP) may also have a detrimental effect on the ecology of the Lower Shannon including Lough Derg.

In contrast, another submission highlighted the potential positive impacts on biodiversity that may arise from Option F2 - Lough Derg and Storage, stating that this option "should be viewed from the perspective of having positive benefits rather than the traditional planning approach of neutral/negative impact. Cutaway bog rehabilitation coupled with the creation of an open water body will result in a species and habitat rich complex, adding significantly to local and regional biodiversity".

One stakeholder expressed concern that abstraction from Lough Derg would result in "catastrophic outcomes such as has happened in the Colorado, the Rio Grande (on the border between US and Mexico) the Murray Darling (in Australia) the Nile, Indus and Yangtze". It referenced the resulting impacts on flora, the advance of invasive species, and aggravation of pollution and erosion.

Threats to biodiversity elsewhere were commented upon, including high risk of cross contamination of water if pumping "untreated water from Lough Derg (where both zebra mussels and Asian clams exist) to a reservoir or any open/exposed facility in another catchment".

3.7.2 Climate Change

Concerns were raised by a number of submissions on the impact of climate change. One outlined that the "precautionary principle needs to be rigorously applied to all aspects of the WSP given that the abstraction from Lough Derg / Parteen basin appears the only possible viable option." This submission referenced the "increasing real evidence for climate change" and that it will be essential that the modelling matrices are "re-assessed and a rigorous approach to climate change impact assessment is taken."

Another submission noted how emerging data on the effect of climate change in Ireland suggests that "generally speaking we will have wetter weather and therefore the supply system presently in place will have a greater amount of supply within the present catchment area".

It was suggested by one stakeholder that "the factoring of the fundamental requirements of Ireland's climate change targets" should be brought to bear on industrial policy.

One submission commented that the four technically viable options will increase "Irelands Carbon emission footprint"; "impact our environmental and green credentials"; "give rise to huge capital and operational cost expenditure"; whilst not addressing "the strategic goal set by Irish water to reduce levels of rainwater run-off into combined sewer systems".

3.7.3 Fisheries

A number of submissions highlighted stresses on the fishery over the past 40 years, and the requirement to consider the effects of abstraction on priority species such as salmon, eel, pollan, Croneen trout and three Lamprey species.

A statutory consultee expressed the views that:-

- "Abstracting water from Lough Derg / Parteen basin would result in the loss of assimilative capacity for pollutants and there is potential to damage the fishery

and the fisheries habitat in particular the loss of spawning grounds for certain coarse fish species".

- The abstraction of water should "not compromise the potential for re-establishment of a viable salmon population in the catchment". For example "the coarse fishery in the Shannon catchment is also extremely valuable and extends to the dam at Parteen".

Another submission suggested that while the extraction of a relatively small volume of water should in itself have little effect upon the resident fish populations of the Shannon, the manner of the extraction, location and intake velocities, should be carefully considered, designed and assessed.

One submission noted that "the future development and proper maintenance of ESB's fishery, with the obvious economic benefits it would bring, must not be sacrificed to address the future water supply needs of Irish Water's Eastern and Midlands Region". The submission went on to express the view that "the ESB's River Shannon Salmon Management Programme has failed".

Another submission commented that it is "essential that an EIA is carried out prior to any planning application, and that this must include a detailed stock abundance survey to establish, for the first time, the level of fish stocks of all types present in the lake". Concern was also expressed in this regard that the system will be inadequate to provide the statutory necessary volume of water to the Old River Shannon.

3.7.4 Alien Invasive Species

Concerns around the spread of invasive species were referenced in a number of submissions with one stating that it would not be "sustainable, nor would it be permissible, to pump untreated water from Lough Derg (where both Zebra mussels and Asian clams exist) to a reservoir or any open or exposed facility in another catchment where cross contamination would be high. If it is necessary to pump water to Dublin, full or partial treatment will have to take place in the Shannon River Basin District area".

Another submission from the environmental regulator highlighted similar concerns and added that "the creation of a new reservoir would need to be assessed by Irish Water to determine if it will constitute a new artificial body of water under the WFD and to assess the implications of the Directive for its management of that reservoir including the consideration of potential spread of alien invasive species".

3.8 Water Framework and Habitats Directives

3.8.1 Water Framework Directive

A number of submissions referred to the aims of the Water Framework Directive (WFD) and its objectives to maintain and enhance the quality of water.

One submission suggested that "activities associated with the project should not give rise to any effect or impact that would be contrary to the aims and objectives of the Water Framework Directive (WFD)".

The same submission outlined potential issues with the transfer of raw water from one River Basin District to another, in the "transfer of invasive species, mixing waters and loss of designation under WFD" and this submission highlighted the

"need to consider any pipe crossing and drainage regime and the impacts of an overflow in a water storage area".

One stakeholder outlined that "environmental scientists have pointed out that increasing and varying flows on the old Shannon is a fundamental step in getting salmon and other migratory fish species (i.e. lampreys) back to the upper Shannon". This submission, referencing the ecology and geomorphology aspects of the WFD, commented that "increasing and varying the flows is also essential for maintaining the ecology and geomorphology of the old River Shannon Special Area of Conservation".

Concerns were raised in relation to the principles and statutory obligations set out in the WFD with particular emphasis on Annex V and the "Quality Elements for the Classification of Ecological Status".

A submission identified a number of key overarching requirements of the WFD and made the following points:

- river basin district planning, hydromorphological obligations, assessment of ecology impacts, suitability of abstraction legislation, all need to be considered,
- "Article 9 of the WFD requires the introduction of *'water-pricing policies* [that] *provide adequate incentives for users to use water resources efficiently and thereby contribute to the environmental objectives of this Directive',* outlining that "until such measures are put in place, the 'needs' assumptions underpinning this project are not sound and may potentially be in conflict with the Directive".
- WFD, ecology and water need to be specifically mentioned under Constraints on the project website

It expressed the view that it was inaccurate to list the WFD only under 'Water Quality' as a constraint, summarising that "an important element of the WFD is quantitative and wider hydro morphological status" in addition to water quality.

A submission suggested that "the obligations arising from the Water Framework Directive "should be core to this proposal, but are clearly sub-ordinated to considerations on supply and the energy requirements of the ESB".

To ensure the sustainability of the project, a submission recommended that the WFD be included in the assessment criteria and "the WFD should be promoted so as to join the source yield technical assessment and Habitats Directive Assessment".

3.8.2 Habitats Directive

A submission welcomed the focus of the OWP on the Appropriate Assessment obligations for the Natura 2000 network arising from Articles 6(3) and 6(4) of the Habitats Directive, but considered it was "misplaced in informing the strategy, and seems to derive solely from a somewhat too narrow view based on a limited focus on the planning consent process and the desire to avoid the legal obstacle in the consent process".

A statutory authority re-iterated a view expressed in a previous 2009 submission, that it "expressed its disagreement with the conclusion of the 2008 Habitats Directive Appropriate Assessment Report that there would be no adverse effects of

water abstraction from the Slevoir Bay of Lough Derg North-east Shore Special Area of Conservation (SAC) and Lough Derg (Shannon) Special Protection Area (SPA)".

It further welcomed the acknowledgment that adverse effects on the integrity of these sites could occur, as noted in Table 5F of the *Water Supply Options Working Paper*. However, it disagreed with the view of the OWP that "*all of these options, at the desk study level of appraisal, can likely satisfy Stage Two of the Appropriate Assessment process without triggering Article 6(4) of the Habitats Directive* …", considering instead that "these options require further analysis and an appropriate assessment in order to establish whether mitigation may or will successfully ameliorate potential effects on site integrity".

The submission continued that if ESB approval is relied on as a key mitigation measure for any future proposed WSP and relied upon for an appropriate assessment, it will need to be demonstrated to be feasible (*e.g.* approval expressed) prior to consent. The submission went on to note in relation to assessments based on modelling studies that "recent Irish and European jurisprudence has underlined the importance of the appropriate assessments being "*complete, precise and definitive*" in nature. As such, it strongly advised that "any modelling that is required to scientifically analyse the potential effects of the WSP on the European sites is included in the Natura Impact Statement to be prepared by Irish Water".

3.9 Communities and Benefiting Corridor

Views on the Benefiting Corridor expressed in submissions have ranged from those who consider it to be a contrived 'add-on' feature of little relevance, to those from farming, industrial development, business, the environmental regulator, and local authority sources who recognise it as an important step by Irish Water to bring water services for all in the Midlands and Eastern Region onto a common resilient, reliable standard of service. Some submissions have linked this to other aspects of planning and development in the Midlands generally. One submission welcomed the inclusion of the benefitting corridor and expressed the view that it would maximise the return on investment in the Midlands and Eastern counties of Tipperary, Meath, Offaly, Westmeath and Laois.

Another submission acknowledged the potential economic benefit for towns and people within these communities suggesting that the prospect of diverting additional water resources to the Midlands region "will facilitate the area becoming more attractive to FDI bringing jobs and economic growth to the region". It also welcomed the long term planning approach and the expansion of the previously identified supply area which will "enable more areas to benefit from investment which will support economic expansion in more regions".

One submission recommended that Portlaoise be included in the benefiting corridor as "providing a long term water supply will ensure that there is a resilient supply of potable water to the town" which will allow for future economic growth.

Conversely, concerns were raised in one submission which questioned the benefitting corridor and suggested that it "is an add-on feature that has little relevance to the primary objective which is the GDA Water supply. The reason it has little relevance is that there is a plentiful water supply of raw water available in the counties mentioned in this corridor and any current problems are due to poor investment in local treatment infrastructure which is a separate issue".

However, it was also noted that development in a benefitting corridor needs to be considered in the context of flood risk and "the availability of more sustainable and energy efficient transport solutions".

3.9.1 Benefitting Corridor Demand and Source Consolidation

The environmental regulator commented that the "supply of drinking water in Ireland has historically been characterized by small local supplies providing water within county boundaries" and encourages "the consolidation of water supplies which would allow efficiencies of operation and resolve treatment issues that are more acute in small supplies". In this regard, it favours a regional approach to the supply of water in the Eastern and Dublin Region incorporating the largest area possible. This will allow many small public supplies in the Midlands to be discontinued and replaced with the larger and more robust Eastern and Midlands Water Supply. It noted that some of the existing midland supplies are on a remedial action list or are having localized impacts (e.g. over abstraction at Clonaslee WTP)".

A local authority in the Midlands also identified issues around the capacity and sustainability of groundwater and small surface water schemes, It agreed that a "larger water supply source, such as proposed in this project, would bring economies of scale and greater security of supply to the production and treatment of water" in their functional area**.**

Another submission endorsed "Irish Waters efforts to consolidate and rationalise the number of water and wastewater treatment plants across the country, at present, Irish Water controls 856 water treatment facilities across Ireland".

3.9.2 Farming

Concerns were expressed by one submission "regarding the impact on farmers with regard to possible restrictions the project could place on land use in the vicinity of abstraction points, in particular regarding effluent control". The same submission outlined that the impact on farms would be "significant and it is essential that the established procedure for wayleave consultation and compensation are fully implemented and that farmers are adequately compensated for any disruption to their farming enterprise".

Another submission "proposes that the interests and requirements of farmers whose lands are prone to flooding must be specifically taken into account in any such new arrangements for the management of the Shannon flow, water levels and extraction".

The view was also expressed "that an adequate and reliable source of quality water is a basic requirement for the further development of the farming and food processing sector" and outlined the importance of the WSP to "provide for water, to the so-called benefit corridor…….and not just the greater Dublin region".

A submission queried whether IW has considered the possibilities of algal bloom, pollution or other crisis and the implication of such single source dependency.

3.10 Tourism and Amenity

Many submissions referred to impacts on tourism generally, and also on potential tourism benefits of raw water storage.

A number of submissions expressed concerns around the potential impacts on both Tourism and Amenity arising from the Lough Derg / Parteen Basin options. Most concerns were related to water abstraction with one submission suggesting it would result in a "loss of amenity for water users such as motor and sail boat use".

Another submission commented that in drought periods, low water levels expose unmapped "pinnacles of limestone (rock)" which "have been a major cause of injuries and fatalities" to the boating community. Extracting water from the Shannon system will exasperate this situation".

Likewise, a number of submissions expressed concerns regarding the navigation levels of the Shannon River and/or Lough Derg, instancing hazards at low water, *viz*:-

- "In recent years, low flows in the River Shannon have impacted on navigation particularly in the Killaloe area. Structures that were inundated due to the construction of the Shannon scheme re-emerged, were visible and posed hazards to navigation".
- "Water levels are low enough as it is. It has become a struggle some days during the summer months, to even get boats out of some local harbours……this has already had some impact on local businesses and on the numbers of boats out on the lake".

One submission strongly advised that the water levels on Lough Derg "always remain above the Waterways Ireland minimum summer level to allow boating activities to take place". They commented that dropping below this would "damage the flora and fauna of the lake", and "seriously affect the many local, national and international boating events that take place on the Lough annually". The submission also stated that it is "essential that a method of controlling the water levels between Waterways Ireland, Irish Water, OPW and the ESB be agreed and adhered to".

Another submission raised concerns that "at present there are two competing bodies controlling water levels on Lough Derg". One organisation provides that "levels are kept at a sufficient level for Navigation and the ESB, who seeks significant volumes of water for Energy Generation. The introduction of a third competing body seeking to divert water from these bodies and their needs, presents a significant risk. An independent body charged with the protection of the unique resource of the Shannon should be designated as final arbiter on whom competing needs are decided".

Reference has already been made to the views of a statutory consultee on weighting to be attached to water based (participatory) activities and the Blueway Project.

The importance of the Shannon to many communities that "live and work by its shores both in terms of a tourism and agriculture" was highlighted by one stakeholder. The same submission gave examples of poorly implemented drainage schemes "that have wrecked areas with devastating consequences e.g. the plight of communities dependent on the Colorado River".

Tourism and Raw Water Storage

The potential tourism benefits of a reservoir in Garryhinch Co. Offaly was highlighted by one submission, explaining that it could be developed as an amenity which "offered significant potential for development of tourism in the Laois and Offaly area". This view was supported by another submission which stated that "value

should be placed on the creation of new amenity facilities", referencing how interim storage provides "potential of establishing additional amenity facilities for walking, cycling, water sports, fishing, etc."

A third submission from a local authority expressed the view in this context that the "tourism potential of the project should be included in any cost benefit analysis, as same is of local, regional and national importance".

3.11 Planning

3.11.1 Planning Policy

A number of submissions commented on spatial planning policy and guidelines.

A view was expressed that "the abstraction of water from the mid-west to Dublin is against spatial planning as it will promote unsustainable development in the Dublin region while weakening the mid-west region".

Another submission suggested that "this volume of water will generate considerable waste and significant infrastructure will be required to appropriately deal with water treatment". Reference was made to risk of "deleterious and polluting effects during the construction phase, and associated with flushing the pipeline".

"Given IW breadth of responsibility", a submission suggested, "the fragmentation of its perspective and limitations of its vision on this water sources project is deeply disturbing. Providing more water, invariably increases the volume of waste water, an area where Ireland is significantly in breach of its obligations under the UWWTD for both collection and treatment facilities.

Concerns were raised that "the requirement for a pipeline and associated treatment and pumping facilities across half of the nation from now into the future is a significant environmental and economic cost", with others highlighting their "concern with the potential waste generated by a new Water Treatment Plant in this area as all Wastewater Treatment Facilities in the Mid-west region are already at full capacity".

The need to consider the Maritime Spatial Planning Framework was highlighted in one submission, noting that that the WSP presents "opportunities to co-locate facilities for other state agencies at the abstraction, storage or desalination facilities".

Finally, concerns were expressed in one submission that related to potential future sterilisation of lands for mining purposes.

3.11.2 Planning Horizon

Differing views were expressed on an appropriate planning horizon.

One submission suggested that "very long term estimates are just guesswork but estimates should be regularly reviewed with a 10-20 year maximum aspect".

Another submission conversely suggested that the "current design horizon to 2050 is not sufficiently long". It pointed out that it is likely to be 2025 before this project is brought into service and 2050 is then "only 25 years beyond that". The project should be looking "at least to a design horizon of 2075, and the design and planning approvals should allow for increasing demands over that time frame".

3.11.3 Legal Issues

A large submission "primarily concerned with matters of a legal nature, and the underlying policy framework" expressed the view that "Irish Water is fundamentally dysfunctionally structured and targeted. The need, on the one hand, to generate revenues and satisfy the requirements and conditions of assessments undertaken by Bodies such as Eurostat and potential privatisation interests in the future, and on the other hand stimulate real conservation and reduction in consumption of water and as a consequence curtail revenues are inherently contradictory objectives".

The same submission considered that the OWP fails to clearly reflect that there is a requirement under Article 5 of the Birds and Habitats Directive (with reference to Annex IV) to document the: "direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project". It considered that the scoping of the project, as regards cumulative impacts, should ensure that "all aspects necessary to its development and operation need to be included for the purposes of the assessment required under the EIA Directive, if the process is not to be fatally legally flawed".

A separate submission expressed the view that Ireland's current institutional arrangements to support the evaluation of the effects of surface water abstraction need to be modernised, noting that the primary legislation, the Water Supplies Act 1942 "does not consider environmental issues".

3.12 Other Issues raised in Consultation Submissions

General comments, suggestions and recommendations were included in many submissions and are all summarised below:

3.12.1 Plumbosolvency

It was stated in one submission that "the project team should also consider the implications of Irish Water's proposed policy of ortho-phosphate dosing to reduce plumbosolvency. The stakeholder went on to say that it "recognises that this will most appropriately be dealt with under the Irish Water National Implementation Strategy for Lead".

3.12.2 Recommendations

A number of submissions made specific recommendations on the project, and on related IW operations.

A submission recommended that "the choice of preferred option should be made so as to maximize the project's technical flexibility to satisfy changing water demand and usage patterns over the years to come".

Another submission welcomed the investment in the region and suggested a random sampling approach to consultation with business. Subject to environmental protection of wildlife and flora, it expressed a preference for the shortest pipeline route from Lough Derg with a commitment of 20% of work value to go to local contractors.

Another submission recommended that "Irish Water engage the services of a suitably qualified underwater archaeologist to carry out an archaeological

assessment of the impact of all potential water supply options referred to within the reports submitted to this Department prior to a final option being decided upon".

The need to match wastewater capacity with treated water was mentioned as was a recommendation on engagement with the IFA on the use of environmentally friendly fertilisers.

3.12.3 Questions Raised

A number of submissions raised questions relating to various themes: these are listed below.

Abstraction rates

One submission sought clarity on the abstraction rate, per hour, per day, or other time period, and whether it would be curtailed in dry weather.

The same submission questioned whether it would be feasible to build a new dam or weir with locks downstream from Foynes as "there are a lot of mudflats around there and it would only be to keep the current water levels so flooding should not be much of a problem".

Flooding

A submission from a county council asked about flooding and "wished to know how this aspect would bear on the emerging preferred option". It requested that "specific reference be made to the implications for the Mid-West Region, the impact on people's lives and whether the project would relieve the risk of flooding along the course of the Shannon". It also noted that "an assessment would be made of the impact on fisheries and wished to know if there would be any implication for the Ardnacrusha Power Station or for flood reduction in the Shannon catchment."

Another submission questioned whether "the design of the project could include a flood alleviation element for the Shannon region prone to flooding."

4 Response to Feedback

4.1 Introduction

Section 3 discusses the general collective content, and context, of the submissions received during the Public Consultation process in terms of common themes. This Section 4 outlines Irish Water's responses to the issues and views expressed in these submissions.

4.2 Options

4.2.1 Desalination

Desalination of seawater is one of the options which will continue to be examined in option appraisals. Submissions received have identified advantages and disadvantages associated with desalination. These have been explored in the Preliminary Options Appraisal Report and will be further developed in the Final Options Appraisal Report.

Advantages of desalination are:-

- Water availability is not a constraining factor.
- It is a solution which would, given its relative location, account for an area representing two-thirds of the projected water demand.
- It can be modularly expanded in response to emerging water demand, thereby de-risking, to some degree, water demand projection and timing.

Disadvantages of desalination are:-

- It is a Dublin-centric solution to a water supply problem which covers the Midlands and Eastern Region.
- It is an energy intensive process, with a high capital and operating cost, and high carbon footprint.
- Operation of desalination as an auxiliary source, or as a supplementary source in drought periods, would have significant operational challenges.

It is important to note that desalination is not without its environmental impacts, in terms of disposal of the brine waste product from the desalination process, construction impacts in the marine environment, and pipeline routing impacts from the desalination site.

A comparative assessment of desalination with a Shannon source has been included in the Preliminary Options Appraisal Report. This will be developed further in the Final Options Appraisal Report.

4.2.2 Lough Derg Direct / Lough Derg (Storage) / Parteen Basin

Irish Water has listened very carefully to the submissions received, and to the views expressed by stakeholders in direct discussions. IW has also examined the results to date from the ongoing water quality monitoring / modelling of Lough Derg and Parteen Basin; as well as the subsoil investigation of the Garryhinch raw water storage site.

On the basis of results to date, it has been concluded in the Preliminary Options Appraisal Report that, notwithstanding that further data collection is necessary for completion of model calibration:-

- Abstraction from the north east corner of Lough Derg is likely to have adverse impacts on 'residence time' in southern areas of the lough in dry weather conditions such as occurred in 1995, and of a degree that would concern aquatic ecologists in the project team.
- Such impacts would not be materially ameliorated or mitigated by raw water storage of 2 months retention time, or even 3 months retention time.
- Analysis of other abstraction sites in the northern sector of Lough Derg do not materially change this position.

'Residence time' is a measure of how quickly the flow through a water body provides a turnover of the volume of that water body.

It has been further concluded that, leaving aside the evidence that raw water storage at Garryhinch would not serve its primary purpose as proposed in Option F2 of the SEA, the ground conditions at the site are such that the cost of construction of the storage would be significantly greater than originally estimated, and the risk of transfer of invasive species to the upper Barrow catchment would remain.

Irish Water has also had regard to the importance of addressing water supply deficiencies throughout the Eastern and Midlands Region and the benefits which come from water treatment at source, rather than from raw water transfer to a water treatment site in the east Midlands. It has considered pipeline corridor routing options, including those offered by existing linear infrastructure.

In summary, Irish Water have pursued the recommendations of the SEA on investigative studies, they have considered the results to date of these studies, and they have concluded that, based on results to date, abstracting from northern Lough Derg, either directly or indirectly through raw water storage, would not meet the necessary standard of environmental sustainability given the views expressed on environmental stresses in the lake.

Abstraction downstream of Lough Derg, where water flows have already passed through the lake, are in a qualitatively different position, as has been pointed out in several submissions and discussed in the Preliminary Options Appraisal Report. Where concerns have been expressed that the presence and propagation of alien invasive species already point to a lake ecosystem naturally experiencing change, abstraction at a point downstream of the lake would avoid any direct impact altogether.

4.2.3 Other Options and Alternatives

A number of submissions invited re-examination of conservation and rainwater harvesting options. Other submissions called for re-examination of options such as abstraction from Lough Ree, or use of groundwater which were considered but not taken forward as primary solutions in the Options Working Paper. All suggested options and alternatives have been considered in the process in which IW is engaging. The options of reusing wastewater and of replacement of compensation flows in the Liffey by pumped recirculated flow, have also been considered.

A response to the submissions, under the appropriate headings, is given below.

Groundwater

Groundwater throughout a region of 80 km in radius centred on Dublin was assessed at the time of preparation of the SEA in 2008. This work was reviewed in 2014 and it was concluded that groundwater on its own would not be able to supply the projected demand, and the best use of the limited resource would be in a supplementary capacity.

Since 2008, the definition of '*available groundwater resource'* given in the Groundwater Regulations (2010) introduces a complex linkage with the Water Framework Directive, when it says:-

"*available groundwater resource…….means the long term annual average recharge of the body of groundwater less the long term annual rate of flow required to achieve the ecological quality objectives for associated surface waters specified under Article 4 of Directive 2000/60/EC to avoid any significant diminution in the ecological status of such waters and to avoid any significant damage to associated terrestrial ecosystems".*

The Curragh aquifer is one of the larger groundwater bodies in Leinster, but is also a source of water for the Pollardstown Fen, an internationally important ecological habitat.

Referring to another large aquifer referenced in 2008, and studied in the interim period, it is notable that yield estimation, based on two years' research and more than 60 boreholes drilled on an aquifer of 675 sq. km in extent, north of Bog of the Ring, was estimated to have a sustainable yield, which would not risk Water Framework Directive quantitative objectives on surface waters, of just 22 Mld. This is to be compared with the originally predicted yield estimates of 33-41 Mld if applying the same multiplier factors used in the original SEA groundwater assessment in 2008, and is an indication that true availability of the groundwater resource in that region calls for a more conservative approach than was adopted in the SEA assessment.

Overall, the 11 groundwater bodies within 80 km of Dublin currently enjoy 'Good' status, as assessed by the EPA under the Water Framework Directive. However, 5 of them are classified as '*at risk of not achieving good status'* in future, (including the existing Bog of the Ring abstraction, which is part of the source capacity for the Dublin Water Supply Area) and 2 more are '*possibly at risk of not achieving good status'*. Overall, the estimated entire regional resource of 115 Mld, which is not adequate to meet projected demand, would have to be located, tested and proven not to involve significant impact on terrestrial ecosystems dependent upon groundwater (when hydrological information to properly model this on a regional scale is not available), and then be sustainably developed as well fields, where water rights can be obtained and water quality can be protected.

Specific quoted instances of groundwater availability from mine dewatering have been previously investigated. The circumstances of such abstraction are complicated by large cones of groundwater depression extending tens of square kilometres, by prolonged discharge of pumped groundwater into surface water systems, which have come into environmental equilibrium with the imported flows. The pumped water has become part of established flow in adjacent surface water systems over decades, and in some instances actually serves to improve background quality in such receiving waters. Such mining facilities are engaged under licence with extensive decommissioning and aftercare obligations with the

environmental regulator, and IW must prudently take such factors into account. Such options, as the OWP indicated, are best developed for auxiliary or local supply, at a time when source capacity and legal standing are clear and must consider the legal and environmental complexity that would arise where a mining aftercare plan would overlap with public water supply.

In Ireland we have no legislation to ensure the sustainable holistic use, and environmental protection of groundwater.

The conclusion drawn in 2008, that groundwater has a potential role as a proven, sustainable supplementary source, capable of augmenting a primary supply from an alternative source, is correct and places groundwater in its proper context, in time and scale.

Rainwater Harvesting

Irish Water welcomes and appreciates submissions received which explore ways in which rainwater harvesting can be used to support existing sources of supply, both proven and brought to market, and in the development stage. Over a decade ago, the original Preliminary Design Report on the Water Supply Project extensively researched the potential to harvest rainwater, including within the domestic context. Adaptation of domestic plumbing systems in existing dwellings and promotion enabling designs in new builds, in a context which is safe from a public health viewpoint, is likely to take time and will have its own costs, which are collectively substantial.

Such approaches can make an important contribution, over the time necessary to implement them, to extend the life of existing water supply systems, but they are not, in IW's view, a primary source option, where the objective is not only to meet projected water demand, but also diversify climate change risk, existing source risks and bring resilience into existing supplies.

Currently, the Government has provided a conservation grant to encourage customers to improve or repair their home's plumbing system or to invest in water saving devices. This is being administered by the Department of Social Protection and Reform. Irish Water also provides advice and information on how to conserve water in the home on its website **www.water.ie**.

Irish Water are preparing a submission to the CER, to request funding under their Innovation Fund, which will enable IW to trial water savings measures within the home – both behavioural measures and water saving devices. This includes water savings devices internally, and external devices such as rainwater harvesting in the garden. This trial, which will also utilise domestic metering as a method to appraise the effectiveness of the various devices and technologies, will serve to inform IW and the CER of the merits of demand management devices.

If this can be demonstrated, IW will apply to the CER for funding to purchase and install water savings devices.

This draft initiative is currently being finalised within Irish Water before it can be submitted to the CER, who will then decide if it will approve the investment to implement this strategy.

Apart from conservation measures in existing dwellings, Irish Water is working with national standards authorities and housing stakeholders to improve the inclusion of

dual plumbing systems in new build housing stock, which effectively promotes rainwater harvesting, in a manner which is safe for public health.

Treated Wastewater Reuse

A number of submissions have proposed that treated wastewater be reused. Re-use of treated wastewater was considered at earlier stages in the optioneering process, but was not taken into the 10 Options examined in the SEA. This point has been reviewed and considered. The issue of products and chemicals collectively termed 'contaminants of emerging concern' in wastewater, and the lack of European standards around reuse of treated wastewater are factors to be taken into account; further views would be welcome on how high quality drinking water could be provided from treated effluents.

Taking treated effluent from Ringsend WWTP, to the Leixlip Water Treatment Plant, might require a pipeline to be laid in the bed of the River Liffey, if immensely disruptive street works through an extremely congested city centre were to be avoided. Taking effluent from Leixlip WWTP, treated to a higher standard, would slightly reduce the required volume from Ringsend WWTP.

In considering this option, the following has been taken into account:-

(a) The Liffey already accepts the treated effluent from the Osberstown Wastewater Treatment Plant in mid Kildare, which is an indirect re-use.
(b) The Environmental Regulator (EPA) would have to approve any reconfiguration or partial reuse of wastewater, and also the proposed discharge location and enabling works.
(c) It is likely that any treated effluents proposed as substitutes for background natural Liffey water, or indirectly permitted to become so, would have to be treated to such a standard as to be chemically indistinguishable from it, along with a high standard of bacterial and pathogen removal.

There is a lack of standards on treated effluent reuse in public water supplies in the EU; this has been discussed with the EPA.

The Environmental Regulator considers treated wastewater reuse as not desirable, given its high risk. Their submission points out that....."The majority of Member States do not engage in this practice and in some cases it is prohibited. Where it is practiced, its use is limited to recreational areas (parks etc) or agriculture (irrigation water) or street cleaning. The use appears to be restricted to a small number of Mediterranean countries."

Environmental Flow Replacement

One submission has advocated further development of the River Liffey, through use of recirculated flow, releasing compensation water to be used in water supply.

The River Liffey is a highly regulated river, and flows are managed by ESB. Ballymore Eustace WTP directly abstracts from Pollaphuca and delivers 310 Mld into supply. Flows are released by ESB from Pollaphuca into the middle Liffey, to permit Leixlip WTP downstream to abstract a further 215 Mld from the ESB impoundment there. On the way, the river accepts and dilutes treated effluent from the Osberstown Wastewater Treatment Plant, upstream of the Leixlip impoundment.

Referring to Figure H.2, ESB release 2 cubic metres per second (m^3/s) at the dam at Leixlip, as a compensation flow to the River Liffey downstream. Because the river is already so highly regulated, there are long periods in the summer when this minimum prevails. In wet weather, the intermediate Liffey catchment contributes additional flow.

The River also receives the treated effluent from the Leixlip Wastewater Treatment Plant (WWTP), accepted into that 2 m^3/s compensation flow. Minor tributaries such as the Rye Water also enter downstream, and the river is tidal below Islandbridge.

The submission on the Project Need Report (which had also referred to options) suggested that the 2 m^3/s (equivalent to 173 Mld) of natural river water, currently released as compensation flow, could be dedicated to water supply instead. It is argued that it could be substituted by pumping river water from a point just above the tidal limit, to an upstream point back at the Leixlip Dam. The fresh water of the river would be effectively recirculated in a continuous flow loop, between Leixlip and the tidal limit at Islandbridge.

The 2 m^3/s natural river compensation flow over the dam would be substantially discontinued and replaced by a pumped recirculation of river water at the same rate from a low pool impoundment just above the tidal limit. The rising main would be laid either in the river bed, or in available wayleave from Islandbridge to Leixlip. The upper Liffey estuary just downstream of the Leixlip impoundment would receive only the surplus flow over 2 m^3/s provided by the Rye Water and other tributaries, as well as the loop overflow from Leixlip treated effluent.

In considering this issue, we have noted that:-

(a) With recirculated river water in an environmental flow replacement scheme, the river water would eventually approach an equilibrium water quality heavily influenced by the recirculated Leixlip WWTP treated effluent quality, because it also flows into the recirculated flow reach of river. This would have to be addressed.
(b) Recirculating the low flow in the river, over a prolonged period, would be a significant intervention in its hydrology, its water quality and its hydromorphology.

The EIS for the Leixlip Wastewater Treatment Plant (WWTP), discussed the hydrology of the lower Liffey, and examined the comparative flows to be expected from the Liffey and the Rye Water.

The 95 Percentile Flow is the flow exceeded 95% of the time, and is frequently a reference flow for planning treated wastewater discharges to a receiving water.

Because the Liffey compensation release of 2 m^3/s at Leixlip Dam is a steady, regulated compensation flow release, it is a minimum available 100% of the time, and the '95 Percentile' issue is also 2 m^3/s at present.

The Rye Water, in contrast, is not regulated, and it has a very low 95%ile flow, so that it would contribute very little (5% of the 95%ile combined flow) to the stretch of river potentially subject to an Environmental Flow Recirculation regime. The existing compensation flow is therefore very important in the low flow regime of the lower River Liffey.

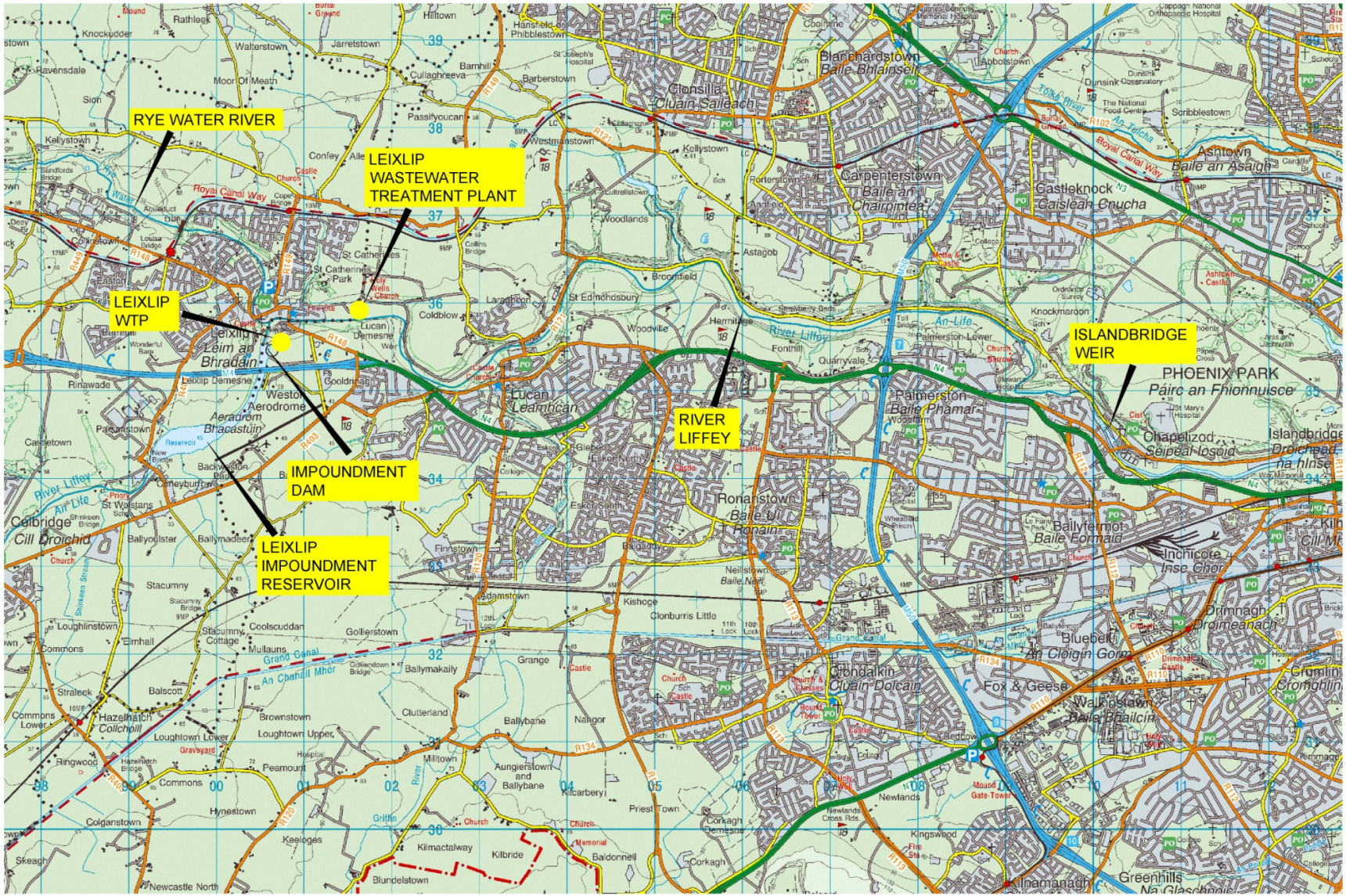


Figure H.2: Areas relevant to Environmental Flow Replacement proposal

The EIS for the Leixlip Wastewater Treatment Plant set out standards on which certification of the EIS was sought.

(a) The standards originally proposed for the treated effluent of the Leixlip WWTP in the design of the plant, have all assumed the dilution and assimilative capacity of the 2 m^3/s compensation flow released by ESB, in order to meet the water quality requirements of the lower Liffey. The compensation flow is an integral part of the design; it defines the acceptable treated effluent quality, prior to dilution by 2 m^3/s of Liffey river water of known background quality.

(b) If the continuous 2 m^3/s release were discontinued, and replaced instead by a pumped recirculated flow of the same flow rate (but continuously recirculating the same water), this would be a fundamental change to the lower Liffey hydrology. The only resemblance would be in the (pumped) flow passing a given point; all other attributes would be different. Continuing to discharge the Leixlip WWTP treated effluent into this recirculating flow would cause an accumulating 'closed-loop' deterioration in water quality, offset only by whatever biological recovery might be possible within the river reach affected by such recirculation.

(c) Moving the discharge of the Leixlip WWTP treated effluent outside this recirculation zone, to discharge instead downstream of Islandbridge weir, at the head of the tide, would still bring that effluent into the innermost tidal water volume, without the 2 m^3/s freshwater pre-dilution, as it has at present.

(d) Re-direction of the treated wastewater discharge from the Leixlip WWTP, by pumping it approximately 8km toward the proposed Orbital Sewer to the new Greater Dublin Drainage Plant, could mitigate this problem, but at very significant capital and operational cost.

A proposal which would remove the last elements of the natural flow of the Liffey at Leixlip dam and replace the flow in the lower Liffey by a pumped recirculation, would be a very significant variance in the long established flow regime on the lower Liffey. It would have to secure the agreement of ESB to accommodate it. It would not only require redirection of the treated effluent from the Leixlip WWTP, but it would also impact the background conditions in the Liffey Estuary, on which the sustainability of the existing Ringsend WWTP treated effluent discharge partly relies.

We have also discussed the merits of this proposal in consultations with the Environmental Regulator, who would have to approve it, and who has not expressed support for it.

Multiple Sources

Irish Water have already considered the use of multiple sources. The 10 source Options in the original SEA, and reviewed in the Options Working Paper, included an option of combined abstraction from Lough Ree and Lough Derg, as well an option for conjunctive use of the River Barrow with the River Liffey. It included an appraisal of groundwater resources which recommended that groundwater be retained, not as a primary option, but as a secondary local supporting water supply, where it can be sustainably abstracted and treated.

The scale of source needs to be commensurate with the scale of the need for water, and the need for resilience in the augmented system.

It has to be recognised that a 'multiple source' approach over decades has brought about a situation where 856 public water supplies, with many more abstraction locations, serve 4.6m people in the Republic, compared to 47 water plants serving 1.7m people in Northern Ireland, and approximately 250 serving Scotland. These smaller isolated sources are often of low yield, often not associated with higher water quality, but are more vulnerable to pollution.

It must also be remembered, as it was emphasized in the Project Need Report, that the requirement is not just for additional water for growing demand, but for improved headroom and resilience in the overall water supply system, which is 84% dependent upon the Liffey, and where peak demand in 2013 reached 570 Mld, against available capacity in existing sources in the region of 600-620 Mld. The scale of the requirement is such that the response must be a decisive improvement in water availability, and in the resilience of the water supply overall.

4.3 Water Conservation and Leakage Control

The Water Services Strategic Plan, covering a 25 year planning period, includes an objective to prepare and implement Regional Water Conservation Strategies to drive conservation efforts against measureable targets within the lifetime of the Strategic Plan. A key objective in the 25 year WSSP is to implement national water conservation strategies to significantly reduce leakage levels across the country.

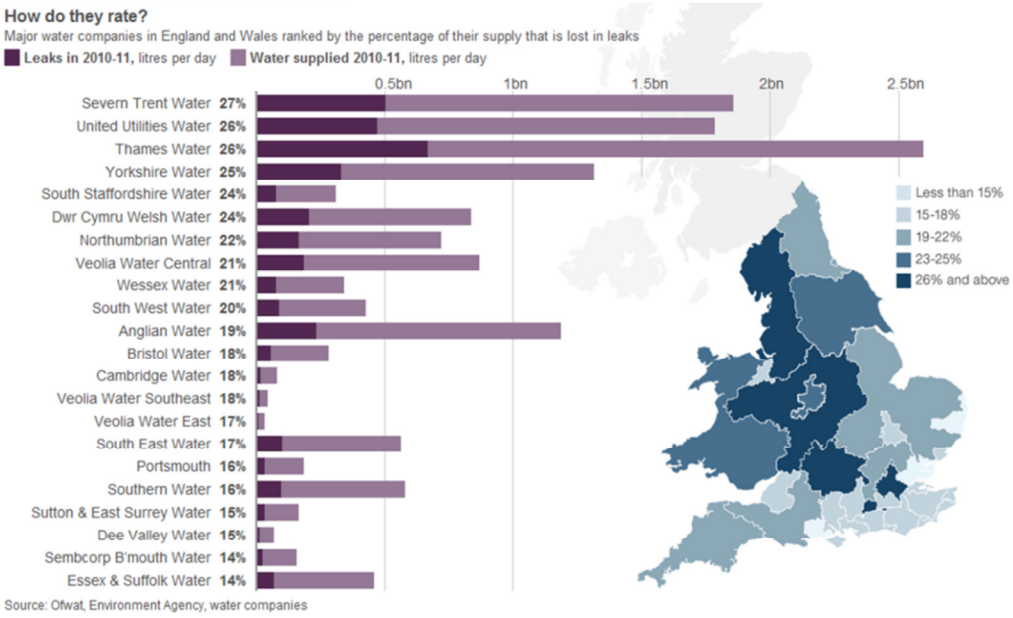
4.3.1 Leakage

IW has committed to reduce leakage but (a) doing so is challenging in view of the required resources and (b) the maximum reduction that can be realistically achieved based on current projections would be 20%. The projected savings from leakage reduction are already factored into water demand projections and the availability of a new source of water will not eliminate the need to reduce leakage.

Water leakage is a national problem. It is an inheritance of 100 years of underinvestment and Irish Water is taking a national approach to tackling it. Guaranteeing a reliable, safe, water supply in the Eastern and Midlands Region will involve a combination of all three elements of water conservation, leakage reduction and new source development.

Dublin has made some progress on leakage reduction in recent years. Over the past decade leakage levels in the Greater Dublin Region have fallen from more than 40% in the late 1990s to below 40% in recent years, a level which is below the national average. It is intended to lower this level further to 25% by 2026 and to 20% by 2041. This level of leakage reduction over such a short timeframe is very ambitious in technical terms and would require a significant level of asset replacement and funding. It took in excess of two decades for leakage levels in the UK to be reduced by one third, and the 2012 position in the major UK water utilities is illustrated in the Figure H.3 below:

Figure H.3: UK Leakage Levels in the UK



It should be noted that finding and repairing leaks is very expensive with ever lower leakage reductions being achieved (for the same expenditure) over time as the situation improves. Evidence from watermain rehabilitation and household-side leakage work over the past decade in Dublin suggests that recovery of 1 Mld costs in the order of €0.75m for household leakage and €7m-8m for watermain network leakage. Pressure management, Find and Fix activities, and watermain rehabilitation work become progressively more expensive, as leakage levels are reduced.

Irish Water is committed to moving from a relatively passive leakage control status to a proactive approach with the long-term objective of ultimately reducing public and customer side leakage nationally to a Sustainable Economic Level of Leakage (SELL). This, as one comprehensive submission indicates, is the level of leakage at which it would cost more, in both capital and in social disruption, to make further reductions in leakage than to produce the water from another source. It is the same customer who pays for the combined effort to save water and to supply it from a new source, and neither part of that combination can be permitted to grow disproportionately, when a key Irish Water objective is affordability for the customer.

Irish Water has been working over the past several months to determine the sustainable economic level of leakage for the Dublin Water Supply Area. The specific targets for the Water Supply Project are set out in Section 8 of the Water Demand Review in the PNR. The savings from leakage reduction are already factored into water demand projections.

It is Irish Water's intention to achieve the earliest affordable reductions in leakage nationally, tackling the largest leaks first to reduce leakage levels as quickly and effectively as possible..

Further to this, it must also be remembered that the objectives of the WSP project are twofold; not only to meet water demand, but also to increase the resilience of the water supply system and its sources (the ability of Ireland to attract FDI is dependent on sustainable availability of sufficient water combined with the resilience

of that water availability). Planning for a resilient water supply must take place independently of any progress on water conservation or on success in reducing leakage, because loss of a key water source through pollution, or loss of a treatment plant element, or a key aqueduct, remains a separate risk to be managed, even as the drive to minimise water demand continues.

In summary, IW is obliged to reduce leakage but doing so is challenging in view of the costs and resources available. The maximum reduction that can be realistically achieved in a best case scenario by 2041 is 20% and this reduction has already been factored into water demand projections.

4.3.2 Conservation Initiatives

Irish Water already encourages water conservation for domestic customers through its “Be Water Smart”initiative, covering guidance on reducing water usage in the kitchen, in the bathroom and in the garden.

That work will be implemented in a continuous programme over a number of investment cycles. The water conservation and leakage targets in the Project Need Report, for the Water Supply Project, are consistent with those objectives, and savings in per capita consumption have been included in water demand forecasting.

Apart from conservation measures in existing dwellings, Irish Water will work with national standards authorities and other stakeholders to provide enhanced guidance on national domestic plumbing standards in new build and upgraded housing stock. This work may promote rainwater harvesting and other water saving measures, in a manner which is safe for public health.

Irish Water actively engages with large industrial users on water conservation initiatives. The Project Need Report has researched international trends in the intensity of industrial water usage, and has factored improved efficiency in industrial water usage into water demand projections.

As has been mentioned previously, the Government has provided a conservation grant to encourage customers to improve or repair their home's plumbing system or to invest in water saving devices. This is being administered by The Department of Social Protection and Reform. Irish Water also provides advice and information on how to conserve water in the home on its website **www.water.ie**.

Irish Water is preparing a submission to the CER, to request funding under their Innovation Fund, which will enable IW to trial water savings measures within the home – both behavioural and water saving devices. This includes water savings devices internally, and external devices such as rainwater harvesting in the garden. This trial, which will also utilise domestic metering as a method to appraise the effectiveness of the various devices and technologies, will serve to inform IW and the CER of the merits of demand management devices.

If this can be demonstrated, IW will apply to the CER for funding to purchase and install water savings devices.

This draft initiative is currently being finalised within Irish Water before it can be submitted to the CER, who will then decide if it will approve the investment to implement this strategy.

4.4 Constraints and Assessment Criteria

The Constraints and Assessment Criteria were published and explained in Sections 7.1 and 7.2 of the Options Working Paper respectively, and on the project website (www.watersupplyproject.ie) with explanatory comment; this approach has been endorsed in several submissions. The methodology of application of these constraints and criteria has now been further detailed in the Preliminary Options Appraisal Report.

The points made in relation to the inclusion of the Shipwreck Inventory of Ireland, and inclusion of coastal zone management and maritime impacts in constraints related to consideration of the desalination option are welcomed, and are noted.

Views expressed on the inclusion of 'timescale of delivery', risks of delays, and streamlining of planning and procedures, as differentiating factors in options appraisal are already covered in the whole question of risk on the project, and this has been addressed in the Preliminary Options Appraisal Report. Similarly, impacts on tourism, and its future development on Lough Derg, are already being considered under the published criteria.

Responding to the view expressed in one submission that assessment criteria lacked 'necessary credibility and objectivity to be applied', Irish Water have, in the Preliminary Options Appraisal Report, transparently presented the case on each of the options, on each of the assessment criteria, giving reasons in each environmental or technical area, for the positions taken on those options.

In response to the query on how people-related, technical and risk criteria are weighted, the methodology is described in the appendices to the Preliminary Options Appraisal Report (PAOR). In summary, impacts on people are minimised from the outset, by design to avoid placing infrastructure, as far as practicable, near population settlements. Similarly, environmental impact is minimised by an approach which seeks to locate infrastructure in areas which are environmentally least constrained.

Risk is assessed under technical, environmental, planning, financial and socioeconomic, on a five-point graduated scale, from low, through medium to high, as detailed in the POAR.

Each criterion is assessed for each of the Options by Specialists, experts in their discipline, individually and collectively, categorising impact on a five-point graduated scale; the objective being to reach a consensus on an Option that was least constrained when compared to the others. Numerical weightings were not used across the range of criteria.

The view was also expressed on assessment criteria that there is 'failure to require robust and transparent record of all assumptions and data underpinning evaluations and comparisons in the Options Working Paper and indeed in the underlying Project Needs Report'. In response, it should be recalled that the Options Working Paper published in June 2015 made available the detailed work of review, attached as Appendices B, C and D, and E. These examined the sustainable availability of water in each of the ten options considered, quantifying the hydrological and hydrogeological grounds of assessment. It reviewed those options with respect to the Habitats Directive, again detailing the sources of data used in reaching the conclusions.

In the Project Need Report (PNR), which was published for consultation in March 2015, detail was provided on every element of need, including domestic usage, non-domestic usage in commerce and business, industrial water usage, and leakage on both the public mains and on private residential water connections.

The demographic projections underpinning domestic demand were all grounded in CSO data, National and Regional, and the demographic scenarios were linked to CSO projections, as interpreted by experienced demographers, in the Demographic Report within the PNR. Analysis throughout the Dublin Water Supply Area was conducted at the District Electoral Division level; a highly granular approach. Four scenarios were examined, and the projections were validated by those prepared by the independent economists, who approached the problem by modelling population growth against GDP.

Not only were the assumptions comprehensively documented, but the uncertainties were transparently declared, the entire body of work was put in the public domain, and remains available on the project website (www.watersupplyproject.ie).

Irish Water agrees with the view “that the WSP in fact should be informed first and foremost by the obligations in respect of ecological water quality and also the aquatic and terrestrial ecosystems dependent on it”, and this has been the approach adopted in options appraisal.

IW has, both through internal expertise and by engaging reputable advisors, provided and will provide information which it believes is as accurate and as comprehensive as possible. A main objective of a consultation process is to subject this information to scrutiny by the public, statutory authorities and NGOs. In the current process, IW is going above and beyond statutory requirements to do this.

4.5 Economic Development

Many submissions have addressed the issue of economic development, its balance across the country, the economic value of tourism in the Lough Derg area and the economic value of abstracted water.

A 25 year Water Services Strategic Plan (WSSP) covering all water services in Ireland was published for consultation by Irish Water in February 2015 and for the first time it took a national view in all its objectives. The WSSP aims to ensure that water supply, or adequate wastewater treatment, are not opportunity-limiting factors anywhere in the country. In consultations with IDA on the Water Supply Project, the importance of resilient water supplies, even for industries already established here, was strongly emphasized, as was their desire to see resilient water supplies, complemented by timely wastewater treatment capacity, in both the Midlands and Eastern Regions.

The Eastern and Midlands Region includes 44% of the population of the State at the 2011 Census, and the Economist Report in Section 2 of the PNR documented the importance of the Dublin area in our National Economy. Global competition for industrial development is acute, and large manufacturing industry constantly reviews the mix of factors, such as educational, labour force, utilities and supply chain, that lead to a decision to locate, or indeed to remain in Ireland. It is not so much the regions of Ireland competing with each other, as Ireland together competing with Israel, or Singapore, or Bangalore, where availability of resilient water supply and synergies within global city regions are key competitive factors. It is not within the

power of Irish Water to influence all the factors determining the location of economic development in the country, but it will strive to ensure, (and the Benefiting Corridor is tangible evidence of this) that water services are an enabling, and not limiting factor in such development anywhere in the country.

The Economist's Report underlines the link between economic activity and water demand. If it is argued, as it is in some submissions, that the requirement for water has plateaued in the Dublin Water Supply Area, we must reflect on the depth of the recession that brought that about, on the social cost in unemployment and emigration which accompanied it, on the statutory obligation on Irish Water to strategically plan, in accordance with the Water Services Strategic Plan, and on the importance of planning for success in developing our economy. These are aims around which we can all unite. That same period also coincides with a programme of multiple contracts for watermain rehabilitation by Dublin City Council, where water savings have contributed to the margin of supply over demand at present. The economic value of tourism and of fisheries, is fully recognized in the commitment by Irish Water to selecting a sustainable option which includes a commitment to do all in the power of Irish Water, working with other stakeholders, to protect and enhance fisheries. A design which seeks to operate within the existing normal operating range of water level, and within current compensation water and generator flow rates, will not adversely impact on tourism, or navigation, or on flow patterns in the estuary, and will respect the economic value and importance of tourism, fisheries, navigation and port activities.

4.6 Water Demand

Some submissions have taken issue with the basis of development of water demand and have expressed the view that population projections and other fundamentals are quite different from previous projections and estimates, and have inferred imprecision in current estimates from that circumstance. Another submission from local authorities in the supply area has argued that water requirements may be underestimated.

The decision by Irish Water to examine the fundamentals of Need, and the economic value of sustainable water supplies in Ireland, brought about a detailed demographic review, which has significantly reduced previous population projections. For the first time, independent economists have developed water demand projections using econometric modelling of population related to GDP, and modelling of the economy by sector. The scenarios range from Low, to Medium and to High levels of population growth and economic development.

The metering programme has informed and reduced estimates of per capita consumption, and international falling trends in industrial water use intensity are factored into projections. Ambitious targets have been set for water conservation and leakage control, and these may be compared with the utilities in the UK in Appendix A of the OWP.

Supporting detail is available in the Project Need Report and in the responses to submissions made on it, and in Appendix A of the OWP, which are available on the Irish Water website.

Some submissions have disagreed with the basis of development of water demand projections. We would again refer to the published detail in the Project Need Report, and its supporting Demographic, Economic and Water Demand appendices.

The demographic projections were developed by specialist planning advisers and demographers, having regard to the legislative planning position and the spatial planning framework in Ireland, and these projections were used to frame the Scenarios presented in the Demographics Report.

They have also considered, in framing these scenarios, possible impacts of failure to achieve the balanced regional development which is the objective of good spatial planning, but Irish Water must ensure it can respond to any unfolding position.

The Water Supply Project is also being developed within the planning approach to water services which is set out in the Water Services Strategic Plan, published for consultation earlier this year, and which was subject to full SEA.

Domestic water consumption figures have been developed, not only by a rigorous review of population projections, but also by abstracting the most up to date information on per capita consumption, from domestic metering validation data gathered in 2014.

Water consumption for business and industry has been projected in two independent ways (in the 'Project Need Report'), using Independent Economist Indecon's econometric modelling, sector by sector, in the Irish economy and also using more traditional methods by water engineers. Developing existing sources to their sustainable maximum yield has been factored into the projections. Ambitious targets for leakage control have been adopted, and a very conservative approach to overall demand, which would be expected of Irish Water, means that the requirement is now estimated at 330 Mld by 2050, whereas it was previously assessed to be 350 Mld by 2040. The requirement to ensure that only water which is truly needed is sought from a new source has been met.

For the first time in Ireland, non-domestic water requirements have been estimated by an independent economist, using a sectoral analysis of how businesses and industry use water, linked to econometric projections of how each sector will grow (grounded in ESRI work). Their approach is consistent with best practice internationally, and is reflected in guidelines by the UK Water Industry Research (1997), and the UK Water Resource Planning Guidelines (2012)[2]. International trends in declining intensity of water use have been acknowledged, and the alignment of the economist on the issue of the strategic industrial provision is outlined on p56-57 of the Economist Report (PNR Appendix B – Economic Needs Report), which is available on the IW website.

Discussions with IDA would indicate that over 50% of this 'strategic provision' is already accounted for by foreseeable projects under active development within the next 10 years.

We note the point emphasised by the Environmental Regulator in its submission:

"The current supply to the Greater Dublin Region is critical and the addition of a new source, at the earliest opportunity, is essential. The current capacity of the supply has already been reached and incidents, such as algal blooms on the Vartry reservoir in recent years, result in water shortages. The development of a new source should ensure that the existing shortage in capacity and future anticipated capacity is addressed in a sustainable and secure manner".

[2] Page 6 Economist Report

Irish Water agrees with the view that the elements of water demand should be kept under review as the project moves towards a formal Planning Application. Since the time of drafting the PNR, for example, the number of installed domestic meters have doubled to a figure in excess of 700,000, with continuous improvement in knowledge of per capita consumption.

The demographic projections prepared by the demographers, are a view at a point in time, based on guided assessment and use of the available data sources. The work of the independent economists, approaching the issue by correlation of population with measures of growth in the national economy, validated the projections of the demographers, and this increases confidence in their accuracy.

These projections will however be reviewed, following the Census of 2016, prior to making a Planning Application on a preferred option.

4.7 Environment

The environmental concerns expressed in many submissions are of the utmost importance to Irish Water, and as the submissions fell into a number of environmental categories, the response to each category is presented below. It is acknowledged that the WSP must be delivered in an environmentally sensitive manner if it is to meet its core objective of developing a new sustainable water source for the Eastern and Midlands Region. A successful outcome to its planning application is dependent on being able to demonstrate full environmental compliance across all aspects of the proposed scheme.

The abstraction of water cannot adversely impact on the Shannon catchment or on the coastal zone of North County Dublin, or be at the expense of any other community. A new abstraction must also be sustainable from an environmental, economic and socio-economic perspective in the short, medium and long term, otherwise it cannot be implemented. These pre-conditions must be satisfied before the project could receive planning approval or be allowed to commence.

Similarly, abstraction from the Shannon could not be proposed if it adversely impacted on the Shannon catchment's aquatic or terrestrial ecology. Extensive environmental investigations are being carried out in relation to potential impacts of the proposed developments on aquatic and terrestrial ecology.

The concerns expressed related to loss of spawning and nursery habitat, and the need to protect the potential for re-establishment of a viable salmon population in the catchment, as well as Annex II fish species in the Habitats Directive, have been addressed in designing abstraction options to operate within existing water level bands on Lough Derg. IW have recognised the importance of this engagement with fisheries stakeholders by enlisting the assistance of Prof Martin O'Grady, who has been retained by Irish Water as a fisheries specialist.

Impacts on assimilative capacity would be minimised by abstraction near the most downstream point in the Shannon system, close to the tidal limit. This is accompanied by a regulation regime where abstraction is compensated for by reduced volumes applied to power generation, whilst guaranteeing the statutory compensation water flows on the Shannon below Parteen Weir.

As part of Irish Water's commitment to taking into consideration the environmental concerns, we have commissioned one of the largest water quality surveys ever carried out in the State. These surveys are being used to build and calibrate a

computer model of Lough Derg and Parteen Basin, which will be an important management tool in protecting the water quality in the lough. The model is now enabling environmental scientists and others to assess the environmental significance of any impacts. Potential impacts on fisheries are also being assessed and the scoping of these assessments has been agreed with the relevant fisheries bodies. That model is being used to help define the best options in terms of abstraction location, pumping, treatment and pipeline siting, in the event that a Shannon option emerges as preferred solution. In addition, siting for different infrastructural elements of the project is being selected, from the outset, using constraint mapping, which is predicated on locating infrastructure within its environment where it is least likely to have an impact. These constraints have been consulted upon in the Options Working Paper which was published in June 2015.

Any project which fails to fully take into account the requirements of Irish and European environmental legislation and legitimate environmental concerns of the Shannon catchment population and businesses, would be compromised and would not be successful in seeking planning permission from An Bord Pleanála.

4.7.1 Biodiversity

A number of submissions expressed concern, on biodiversity impacts, on the premise that water level lowering on Lough Derg would take place under the proposal.

Irish Water again emphasise that abstraction from Lough Derg would be within the normal operating range that currently applies under ESB management of water levels on the lake. This would be part of any abstraction agreement with ESB, which would include a reduction in water used for power generation, matching in volume the water proposed for abstraction. At times of no power generation in summer, continued abstraction, drawing upon but within the confines of the normal operating band, will be demonstrated to be sustainable through hydrological modelling.

Irish Water acknowledges the importance of maintaining biodiversity in planning infrastructural projects. The environmental risks associated with invasive species are also very important and this is acknowledged as a Key Challenge in the draft Water Services Strategic Plan, published in February 2015. It is recognised that many fish, bird and mammal species depend on the health of the ecosystem of Lough Derg, and that the presence of invasive species can itself bring about change in that system. We are consulting closely with environmental stakeholders and specialists working in this area. Protocols against spreading these species are in place for survey work and propagation risks have been taken into account in options appraisal.

In response to concerns expressed that abstraction from Lough Derg, or Parteen Basin, would be of a scale comparable to heavy abstractions on large rivers in the United States, Mexico or Australia, and would have similar impacts on biodiversity as have occurred in these countries, it is emphasised that abstraction on the Shannon is proposed at a rate of approximately 2% of mean annual flow, and it would be managed within the same water level operating band as currently exists.

Extensive environmental investigations are being carried out in relation to potential impacts of the proposed developments on aquatic and terrestrial ecology, and the Preliminary Options Appraisal Report has taken a very responsible and precautionary position with respect to biodiversity.

4.7.2 Climate Change

Submissions have highlighted the importance of climate change in demand and yield calculations and option design and appraisal. One submission has expressed the view that industrial policy should itself be subject to climate change selection criteria.

Special attention has been given to this issue and renowned experts at NUI Maynooth have been consulted, and will continue to be consulted, in respect of it. The choice of water sources, locations, routes, construction methodology, materials used, etc. have and will all be, influenced by Climate Change considerations.

Sustainable development involves planning for future economic growth. Where and when particular industries will be located and what industries will be permitted, is a matter for national and regional policies and for legislation applicable to industrial locations, permissible developments and the implications of same for water quality and quantity. These are matters which are outside the control of IW. In general, no industries which will result in Ireland failing to meet Green House Gases compliance targets can be permitted by planning authorities or the EPA. Existing industries will be required to reduce Green House Gases. IW will be particularly concerned about sectors which impact on water quality/quantity and will ensure in so far as is possible within its power to participate in the environmental management processes, that any such industries do not impair legitimate uses of water or water quality or quantity.

The energy intensity of desalination is recognised and acknowledged, and will be taken into account in appraisal of that Option. Climate change will also be taken into account in options appraisal generally, as it must in relation to potential erosion of sustainable yield on the existing water sources, more than 84% dependent upon the Liffey.

4.7.3 Fisheries

To permit the appraisal of the proposed abstraction in light of the WFD, one of the largest water quality survey contracts commissioned on a large water body in Ireland is currently operating on Lough Derg and in Parteen Basin, and data from that survey is informing the development of a hydrodynamic model which will define the expected impacts of abstraction for water supply and ecological water quality.

Loss of spawning ground is not expected where the existing normal operation band of water level will remain unchanged, and it is proposed to maintain the old Shannon statutory compensation water flow undiminished.

Irish Water has been in discussions with anglers and with IFI on supporting fish stock surveys in the Lower Shannon.

Irish Water has engaged Professor Martin O'Grady, an internationally respected fisheries specialist, to advise on fisheries issues in the options, to engage effectively with anglers, with IFI and with the ESB as fisheries owner on the Shannon, in an effort to ensure that any abstraction does not impede their efforts and that design work actively supports efforts to restore migratory fish connectivity on the Shannon.

4.7.4 Alien Invasive Species

The issue of transfer of alien invasive species from Lough Derg/Parteen Basin to catchments where such species are not present, has been raised in submissions, and in discussions with anglers, with EPA and with environmental NGOs who have accumulated significant data on this problem in Lough Derg.

The Shannon options have been assessed, in the Preliminary Options Appraisal Report, in the context of possible change in the ecosystem of Lough Derg due to the possible extension of invasive species, and on risks of transferring invasive species with raw water storage in the Midlands under Option F2.

The environmental risks associated with invasive species are also important, and this is already acknowledged as a Key Challenge in the Water Services Strategic Plan. We are consulting closely with environmental stakeholders and specialists working in this area, protocols against spreading these species are in place for survey work, and propagation risks will be taken into account in options appraisal later in the project planning process.

We recognise the environmental risk of transfer of invasive species between catchments with a raw water storage, and that has been taken into account in appraisal of the option which includes such storage.

The experience with microfiltration of raw water to try to interdict larvae, and the use of biochemical approaches to inactivation of zebra mussel and Asian clam larvae have been examined. In the view of the project team, the risk of transfer of alien invasive species is most effectively and decisively managed by water treatment at source, and the Preliminary Options Appraisal Report has adopted this position.

4.8 Water Framework and Habitats Directives

4.8.1 Water Framework Directive

Consideration of the requirements of this Directive is at the forefront of IW's approach to this project. However, the statutory framework for compliance with it is not a matter for IW.

The key role of the Water Framework Directive (WFD) across all of Irish Water's activities is fully recognised, firstly in the Water Services Strategic Plan, and also in the options appraisal process of the Water Supply Project.

In the WSSP, the stated objectives are to:-

"*Operate our infrastructure to support the achievement of water body objectives under the Water Framework Directive."*

and to

"*Facilitate the achievement of water body objectives under the Water Framework Directive*".

A specific strategy to achieve these objectives, and relevant to the Water Supply Project, is:-

WS2b Strategy:-Manage existing water resources and plan for new resources taking a regional view of needs and having regard to the objectives of the Water Framework Directive (WFD).

These objectives have been carried into the continuing planning process of the Water Supply Project Eastern and Midlands Region.

The ESB has statutory responsibilities relating to the Shannon and its requirements must be taken into account.

The development of an approach whereby an abstraction from any of the River Shannon options can be compensated, by a corresponding reduction in water used at Ardnacrusha in hydropower generation, is an important attribute of all options on the lower Shannon. Such an abstraction can operate within the same operating water level band as currently operates with ESB, and without impact on compensation flows.

Each of the water source options will first and foremost be assessed for sustainability with respect to the aquatic ecology of the source water body, and for compliance with the requirements of the WFD. This will be part of the appraisal of the options. In other respects, in the siting of infrastructure, constraints identified in Section 7.1.3 (d) of the OWP under *Water Quality* included Water Framework Directive water bodies.

To permit the full appraisal of the abstraction, the water quality survey is currently operating on Lough Derg and in Parteen Basin and data from that survey is informing the development of a hydrodynamic model which will define the expected impacts of abstraction for water supply and ecological water quality. The views expressed by statutory consultees that such modelling should be “complete, precise and definitive” is noted and will be taken on board. The impacts in coastal waters are also being taken into account in appraisal of the desalination option. Field surveys are also under way in these coastal waters. The implications of compliance with the WFD and with the Habitats Directive with regard to the question of raw water storage in the Midlands, and for protection of the groundwater environment in the vicinity of the storage site, have also been studied.

4.8.2 Habitats Directive

Meeting the requirements of the Birds and Habitats Directives is a primary objective of IW, which is conscious of the requirements not only in relation to protected habitats but also in relation to protected species. Any perceived failures to comply with these or any information on species not publicly available, would be welcomed.

This is primarily a matter for the Government. IW will ensure that it complies with the Birds and Habitats Directives in every way. Information on the presence of protected species outside protected habitats, would be welcomed

All legal requirements will be complied with in the preparation of the application for the project. The birds and habitats requirements are important in assessing options in order to avoid compromising biodiversity. The consent process is regarded as both a challenge and an opportunity to ensure that the project is a sustainable one which meets all sustainable development requirements.

Irish Water welcomes the acknowledgement in one submission of its focus on the Appropriate Assessment obligations for the Natura 2000 network arising from Articles 6(3) and 6(4) of the Habitats Directive.

In response to the expressed view that the focus is nonetheless narrowly placed on the planning consent process in a legalistic fashion, we would disagree and point out that the consideration of qualifying interests and conservation objectives associated with European Sites, is part of the interaction between environmental and technical specialists. It places these conservation objectives at high priority and it is contributing very significantly to the developing design on the project.

In response to views expressed by a statutory authority, Irish Water have taken a precautionary approach in reviewing previous work with respect to compliance with the Habitats Directive. Options taken forward in the Options Working Paper, and considered technically viable and likely to satisfy Stage Two of the Appropriate Assessment process, without triggering Article 6(4) of the Habitats Directive are recognised as still carrying the burden of proof to establish this position. The views of the statutory authority that these options require further analysis and an appropriate assessment in order to establish whether mitigation will successfully ameliorate potential effects on site integrity, are acknowledged and accepted.

4.9 Communities and Benefiting Corridor

Views on the Benefiting Corridor expressed in submissions have ranged from those who consider it to be a contrived 'add-on' feature of little relevance, to those from farming, industrial development, business, the Environmental Regulator and local authority sources who recognise it as an important step by Irish Water to bring water services for all in the Midlands and Eastern Region onto a common resilient, reliable standard of service. Some submissions have linked this to other aspects of planning and development in the Midlands generally.

Of the 314 Mld overall treated water requirement estimated in the Project Need Report, 99 Mld, or 32%, would be required in the Benefiting Corridor. The provision of adequate water supplies to Midlands communities is as much a priority for Irish Water, as it is for every region in the State and the sharing of resilient, reliable water supplies in the Benefiting Corridor and upgrading of many existing supplies is an important part of this project. In discussions with the EPA, the importance which they attach to this approach to small Midland water supplies was strongly emphasised.

4.9.1 Benefitting Corridor Demand and Source Consolidation

The spatial planning of the Benefiting Corridor and of the Eastern area, will take place under national and regional planning policy and the consideration of flood risk and sustainable transport planning are part of that process. The Water Supply Project makes provision for the water requirements of development of settlements in the Benefiting Corridor, but that is subject, in its detail, to proper planning and sustainable development requirements.

The Project Need Report and the Options Working Paper have defined the foreseeable water need. They set out the options to meet that need, which can be phased and can respond to unfolding development-in-detail. They also define an approach to achieving least environmental impact, which will be further developed in consultation with the public and with stakeholders.

Ireland has 856 water treatment plants, serving 4.56m people, compared to less than 50 in Northern Ireland, serving 1.8m people, and 297 in Scotland, serving 5.2m people. Our dispersed, isolated sources and treatment centres are a legacy of planning at county level and consolidation to achieve consistently high standards and benefits of scale are now needed.

Irish Water would aim to consolidate existing smaller water sources of unreliable yield, or elevated vulnerability to pollution, or low linkage and resilience, to achieve nationally uniform standards of service from consolidated, efficient water treatment plants and resilient distribution systems. This approach is supported by the environmental regulator in its submission which states:-

"The supply of drinking water in Ireland has historically been characterised by small local supplies providing water within county boundaries. The EPA has encouraged the consolidation of water supplies which would allow efficiencies of operation and resolve treatment issues that are more acute in small supplies. In this regard, the EPA favours a regional approach to the supply of water in the Eastern and Dublin region incorporating the largest area possible. This will allow many small public supplies in the midlands to be discontinued and replaced with the larger and more robust Eastern and Midlands Water Supply. Some of the existing midland supplies are on the EPAs remedial action list or are having localised impacts (e.g. over abstraction at Clonaslee WTP)".

From an environmental perspective, this project has the potential to indirectly benefit existing Midland water bodies such as Lough Owel, which are coming under increasing pressure from abstractions for local use. The prospect of collateral benefit in fisheries terms is also clear, with just two illustrative examples:

1. Additional water supply to the Shinrone/Roscrea area would benefit the Little Brosna system by alleviating pressure on existing ground water supplies.
2. Water is abstracted from the Clodiagh River which is a valuable salmonid spawning and nursery channel. This abstraction has had adverse impacts in fishery terms, a loss of connectivity between fish stocks in the upper Clodiagh (above the abstraction point) and those in the lower reaches of this channel. The provision of an additional water supply to Tullamore would resolve these problems.

In those circumstances where the existing abstractions are unsatisfactory, capacity of existing inadequate Midland sources should not be taken into account, (as advocated in some submissions) where the intention and correct course of action is to retire them.

In Midlands communities, the issues of reliable water supply and adequacy of wastewater treatment with discharge into small receiving waters are also linked issues. Irish Water can ensure that both sides of the "water in-water out" balance are collectively managed. IDA, in consultations, placed particular importance on this capability in allowing them to promote Midlands centres for water using industry.

4.9.2 Farming

With respect to concerns expressed in one submission that onerous farming restrictions would arise from source protection and that wayleave disruption would be significant, Irish Water would consider that normal best practices for farming near watercourses, developed in partnership with IFA, Teagasc, EPA, IFI, DECLG and

other stakeholders, will continue to be appropriate for protection of any surface water source for the Water Supply Project.

Irish Water agrees with the view that an adequate and reliable source of quality water is a basic requirement for the further development of the farming and food processing sector, and it underlined that view in its submission in Spring 2015 on consultation on *Harvest 25*, the national strategy for food.

In relation to flooding, the proposed abstraction of 3.82m³/s is many orders of magnitude smaller than flood flows and no significant beneficial impact can be expected. The abstraction regime would be managed entirely within the existing normal operating water level on Lough Derg / Parteen Basin, and will not impact on the ability of ESB to manage flood flows.

4.10 Tourism and Amenity

Many submissions have referred to impacts on tourism and on potential tourism benefits of raw water storage. The importance of tourism in the Lough Derg area is absolutely recognised and has been emphasized by many in stakeholder consultations to date.

Irish Water would propose to address this at its most fundamental level, through designing any option which might be based on the lower Shannon, to operate within the same water level range as currently applies on Lough Derg and in Parteen Basin, by agreement with ESB.

Irish Water also favours the transparent availability of real time data on water levels and flow rates at any abstraction point, so that any concerns in this area can be allayed. Any abstraction option in the lower Shannon would be designed to harmonise with tourism development plans for the region, which Irish Water would wish to support.

The water demands of the tourism sector in the Eastern and Midlands region have been included in the projected requirement and are detailed in Section 6.2.1 of the Water Demand Review in the Project Need Report.

A sustainable abstraction could only involve water which is not required for local use, either for drinking purposes or for angling, navigation, tourism or agricultural purposes. The abstraction of water cannot adversely impact on the Shannon catchment or be at the expense of tourism development in the area of any other community. It must also be sustainable from an environmental, economic and socio-economic perspective in the short, medium and long term, otherwise it cannot be implemented. These pre-conditions must be satisfied before the project could receive planning approval or be allowed to commence.

Tourism and Raw Water Storage

With respect to any engineered storage of large volumes of raw water, it is important to keep in mind, and it has been necessary to determine, that such facilities can meet their primary water supply objectives, that they can be properly sited with respect to engineering and environmental risks, and that they are an effective component part of a sustainable option. These design priorities have been investigated, for the option involving raw water storage, and have been considered in options appraisal.

While the potential benefits of a raw water storage at Garryhinch for complementary tourism development are acknowledged in concept, it must be recognised that the primary environmental and water services purpose of a raw water storage must first be achieved and that is to effectively ameliorate the water residence time impacts of abstraction on Lough Derg in prolonged drought conditions. The Preliminary Options Appraisal Report and the modelling work to date, indicates that this fundamental prerequisite would not be met by such a storage, at Garryhinch or elsewhere, to a standard that would underpin the sustainability of the option of abstraction from the north east of Lough Derg, with seasonal raw water storage.

There are other site specific technical, operational and environmental risk reasons, set out in the Preliminary Options Appraisal Report, why raw water storage is not recommended, consequently there is no recommended core raw water storage element around which tourism related benefits can develop.

4.11 Planning

4.11.1 Planning Policy

The demographic scenarios examined by Irish Water in the PNR covered a wide range of scenarios of economic and regional development. Irish Water will ensure that water services infrastructure will not be a development-limiting constraint anywhere in the country, and it will ensure that demand for water supply, and for corresponding wastewater treatment capacity, will be met in good time.

The Water Services Strategic Plan, a strategy for the next 25 years, is the complete embodiment of a complementary and holistic strategy between water supply and wastewater treatment, overarched by a Water Framework Directive approach to protecting source water quality, ecology and morphology.

The Greater Dublin Drainage Project, which is well advanced in planning, and which itself has been consulted upon widely, is the obverse side of the WSP coin.

Communities in the Benefiting Corridor, for the first time, have the prospect that the same utility which brings opportunity with clean water, can simultaneously prevent wastewater treatment capacity becoming an impediment to taking up that opportunity. Irish Water have responsibility for both sides, and can prioritise both sides, when the need requires it. The PNR emphasized that point in March 2015.

The perspective and the vision that would ally sustainable, abundant, clean water to agriculture, food processing and industry in the Midlands and Eastern areas, on an equal footing throughout the Region, are entirely present in this approach.

4.11.2 Planning Horizon

The importance of phased, modular designs for timely and proportionate response to unfolding water demand is also acknowledged.

There are difficulties, however, associated with adopting a design horizon 60 years hence, in that the reliability of demographic projections, or of econometric modelling of non-domestic requirements, or of climate change pressures, declines as the horizon moves beyond 35 years. A case to An Bord Pleanála, and to the CER, needs a high degree of predictive reliability to be accepted. The technical options which may be available at 2050 to extend the life of assets, also need to be given fair appraisal at that time.

4.11.3 Legal Issues

Water is a finite resource. IW has no interest in exhausting it. Obligations to conserve water should be contained in legal obligations to do so in legislation, which are matters outside the control of Irish Water. IW has obligations to prevent water leakages, to promote sustainable uses of water etc. but the legal powers to require a comprehensive suite of conservation measures have not been conferred on IW. There is no conflict whatsoever between conservation and cost recovery of water services.

IW has no statutory function to aim for privatisation and attention is drawn to the legal constraints on privatisation in Section 2 of the Water Services Act 2014. Section 2(1) of the Water Services Act 2014 (SI No 44 2014) states that:-

2. (1) A Bill providing or allowing for the alienation of any share or shares in Irish Water to a person other than a Minister of the Government shall not be initiated by or on behalf of a Minister of the Government in either House of the Oireachtas unless—

(a) a Resolution of each such House is passed approving a proposal to provide or allow for such alienation,
(b) a proposal to provide or allow for such alienation is submitted by Plebiscite for the decision of the People, and
(c) a majority of the votes cast in such Plebiscite shall have been cast in favour of the proposal.

Eurostat requirements have no relevance to the need for the project.

All legislative planning and other policy requirements must be taken into account and complied with in the planning application and the applications for regulatory consents for the project. Failure to do so would be enforced by regulatory authorities and would make any decisions on the project liable to judicial review. The Water Supply Project is also being developed having regard to the planning approach to water services set out in the Water Services Strategic Plan, published for consultation earlier this year. Cumulative environmental impacts are also being considered.

4.12 Other Issues raised in Consultation Submissions

4.12.1 Plumbosolvency

Irish Water will consider the environmental impacts of measures to curtail the impact of lead service connections on water quality.

4.12.2 Recommendations

In response to the recommendation that 'the preferred option should maximise the projects technical flexibility to satisfy changing water demand and usage patterns over the years to come', Irish Water accepts the point and seeks to develop a solution which is safe, environmentally sustainable, affordable, modular and adjustable to actual growing water demand, with secure planning permissions and

consents in place, to permit water supply to match demand. It should also create resilience and leverage advantage from existing assets, by the opportunities to conjunctively use all of them together.

The recommendation that wastewater capacity must match treated water supply is also acknowledged. The benefit which a new water supply would bring, would be underpinned by alignment of related IW wastewater projects in the local authorities, to allow the benefits flowing from the main project, to be taken up without constraint locally.

A recommendation on engagement with IFA on the use of environmentally friendly fertilisers is beyond the remit of IW, but is a factor for discussion among all the partners on River Basin Management planning.

A recommendation on the engagement of underwater archaeology expertise would be kept under review with statutory stakeholders in this area and considered in the context of a proposed abstraction point.

A recommendation that a Code of Sustainable Homes be developed to help in water conservation, is a matter for Building Control Regulations, but Irish Water will constructively contribute towards the development of building standards for more sustainable use of water.

4.12.3 Questions Raised

Abstraction Rates
Responding to a query on abstraction, Irish Water would like to clarify that there is no proposal to abstract 2% of the volume of the lake under the Shannon options, rather it is proposed to abstract approximately 2% of the long term average flow through the lake, within an entirely unchanged water level regime.

Responding to the request for clarity on the abstraction rate, it is proposed to abstract 330 million litres in a day, at an average abstraction rate of 3.82 m^3/s rate, equivalent to 4.58 m^3/s maintained over 20 hours in a 24 hour period, avoiding peak pumping tariffs. This corresponds to 16.5 Ml per hour over a 20 hour day. It would not be curtailed in dry weather, subject to water level remaining within the normal operating band.

In relation to the feasibility of building a new dam or weir with locks downstream from Foynes, as referenced in the submission, Irish Water would not favour extensive works in the estuarial environment of a working port where water is essentially seawater in quality.

Flooding
In relation to flooding, it must be understood that an average abstraction rate of 3.82 m^3/s, which is just 2% of the average flow, will not have a significant impact on flood flows in the region of 800 - 1000 m^3/s, they are simply of different orders of magnitude. The proposal will not involve changing the normal operating levels on Lough Derg, and will permit ESB to manage flood flows as they currently do.

5 Next Steps

The issues / themes raised during the OWP consultation will be further reviewed by the project team as more data becomes available from follow-on consultations and will be considered as part of the wider development of the project prior to the preparation of a Planning Application.

As shown in the project Road Map (Figure H.1 in Section 1), this consultation is part of a series of Consultations that will take place which aim to elicit views from stakeholders and interested parties at each stage in the Water Supply Project. The next stage of the project is the publication of the Preliminary Options Appraisal Report which will outline the Emerging Preferred Option, ancillary site selection and least constrained pipeline route corridor.

Appendix A Advertisement

Public Consultation on Water Supply

UISCE ÉIREANN : IRISH WATER

WATER SUPPLY PROJECT EASTERN AND MIDLANDS REGION

Irish Water invites you to have your say

On 9th June Irish Water published The Options Working Paper for the Water Supply Project-Eastern and Midlands Region. This Working Paper reviews previous studies carried out up to the present time and outlines that four technically viable options for a new source of water for the Eastern and Midland Region are being considered by Irish Water as part of the current planning process.

The Options Working Paper examines the original 10 options that were considered by the Strategic Environmental Assessment (SEA) undertaken by Dublin City Council between 2007 and 2011. The Options Working Paper has validated the process previously undertaken, and has also reviewed it in the light of new environmental criteria that have come into being since the SEA process concluded in 2011.

The Options Working Paper identifies the range of further studies which the four technically viable options will need to undergo as part of the planning process.

Irish Water is now undertaking an 8 week consultation on the constraints and the criteria that will be used in assessing the four technically viable options in the next phase of the project. The consultation period commences on the 9th June and concludes on 4th August. During this period we would like to hear from you. Any individuals or groups wishing to provide feedback are invited to do so by post or by e-mail to the addresses below.

All feedback on any relevant issues raised from this consultation will be reviewed and considered as part of the next phase of public consultation process, which will result in a preliminary Options Appraisal Report (detailing an emerging preferred option) due for publication and further public consultation in late 2015.

For more information on this Consultation phase and on the project generally please visit ***www.watersupplyproject.ie***

The Options Working Paper is available to view in County Libraries and at Planning Counters within the project study area and can be downloaded from ***www.watersupplyproject.ie***.

Submissions to the consultation process can be sent either by email to ***watersupply@water.ie*** or by post to Water Supply Project, Merrion House, Merrion Road, Dublin 4. **Closing dates for receipt of submissions is 4th August 2015**

If you require any further information please call us on 1890 252 848.

Appendix B Press Release

National Print
Irish Times (including Olivia Kelly)
Irish Independent (including Paul Melia)
Irish Examiner
Irish Daily Mail
Irish Star
Irish Sun
Irish Mirror
Herald
Sunday Times
Sunday Business Post
Sunday Independent
Sunday World
Star on Sunday
Irish Sunday Mirror
Irish Mail on Sunday
Irish Farmers Journal

Online
Thejournal.ie
Breakingnews.ie
Businessandleadership.ie
Businessworld.ie

National Broadcast
RTE News
RTE Morning Ireland
RTE Drivetime
RTE Today with Sean O'Rourke
RTE George Lee and Martina Fitzgerald
Today FM News
Newstalk News
Newstalk Breakfast
Today FM The Last Word

Regional Print Media that received get Press release

Clare People	Drogheda Leader
Clare Champion	Dundalk Democrat
Citywide News	Meath Chronicle
Dublin People newspapers	Meath Topic
Gazette group	Midland Tribune
Kildare Nationalist	Offaly

	Independent
Kildare Post	Offaly Topic
Kildare Times	Tullamore Tribune
Liffey Champion Leinster Leader	Nationalist
Laois Nationalist	Nenagh Guardian
Leinster Express	South Tipp Today
Limerick Leader	Tipperary Star
Limerick Post Argus	Fingal Independent North County Leader
Drogheda Independent	Connaught Tribune
Athlone / Mullingar Advertiser	Tuam Herald
Westmeath Examiner	Galway Advertiser
Westmeath Independent	Galway Independent
Westmeath Topic	

Regional radio, current affairs shows
Clare FM: Morning Focus;
KFM: Kildare Today;
Limerick's Live 95FM: Limerick Today;
LMFM: The Michael Reade Show;
Tipp FM: Tipp Today; and
East Coast FM: The Morning Show

Press Release

Irish Water launches second public consultation phase for the proposed Water Supply Project Eastern and Midlands Region (WSP)

-4 water supply options now being considered by Irish Water – feedback sought in relation to proposed constraints and assessment criteria for shortlisting options

9th June, 2015 - Irish Water has published the Options Working Paper on the proposed Water Supply Project, Eastern and Midlands Region (WSP) which outlines an independent review of all previous studies undertaken on providing a new source of water supply for Dublin and the Eastern and Midlands Region. Finding a sustainable new source of drinking water to cater for population and economic growth in this area has been a key priority for the past decade. This consultation will run for 8 weeks from the 9th June to the 4th August 2015.

Ten options identified to date have already been evaluated as part of Strategic Environmental Assessments (2007-2011) which looked at environmental, technical, risk, economic and socio-economic perspectives. Four of the ten options were identified as being technically viable and Irish Water, having independently validated the four options is now bringing each forward for further consideration in the planning process. No decision on a preferred option has been made to date.

Public consultation and on site studies in each of the four areas will form a key part of the decision making process to identify an emerging preferred option by late 2015. Following detailed environmental assessments on the preferred option a planning application will be submitted by Irish Water to An Bord Pleanála in mid-2017. At this stage Irish Water is now looking in detail at the four options to identify the **Constraints** which will define the positioning of option infrastructure (e.g. pipelines, treatment plants etc.) and also to identify the '**Assessment Criteria'** which will be used to consider each of the four options relative to each other.

Jerry Grant, Head of Asset Strategy with Irish Water, commenting on the project said, "The Eastern and Midlands region urgently needs a new source of drinking water and work has been ongoing to secure this for more than a decade. Irish Water wants to engage with people on how we are going to look at and assess the viable options to meet that need moving forward in order to ensure security of supply and economic growth for the Eastern and Midlands Region as well as the country as a whole."

Irish Water is inviting members of the public and interested groups to give their views on their proposed **Constraints** and **Assessment Criteria** (and the approach to their use) to identify an Emerging Preferred Option whilst minimising the impact on people and the environment. The four technically viable options confirmed by Irish Water in no particular order of priority, are as follows:

- DESALINATION
- LOUGH DERG (DIRECT)
- LOUGH DERG AND STORAGE
- PARTEEN BASIN (DIRECT)

Irish Water is now inviting submissions **on the following:**

- What other national, regional or locally important constraints should Irish Water take into account when locating the infrastructure associated with each water supply option?
- Have you any comment on the proposed constraints and the approach to their use?
- Are there any Assessment Criteria other than those proposed which should be used in the next phase of options appraisal?
- How would you like to be communicated with us as the project progresses?

Feedback from the consultation process will be obtained through stakeholder meetings and written submissions which can be made by email to watersupply@water.ie by post to Water Supply Project, Merrion House, Merrion Road, Dublin 4. All issues raised from this consultation will be reviewed and considered as part of the next phase of the process which will result in a Preliminary Options Appraisal Report (detailing an Emerging Preferred Option) due for publication and consultation later in 2015.

It is expected that a preferred option for meeting the water supply needs of Dublin, the Eastern and Midlands region once agreed and subject to relevant environmental consideration will be submitted to An Bord Pleanála for planning approval in mid-2017.

The Water Supply Options Working Paper is available to view in County Libraries and at Local Authority Planning Counters within the project study area and can be downloaded from **www.watersupplyproject.ie**. Further information can also be made available by calling Lo-call 1890 252 848.

Notes to Editors:

Project Background

Irish Water has a statutory responsibility to meet 'all reasonable demands for water, both current and foreseeable', and is required to address in its strategic planning, 'existing and reasonably foreseeable deficiencies in the provision of water services'

In January 2014, Irish Water assumed responsibility for the provision of public water services from 34 local authorities. This included the transfer of responsibility for the Water Supply Project Eastern and Midlands Region (WSP) from Dublin City Council who managed the project on behalf of the Department of Environment, Community and Local Government since 2004.

When responsibility for the project was with Dublin City Council, the project was known as the Water Supply Project – Dublin Region. However, the transfer of water services functions to Irish Water has opened a unique opportunity to take a strategic view of providing water services at a national level and as a result the project has now been considered with respect to one of the three regions within which Irish Water operates. Therefore the project is now known as the Water Supply Project Eastern and Midlands Region.

Irish Water is regulated by both the Commission for Energy Regulation (CER) for economic matters and the Environmental Protection Agency (EPA) for environmental matters.

This is the second in a series of public consultation phases that has occurred to date. The first was held on the Need for the Project and the Project Road Map and ran for 8 weeks from the 10th March to 5th May 2015. Feedback from this consultation phase will be reported on within the Options Working Paper which is out for Public Consultation for 8 weeks from the 9th June until the 4th August 2015.

(*A ***constraint*** is a limiting factor on site selection for locating infrastructure – typical constraints would include human settlements, environmental (Special Areas of Conservation) or technical / physical factors (mountains / rivers / lakes etc.). ***Assessment Criteria*** would (typically) include Environmental, Economic, Social, Technical and Risk factors.)

WSP Options Working Paper Consultation – Press Release (reminder)

Dear x

In June, Irish Water contacted you to inform you of the recently published Options Working Paper on the proposed Water Supply Project, Eastern and Midlands Region (WSP) which outlines an independent review of all previous studies undertaken on providing a new source of water supply for Dublin and the Eastern and Midlands Region. Finding a sustainable new source of drinking water to cater for population and economic growth in this area, has been a key priority for the past decade. Irish Water would like to bring to your attention that this consultation will run for only another 2 weeks until the 4th August 2015.

Ten options identified to date have already been evaluated as part of Strategic Environmental Assessments (2007-2011) which looked at environmental, technical, risk, economic and socio-economic perspectives. Four of the ten options were identified as being technically viable and Irish Water, having independently validated the four options is now bringing each forward for further consideration in the planning process. No decision on a preferred option has been made to date.

Public consultation will form a key part of the decision making process to identify an emerging preferred option by late 2015. Following detailed environmental assessments on the emerging preferred option, a planning application will be submitted by Irish Water to An Bord Pleanála in mid-2017. Currently Irish Water is looking in detail at the four options to identify the Constraints which will define the positioning of infrastructure (e.g. pipelines, treatment plants etc.) and also to identify the 'Assessment Criteria' which will be used to assess each of the four options relative to each other. This forms the Options Working Paper.

The Options Working Paper is available to view in County Libraries and at Local Authority Planning Counters within the project study area and can be downloaded from www.watersupplyproject.ie.

Public Consultation
Irish Water is inviting members of the public and interested groups to give their views on the proposed Constraints and Assessment Criteria (and the approach to their use) to identify an emerging preferred option whilst minimising the impact on people and the environment. The four technically viable options confirmed by Irish Water in no particular order of priority, are as follows:

- DESALINATION
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Irish Water is now inviting submissions on the following:

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- Are there any Assessment Criteria other than those proposed which should be used in the next phase of options appraisal?
- How would you like to be communicated with as the project progresses?

Feedback from the consultation process will be obtained through stakeholder meetings and written submissions which can be made by email to watersupply@water.ie or by post to Water Supply Project, Merrion House, Merrion Road, Dublin 4. All issues raised from this consultation will be reviewed and considered as part of the next phase of the process which will result in a Preliminary Options Appraisal Report (detailing an Emerging Preferred Option) due for publication and consultation later in 2015. Closing dates for receipt of submissions is 4th August 2015.

If you require any further information please call us on lo-call 1890 252 848 in the Republic or on 0845 246 5059 from Northern Ireland.

Kind regards

Appendix C Letter Template to Librarians and Planning Counters

JACOBS TOBIN Patrick J. Tobin & Co. Ltd.

Jacobs Engineering Ireland Limited
Merrion House
Merrion Road
Dublin 4
Ireland
Telephone: +353 1 269 5666
Fax: +353 1 269 5497

Ref: Irish Water, Water Supply Project, Eastern and Midlands Region, Options Working Paper

Dear Librarian,

As you are aware from recent media reports, Irish Water published a report which sets out the pressing need for a new water supply source for the Eastern and Midlands Region of the country. Following publication of the Options Working Paper (enclosed), Irish Water is now undertaking an 8 week consultation process concluding on 04 August 2015. A copy has also been sent to your Planning Counter and Chief Executive. We would appreciate any assistance you may be able to provide in ensuring that the report and roadmap are adequately displayed in your library. They will also be available at other County Libraries and Planning Counters within the project study area and can be downloaded from www.watersupplyproject.ie.

If you require any further information please call us on 1890 252 848

Regards

Michael Garrick
Project Manager

Jacobs Engineering Ireland Limited
Merrion House
Merrion Road
Dublin 4
Ireland
Telephone: +353 1 269 5666
Fax: +353 1 269 5497

Ref: Irish Water, Water Supply Project, Eastern and Midlands Region, Options Working Paper

Dear

As you are aware from a recent email, Irish Water published a report which sets out the pressing need for a new water supply source for the Eastern and Midlands Region of the country.

Following publication of the Project Need Report (enclosed) Irish Water is now undertaking an 8 week consultation process concluding on 04 August 2015. A copy has also been sent to your County Library and Chief Executive. We would appreciate any assistance you may be able to provide in ensuring that the report and roadmap are adequately displayed at your planning counter. They will also be available at other County Libraries and Planning Counters within the project study area and can be downloaded from www.watersupplyproject.ie.

Regards

Michael Garrick
Project Manager

Appendix D Email to Minister, Senators, TD's and Councillors

Dear Minister «Lastname»,

On behalf of Irish Water I would like to invite you to a briefing about the ***Water Supply Project, Eastern and Midlands Region, Water Supply Options Working Paper.***

Irish Water has published the Options Working Paper on the proposed Water Supply Project, Eastern and Midlands Region (WSP) which outlines an independent review of all previous studies undertaken on providing a new source of water supply for Dublin and the Eastern and Midlands Region. Finding a sustainable new source of drinking water to cater for population and economic growth in this area has been a key priority for the past decade. This consultation will run for 8 weeks from the 9th June to the 4th August 2015.

Between 2007-2011, ten Options for a new source of water supply were appraised by Dublin City Council as part of a Strategic Environmental Assessment (SEA) at a desktop-study level. Over the 2014-2015 period, Irish Water and their Service Providers have reviewed the 2007-2011 SEA process and Options, and the findings of these reviews are now being reported on in the Options Working Paper (OWP).

The prime focus of this OWP consultation is to confirm the four technically viable Options and to receive feedback from the public in relation to a) the proposed constraints and b) the assessment criteria which will be used to evaluate these Options and select a preferred new water supply option.

The Project Need Report published alongside the Project Road Map and put out for public consultation earlier this year, identified that a new source of water (supplying 330 Ml/d by 2050) is required for the Eastern and Midlands Region to ensure the security of future water supply.

The briefing will enable us to update you about the Water Supply Project and Project Road Map and answer any questions that you may have about the OWP or the project.

The briefings will take place throughout the day on an ongoing basis in Buswells Hotel on Tuesday 9th June 2015. Please let us know what time during the day suits you best and we will make ourselves available to you.

Event – Irish Water Briefing to TDs and Senators on the ***Water Supply Project, Eastern and Midlands Region, Water Supply Options Working Paper***

Venue – The Georgian Suite, Buswells Hotel

Day / Date – Tuesday 9th June

Time - 9am to 5pm – please let us know what time suits you - RSVP re: preferred times

RSVP – By close of business, Friday 5th June to **watersupply@water.ie**

Further Information - Tel 1890 252 848

Regards

Gerry Geoghegan

Dear Senator «Lastname»,

On behalf of Irish Water I would like to invite you to a briefing about the ***Water Supply Project, Eastern and Midlands Region, Water Supply Options Working Paper.***

Irish Water has published the Options Working Paper on the proposed Water Supply Project, Eastern and Midlands Region (WSP) which outlines an independent review of all previous studies undertaken on providing a new source of water supply for Dublin and the Eastern and Midlands Region. Finding a sustainable new source of drinking water to cater for population and economic growth in this area has been a key priority for the past decade. This consultation will run for 8 weeks from the 9th June to the 4th August 2015.

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Regards

Gerry Geoghegan

Irish Water publishes the "Options Working Paper" for the proposed Eastern and Midlands Region Water Supply Project (WSP)

Dear Councillor <<Lastname>>,

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Public consultation on site studies in each of the four areas will form a key part of the decision making process to identify an emerging preferred option by late 2015. Following detailed environmental assessments on the preferred option, a planning application will be submitted by Irish Water to An Bord Pleanála in mid-2017. At this stage Irish Water is now looking in detail at the four options to identify the **Constraints** which will define the positioning of option infrastructure (e.g. pipelines, treatment plants etc.) and also to identify the '**Assessment Criteria'** which will be used to consider each of the four options relative to each other.

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Public Consultation

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- LOUGH DERG AND STORAGE
- PARTEEN BASIN (DIRECT)

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- Have you any comment on the proposed constraints and the approach to their use?
- Are there any Assessment Criteria other than those proposed which should be used in the next phase of options appraisal?

- How would you like to be communicated with us as the project progresses?

Feedback from the consultation process will be obtained through stakeholder meetings and written submissions which can be made by email to **watersupply@water.ie** or by post to Water Supply Project, Merrion House, Merrion Road, Dublin 4. All issues raised from this consultation will be reviewed and considered as part of the next phase of the process which will result in a Preliminary Options Appraisal Report (detailing an Emerging Preferred Option) due for publication and consultation later in 2015. **Closing dates for receipt of submissions is 4th August 2015.**

If you require any further information please call us on lo-call 1890 252 848 in the Republic or on 0845 246 5059 in Northern Ireland.

Regards

Gerry Geoghegan

Project Manager

If you wish to be taken off the Water Supply Project Eastern and Midlands Region mailing list please reply to the email 'Unsubscribe'.

Appendix E Email Invitation to a Face-to-Face Briefing

Irish Water publishes the "Options Working Paper" for the proposed

Eastern and Midlands Region Water Supply Project (WSP)

Dear

Irish Water has today published the Options Working Paper on the proposed Water Supply Project, Eastern and Midlands Region (WSP) which outlines an independent review of all previous studies undertaken on providing a new source of water supply for Dublin and the Eastern and Midlands Region. Finding a sustainable new source of drinking water to cater for population and economic growth in this area, has been a key priority for the past decade. This consultation will run for 8 weeks from the 9th June to the 4th August 2015.

Ten options identified to date have already been evaluated as part of Strategic Environmental Assessments (2007-2011) which looked at environmental, technical, risk, economic and socio-economic perspectives. Four of the ten options were identified as being technically viable and Irish Water, having independently validated the four options is now bringing each forward for further consideration in the planning process. No decision on a preferred option has been made to date.

We have briefed you previously on the "Project Need Report" and will be glad to give you a briefing to update you on this stage of Consultation, should you require it. If you are interested in such a briefing or if you have any immediate queries, please contact the project phone line at 1890 252 848 or email **watersupply@water.ie**.

Public consultation on site studies in each of the four areas will form a key part of the decision making process to identify an emerging preferred option by late 2015. Following detailed environmental assessments on the preferred option, a planning application will be submitted by Irish Water to An Bord Pleanála in mid-2017. At this stage Irish Water is now looking in detail at the four options to identify the **Constraints** which will define the positioning of option infrastructure (e.g. pipelines, treatment plants etc.) and also to identify the '**Assessment Criteria'** which will be used to consider each of the four options relative to each other.

The Options Working Paper is available to view in County Libraries and at Local Authority Planning Counters within the project study area and can be downloaded from www.watersupplyproject.ie.

Public Consultation

Irish Water is inviting members of the public and interested groups to give their views on the proposed **Constraints** and **Assessment Criteria** (and the approach to their use) to identify an Emerging Preferred Option whilst minimising the impact on

people and the environment. The four technically viable options confirmed by Irish Water in no particular order of priority, are as follows:

- DESALINATION
- LOUGH DERG (DIRECT)
- LOUGH DERG AND STORAGE
- PARTEEN BASIN (DIRECT)

Irish Water is now inviting submissions **on the following:**

- What other national, regional or locally important constraints should Irish Water take into account when locating the infrastructure associated with each water supply option?
- Have you any comment on the proposed constraints and the approach to their use?
- Are there any Assessment Criteria other than those proposed which should be used in the next phase of options appraisal?
- How would you like to be communicated with us as the project progresses?

Feedback from the consultation process will be obtained through stakeholder meetings and written submissions which can be made by email to **watersupply@water.ie** or by post to Water Supply Project, Merrion House, Merrion Road, Dublin 4. All issues raised from this consultation will be reviewed and considered as part of the next phase of the process which will result in a Preliminary Options Appraisal Report (detailing an Emerging Preferred Option) due for publication and consultation later in 2015. **Closing dates for receipt of submissions is 4th August 2015.**

If you require any further information please call us on lo-call 1890 252 848 in the Republic or on 0845 246 5059 in Northern Ireland.

Regards

Gerry Geoghegan

Project Manager

If you wish to be taken off the Water Supply Project Eastern and Midlands Region mailing list please reply to the email 'Unsubscribe'.

Irish Water publishes the "Options Working Paper" for the proposed

Eastern and Midlands Region Water Supply Project (WSP)

Dear

Irish Water has today published the Options Working Paper on the proposed Water Supply Project, Eastern and Midlands Region (WSP) which outlines an independent review of all previous studies undertaken on providing a new source of water supply for Dublin and the Eastern and Midlands Region. Finding a sustainable new source of drinking water to cater for population and economic growth in this area, has been a key priority for the past decade. This consultation will run for 8 weeks from the 9th June to the 4th August 2015.

Ten options identified to date have already been evaluated as part of Strategic Environmental Assessments (2007-2011) which looked at environmental, technical, risk, economic and socio-economic perspectives. Four of the ten options were identified as being technically viable and Irish Water, having independently validated the four options is now bringing each forward for further consideration in the planning process. No decision on a preferred option has been made to date.

We contacted you previously on the "Project Need Report" and will be glad to give you a briefing to update you on this stage of Consultation, should you require it. If you are interested in such a briefing or if you have any immediate queries, please contact the project phoneline at 1890 252 848 or email **watersupply@water.ie**.

Public consultation on site studies in each of the four areas will form a key part of the decision making process to identify an emerging preferred option by late 2015. Following detailed environmental assessments on the preferred option, a planning application will be submitted by Irish Water to An Bord Pleanála in mid-2017. At this stage Irish Water is now looking in detail at the four options to identify the **Constraints** which will define the positioning of option infrastructure (e.g. pipelines, treatment plants etc.) and also to identify the '**Assessment Criteria'** which will be used to consider each of the four options relative to each other.

The Options Working Paper is available to view in County Libraries and at Local Authority Planning Counters within the project study area and can be downloaded from www.watersupplyproject.ie.

Public Consultation

Irish Water is inviting members of the public and interested groups to give their views on the proposed **Constraints** and **Assessment Criteria** (and the approach to their use) to identify an Emerging Preferred Option whilst minimising the impact on people and the environment. The four technically viable options confirmed by Irish Water in no particular order of priority, are as follows:

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Irish Water is now inviting submissions **on the following:**

- What other national, regional or locally important constraints should Irish Water take into account when locating the infrastructure associated with each water supply option?
- Have you any comment on the proposed constraints and the approach to their use?
- Are there any Assessment Criteria other than those proposed which should be used in the next phase of options appraisal?
- How would you like to be communicated with us as the project progresses?

Feedback from the consultation process will be obtained through stakeholder meetings and written submissions which can be made by email to **watersupply@water.ie** or by post to Water Supply Project, Merrion House, Merrion Road, Dublin 4. All issues raised from this consultation will be reviewed and considered as part of the next phase of the process which will result in a Preliminary Options Appraisal Report (detailing an Emerging Preferred Option) due for publication and consultation later in 2015. **Closing dates for receipt of submissions is 4th August 2015.**

If you require any further information please call us on lo-call 1890 252 848 in the Republic or on 0845 246 5059 in Northern Ireland.

Regards

Gerry Geoghegan

Project Manager

If you wish to be taken off the Water Supply Project Eastern and Midlands Region mailing list please reply to the email 'Unsubscribe'.

Appendix F Online Media

Published	Post	Tags	Media Type
09/06/2015 19:18:06	Irish Water says the extraction of millions of litres of water from the River Shannon will have minimal impact on the river in Limerick. The water utility has published its four preferred options to service the wider Dublin area with clean water. These include extraction up to 330 million litres per day from either Lough Derg or the Parteen Basin at Ardnacrusha. Jerry Grant, Head of Asset Management at Irish Water says it will have little impact on the river downstream... Live 95 FM News	Consultants	Mainstream Media
10/06/2015 03:30:00	Business owners have warned that any delay introducing a new water supply for Dublin risks costing up to €78m a day if shops citywide have to shut down. An extra 215 million litres daily will be needed by 2050 for the Dublin region alone. Demand for water in the city and surrounding areas is set to increase by more than 50pc by 2050. Irish Water has now established four options for providing a new water supply source for Dublin and the Eastern and Midlands Region. However, Gina Quinn, Dublin Chamber of Commerce CEO, said the threat of shortages had been apparent for two decades, and still no new supply had been delivered. "Dublin is operating on a knife edge, with daily use accounting for 98pc of our total capacity," she said. In most European capitals, they operate in a safer zone of around 80pc, she added. She said there was currently no "headroom" to deal with the kind of crisis that hit Dublin in late 2013. "These incidents harm our competitiveness, affecting both businesses and consumers, and cost the region some €78m per day." She said pressure on supply will increase as the population and economy grows. She cited a recent Stanford University study, which identified Dublin as the second most vulnerable city in the world, for water shortages. "It found that Dublin is particularly vulnerable given the city's reliance on surface water that feed a single water course - the River Liffey," she said. Irish Water is examining the four options to deal with inadequacies in the supply for Dublin and the eastern region, including three that would involve taking water from the River Shannon. These will now go out for public consultation until early August with the aim of having a preferred option to go for planning permission in 2017. The options are: desalination; Lough Derg (Direct); Lough Derg and storage; and Parteen Basin (Direct). The cost of the options was estimated four years ago at between €500m and €600m. The utility said no decision on a preferred option has been made to date.	Consultants	Mainstream Media
10/06/2015 15:39:48	Say No #IrishWater Consultation on Lough Derg water plan: Irish Water has published the Options Working Paper ... http://t.co/7Ck7eN8zcR	Community Groups	Twitter

Published	Post	Tags	Media Type
10/06/2015 22:26:31	Irish Water has published the Options Working Paper on the proposed Water Supply Project, Eastern and Midlands Region (WSP), which outlines an independent review of all previous studies undertaken on providing a new source of water supply for Dublin and the Eastern and Midlands Region. Finding a sustainable new source of drinking water to cater for population and economic growth in this area has been a key priority for the past decade. This consultation will run for eight weeks from the 9th June to the 4th August 2015. Ten options identified to date have already been evaluated as part of Strategic Environmental Assessments (2007-2011), which looked at environmental, technical, risk, economic and socio-economic perspectives. Four of the ten options were identified as being technically viable and Irish Water, having independently validated the four options, is now bringing each forward for further consideration in the planning process. No decision on a preferred option has been made to date. Public consultation and onsite studies in each of the four areas will form a key part of the decision making process to identify an emerging preferred option by late 2015. Following detailed environmental assessments on the preferred option, a planning application will be submitted by Irish Water to An Bord Pleanála in mid-2017. At this stage Irish Water is now looking in detail at the four options to identify the constraints that will define the positioning of option infrastructure (e.g. pipelines, treatment plants, etc.) and also to identify the 'Assessment Criteria' that will be used to consider each of the four options relative to each other. Jerry Grant, Head of Asset Strategy with Irish Water, commenting on the project said: "The Eastern and Midlands region urgently needs a new source of drinking water and work has been ongoing to secure this for more than a decade. Irish Water wants to engage with people on how we are going to look at and assess the viable options to meet that need moving forward in order to ensure security of supply and economic growth for the Eastern and Midlands Region as well as the country as a whole." Irish Water is inviting members of the public and interested groups to give their views on their proposed Constraints and Assessment Criteria (and the approach to their use) to identify an Emerging Preferred Option whilst minimising the impact on people and the environment. The four technically viable options confirmed by Irish Water in no particular order of priority, are as follows: - DESALINATION - LOUGH DERG (DIRECT) - LOUGH DERG AND STORAGE - PARTEEN BASIN (DIRECT) Irish Water is now inviting submissions on the following: - What other national, regional or locally important constraints should Irish Water take into account when locating the infrastructure associated with each water supply option? - Have you any comment on the proposed constraints and the approach to their use? - Are there any Assessment Criteria other than those proposed which should be used in the next phase of options appraisal?	Consultants	Mainstream Media

Published	Post	Tags	Media Type
	- How would you like to be communicated with us as the project progresses? Feedback from the consultation process will be obtained through stakeholder meetings and written submissions, which can be made by email to watersupply@water.ie or by post to Water Supply Project, Merrion House, Merrion Road, Dublin 4. All issues raised from this consultation will be reviewed and considered as part of the next phase of the process, which will result in a Preliminary Options Appraisal Report (detailing an Emerging Preferred Option) due for publication and consultation later in 2015. It is expected that a preferred option for meeting the water supply needs of Dublin, the Eastern and Midlands region once agreed and subject to relevant environmental consideration will be submitted to An Bord Pleanála for planning approval in mid-2017. The Water Supply Options Working Paper is available to view in County Libraries and at Local Authority Planning Counters within the project study area and can be downloaded from www.watersupplyproject.ie Further information can also be made available by calling Lo-call 1890 252 848.		
11/06/2015 11:32:51	#IrishWater Consultation on Lough Derg water plan The #Nenagh Guardian - #right2water https://t.co/LOltqJicJB via @sharethis	Community Groups	Twitter
11/06/2015 11:32:54	#IrishWater Consultation on Lough Derg water plan The #Nenagh Guardian - #right2water http://t.co/o6yJKS9uQZ via @sharethis	Community Groups	Twitter

Published	Post	Tags	Media Type
17/06/2015 21:00:47	Extracting water from Lough Derg to supply the greater Dublin area is one of the preferred options proposed by Irish Water. by Kathy Masterson kathy@limerickpost.ie THE public consultation phase for the proposals to solve Dublin's water shortage was launched last week, with three of the four options centred around extracting water from the River Shannon. The options for the Water Supply Project Eastern and Midlands Region (WSP)? project include directly linking Lough Derg or the Parteen Basin near Ardnacrusha with the Dublin water supply, or taking water from Lough Derg and storing it before use. These options would see up to 330 million litres of water per day extracted from the Shannon. Irish Water claims that these options would "have minimal impact" on the river in the Limerick area. The fourth option involves plans for a desalination plant on the East Coast that would process water from the Irish Sea. The public consultation phase will run until August 4. Irish Water says that "no decision on a preferred option has been made to date". "Public consultation and on site studies in each of the four areas will form a key part of the decision-making process to identify an emerging preferred option by late 2015. Following detailed environmental assessments on the preferred option a planning application will be submitted by Irish Water to An Bord Pleanála in mid-2017. "At this stage Irish Water is now looking in detail at the four options to identify the constraints which will define the positioning of option infrastructure and also to identify the 'Assessment Criteria' which will be used to consider each of the four options relative to each other," said a statement released by the company." Jerry Grant, head of asset strategy with Irish Water said: "The Eastern and Midlands region urgently needs a new source of drinking water and work has been ongoing to secure this for more than a decade. Irish Water wants to engage with people on how we are going to look at and assess the viable options to meet that need moving forward in order to ensure security of supply and economic growth for the Eastern and Midlands Region as well as the country as a whole." Written submissions can be made to watersupply@water.ie or Water Supply Project, Merrion House, Merrion Road, Dublin 4. The Water Supply Options Working Paper is available to view in County Libraries and at Local Authority planning counters within the project study area and can be downloaded from www.watersupplyproject.ie Further information is also available from locall 1890 252 848.	Consultants	Mainstream Media
21/06/2015 11:00:00	Irish Waterâ€™s Options Working Paper on the proposed water supply for the Great Dublin Area has been dismissed by local people opposed to it.	Community Groups	Mainstream Media

Published	Post	Tags	Media Type
21/06/2015 11:15:10	Irish Water 'hell-bent' on taking water from Lough Derg http://t.co/BXwHdjnsjX [Tipperary Star, Northern Ireland] #ireland #news	Community Groups	Twitter
21/06/2015 12:00:00	Irish Water's Options Working Paper on the proposed water supply for the Great Dublin Area has been dismissed by local people opposed to it. The paper outlines an independent review of all previous studies undertaken on providing a new source of water supply for Dublin and the Eastern and Midlands Region, and, according to Irish Water, finding a sustainable new source of drinking water to cater for population and economic growth in this area has been a key priority for the past decade. Among the options are extracting water from Lough Derg, abstracting water from the lake and storing in a a new reservoir in County Laois, taking it from the Parteen Basin or desalination. "They are hell bent on coming to Lough Derg," said Declan Collison, who runs Lough Derg House in Dromineer and who has been against the plan from the start through the River Shannon Protection Alliance. "They have already at an earlier stage ruled out desalination." He agreed that the options amounted to Lough Derg and nothing else. Mr Collison pointed out that water levels in the lake had been low over the past while and questioned whether this was linked to experimentation to see how low levels could be driven. "Buoys have been placed in the lake to gather data. Will this data be freely available? The people putting them down were camera shy and disappeared when approached," he said. "Among our main concerns are the environmental impact and the effect on tourism. It is a major economic driver for the Mid West and Midlands. Our future depends on attracting major industry but our potential will be gone if we allow water to be transferred to Dublin," said Mr Collison. "This whole proposal is unnecessary at a time when things are starting to happen," he said, pointing out that a canoe trail was being developed around Lough Derg, and the area was being used by groups for everything from sailing to charity cycles. "Clare County Council has just bought Holy Island, but what is the point if you can't get access because of water levels," he said. He said the Shannon Protection Alliance's own needs report pointed out that the figures used to justify abstraction were flawed. "Irish Water has admitted that Dublin usage has levelled off. They are now pushing the figures out and playing with numbers," he said The consultation proecss will run until August 4, and Mr Collison urged all boat hire operators, angling interests and local politicians to make a submission through www.watersupplyproject.ie	Community Groups	Mainstream Media
21/06/2015 12:13:04	Tipp Local News Irish Water 'hell-bent' on taking water from Lough Derg http://t.co/iW9ug59Jzg	Community Groups	Twitter
21/06/2015 12:54:59	Say No #IrishWater Irish Water 'hell-bent' on taking water from Lough Derg: Irish Water's Options Working Pape... http://t.co/2qdVI3pP9p	Community Groups	Twitter

Published	Post	Tags	Media Type
21/06/2015 12:56:31	RT @NoToIrishWaterg: Say No #IrishWater Irish Water 'hell-bent' on taking water from Lough Derg: Irish Water's Options Working Pape... http…	Community Groups	Twitter
21/06/2015 12:58:16	RT @NoToIrishWaterg: Say No #IrishWater Irish Water 'hell-bent' on taking water from Lough Derg: Irish Water's Options Working Pape... http…	Community Groups	Twitter
21/06/2015 20:17:39	Tipp Local News Irish Water ‘hell-bent’ on taking water from Lough Derg http://t.co/gP9ITxK7dO	Community Groups	Twitter
22/06/2015 21:39:47	this region, and the importance of Lough Derg as an economic driver in the Mid West....	Community Groups	Social Networks
24/06/2015 15:09:07	24 Jun, 2015 The ESB is being called on to explain why water levels in Lough Derg have dropped dramatically in recent weeks. Fishermen and other lake users are up in arms as many say they can't get their boats onto the lake as a result. It's been put down to works by the ESB at Parteen Weir who says this has now been completed with levels back to normal. However Sinn Fein Councillor Seamie Morris says the lack of communication from the company is not acceptable as the work was carried out at the height of the fishing season in May. There are also concerns that the work is part of tests being carried out on Lough Derg to determine the impact of water extraction on the lake. Proposals are currently being considered to take water from the Shannon to supply Dublin and the east of the country. Councillor Morris says many people feel the drop in the level may have been part of the plans to take water from the lake.	Councils	Mainstream Media

Published	Post	Tags	Media Type
30/06/2015 12:36:06	Cllr Séamie Morris has been selected to contest the next General Election for Sinn Féin in Tipperary. He was selected at a convention held in Halla na Féile in Cashel last night. The convention was also attended by Liadh Ní Riada MEP. Speaking after the convention, Cllr Morris said: “I am honoured to be standing for Sinn Féin in Tipperary at the next general election. It is an election at an auspicious time, shaping the political direction of this island for many years to come. “I will go to the people of Tipperary with the message that there is a fairer way of managing our recovery, and that the people of rural Ireland deserve better representation. “The interests of ordinary people of this county can no longer take a back seat to the interests of the political elites and the golden circles that have brought communities, town and villages throughout Tipperary, to the point of ruination. “As your Sinn Féin candidate I will fight for communities that have lost their post offices, that have been marginalised for lack of infrastructural investment from this government and whose families have had to stand-by and watch as their young emigrate to look for work. “The so-called recovery designed by this current government isn't for the benefit of the ordinary people of this constituency, or for the small farmers of Tipperary, or the increasing numbers of homeless in towns across Tipperary. “The reality is that social fabric of our communities has been ripped to shreds by the policies of Fine Gael, Fianna Fáil and the Labour Party. “In the Dáil I'll fight for a fair recovery, a better deal for rural Ireland and for the protection of our public services, for our bus routes, and for our treasured Lough Derg against the marauding greed of Uisce Éireann. “Sinn Féin has a vision for a fairer Ireland and a new republic - one in which citizens have real rights that cannot be simply discarded at the whim of a detached government. “I want to give the voters of Tipperary an opportunity to break with the past and move away from the parties that have so badly failed the people, and a proper working class alternative to the pretend-left of Labour's Alan Kelly. “The people of Tipperary want real change. They want to see a fair recovery and an end to the marginalisation of rural Ireland. “Sinn Féin will put our vision of a united, fair, and progressive Ireland to the people of Tipperary, and it is on that basis that we will win our seat in this county.”	Councils	Mainstream Media

Published	Post	Tags	Media Type
30/06/2015 17:18:48	Cllr Séamie Morris with jubilant Sinn Féin supporters after he was elected to contest the general election on behalf of the party at its selection convention in Cashel. Cllr Séamie Morris with jubilant Sinn Féin supporters after he was elected to contest the general election on behalf of the party at its selection convention in Cashel. Cllr Séamie Morris has been selected to contest the next General Election for Sinn Féin in Tipperary. He was selected at a convention held in Halla na Féile in Cashel this evening. The convention was also attended by Liadh Ní Riada MEP. Speaking after the convention, Cllr Morris said: “I am honoured to be standing for Sinn Féin in Tipperary at the next general election. It is an election at an auspicious time, shaping the political direction of this island for many years to come. “I will go to the people of Tipperary with the message that there is a fairer way of managing our recovery, and that the people of rural Ireland deserve better representation. “The interests of ordinary people of this county can no longer take a back seat to the interests of the political elites and the golden circles that have brought communities, town and villages throughout Tipperary, to the point of ruination. “As your Sinn Féin candidate I will fight for communities that have lost their post offices, that have been marginalised for lack of infrastructural investment from this government and whose families have had to stand-by and watch as their young emigrate to look for work. “The so-called recovery designed by this current government isn't for the benefit of the ordinary people of this constituency, or for the small farmers of Tipperary, or the increasing numbers of homeless in Tipperary's towns. “The reality is that social fabric of our communities has been ripped to shreds by the policies of Fine Gael, Fianna Fáil and the Labour Party. “In the Dáil I'll fight for a fair recovery, a better deal for rural Ireland and for the protection of our public services, for our bus routes, and for our treasured Lough Derg against the marauding greed of Uisce Éireann. “Sinn Féin has a vision for a fairer Ireland and a new republic - one in which citizens have real rights that cannot be simply discarded at the whim of a detached government. “I want to give the voters of Tipperary an opportunity to break with the past and move away from the parties that have so badly failed the people, and a proper working class alternative to the pretend-left of Labour's Alan Kelly. “The people of Tipperary want real change. They want to see a fair recovery and an end to the marginalisation of rural Ireland. “Sinn Féin will put our vision of a united, fair, and progressive Ireland to the people of Tipperary, and it is on that basis that we will win our seat in this county.”	Councils	Mainstream Media

Published	Post	Tags	Media Type
03/07/2015 08:00:00	The ESB has confirmed to the Tipperary Star that it lowered water levels on Lough Derg for maintenance work on the Lower Shannon. The work involved engineering works on a number of bridges and cleaning the Black River as well as scheduled work on a turbine at Ardnacrusha. All the wrok was below the Parteen weir. The company has also confirmed that the levels have since returned to normal. The water was lowered to Lough Derg's regulated limit and was done following a high rainfall forecast. "To allow the work to be carried out safely, the level in Lough Derg was lowered to make as much storage available as possible," the ESB said in a statement. Meanwhile, Ervia, the group with responsibiility for Bord Gais and Irish Water, dismissed claims that the water level was dropped to mirror "drought conditions". The claim had been made by Cllr Seamus Morris who had called on the ESB to explain why the water levels were low, in some cases down by three feet. He had blamed it on a "simulation of a drought such as will occur when Irish Water extracts water from the lake". However, a spokesperson for Ervia said in a statement to the Tipperary Star that the ESB lowered the level in Lough Derg "a couple weeks ago in anticipation of forecast high rainfall during a period when maintenance works were being undertaken on infrastructure on the Lower Shannon". They said that the level to which the lake was lowered was within the normal operating range that Lough Derg was regulated within. "These maintenance works are now complete and the level in Lough Derg has risen subsequently," they said. A Met Eireann spokesperson told the Tipperary Star that while May had seen above average rainfall at its Gurteen station, June had been very dry. According to their website, rainfall was twice the normal level in May but only one third the June average. The spokesman said that this meant rainfall was "about normal" for the year, but that when evaporation was taken into account the lake would be lower anyway. Meanwhile, Cllr Michael O'Meara has called for an update on the North West Regional Water Supply, claiming the Portland and surrounding areas in Lower Ormond suffered in the summer. "This has to be tackled. Farmers in a dry summer don't have enough water," he said.	Community Groups	Mainstream Media

Published	Post	Tags	Media Type
09/07/2015 11:00:00	The ESB has confirmed to the Tipperary Star that it lowered water levels in Lough Derg in May for maintenance works. The confirmation comes following concerns by anglers and boat owners, as well as the River Shannon Protection Alliance, that the lake was lowered to study water levels if Irish Water goes ahead with its plan to take water from Lough Derg and pipe it to Dublin. Ervia, the company with responsibility for Irish Water, had told the Tipperay Star that the lake was lowered by the ESB but had directed enquiries on the nature of the work to the ESB. In a statement, the ESB said it lowered water levels in late May at a time when essential maintenance works were being undertaken on infrastructure on the Lower Shannon and high rainfall was forecast. The level to which the lake was lowered was within the normal operating range. These maintenance works are now complete and the level in Lough Derg has subsequently risen. The ESB carried out maintenance to the bearings and joints of O'Brien's Bridge, Clonlara Bridge, Blackwater Bridge and Parteen Bridge. This work involved a cherry picker working off a pontoon. In order to allow this work to be carried out safely, flows through the headrace had to be limited. Separately, a scheduled outage to a turbine in Ardnacrusha took place, meaning that Ardnacrusha's capacity for passing flows was temporarily curtailed. The Black River Culvert, which enters the Shannon below Parteen Weir, was also cleaned. This takes place every 10 years in order to allow an inspection be carried out. In order to safely carry out work in the culvert, the water level in Lough Derg had to be such that there was a low risk of spilling at Parteen Weir. The occurrence of these three maintenance events together meant that ESB's normal capacity for dealing with flows on the Shannon was curtailed. In order to account for this and to allow the work to be carried out safely, the level in Lough Derg was lowered to make as much storage available as possible. The level to which the lake was lowered was within the range of levels to which Lough Derg is regulated. In addition, during periods of very low flow - as was the case last year - ESB aims to have a high water level in the lake to ensure that if there were a severe and prolonged drought, the lake level would not be reduced to too low a level.	Community Groups	Mainstream Media
09/07/2015 11:00:00	The ESB has confirmed to the Tipperary Star that it lowered water levels in Lough Derg in May for maintenance works. The confirmation comes following concerns by anglers and boat owners, as well as the River Shannon Protection Alliance, that the lake was lowered to study water levels if Irish Water goes...	Community Groups	Mainstream Media
09/07/2015 16:00:59	Extracting water from Lough Derg to supply the greater Dublin area is one of the preferred options proposed by Irish Water. by Kathy Masterson kathy@limerickpost.ie A TIPPERARY councillor says he has been "inundated" with calls from fishermen and other lake users recently as they cannot get their boats onto Lough Derg due to a dramatic fall in water levels.	Community Groups	Mainstream Media

Published	Post	Tags	Media Type
	Cllr Séamie Morris (SF) has called on the ESB to explain why the water levels have dropped in recent weeks. "Fishermen and other users of the lake are calling me to say they can't get their boats out because the water level is so low. The level has been dropped by 1.5 feet in the last month. That means even the smallest of boats are in trouble when they want to get out. "There hasn't been a dry spell, so it's obvious that the water level is changing artificially. Recently there has been a very noticeable increase in monitoring activity on the lake, with survey buoys put in place. The rapidity of the recent drop in levels has caused suspicion that this is a simulation of a drought, such as will occur when Irish Water extracts water from the lake," he said. "Lough Derg isn't a bottomless pit of water, and it will be destroyed if Irish Water start piping it up to Dublin to leak into the ground up there." Cllr Morris is encouraging all lake users to join the campaign to stop the proposed extraction of water from Lough Derg to supply the greater Dublin area and warned that "once Dublin city turns on the taps they will suck the lake dry". A spokesperson for ESB told the Limerick Post: "The ESB lowered water levels in Lough Derg at a time when essential maintenance works were being undertaken on infrastructure on the Lower Shannon and high rainfall was forecast. The level to which the lake was lowered was within the normal operating range. These maintenance works are now complete and the level in Lough Derg has subsequently risen." The spokesperson added that due to three separate maintenance events taking place simultaneously, "ESB's normal capacity for dealing with flows on the Shannon was curtailed. In order to account for this and to allow the work to be carried out safely, the level in Lough Derg was lowered to make as much storage available as possible". Meanwhile, environmental group the River Shannon Protection Alliance (RSPA) has pledged to pursue its objection to Irish Water's proposal to pump up to 350 million litres of water a day from Lough Derg to Dublin "at every level necessary". The group believes that the project should be "abandoned immediately in favour of the viable supply options available to Dublin's needs, beginning with aggressive leakage repair" and says that it is "deeply flawed and completely unjustifiable". Share this: Tags: ESB , Irish Water , Liadh Ni Riada , Lough Derg , Séamie Morris , Shannon , The River Shannon Protection Alliance Category		

Published	Post	Tags	Media Type
11/07/2015 07:34:43	Up to 73 kilometres of mainly iron water pipe is being replaced in the Dublin Region. Irish Water will spend €28m on the next phase of a project which has already seen around 200 kilometres of pipes upgraded. Similar works are being undertaken throughout the country, to improve supply and reduce leaks. Irish Water's Jerry Grant says the current work on the Dublin Watermains Rehabilitation project will prevent huge amounts of wastage. Mr Grant said: "Replacing this length of mains will save directly about 1.6 million litres per day. "That's just part of the overall effort at reducing leakage because we'll also be reducing leakage through ordinary find and fix, and pressure management. "But as we do, those pipes that are showing repeat leaks are replaced and directly we think that will replace about 1.6 million litres."	Community Groups	Mainstream Media
11/07/2015 08:02:24	Up to 73 kilometres of mainly iron water pipe is being replaced in the Dublin Region. Irish Water will spend €28m on the next phase of a project which has already seen around 200 kilometres of pipes upgraded. Similar works are being undertaken throughout the country, to improve supply and reduce leaks. Irish Water's Jerry Grant says the current work on the Dublin Watermains Rehabilitation project will prevent huge amounts of wastage. Mr Grant said: "Replacing this length of mains will save directly about 1.6 million litres per day. "That's just part of the overall effort at reducing leakage because we'll also be reducing leakage through ordinary find and fix, and pressure management. "But as we do, those pipes that are showing repeat leaks are replaced and directly we think that will replace about 1.6 million litres."	Community Groups	Mainstream Media
15/07/2015 07:39:13	Wednesday 15 July 2015 Representatives of Irish Water are meeting with councillors from the Killaloe area later about plans to extract millions of litres a day from Lough Derg. The meeting is part of the water utility's offensive in trying to gain acceptance from local people for proposals to extract the water to service the capital. Three of the four proposals currently out for public consultation involve pumping up to 500 million litres out of Lough Derg every day and transporting it for use in the greater Dublin area. The meeting takes place in the council offices in Scariff at 2.00pm. Councillor Michael Begley says there are huge fears in the locality about the impact the extraction will have... Live 95 FM News	Councils	Mainstream Media
16/07/2015 09:46:33	There's renewed concerns about controversial plans to extract water from the River Shannon following a meeting with Irish Water. Representatives from the water utility company met with Killaloe Municipal Disctrict Councillors in Scarriff yesterday to discuss plans to increase water supply to the Mid-lands and Dublin. Four proposals, three of which involve water being taken from the river Shannon at Lough Derg are still being considered but no decision will be made until October. However, Whitegate Councillor Pat	Councils	Mainstream Media

Published	Post	Tags	Media Type
	Burke now fears that the option of a desalination plant in Dublin has been ruled out.		
16/07/2015 13:46:48	Clare Councillors are calling for a united front against plans to extract water from the River Shannon to supply Dublin and the Midlands. Four proposals are being considered by Irish Water but following a meeting in Scarriff yesterday Councillors now feel, two proposals which will affect Clare and the MidWest Region are the frontrunners. Killaloe Councillors met with Irish Water in Scarriff yesterday, where representatives outlined details of four proposals aimed at increasing water supply to the Mid-lands and Dublin. Three of them involve plans to take water from the River Shannon at Lough Derg or the Parteen Basin and local Councillors now fear the fourth option of a desallination plant for Water from the Irish Sea has been taken off the table as a similar project in the UK was left idle due to high running costs, while water storage in the midlands could incur similar financial difficulties. Killaloe FF Councillor Tony O'Brien thinks the plans could have a devastating impact on the local environment. All six Killaloe Councillors have given their backing to a submission by the River Shannon Protection Alliance which they hope all of Clare's public representatives will get behind. Whitegate FG Councillor Pat Burke fears the needs of Dublin and the East of the Country will outwiegh local concerns around the Shannon and Lough Derg. In a statement, Irish Water says it will "fully consider" the concerns raised at yesterday's meeting and will update East Clare councillors on a regular basis as the project moves forward with a preferred option to be announced by late 2	Councils	Mainstream Media
16/07/2015 23:10:00	Quote: Originally Posted by JacquesDeLad Does Dublin still need to pump more water from Lough Derg to fill it's resevoirs? I'd have thought finding a way to avoid that would be a priority for anyone living around the Shannon. Dublin can't run dry, it's the rural areas that will suffer. Not it's current...	Community Groups	Forums
16/07/2015 23:17:00	Quote: Originally Posted by JacquesDeLad Does Dublin still need to pump more water from Lough Derg to fill it's resevoirs? I'd have thought finding a way to avoid that would be a priority for anyone living around the Shannon. Dublin can't run dry, it's the rural areas that will suffer. That's only in...	Community Groups	Forums
19/07/2015 10:19:02	Clare County Council's opposition to the proposed Lough Derg water abstraction project may be drowned by the huge waves of support from vested interests in the east of the country, local councillors have claimed. Councillors have warned that the lack of professional, technical and engineering support for their objections makes it harder to fight the huge volume of submissions supporting the planned abstraction of over 330 million litres of water daily from Lough Derg, to supply the greater Dublin region. Local councillors expressed trenchant opposition to Irish Water's plans to take water from the lake at	Councils	Mainstream Media

Published	Post	Tags	Media Type
	a special briefing session for the Killaloe Municipal District. Councillor Pat Hayes lamented the fact there is “no one to fight for our side” and noted the former North Tipperary Council still had not made a submission after entering into an agreement with the previous promoters of this project, Dublin City Council, to get financial assistance for an independent assessment of the plans. Claiming that consultants commissioned by the new Tipperary County Council would effectively be paid by the State, he warned that Clare County Council are “small players” in relative terms on a national scale. “We are trying to put up a buffer against a national movement for a strategic infrastructure project. I am very worried what will emerge as the preferred option for water abstraction in October or November,” he said. Councillor Pat Hayes was strong in his opposition. Councillor Tony O’Brien claimed no one could put a price on the potential ecological, environment and industrial damage the water abstraction could cause to the lake, if Irish Water proceedes with its plans. He stated Irish Water could not guarantee water levels would be maintained at appropriate levels, particularly during periods of drought. He recalled that over three weeks ago, water levels dropped significantly on the lake, which caused “mayhem” for boats and marinas. Irish Water project manager, Gerry Geoghegan, said if the utility does not come up with a project that meets strict environmental and other criteria, it would not get through the planning process. He stressed the utility would engage the best technical expertise to produce water modelling that would take into account all climatic changes that happened over the last 100 years and to ensure abstraction would not have any adverse impact on water levels. He told councillors that water levels on Lough Derg are controlled by the ESB within an upper and lower limit of 18 inches and not Irish Water. Councillor O’Brien interjected that the lower limits operated by the ESB are “too low”. Irish Water managing director for major projects, John Barry, confirmed the national water utility had not received any application from Clare County Council to provide financial or other assistance to secure an independent technical assessment of its plans. If an application is received from the chief executive officer, Tom Coughlan, Mr Barry said it would be considered. In a statement, the ESB said it lowered water levels in late May at a time when essential maintenance works were being undertaken on infrastructure on the Lower Shannon and high rainfall was forecast. It stated the level to which the lake was lowered was within the normal operating range. These maintenance works are now complete and the level in Lough Derg has subsequently risen. The ESB carried out maintenance to the bearings and joints of O’Brien’s Bridge, Clonlara Bridge, Blackwater Bridge and Parteen Bridge. In order to allow this work to be carried out safely, flows through the headrace had to be limited.		

Published	Post	Tags	Media Type
	Separately, a scheduled outage to a turbine in Ardnacrusha took place, meaning its capacity for passing flows was temporarily curtailed. The Black River culvert, which enters the Shannon below Parteen Weir, was also cleaned. This takes place every 10 years in order to allow an inspection be carried out. To safely carry out work in the culvert, The ESB said the water level in Lough Derg had to be such that there was a low risk of spilling at Parteen Weir. Dan Danaher		
19/07/2015 12:04:09	Say No #IrishWater Support for Lough Derg abstraction could drown out local opposition - The Clare Champion: L... http://t.co/dUAyBTmiKx	Community Groups	Twitter
19/07/2015 17:00:00	Irish Water has renewed its appeal for the public to get involved in the consultation process on the proposed Water Supply Project, Eastern and Midlands Region. The agency recently published its Options Working Paper (OWP) on the proposal in June outlining an independent review of all previous studies undertaken on providing a new source of water supply for the Eastern and Midlands region. The company says that finding a sustainable new source of drinking water to cater for population and economic growth in this area has been a key priority for the past decade. The consultation period for this phase will run until August 4, 2015. Ten options identified to date have already been evaluated as part of Strategic Environmental Assessments (2007-2011) which looked at environmental, technical, risk economic and socio-economic perspectives. No decision on a preferred option has been made to date. Public consultation and further studies will form a key part of the decision making process to identify an emerging preferred option by late 2015. Irish Water is inviting the public and interested groups to give their views on their proposed Constraints and Assessment Criteria (and the approach to their use) to identify an Emerging Preferred Option. The four technically viable options confirmed by Irish Water in no particular order of priority, are desalination, Lough Derg, Lough Derg and storage and the Parteen Basin Irish Water is inviting submissions on the following: What other national, regional or locally important constraints should Irish Water take into account when locating the infrastructure associated with each water supply option? Have you any comment on the proposed constraints and the approach to their use? Are there any Assessment Criteria other than those proposed which should be used in the next phase of options appraisal? How would you like to be communicated with us as the project progresses? Further information can be found on the project website at www.watersupplyproject.ie It is expected that a preferred optio, once agreed and subject to relevant environmental consideration will be submitted to An Bord Pleanála for planning approval in mid-2017. The Water Supply Options Working Paper is available to view in county libraries and at local authority planning counters within the project study area and www.watersupplyproject.ie	Community Groups	Mainstream Media
19/07/2015 17:00:00	Irish Water has renewed its appeal for the public to get involved in the consultation process on the proposed Water Supply Project, Eastern and Midlands Region.	Community Groups	Mainstream Media

Published	Post	Tags	Media Type
19/07/2015 17:50:00	Originally Posted by DCon How (as it is not a bank) and why is the NPRF advancing a line of credit to Irish Water? Total debt at under-pressure Irish Water now tops Water Supply Project Eastern and Midlands Region Major Projects | Projects and Plans | Irish Water	Department of the Environment	Forums
19/07/2015 19:30:00	Originally Posted by SPN Water Supply Project Eastern and Midlands Region Major Projects | Projects and Plans | Irish Water Why is a credit line, from a state run Pension Fund, being used to fund large projects?	Department of the Environment	Forums
19/07/2015 19:38:00	Originally Posted by SPN Water Supply Project Eastern and Midlands Region Major Projects | Projects and Plans | Irish Water Originally Posted by SPN Why is a State owned pension fund investing in critical infrastructure in Ireland? Surely they should be speculating on the New York Stock Exchange? Not! Not my...	Department of the Environment	Forums

Published	Post	Tags	Media Type
22/07/2015 10:17:11	Independent TDs Mattie McGrath and Seamus Healy have attacked constituency colleague, Environment Minister Alan Kelly, over what they label the Irish Water 'fiasco'. Less than half of Irish Water's customers have paid their charges and the company is facing a massive deficit. Deputy McGrath has called on Minister Kelly to resign - 'and take Irish Water with him'. Deputy Healy said it's now time for the government and Minister Kelly to withdraw the controversial charges. However Minister Kelly has defended the collection rate, describing it as a compliance rate of 44%. "This represents an encouraging start to a long-term project with in excess of €30 million coming in immediately following the first billing period", he stated. He added - "The introduction of any new charge usually takes a period of time to bed-down fully, as previous experience with new charges would indicate. However, the reasons for establishing Irish Water and this funding model remain the same, we have to have a secure, clean water supply for the next 30 to 40 years in this country," However Deputy McGrath described it as an 'embarrassingly low rate of payment. He said - "It indicates that just 43% of the company's 1.5 million customers have paid their bills, leaving Irish Water with a staggering €37m capital deficit. This is just the latest in a string of fiascos that the Minister has presided over since he took office. It is time he went and took Irish Water with him." According to Deputy Healy, the 'mass refusal' to pay is a huge boost to the Anti-Water Charges Campaign which will be holding a mass march in Dublin on August 29. "Let us keep up the pressure.". He remarked that the widespread refusal to pay the first water bill should encourage many more to refuse to pay the second bill. "As no penalties take effect before the next general election, people can continue to refuse to pay and can vote out the present government and elect candidates committed to abolishing the charges in the election. "I will continue to refuse to pay. Irish people already pay for water through general taxation including VAT. The majority are refusing to pay a second time. The Fine Gael/Labour Government gave €80 m in tax relief in the last budget to over 100,000 people who earn €180,000 per year each. But it is persisting with a charge that amounts to double taxation of households including very poor households."	Department of the Environment	Mainstream Media
23/07/2015 19:34:00	Department of the Environmentâ€™s annual litter survey. The 2014 National Litter Pollution Report found that â€œ cigarette-related litterâ€ accounted for almost 55 per cent of litter, with butts constituting more than half of all litter items found on the street. The survey, carried out by Tobin Consulting Engineers...	Community Groups	Mainstream Media

Appendix G Submission Summaries

Summary of relevant submission received	Issue / Theme
• Expressed opinion not in favour of water extraction from the River Shannon and Lough Derg • Desalination is preferred option	**Options** Desalination
• Expressed support of WSP, but not in favour of desalination	**Options** • Desalination
• Lacked confidence in Irish Water's management abilities relating to the process and in the independence of ecological assessments, and reservations about openness	**Environment** • Biodiversity
• Advocated thorough review of rainwater harvesting options, citing studies by DIT, stating that 20-30% of water requirement could be met this way, which would create employment and alleviate flooding also	**Water Conservation** • Other water conservation initiatives
• Favoured desalination option due to its lower environmental impact and lower construction/maintenance costs • Expressed concern that Shannon extraction would lead to lowered water levels and thus adverse impacts on wildlife as well as tourism and the ability of large watercraft to use Foynes Port	**Environment** • Biodiversity **Options** • Desalination
• Acknowledged that WSP is warranted in general, but voices multiple concerns: • Concerned over choice of mid-range demand growth forecasts instead of higher range ones, advocating this as a more prudent approach • Also concerned that the forecasted rate of water conservation may be difficult to achieve – current and future water charges do not incentivise water conservation like other regimes elsewhere • Concerned that forecasts for non-domestic sectors may be overly-prudent – agreement that sectoral projections are a good idea but that assumptions of non-existent non-domestic developments are not • Concerned that aggregate water demand growth is weighted towards industry, and over the potential disproportionate allocation of associated costs towards industry also • Sought elaboration on why forecasts have been set out as they are	**Constraints and Assessment Criteria** **Other** • Need **Water Conservation** **Options** • Lough Derg (Direct) / Lough Derg (Storage) / Parteen Basin

Summary of relevant submission received	Issue / Theme
• Accepted identification of Options B, C, F2 and H as reasonable water supply options for the WSP • Supported Irish Water's assessment of preferred option using criteria outlined in the Options Working paper, particularly those pertaining to Sustainability and Capital and Operating Costs • Advocated an option which ensures speed and efficiency of execution while minimizing environmental impacts and cost-inefficiencies – advocated streamlined, proactive cooperation with An Bord Pleanála and the Environmental Protection Agency • Advocated of a choice of option which maximises technical flexibility • A list of queries was given: - How will the people-related assessment criteria be weighted? - How will the technical and risk criteria be weighted? - How sensitive is the choice of a preferred option to the WSP's underlying assumptions about population growth? - How is "risk" defined or otherwise applied in the context of the assessment, and does its definition or application consider the possibility of project non-completion and of developed infrastructure not performing as designed?	
• Welcomed the investment in the region • Suggested random sampling approach to consultation with businesses • Expressed preference for shortest pipeline route from Lough Derg • Advocated an allocation of 20% of work on this pipeline to local contractors • Pointed out need to match wastewater and treated water capacities • Recommended engagement with IFA on use of environmentally-friendly fertilisers	**Options** • Lough Derg **Environment** • Biodiversity
• Advocated use of existing supply of fresh water to benefit those who need it • Referred to 60+ years of abundant water in the Shannon catchment • Favoured Lough Ree as an extraction source, with L. Derg as a secondary option • Supported concept of reservoir at Garryhinch	**Options** • Lough Derg (Direct) / Lough Derg (Storage) / Parteen Basin
• Welcomed the project and noting that previous contributions had been taken into consideration • Broadly satisfied with the proposed assessment criteria, but suggests that dividends of all options are considered	**Constraints and Assessment Criteria** **Communities** /

Summary of relevant submission received	Issue / Theme
• Welcomed benefitting corridor which would maximize the return on investment in the Midlands and Eastern counties of Tipperary, Meath, Offaly, Westmeath and Laois – suggested this be a factor in option choice • Expression of concern over lack of use of timeframe of successful delivery as an assessment criterion – losses to economy could result if adequate supply is not delivered when needed • Recommended careful consideration of cost-effectiveness of delivery of water, and clear evaluation and presentation of the costs involved	**Benefitting corridor** **Economic Development**
• Referenced life spent boating on Lough Derg and its personal importance, and appreciation of the Lough has a resource • Expressed support of water charges • Expressed belief that water belongs to those who love and cherish it, including the wildlife living on it • Concerned over lowering of water levels already and impact this has on boating and local businesses • Expressed concern over leakage from pipes to Dublin • Reduction in fish stocks as a result of lowered water levels will have knock-on effects on animal life, including rare white-tailed sea eagle • Concerned over loss of tourism due to reduction in lake levels	**Water Conservation** • Leakage **Environment** • Biodiversity **Communities / Benefitting Corridor** **Tourism and Amenity**
• Referenced numerous cases globally where lake abstraction has had disastrous outcomes • Referenced the Lough as a wonderful amenity and tourist attraction and recommendation that it should be cared for • Noted that water levels in the Lough already appear quite low • Suggested that Irish Water focus on fixing leaking pipes and encouraging water conservation	**Environment** • Biodiversity **Tourism and Amenity** **Water Conservation** • Leakage
• Referenced licensing of survey equipment • Welcomed any opportunity to explore the use of Lough Derg as a means to transport water, or for any infrastructure compatible with the canal system	**Tourism and Amenity** **Options** • Lough Derg (Direct) / Lough Derg (Storage) / Parteen Basin
• Advocated desalination over lake abstraction, noting that Spain has had success with	**Options**

Summary of relevant submission received	Issue / Theme
desalination • Expressed concern that other options would adversely affect wildlife on Lough Derg	• Desalination **Environment** • Biodiversity
• Agreed with constraints chosen, but suggests that State-owned land or land under stewardship of the State should also be considered as a constraint • Stated the advantage of using State-owned land or land under stewardship of the State lies in minimising disturbance to third party/individual landowners • Believed initial grouping of constraints was "hard" and suggests that the "white space" of the of the study area was the only area development of the project could occur in • Commented on positive effects of option F2: • With regard to biodiversity, an approach of positive impacts is advised – rehabilitation of cutover bog and creation of open water space can lead to local and regional increases in biodiversity • Stated that Garryhinch reservoir would be an additional angling facility • Creation of a water storage facility on a cutaway bog enhances visual aesthetics • Water storage/treatment facility is an appropriate use of an exhausted peatland and frees up more fertile land for other uses • Value should be placed on new amenity creation • Option has potential for positive impact on human health and well-being by virtue of encouraging outdoor activities • Interim storage option would allow offset of climate change or pollution effects on supply sustainability • Meeting the water supply needs of the most southerly communities best accomplished at Garryhinch site • Essential that Whole Life Cost / Cost of Water Delivered is the basis of the CAPEX and OPEX evaluation • Ability to fund the Project may inhibit the full potential outcome	**Options** • Lough Derg (Direct) / Lough Derg (Storage) / Parteen Basin **Constraints and Assessment Criteria** **Environment** • Biodiversity • Climate change **Tourism and Amenity** **Benefitting Corridor**
• Concerned that predictions made by Irish Water are sketchy and that they may lead to an unbounded abstraction regime • Stated that Irish Water fail to adequately address flow by season and maximum abstraction at times of lowest flow • Stated that EIA and SEA groundwork has not been completed • Stated that Irish Water's proposal to "turn the Shannon east" is "folly" based on a	**Options** • Desalination • Other options and alternatives • Groundwater

Summary of relevant submission received	Issue / Theme
"contrived and unrealistic need" and that alternatives had not been explored • Stated that inadequate detail has been provided on water level, records, monitoring and control data of substance, information on impacts for ecology, water quality, navigation, angling and recreation • Stated that Irish Water's priority should have been centred on cleaning up pollution points and that they have contributed to pollution via leakage of untreated wastewater into the Shannon catchment • Questioned if IW have taken into account possibility of algal blooms, pollution or other crises and the implications of single-source dependency • Stated that IW have ignored alternatives bar fleeting references to desalination as a means to distract and reject on the basis of cost issues • Referenced untapped groundwater in eastern areas • Stated that midland corridor along proposed pipeline is more than self-sufficient requiring only improved infrastructure, less waste and polluting discharges	**Planning** • Legislation **Environment** **Tourism and Amenity** **Benefitting Corridor**
• Advised that the impacts and interactions with the national roads network are unclear and require significant clarification • Noted numerous locations where a potential scheme would interface with both the existing and future national road network • Advised liaison of WSP with Transport infrastructure Ireland, Land Use Planning Unit	**Planning**
• Referenced seasonal rise/fall in lake levels • Urged that project must not interfere with lakes in East Clare	**Other** • General comments
• Stated that first priority is to repair/replace the water distribution network, and to achieve 10% leak loss from the current 55% rate will give a 45% saving of current treated volume • Estimates should be regularly reviewed with a 10-20 year maximum aspect, though this may be guesswork • Groundwater aquifers which could supply well over the projected demand exit in north Dublin and Blessington, and a recent bore in Newbridge was revealed to have the largest water-bore flow rate in the state • Stated that mentions of recycling of water have been scarce • Stated that even at 10% collection efficiency, Dublin has the potential to collect 4ML of water a year from storm • Stated that 85% of domestic needs can be fulfilled by water collected via rooves • Preferred desalination as an option but note that with Irish rainfall, it is still hard to justify	**Options** • Desalination • Lough Derg (Direct) / Lough Derg (Storage) / Parteen Basin • Other options and alternatives **Water Conservation** • Leakage

Summary of relevant submission received	Issue / Theme
• Asserted need for impartial economic oversight as well as engineering expertise • Stated that all alternatives are feasible, but currently are of little merit due to strategic, economic and current national priorities	• Other water conservation initiatives **Environment** • Fisheries **Water Framework Directive** **Other** • General comments
• Considered desalination as the best option - minimises disturbance to rural tourism and agriculture, requires less piping, does not put water levels of the Shannon or Lough Derg at risk and provides an incentive to save water due to higher cost • Stated that increasing and varying flows on the old Shannon is a fundamental in getting salmon and other migratory fish species (i.e. lampreys) back to the upper Shannon. Increasing and varying the flows is also essential for maintaining the ecology and geomorphology of the old River Shannon Special Area of Conservation. • Also stated claims that the current compensation flow is less than the requirements of the river under the Water Framework Directive • Raised concerns that extraction of water from Lough Derg or the Parteen Basin would impact negatively on tourism, fishing, agriculture and the local water supply. • Favoured reopening of the Erinagh Canal over siphoning water – states that it would be very beneficial to O'Briensbridge*, Clonlara and the Plassey campus of the University of Limerick* • *Referenced the failure of the ESB* River Shannon Salmon Management Programme – despite this, asserts that the proper maintenance of this fishery should not be sacrificed for the sake of the project	**Options** • Desalination **Water Conservation** • Other water conservation initiatives **Economic Development**
• Objected to water abstraction in any circumstance, citing numerous cases where such abstraction has proved detrimental to river communities of both humans and other wildlife	**Options** • Lough Derg (Direct) / Lough Derg (Storage) / Parteen Basin

Summary of relevant submission received	Issue / Theme
• Objected in principle to abstraction of water from one catchment to another • Concerned that lowering of water levels further will impact so severely on Lough Derg as an SAC that the Water Framework Directive or EU Habitats Directive will be violated • Concerned that no fish stock survey has been carried out • Concerned that abstraction during drought or ESB-abstraction would cause lowering of lake levels to unacceptable levels • Queried if ESB will halt abstraction activities in such a case or in the case of emergency power demand • Not satisfied that restriction of Killaloe and its bridge will allow replenishment of the reservoir in a time frame adequate to meet the demand • Concerned about the waste generated by a water treatment plant in the areas, as all nearby waste treatment facilities are at max. capacity	**Options** • Lough Derg (Direct) / Lough Derg (Storage) / Parteen Basin **Environment** • Biodiversity • Fisheries **Other** • General comments • Questions raised
• Money would be better spent by fixing the up to 50% leakage rates in Dublin - 15% reduction of leaks would save 100MLD of water per day • High, unsustainable cost on region, as well as ecological and environmental damage • Objected to free-of-charge abstraction – Tipperary County Council has a development contribution levy in place at request of this individual • Abstraction will promote unsustainable development in Dublin and weaken the mid-West region	**Water Conservation** • Other water conservation initiatives **Planning** **Economic Development**
• Future of water management (globally) revolves around the creation of hybrid treatment networks where harvested rainwater can be augmented with partially treated municipal supply for final polishing to drinking water quality • Using Wi-Fi connectivity to balance municipal ground water extraction with customer demand • The new system (presumably of the individual/group writing the submission) treats water to drinking quality so using harvested rainwater no longer requires the installation of a second piping system • Considered that each of the initiative options proposed have the effect of… 1. increasing Ireland's carbon footprint 2. adversely impacting Ireland's environmental and green credentials 3. giving rise to huge capital and operational cost expenditure 4. failing in any way to address the strategic goal set by Irish water to reduce levels of rainwater run-off into combined sewer systems • Asked that a more expansive and visionary approach be brought to the challenge of	**Options** • Other options and alternatives **Water Conservation** • Leakage **Economic Development**

Summary of relevant submission received	Issue / Theme
meeting water management needs in harmony with the needs of cutting carbon emissions, addressing climate change challenges, boosting Irish technology and creating Irish jobs	
• Concerned over silting up of Shannon Estuary • Concerned over cost of continuous dredging of Shannon Estuary • Project will threaten fish stocks • Lowered water levels will reduce dilution of pollutants and enhance their impacts • Viewed IW as not having the desire or wisdom to repair eastern region leaks which could save a lot of water • Suggested grants be given to householders to help them harvest rainwater from their rooves	**Options** • Other options and alternatives **Water Conservation** • Leakage **Economic Development** **Environment** • Fisheries
• Unanimously agreed to support the submission prepared by the River Shannon Protection Alliance to Irish Water in the matter of possible diverting of River Shannon water to Dublin, dated April 2015	
• Believed that government have erred in appointing engineers to solve water problem – problem is with use of water, not lack of water in Dublin • Believed that it is a multi-faceted bio-diverse ecological issue • Suggested project be abandoned as common sense	**Water Conservation** • Other water conservation initiatives **Other** • General comments
• Water leakages in Dublin must be addressed and water meters installed to encourage water conservation • Grey/recycled water should be used for toilets and should be collected via water butts • Reduction of river flow due to abstraction will impact tourism and biodiversity along Shannon • Carbon footprint for transport of water will be large • High cost of desalination as well as increased emissions • Exploration of development in other parts of country to slow Dublin's growth • Believed that we should not "play God" in altering the Shannon's flow	**Options** • Desalination • Other options and alternatives **Water Conservation** • Leakage • Other water conservation initiatives **Economic Development** **Tourism and Amenity** **Other**

Summary of relevant submission received	Issue / Theme
	• General comments

• Requested that when routes are planned that resourcing and investment information is compiled from local authorities and state agencies with investments along the route to construct a composite interactive map
• Asked that consideration be giving to coastal zone management and maritime impacts arising from desalination options
• IW requested to consider the regulatory requirements of the Maritime Spatial Planning Framework
• Suggested investigation into the locations of publicly owned land banks (including state agencies) along or adjacent the 4 technically viable options so as to maximise value for money opportunities and minimise impacts on third party landowners if possible
• Include an Integrated Spatial Planning Criteria under which each of the four technically viable options could be considered in the context of compliance with NSS/ NPF and RPGs/RSES Spatial Planning and Capital Investment Priorities
• This would allow:
  ○ Specific economic development opportunities associated with the options
  ○ Opportunities to schedule works associated with all or some of the options to coincide with works by other state agencies, statutory undertakers or major investment projects
  ○ Opportunities to co-locate facilities for other state agencies at the abstraction, storage or desalination facilities
	Constraints and Assessment Criteria
	
	Economic Development
	
	Planning

• Requested clarification of rate of water abstraction from the lake • What prevents extraction during low-water periods? • What additional measures can be put in place to ensure lake level doesn't drop during dry periods? • Wonder if boiled and condensed water from electric Ireland coastal power plants could be used, as they (this individual) believe it to be desalinised • Could a combined power station and desalinisation plant producing both electricity and clean water with the costs shared be viable? • Would it be feasible to build a new dam or weir with locks downstream from Foynes to keep water levels in the lake and estuary high?	**Other** • Questions raised **Options** • Desalination

Summary of relevant submission received	Issue / Theme
• Noted the recent "Need Report" for the proposed Eastern and Midlands Region Water Supply Project and views it as a lost opportunity and failure of a number of local authorities to adequately plan for future water demands • Believed abstraction from River Shannon would set a precedent for abstraction elsewhere • Believed insufficient weight has been given to the desalination options and to increasing conservation measures on the eastern sea board • Viewed IW as a third competing body for water in the area alongside ESB and Waterways Ireland • Suggested the designation of an independent body as arbiter of water use in the Shannon • Regarded all options other than desalination as a threat to Shannon Navigation • Requested through and world-class ecological surveys as well as a composite audit should be complete before grant of permission • Flow and water quality surveys should be carried out in Shannon Callows • Believed the project will cause loss of amenity for water users such as motor and sail boat use • Community disharmony costs should be taken into consideration • Project will stifle economic development • Decline in river use will result in loss of jobs in marine and leisure sectors • Desalination presents greater options for modular design and ability to increase capacity over the limitations of the abstraction option. • While it is not sustainable to use a finite resource while an infinite resource (the sea) is available, the risks to a unique ecological, economic resource such as the River Shannon is greater than the benefits from desalination	**Options** • Desalination • Lough Derg (Direct) / Lough Derg (Storage) / Parteen Basin **Constraints and Assessment Criteria** **Economic Development** **Environment** • Biodiversity **Tourism and Amenity** **Other** • Questions raised
• Were very concerned about any actions that would impact on the environment, fauna or wild life on the Lough • Have been involved in many environmental projects in the Lough Derg/Shannon River areas • Complete opposition to any work and schemes that would impact in any way on the welfare of White Tailed Sea Eagles on Lough Derg • The assessment criteria not clear on the website – request measurement method and weightings, etc. • Asked whether tourism should be a criteria for assessment • Should the assessment criteria include the methodology(ies) selected & their accuracy and effectiveness for measuring impact to the ecology of the areas impacted as part of	**Constraints and Assessment Criteria** **Environment** • Biodiversity

Summary of relevant submission received	Issue / Theme
either a technical study/simulation up front or afterwards on an ongoing basis for the extraction method & area selected? • Should the assessment criteria include additional investigation into the number of and potential impact on higher lying areas by lowering water levels?	
• Fixing leaks in Dublin eliminates need for expensive project and also environmental damage • Climate change will increase rain in Ireland and thus offset the need for extra water • Reduction of water levels will cause further exposure of dangerous limestone formations in the lakes Derg and Ree • No allowance made in estimates for evaporation of water • Minerals not mentioned at all • Effect of loading on land surface with water not considered • Faults like Iapetus Suture not considered • Hot wells in the area – effects of moving water from these not considered	**Water Conservation** • Leakage **Environment** • Climate change **Tourism and Amenity** **Other** • General comments
• Regard should be had to the need for the substainable development of the inland and marine fisheries resource (including the conservation of fish and other species of fauna and flora, aquatic habitats and the biodiversity of inland and marine water ecosystems • Potential significant impacts on: o Water quality o Surface water hydrology o Fish Spawning and nursery areas (fisheries habitats) o Passage of migratory fish o Areas of natural heritage importance including geological heritage sites o Biological diversity o Ecosystem structure and function o Sport and commercial fishing and angling amenity and recreational areas • Project should not give rise to any effect or impact that would be contrary to the aims and objectives of the Water Framework Directive (WFD) • Recommended: o The installation of a permanent sill to reduce velocity and prevent entrainment of juvenile fish; o Adequate screening of intake	**Water Conservation** • Leakage • Other water conservation initiatives **Economic Development** **Environment** • Climate change **Water Framework Directive** **Tourism and Amenity** **Other** General comments

Summary of relevant submission received	Issue / Theme
○ Necessary cleaning of pipe to remove zebra mussel will result in sludge ○ Any pipework should be laid outside the spawning season ○ The abstraction point should have no fisheries interest ○ Floral and faunal surveys and identification of breeding and spawning grounds should be undertaken within the relevant time periods for the various species ○ Flood events and future temperature fluctuations should be considered ○ Anthropogenic effects need to be considered. • Issues relating to Garryhinch especially with the transfer of raw water from one RBD to another, transfer of invasive species, mixing waters and loss of designation under WFD • Environmental sustainability of the project appears compromised by the fact that the current estimated rate of leakage in Dublin City is at 40%. • Highlighted the importance of an enhanced national water conservation ethos. • Abstraction of water from the Shannon RBD area should make provision for a level of commercial/environmental compensation to the catchment - should include a compensatory fee • Potential to damage the fishery and the fisheries habitat due to the abstraction of water - should be noted that fishery rights are property rights and that the value of the inland fisheries resource (including sea angling) to Ireland is estimated at €750 million • Important that the abstraction of water will not compromise the potential for re-establishment of a viable salmon population in the catchment. • Coarse fishery in the Shannon catchment is also extremely valuable and extends to the dam at Parteen • Low flows in the River Shannon have impacted on navigation particularly in the Killaloe area. Structures that were inundated due to the construction of the Shannon scheme re-emerged, were visible and posed hazards to navigation • “Precautionary principle” needs to be rigorously applied to all aspects of this project given that the abstraction from Lough Derg/Parteen basin appears the only possible viable option - essential that the modelling matrices are re-assessed and a rigorous approach to climate change impact assessment is taken • Entire development should take into account the principles and statutory obligations set	

Summary of relevant submission received	Issue / Theme
out in the WFD • National Biodiversity Plan is clear that biodiversity must be considered in economic and social policies - would not therefore be sustainable nor would it be permissible to pump untreated water from Lough Derg (where both zebra mussels and Asian clams exist) to a reservoir or any open/exposed facility in another catchment where cross contamination would be a high risk • Volume of water will generate considerable waste and significant infrastructure will be required to appropriately deal with water treatment • Pipeline would potentially have significant impacts on water courses along the route • Problems associated with flushing the pipeline with treated water and the discharge of same • Once a route is finalised there will be numerous crossings of waterways along the route. Each of these will have to be inspected and assessed from the fisheries perspective • Important to bear in mind that there is a "close season for in-stream works" • Clear preference for directional drilling as the best means of minimising disruption to rivers and streams and associated damage to fisheries habitat	
• White-tailed Eagle have nested on Lough Derg, near Mountshannon, Co. Clare • Since 2014 a second pair of White-tailed Sea Eagles has nested on Lough Derg on the Galway shore. • Both pairs successfully fledged chicks in 2015 with the Mountshannon pair now having nested successfully every year since 2013 • White-tailed Eagles are protected under Annex 1 of the EU Birds Directive (2009/147/EC) and have recently been added to the Red List (High Concern) of Birds of Conservation Concern in Ireland • Lough Derg fish supplies as much as 90-95% of the White-tailed Eagles at the nest. • Primarily concerned about the detrimental effects of large scale water extraction from Lough Derg and its effects on fish populations • Considered that the options of greatest risk to the biodiversity and ecological integrity of Lough Derg in descending order would be Option F2, Option C and Option H • Considered option H to be most desirable to reduce impacts on Lough Derg • Urges Irish Water to reconsider any option to extract water from Lough Derg and instead	**Options** • Desalination • Lough Derg (Direct) / Lough Derg (Storage) / Parteen Basin **Environment** • Biodiversity

Summary of relevant submission received	Issue / Theme
fully explore the option to desalinate sea-water and extract from Dublin Bay • Will oppose any projects seeking to remove water from Lough Derg without prior environmental and ecological assessments of the project's impacts	
• WSP option should be abandoned if cost per litre of water exceeds international averages • Considered that the estimated final cost of delivering water from the completed option must be considered as a constraint • Security of water supply and quality is essential to developing businesses • Urged IW to monitor population growth forecasts - population settlements could pose a constraint to the delivery of the WSP • WSP must be aligned with Irish Water's efforts to consolidate and rationalise the number of water and wastewater treatment plants across the country • Security of energy supply is a strategic risk for the country – options should be considered in terms of their energy consumption, particularly desalination options • Recommended that specific variable operational costs (e.g. energy costs) be included at multiple cost scenarios • By 2030, the world is expected to need 40% more water than will be available – Ireland can turn its abundance of fresh water to its advantage and attract water-intensive industries • A lack of certainty over the future price of water is weakening the country's hand in terms of foreign direct investment (FDI) – the supply and quality of water in Ireland needs to be assured to continue to attract FDI	**Constraints and Assessment Criteria** **Economic Development** **Other** • General comments
• Evaluation process should take note of the Tourism Impact Assessment Report submitted by Fáilte Ireland (2009) in relation to the Strategic Environmental Assessment undertaken • Rigorous assessment of impact on tourism and amenity is requested via the valuation of tourism and amenity services in the project option areas • Considered that water based (participatory) activities should be afforded a greater weighting in the assessment than potential impacts on landscape and cultural heritage, where it is considered that potential impacts could be alleviated through strong mitigation measures in any project EIA • Water levels essential in maintaining amenity value of lake • Development of Shannon Blueway (a recreational area with water activities at its core) is underway • Option H is located in an area of high amenity, and any potential visual impact of the construction and location of a desalination plant on a scenic coastal route should be	**Tourism and Amenity** **Planning - Legislation**

Summary of relevant submission received	Issue / Theme
factored in to the evaluation process	
• Will continue to co-operate with Irish Water, for both existing abstractions and the proposed new source • Strict drawdown regulations in place to ensure the stability of the embankments on Ardnacrusha Headrace and upstream of Parteen Weir on the River Shannon, which must be complied with and must be considered constraints • To ensure the stability of the embankments on Ardnacrusha Headrace and upstream of Parteen Weir, the operating range in Lough Derg is small. This is a constraint which has to be taken into account • Requirements of the ESB Regulations and Guidelines must be complied with and must be considered as constraints • Manner of the extraction, location and or intake velocities need to be carefully considered, designed and assessed • In addition to the resident fish population, native but endangered migratory fish such as salmon and eel, and species such as the pollan, and the three lamprey species should be prioritised to ensure lowest possible, practicable impact	**Constraints and Assessment Criteria** **Environment** • Fisheries
• Stated that Irish Water commit to reducing the current leakage rate of approximately 49% to less than 38% by the end of 2021 and to an economic level of leakage (18-22%) by 2040 • A code similar to that in the UK could help Ireland to achieve a reduction in demand from 125litres/person/day to an average of 80litres/person/day • Typical household could save up to 50% of its mains water by adopting a rainwater harvesting system to supplement water for non-potable uses such as toilets	**Water Conservation** • Leakage • Other water conservation initiatives **Planning**
• Concerned about the limitation of the consultation exercise given the inadequacies and lack of transparency on what has been included and discounted and evaluated in terms of options • Submitted that IW is fundamentally dysfunctionally structured and targeted – generating revenue and satisfying requirements of privatisation interests in the future, and also encouraging water conservation (and thus reduce revenue) are inherently contradictory objectives • Exercise and associate scoping are compromised by failure to provide the necessary and adequate transparency on the underlying assumptions and costs associated • Necessary credibility and objectivity to be applied to the exercise and the associated scoping, documentation, evaluations etc. is lacking	**Options** • Desalination • Other options and alternatives **Water Conservation** • Leakage • Other water conservation initiatives

Summary of relevant submission received	Issue / Theme
• Failure to require robust and transparent record of all assumptions and data underpinning the evaluations and comparisons in the Options Paper and indeed in the underlying Needs Report • Extent to which development of the infrastructure for the WSP will be required to rely on Public Private Partnership Investment models, and the effect this will have on the network, and the cost burden for IW needs to be explicit and transparently covered • Deficit in both the constraints and assessment criteria in relation to the wider legislative planning and policy framework • With regard to concept of corridors and populations which can be serviced and where development and demand will occur , the effect of their mapping and consideration is not evident in the Options paper, nor is it evident in the underlining "needs" exercise conducted • Factoring of the fundamental requirements of Ireland's climate change targets and the effect of such industries on that first of all needs to be both scrutinised and evidenced • Suitability of locations which the new supply proposes to service and which it proposes will facilitate further development, also need to be considered • The basis on which flow rates are deemed adequate and inadequate (in being a function of unreliable flow data and the quality of the climate change modelling) – requires greater transparency • Desalination is energy intensive and dependent on fossil fuels – emissions would be a challenge to Irish climate change targets and climate change needs to be discussed in terms of constraints and assessment • Option of drawing from one source seems to be unjustly outweighing options of drawing from multiple or lower-volume/higher-quality sources • A focus on the Appropriate Assessment obligations for the Natura 2000 network arising from Articles 6(3) and 6(4) of the Habitats Directive is welcome – the focus on this seems misplaced in informing the strategy in that it focuses on avoiding legal obstacles • Obligations arising from the Water Framework Directive, "WFD" should be core to this proposal – but are clearly sub-ordinated to considerations on supply and the energy requirements of the ESB in section • WSP in fact should be informed first and foremost by the obligations in respect of ecological water quality and also the aquatic and terrestrial ecosystems dependent on it; this has not been done adequately or transparently • Data associated with the assertions made on the marginality of benefits and the increased	**Constraints and Assessment Criteria** **Economic Development** **Environment** • Biodiversity • Climate change **Water Framework Directive** **Communities** **Other** • General comments • Questions raised

Summary of relevant submission received	Issue / Theme
costs of elimination of leakage beyond 25% needs to be more transparent and justified • An inherent unjustified assumption that the leaks which are deemed not cost effective to fix – will remain static and effectively "sustainable". • Considered that WFD demands sustainable use of water resources • Fragmentation of IW's perspective and limitations of its vision on this water sources project is deeply disturbing – increased supply of water will lead to more waste generated • Collection, treatment and re-use of waste water is an option which should have been examined • Constraints exercise and assessment criteria are necessarily compromised if the fundamental need hasn't been properly formulated and an adequate set of alternatives and options aren't explored • Capacity to retro-fit houses and to ensure new houses are designed in such a way as to facilitate the effective use of rainwater and greywater for suitable purposes hasn't been adequately or transparently explored • Options need to be assessed on the basis of their contribution to the "sustainability of water resources" and this needs to be an explicit assessment criteria • Treatment of water used and the re-use for the same industry plant or for other less quality sensitive purposes needs to be considered • Whilst the focus in the Options Report on Freshwater Pearl Mussel is welcome – there is a need to focus on other protected aquatic species and their habitats in particular other Annex IV species such as otters occurring in and outside of Natura 2000 sites • Obligations under both the Habitats and Birds Directives to address wider country-side measure and obligations outstanding from the case c-418/04 also need to be considered • The Liffey Valley should be included in the list of constraints - encompasses the first Special Amenity Area Order in the History of the State and has the highest level of national protection • EIA fails to clearly reflect that there is a requirement under Article 5 with reference to Annex IV to document the: "direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project" • Complex causal relationships and impacts need to be considered to satisfy the assessment obligation of the Habitats Directive • "White space" area identified for infrastructural development and project benefit fails to consider the effect of other projects envisaged in these areas	

Summary of relevant submission received	Issue / Theme
• Scoping of the project should ensure that all aspects necessary to its development and operation need to be included for the purposes of the assessment required under the EIA Directive • Most fundamental requirement for a constraints exercise is being over-looked which is to ensure a full and robust set of options have been included in the first instance with sufficient information and transparency against which constraints can properly exercised • Submitted that "need" in the first instance should be revisited based on the requirement to address fundamental obligations of the WFD to ensure sustainable use of water resources • IW has not engaged in any meaningful conservation exercise - every mailshot delivered by IW as part of its registration and billing process to Irish households has failed abysmally to highlight how people can conserve water • Deficit in consideration and information will have a fundamental implication when the legislative requirements and obligations of certain key EU Directives • Extent to which the consultation responses were given real and valid consideration and their proposals evaluated fully must be of concern given that conservation consultancy lasted only a month	
• Vital that the key legislative context for this project is the EU Water Framework Directive • Vital that water services management, including large-scale infrastructure projects such as this, only take place within, and not alongside, catchment management and river basin district planning – this should be stressed in the Options paper • WFD also requires '*measures to ensure that the hydromorphological conditions of the bodies of water are consistent with the achievement of the required ecological status'* for water bodies and requires a system a system of regulation of morphological alterations to, and abstractions from, waterbodies – this currently 3 years overdue • WFD should be promoted so as to join the *'Source yield technical assessment'* and *'Habitats Directive Assessment'* as one of the *'most significant screening criteria'*. • Ecological impacts of abstraction and the key WFD requirement for measures to incentivise sustainable water use are key to the project • The Shannon River Basin Management Plan (2009-2015) stated that, '*The legislative framework will be further enhanced to protect and improve water quality through the introduction of strengthened controls on abstractions of water'*, and as indicated in the recent draft Irish Water WSSP, this vital legislation is imminent • 2008 report *'Revised River Risk Assessment for Abstraction Pressures*' found 237 river water bodies to be 'at risk' or 'probably at risk' from abstraction	**Water Conservation** • Other water conservation initiatives **Constraints and Assessment Criteria** **Water Framework Directive**

Summary of relevant submission received	Issue / Theme
• It is the responsibility of Irish Water to ensure that the quantity of water abstracted is sustainable and will not compromise the achievement of WFD objectives - has yet to be demonstrated that any of the four options fulfil this criteria and the proposed assessment criteria and constraints do not adequately reflect the importance of this requirement • Until water-pricing measures to incentivise water conservation are put in place, the 'needs' assumptions underpinning this project are not sound and may potentially be in conflict with the WFD • A strategy to promote water conservation, including the promotion of rain-water harvesting, and, for example, grant schemes for retrofitting and new-builds must be seriously considered • On the main consultation web page listing constraints, the WFD in not mentioned • It is inaccurate to list the WFD only under *'Water Quality'* as a constraint – it takes into account hydromorphological status also • There should be a greater level of transparency as to why earlier options were dismissed and what the diverse range of stakeholder responses were to the recent Project Need Report consultation • A well-resourced citizen engagement approach led by suitably qualified professionals is central to the delivery of sustainable water management • In summary they should include: o early engagement, that is well-planned & designed and has been well publicised in advance; o appropriate mechanisms, structures & processes, that genuinely facilitates the participation of those affected (stakeholders), and enables them to influence the outcome(s); o adequate resources to conduct effective public participation, and to enable stakeholders to fully realise the potential of each engagement opportunity; o evaluation of operation and outcomes, to inform improvements in how engagement continues; o specially qualified & trained professionals	
• National Monuments in State ownership or guardianship and monuments subject to Preservation Orders should be identified and zones of visual amenity defined for them • Monuments in State or Local Authority care or subject to a preservation order will require the consent of the Minister for the Arts, Heritage and Gaeltacht	**Options** • Lough Derg (Direct) / Lough Derg (Storage) /

Summary of relevant submission received	Issue / Theme
• Any activity which may affect these World Heritage Sites requires a consent from the Minister for Arts, Heritage and Gaeltacht • Constraints section on "Archaeology, Cultural Heritage and Architectural Heritage", page 42 of the *Water Supply Project Eastern and Midlands Region Water Supply Options Working Paper* report has failed to include reference to the Shipwreck Inventory of Ireland Database (SIID) – these shipwrecks are protected under the National Monuments Act • Recommended that Irish Water engage the services of a suitably qualified underwater archaeologist to carry out an archaeological assessment of the impact of all potential water supply options • Welcomed the decision to develop and amend the conclusions of the 2008 assessments that were undertaken • Noted that the option of reprocessing and reusing water from wastewater facilities in major urban areas, *e.g.* Dublin City, does not appear to have been considered • Recommended that the Parteen option be explored in more depth, as there may be fewer potential ecological issues • Welcomed the acknowledgment that adverse effects on the integrity of Slevoir Bay of Lough Derg North-east Shore Special Area of Conservation (SAC) and Lough Derg (Shannon) Special Protection Area (SPA) could occur, in Table 5F of the *Water Supply Options Working Paper* • Could not see how the conclusion reached in Appendix C *Strategic Environmental Assessment (2007-2011) and Habitats Directive Review* (June 2015), however preliminary in nature and with the caveat of further review, can be drawn at this stage, in the absence of a full Natura Impact Statement • Viewed that a more appropriate conclusion would be that these options require further analysis and an appropriate assessment • If such approval is relied on as a key mitigation measure for any future proposed WSP and relied upon for an appropriate assessment, it is the Department's view that this will need to be demonstrated to be feasible (*e.g.* approval expressed) prior to consent • A 2008 report concluded that an increase in water retention time will not have an adverse effect on European sites, but that further investigations were required to allow more accurate modelling – this highlights the importance of the appropriate assessments being "*complete, precise and definitive*" in nature. • As such, it was strongly advised that any modelling that is required to scientifically analyse the potential effects of the WSP on the European sites is included in the Natura Impact	Parteen Basin • Other options and alternatives **Constraints and Assessment Criteria** **Other** • General comments • Questions raised

Summary of relevant submission received	Issue / Theme
Statement to be prepared by Irish Water	
• Evident that an adequate and reliable source of quality water is a basic requirement for the further development of the farming and food processing sector. • Therefore, it the water source will be in the River Shannon and not from desalination, it is essential the scheme design should provide for water to the so-called benefit corridor • This may require treatment of water close to the River Shannon, but will help accrue benefits to the Midlands region and not just Dublin • Scheme designers should consider whether the design of the project could include a flood alleviation element for the Shannon region • Providing for a consistent supply of water to this major national water supply scheme, to the existing elements such as balancing of power generation, navigation, habitat protection and the avoidance of flooding downstream, will require even greater management than the current situation requires • Proposed that the interests and requirements of farmers whose lands are prone to flooding must be specifically taken into account in any such new arrangements for the management of the Shannon • Serious concerns regarding the impact on farmers with regard to possible restrictions the project could place on land use, esp. on effluent control • Proposed that a detailed assessment of the likely impact of the project on land use and the agricultural sector should be carried out in advance of the conducting of the EIA for the final preferred option and be made publicly available • The project will require the layering of two high pressure water mains between the Shannon and the greater Dublin region - the on-farm impact will be significant, it is essential that the established procedure for wayleave consultation and compensation are fully implemented and that farmers are adequately compensated for any disruption	**Constraints and Assessment Criteria** **Communities / Benefitting Corridor** **Other** • Questions raised
• Some individuals spoke in favour of desalination due to lower negative impacts on Shannon River • Some spoke against desalination due to prohibitive costs • Many wished to know how costs would bear on the development of the emerging preferred option • Requested that specific reference be made to the implications for the Mid West Region, the impact on people's lives and whether the project would relieve the risk of flooding along the course of the Shannon • Noted that an assessment would be made of the impact on fisheries and wished to know if	**Options** • Desalination **Economic Development** **Other** • Questions raised • Flood risk

Summary of relevant submission received	Issue / Theme
there would be any implication for the Ardnacrusha Power Station or for flood reduction in the Shannon catchment • Agreed that most members of the public were not aware of the progress being made in this project and that it would be beneficial if wider public participation could be encouraged • Agreed to request that Irish Water would attend a Special Meeting of the Council in September to allow members obtain more detailed information • Welcomed the proposed investment in water services and, in particular, where it would assist in more balanced regional development	
• What amount of water will be saved if the current water pipes installed since before 1930 are replaced and the water leaks are plugged? • What amount of water can be saved if residential users plug their home leaks (assuming users would be paying for water usage). • How much water could be saved versus the expected demand that requires such extra capacity? • Current treated water is put back in the sea or rivers. Could this not be extended to other East coast treatment plans? • Industrial users do not always need water quality at drinking level quality and could be charged a lower cost for accepting such? • The current Ringsend WwT works could be re-engineered to generate/collect methane as a by-product. This methane could be sold to either the new Waste to energy plant or the ESB who use burn gas in Poolbeg. The resulting electricity could be used for any desalination plant on the East coast • There will also be the tendency to look at this “unlimited” resource not requiring much water conservation efforts when it comes from somewhere else	**Options** • Other options and alternatives **Water Conservation** • Other water conservation initiatives **Other** • Questions raised
• Addition of new source to the Greater Dublin Region critical • Drinking water supplies historically characterised by small local supplies within county boundaries • Encouraged the consolidation of water supplies allowing efficiency of operation and resolve treatment issues. • Favoured a regional approach to supply of water incorporating the largest area possible – allows for many small public supplies (some on a remedial list) to be replaced with the larger and more robust Eastern and Midlands Water Supply • Creation of a new reservoir presents an environmental risk with regards to alien invasive species and would need to be determined if it will constitute a new artificial water body	**Communities / Benefitting Corridor Environment** • Invasive species **Options** • Other options and alternatives **Other** • Questions raised

Summary of relevant submission received	Issue / Theme
under the WFD • Suggested that the project team should also consider the implications of Irish Water's proposed policy of dosing with ortho – phosphate to reduce plumbosolvency • Regarding reuse of water the majority of European Member States do not engage in this practice and in some cases it is prohibited or limited to use in irrigation of recreational areas, agriculture or street cleaning	
• Suggested that water supply needs of the Greater Dublin Area need to be met by pumping water from the River Shannon as the only alternative mentioned is desalination which is prohibitively expensive. The only references to alternative options were a handful of mentions of desalination whereas in reality there are a wide range of options on the supply side as well as on the demand side for meeting requirements in the next 30 or more years. • Stated that taking huge volumes of water from the Shannon catchment and discharging it to the Irish Sea would be contrary to the principles of the EU Water Framework Directive. • Questioned the benefitting corridor and suggested that it is an add-on feature that has little relevance to the primary objective which is the GDA Water supply. The reason it has little relevance is that there is a plentiful water supply of raw water available in the counties mentioned in this corridor and any current problems are due to poor investment in local treatment infrastructure which is a separate issue".	**Options** • Desalination **Water Framework Directive** **Communities / Benefitting Corridor**
• Suggested that fresh water in the Shannon estuary up to 13 km into the tidal zone of the estuary and this freshwater could be extracted using sluice gates which would mean no ecological damage to the Shannon, no requirement for a pipeline to Dublin as the water could be shipped and could even be exported". The submission also suggested that a desalination plant could be developed to use brackish water in the estuary which is cheaper than desalination of full sea water.	**Options** • Desalination
• The projected demand to 2050 is *understated* even allowing for 15% headroom and 20% for peaking and it is felt that the base projections should be as realistic as possible. • The proposed scheme provides a real possibility to serve areas in Meath but the not all areas of Meath have been considered as part of the benefitting corridor.	**Water Demand** **Communities / Benefitting Corridor**
• Lisheen Mine had to lower the groundwater levels in the mine and extracted approximately 100ML per day, of which 70ML per day was captured clean at source and 30ML per day was treated in on site facilities before all 100ML was discharged to local streams and rivers. Tara Mines has a similar operation and this water needs to be extracted anyway, it	**Options** • Other Options and Alternatives

Summary of relevant submission received	Issue / Theme
might be suitable for Irish Waters requirements.	
• Should abstraction take place from the Shannon that it should be taken from the southern end of Parteen Reservoir as the removal of water from the north eastern part of Lough Derg might contribute to the ecological stresses of the lake. Abstraction at Parteen is preferable because it would substantially avoid potentially harmful impacts on upstream lakes. • In tandem with whatever system is adopted, efforts to reduce water loss in the extensive distribution network in the Dublin region need to continue. Water conservation measures in conjunction with metering should significantly reduce demands. • Drawing down of water during low flow in the predicted dryer summers could result in significant changes to the ecology of the lake. There is insufficient information to conclude that there will be no impact. The use of a holding area / reservoir that can be flooded during periods of high flow is eminently sensible. Full habitat and Roxanne (sediment structure) survey is needed in order to get a fuller understanding of the Lough, together with more detailed observations beyond those collected by the Lough Derg Science Group over the last eleven years.	**Options** • Lough Derg (Direct) / Lough Derg and Storage / Parteen Basin **Water Conservation** • Leakage **Environment** • Biodiversity
• All options should be assessed through to cost benefit analysis stage including banked storage at some location. The tourism potential of the project should be included in any cost benefit analysis as the benefit is of local and potentially national importance. • The larger water schemes are served by a number of groundwater sources or a combination of groundwater and surface water. This increases monitoring, caretaking and pumping costs relative to schemes with larger sources. A larger water supply source, such as proposed in this project, would bring economies of scale and greater security of supply to the production and treatment of water in Offaly**.**	**Economic Development** **Communities / Benefitting Corridor**
• We can live within our current resources and should not be looking for new water sources for Dublin water, (especially the Shannon) if we reduce our wasteful consumption and minimise leaks and water metering can help.	**Water Conservation** • Leakage
• Potential for tourism benefits of a reservoir in Garryhinch Co Offaly. The reservoir could be developed as an amenity which offered significant potential for development of tourism in	**Communities / Benefitting Corridor**

Summary of relevant submission received	Issue / Theme
the Laois and Offaly area. • Portlaoise is included as part of the benefitting corridor as the joint largest town in the midlands region which has experienced substantial population growth in the last census. • Providing a long term water supply will ensure that there is a resilient supply of potable water to the town. The economic impact of not providing such resilience would be detrimental to the future economic growth potential of Portlaoise. Failing to include Portlaoise will mean that it will be adversely affected when compared to those towns that are included.	**Tourism and Amenity**
• Lough Derg should always remain above the Waterways Ireland minimum summer level to allow boating activities to take place. Low water levels not only would damage the flora and fauna of the lake, but it would also seriously affect the many local, national and international boating events that take place on the Lough annually. • States that it is essential that a method of controlling the water levels between Waterways Ireland, Irish Water, OPW and the ESB be agreed and adhered to.	**Tourism and Amenity**
• Recommended that the amount of leakage is reduced to an economically sustainable level. • The supply of high quality water is a key requirement for Ireland future economic growth. Not only is the investment in water services infrastructure critical for citizens but it is also directly linked to Irish businesses ability to compete internationally as well as Ireland's ability to attract foreign direct investment. • The prospect of diverting additional water resources to the Midlands region will facilitate the area becoming more attractive to foreign direct investment bringing jobs and economic growth to the region. The long term planning approach and the expansion of the previously identified supply area which will enable more areas to benefit from investment which will support economic expansion in more regions. • The Parteen Basin solution should be pursued and that despite requiring an additional pipeline an initial review would suggest that this option is the most cost effective, bringing benefits, not just to the Dublin area, but also to the benefitting corridor underpinning economic development in these areas.	**Options** • Lough Derg (Direct) / Lough Derg and Storage / Parteen Basin **Water Conservation** • Leakage **Constraints and Assessment Criteria** **Economic Development** **Communities / Benefitting Corridor**

Summary of relevant submission received	Issue / Theme
• Rigorous cost benefit analysis of the Shannon project and other alternatives has never been published and that taxpayers are entitled to see such analysis. • The importance of the Shannon to many communities that live and work by its shores both in terms of a tourism and agriculture" was highlighted by one stakeholder. The Shannon is important financially, environmentally and culturally. There are many examples of poorly implemented drainage schemes that have wrecked areas with devastating consequences e.g. the plight of communities dependent on the Colorado River. • Reference was made to leakage and the requirement for the leaks in the Dublin region to be addressed.	**Tourism and Amenity** **Constraints and Assessment Criteria** **Water Conservation** • Leakage
• There are differences between metered records and figures for non-domestic consumption and domestic consumption, baseline non domestic consumption be reviewed in the light of metered consumption in domestic and non-domestic and that the figures be kept under review during the planning phase of the project. • It is crucial that water supply constraints do not act as an impediment to overall development which is necessary to drive economic development in the future. • The current design horizon to 2050 is not sufficiently long. The project should be looking at least to a design horizon of 2075.	**Water Demand** **Planning** • Planning Horizon
• Irish Water, as a commercial entity should make provision for a level of commercial / environmental compensation to whatever catchment it takes its water, which should be a compensatory fee. The principal of paying a fee is already established with the ESB. To offset the loss of water from the catchment which would otherwise have gone to generate electricity the ESB will receive compensation in monetary terms. The precautionary principal needs to be rigorously applied to all aspects of this project given that the abstraction from Lough Derg / Parteen basin appears the only possible viable options. • Biodiversity must be considered in economic and social development policies particularly in relation to key strategic infrastructural projects such as the Water Supply Project. • Highlighted the potential to damage the Shannon fishery and the fisheries habitat due to the abstraction of water – e.g. loss of spawning grounds particularly for coarse fish species. The abstraction could also inhibit the movement of salmonids and other fish species. It is important that the abstraction will not compromise the potential for the re-	**Economic Development** **Environment** • Biodiversity • Fisheries • Alien Invasive Species **Water Conservation** • Leakage

Summary of relevant submission received	Issue / Theme
establishment of a viable salmon population. • Sustainable nor would it be permissible, to pump untreated water from Lough Derg (where both Zebra mussels and Asian clams exist) to a reservoir or any open or exposed facility in another catchment where cross contamination would be high. If it is necessary to pump water to Dublin, full or partial treatment will have to take place in the Shannon River Basin District area. • The environmental sustainability of the project appears compromised by the fact that the current estimated rate of leakage in Dublin City is at 40%.	

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