



Comhairle Cathrach
Bhaile Átha Cliath
Dublin City Council

Report on Dublin City Flood Risk and interim report on extreme pluvial flooding event affecting East Coast and Dublin City on 24th October 2011

Note: This is an interim report based on best available information at the time of issue. Additional surveys and data collection will continue in the coming weeks and months to facilitate recommendations on further actions to address flood risk.

Introduction

Dublin City Council received a comprehensive briefing and Strategic overview of flood risk management in Dublin City at the Council Meeting on 7th September 2009. The Report covered:

- Historical Development of Dublin City
- Flooding – Causes and influencing factors.
- Dublin 2002 – A city at risk.
- Actions 2002 – 2009 to make Dublin a safer City.
- Future Challenges and actions

The 2009 report outlined how much of Dublin was once under the sea and the unique features, which facilitated growth over the centuries (Coastal location, flat land, multiple rivers and water supply) could pose a unique series of risks due to climate change.

Flooding in Dublin had many potential causes and 5 main flood risk factors namely:

- **Coastal Flooding**
- **River Flooding (3 main Rivers – Liffey, Tolka and Dodder with 35 smaller rivers many of which run underground in the City).**
- **Dam failure (from Existing dams on Dodder and Liffey)**
- **Infrastructure failure**
- **Pluvial Flooding (described as “Monster Rain”)**

Some locations are at risk from several of these risk factors in combination. In turn there are many influencing factors including:

- Global warming leading to an increase in number of extreme events.
- Increased Urbanisation and increased flows into drainage systems built in previous centuries.
- Increase in intensification of development with paving over of gardens reducing natural absorption of rainfall.

Dublin Flood Initiative

The Dublin Flood Initiative was created after the severe tidal flooding and river flooding in 2002 in order to provide a complete integrated strategy to address flood risk reduction. It was modelled in part on the Dublin Transportation Initiative which reversed decades of unsustainable public policy on transportation by focussing on a transportation policy with public transport at its centre. Previous transportation policy concentrated on building more and bigger roads to cater for car congestion which was the symptom but not the cause of the problem. In like fashion the Dublin Flood initiative focussed on use of sustainable urban drainage systems (SUDS) which is fully compatible with the European movement to make “*Room for the River*” and recreates the essential bond with natural drainage in the urban environment. This policy approach was confirmed in the 2005 Greater Dublin Strategic Drainage Study and now forms the basis of policies enshrined in the City Development Plan and the regional Drainage code of practice.

Flood Risk Management

The Office of Public Works (OPW) is now Ireland’s National Flood Agency and has provided guidance on “*The Planning System and Flood Risk Management*” and also guidance on how property owners and businesses can reduce their flood risk exposure. Through securing project funding from the European Union INTERREG Programme in a very competitive environment, Dublin City has a unique network of flood partner experts in Europe and beyond. Since 2002 the City has worked to improve the flood resilience of the City. These measures were reported on in 2009 to City Council under 6 headings namely:

- SAFER Project (**S**trategies and **A**ctions for **F**lood **E**mergency **R**isk Management).
- OPW Flood policy review.
- Flood Risk Mapping
- Early Warning Systems (Coastal)
- Investment in flood works schemes and CFRAM (**C**atchment **F**lood **R**isk and **M**anagement) schemes
- Flood Emergency Management.

In particular the 2009 report highlighted works completed (including River Tolka, Tidal protection scheme East Wall Area, Lower Dodder Tidal flood protection etc.), road drainage maintenance programme for gullies, Dam Safety Projects completed, investment in swift

water rescue capability for Dublin Fire Brigade and Civil Defence and the National Framework for Emergency Management.

National Framework for Emergency Management

This is a framework for enabling An Garda Síochána, the Health Services Executive (HSE) and Local Authorities (known as the three Principal Response Agencies (PRA's) to prepare for and make a co-ordinated response to major emergencies. These include responding to severe weather emergencies including flooding. The report on the OPW flood policy review group and the National Emergency Management Framework sit together as key policy documents. The National framework for emergency management provides a structured framework within which Local Authorities, the Gardai and HSE address emergencies including local flood response. The OPW have prepared detailed guidance on how individual property owners can address their individual flood risk.

Every property has a flood risk and in Dublin many properties have exposure to several of the five categories of flood risk previously identified in this report.

Over the last decade over €120m has been invested in reducing flood risk and additional schemes are at an advanced stage of design or nearing construction to further reduce flood risk in Dublin.

Unfortunately flooding is a natural hazard and has been with us since the dawn of time and will always be with us with potential increased risk due to changing climate. Making Dublin more flood resilient is a great challenge.

Physical infrastructure can only achieve so much and as outlined in OPW guidance every property owner must also address their own flood resilience.

Future Challenges and Actions

The key challenges identified in 2009 included implementation of the Floods Directive, Project 2030/50 to protect against long term rising sea level and mandatory use of SUDS by all State Agencies. In particular the emerging threat of pluvial flooding (i.e. flooding due to extreme high intensity rain which exceeds the design capability of drainage systems and results in overland flowing of water) was identified. The Flood Resilient Cities project is intended to quantify this risk and develop codes of practice for new development and for making existing development more flood resilient. This intense rain comes with little warning and weather forecasting cannot identify the time or location of flooding in advance.

National Protocols for Flood Response

Current Institutional Arrangements

The Office of Public Works (OPW) are Ireland's **National Flood Agency** and MET Éireann are Ireland's **National Weather Forecasting and Weather Warning Agency**. Ireland does not yet have a National Flood Forecasting and Flood Warning Agency. The OPW have commissioned a Consultant to advise on future structures to create a National Flood

Forecasting and Flood Warning Agency and has made recommendations on the creation of such an agency.

Future Institutional Arrangements

The preferred recommended option is an oversight committee of 4-6 people to advise on flood forecasting and warning in Ireland. In addition a new national flood forecasting centre of 14-16 people is recommended to produce flood warnings for river and tidal events and four regional centres are recommended with lead Local Authority identified for the region to issue the flood warnings to appropriate recipients.

Following the initial assessment, it is suggested that the most appropriate bodies to assume responsibility are: the Office of Public Works for the national oversight unit; Met Éireann for the flood forecasting centre; and an individual lead local authority, serving a group of local authorities, for each of the network of four regional flood warning centres. It will be necessary to determine if the creation of Irish Water will change this recommendation to avoid creation of response gaps in structure.

Pending creation of this Agency MET Éireann, as part of their weather forecasting service, issue flood warnings through the media including National radio and TV.

Weather alerts are issued to National Agencies including Local Authorities. However a weather alert does not mean that flooding will occur and it does not mean that it gives rise to an emergency.

At present technology has not yet advanced to a point where individual properties at risk of flooding can be forecast in advance of a flood event.

Local Authority Resources

The Public Service (Croke Park) Agreement 2010-2014 provides a framework for management of staff to deliver an ongoing reduction in the cost of public service delivery. In the City the need for change is reinforced by the reduction in income available. Since the 1st January 2009 overall staff numbers have reduced by 810 and numbers are likely to reduce by a further 500 to 600 over the next three years in line with the City Council's Workforce Plan. To date every effort has been made to minimise the reduction in frontline operational staff with the lowest percentage reduction occurring under this heading i.e. 8%. However this still amounts to a reduction of 308 staff in this regard. While our numbers are reducing service demands are in some case increasing (e.g. in relation to severe weather events) and available numbers have to be viewed against a City Region with over 1.2 million people.

Health & Safety in Flood Response

The City Council as an employer must have particular regard to Health & Safety of its staff when responding to a flood emergency. Following the 2002 floods as part of the wider Dublin Flood Initiative Dublin Fire Brigade was equipped with water rescue craft and has staff trained in swift water rescue. Drainage Staff are very knowledgeable about the hazards of drainage systems and in particular know that staff should not enter standing water without great care and use probing sticks due to the hazard of manholes becoming unseated with risk of drowning if such manholes are uncovered. Moving water is particularly hazardous as 25mm of swift moving water can sweep a person off their feet. Structures can also be

undermined by flood action and for that reason Local Authority response in floods is structured as follows:

- **Dublin Fire Brigade (Principal Emergency Service)** – Rescue of trapped persons and recovery.
- **Civil Defence** – Support for Dublin Fire Brigade (as requested) and mobilisation of volunteers with water rescue capability.
- **Drainage Team** - These are not an emergency service and provide a flooding response capability with staff aware of the hazards of working near and in water. These are supported by other City resources including Waste Management Services, Area Staff, Roads and Traffic, Housing Personnel and Traffic Control Centre.

National Design Standards

National design standards for roads and drainage systems strike a balance between the practicality of protecting against flooding and cost of public infrastructure. Much of the old infrastructure was built before modern codes of practice. Since 2005 urban drainage design in the Greater Dublin Area has been guided by the recommendations and policies of the Greater Dublin Strategic Drainage Study (GDSDS) which have been adopted into the development plans of the seven local authorities in the region.

In the GDSDS policy document, Regional Policies – New Development, 2005, recommendations were made regarding the level of appropriate flood protection service. These recommendations, set out in Table 1 below, have been adopted for hydraulic performance targets for the Greater Dublin Area.

Table 1 Hydraulic Performance Criteria

Flooding Type	Trigger Criteria	Target Criteria
Internal foul flooding	1 in 20 year	1 in 100 year
Internal storm flooding	1 in 20 year	1 in 100 year
External foul flooding	1 in 5 year	1 in 30 year
External storm flooding	1 in 5 year	1 in 30 year

The trigger levels give an indication of when sewer rehabilitation work should take place and assist in identifying hydraulic performance deficiencies. The target levels are used for design options to alleviate the hydraulic performance deficiencies, although in certain cases it must be accepted that short term alleviation solutions may be necessary. It is important to recognise that roads are not designed to be free from floods under all flood conditions. The Report on the Flood Resilient Cities Project will give detailed guidance on measures to protect property from pluvial type flooding and the report will be available in 2012 as originally envisaged. The City Council is organiser of a Major International Conference on Water, Energy and Climate Change in Dublin from 13th to 18th May 2012 at which a special session will be devoted to the International impact of extreme events.

Flood on Monday 24th October 2011

MET Éireann issued a flood warning to all Agencies including all Local Authorities on the Eastern seaboard on Sunday 23rd October at 10.01pm indicating that ***“Some periods of heavy rain are expected from this afternoon (Sunday) through to Tuesday with accumulations of 40 to 70 mm expected leading to flooding in places. Heaviest rainfall is expected in Coastal Counties of the East where coastal flooding is expected”***.

To date this year MET Éireann have issued 15 Weather Alerts to Local Authorities and 35 were issued in 2010. Rainfall of 40 to 70 mm over 2 days (average of 20 to 35 mm per day) would not be unusual at this time of year. This weather alert was broadcast, in accordance with National protocol, on radio and TV weather reports.

A further weather update was issued to all Local Authorities at 6.16pm on 24th October (in the middle of the extreme rainfall) that *“30 to 50 mm of rain has fallen since 12.00 today (Monday) and a further 15 to 30 mm of rain is likely to midnight”*.

As it subsequently transpired the rain considerably exceeded this forecast with rain recorded at Civic offices reaching 95 mm on Monday 24th over the 24 hour period to 10 pm. In addition 40 mm was recorded to 4pm with the remaining 54 mm occurring over a 5 hour period exceeding the quantity set out in MET Éireann Severe Weather alert (40 to 70 mm over 2 days).

This equates to the equivalent of the rain that arrives once a century. Forecasting is an inexact science and science cannot predict the location of where the heavy rain will occur, which properties will flood or when they might flood. Dublin City put its resources on alert and monitored water levels in sea and rivers as well as linking in with HSE and Garda to monitor effects of rain which began to fall in Dublin Region on Monday morning.

The Dublin City tidal early warning system forecast for Dublin forecast no tidal flooding which proved to be correct. The major emergency plan was activated at 8.15pm in Dublin City and South Dublin County Council but before this the City had mobilised resources (see below) and had activated the inter agency structures provided for in the Emergency Management Framework

Assessment by Dublin City Drainage Team

On receipt of the weather warning from MET Éireann on Sunday Drainage staff were placed on alert, the warning was assessed and weather patterns were monitored through the City network of river and rain gauges. Tidal early warning system was assessed and this indicated that there was not likely to be a significant risk of tidal flooding (as forecast by MET Éireann) which proved to be correct.

In accordance with City flood protocol a monitoring and assessment team from Drainage reviewed the information. It is of particular relevance that the warning was for similar rainfall to that which fell on the City on 1st October 2011 which amounted to 60 mm and that event did not cause any major or significant flooding in the City.

The monitoring team closely monitored rainfall through the telemetry system connected to the City's own extensive network of rain gauges which allowed analysis of actual rainfall amounts and rainfall patterns.

Following an assessment by Drainage overseen by the City Engineer at 3.30pm on Monday approximately half of the available drainage resources were retained on standby having regard to the amount of rainfall which had fallen in line with the 40 to 70mm rain forecast by MET Éireann.

An initial post flooding analysis of actual rainfall showed rain of 69mm over 6 hours which approximated to a 1/100 year event by MET Éireann published charts.

Resources and Deployment

Having further assessed the weather situation at 4pm on Monday 24th October it was decided that in addition to our normal emergency on call crew (7 Men) that additional staff would also be held back to deal with any potential flooding incidents.

At 4.30pm the following resources were on site at various locations around the City:

- On Call Inspector
- Drainage Inspector
- Shift On Call Assistant Inspector,
- 30 General Operatives
- 3 No. Jet-Vac machines
- 2 No. Mini jets
- 1 No Gully Sucker
- 10 General purpose vans/trucks

This was half of the maximum available City Drainage resources. As the intensity of the rain increased additional General Operative staff (who were not on call) were contacted by telephone and requested to report to work. These included:

Assistant Inspector

- 6 Additional staff
- 3 No. Trucks/vans
- 1 No fork lift vehicle

Approximately 4000 sandbags were distributed from Drainage Bannow Road, Cabra, Depot. In addition 1 no. container on Clontarf Road containing approximately 500 sandbags, located at the junction of Vernon Avenue/Clontarf Road as a result of flooding in the Kincora Area, was opened at approximately 8pm and made available to local residents. The

remaining 2 containers in the area were opened on the Tuesday morning following requests from residents.

A further 2000 sandbags were made available from the containers at Strand Road Sandymount from around 8.30pm. These had been pre deployed to cater for tidal flooding risk. Approximately 1000 sandbags were delivered to Bath Avenue Sandymount at approximately 9pm and made available to local residents. Considerable delays were encountered by staff delivering sandbags due to impassable roads and heavy traffic.

The City has a network of 52,000 road gullies and these are regularly inspected and maintained. Every gully is cleaned and inspected at an average frequency of 1/year. Gullies located in known flood sensitive locations are cleaned and inspected at an average frequency of 6/year and in addition staff from Water Management Services pay particular attention to keeping gullies clear at times when trees shed leaves. Gullies are designed to take design flows of rainwater from roads and this flowing water carries with it debris which after a flood event requires additional resources to remove. All gullies inspected and cleaned are fully recorded on database which records all maintenance activities.

The Drainage Division were supported by Waste Management Services who deployed citywide the following staff and equipment during floods and cleanup as follows:

Staff

45 Including 2 Inspectors

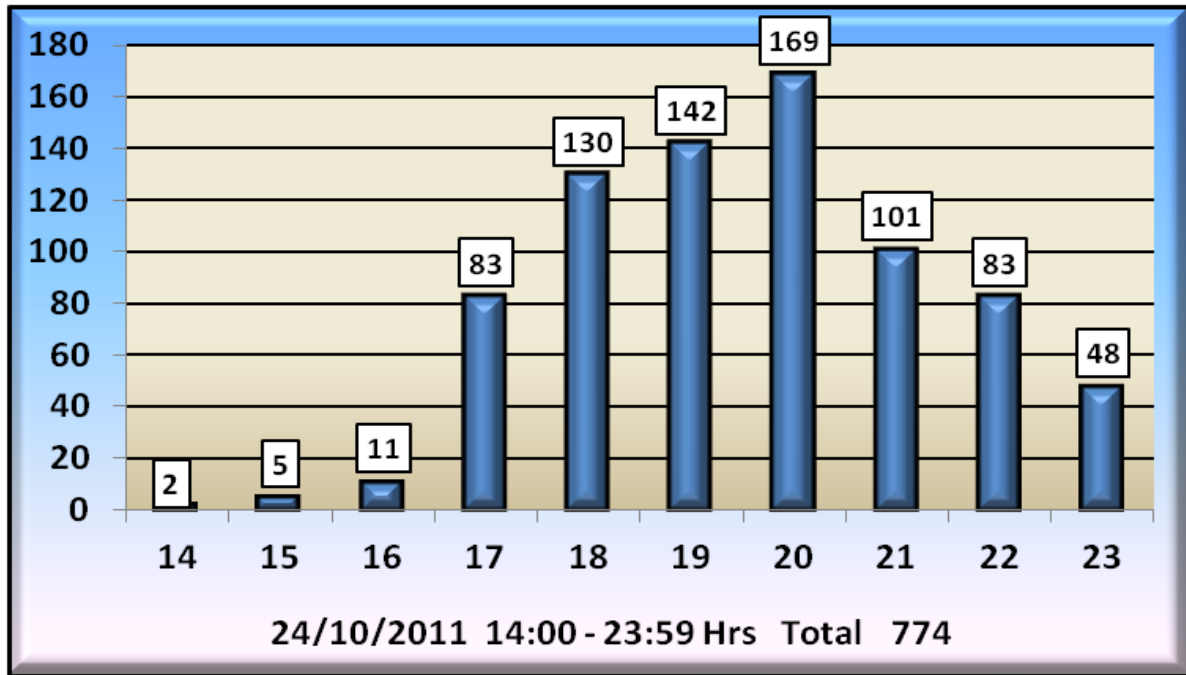
Equipment

- JCB
- 5 Bedford trucks
- 8 Sweeping Machines
- 18 Sideloaders
- High Pressure Washer

Emergency Response by Dublin Fire Brigade (Dublin City and Dublin Region Principal Emergency Service (PES))

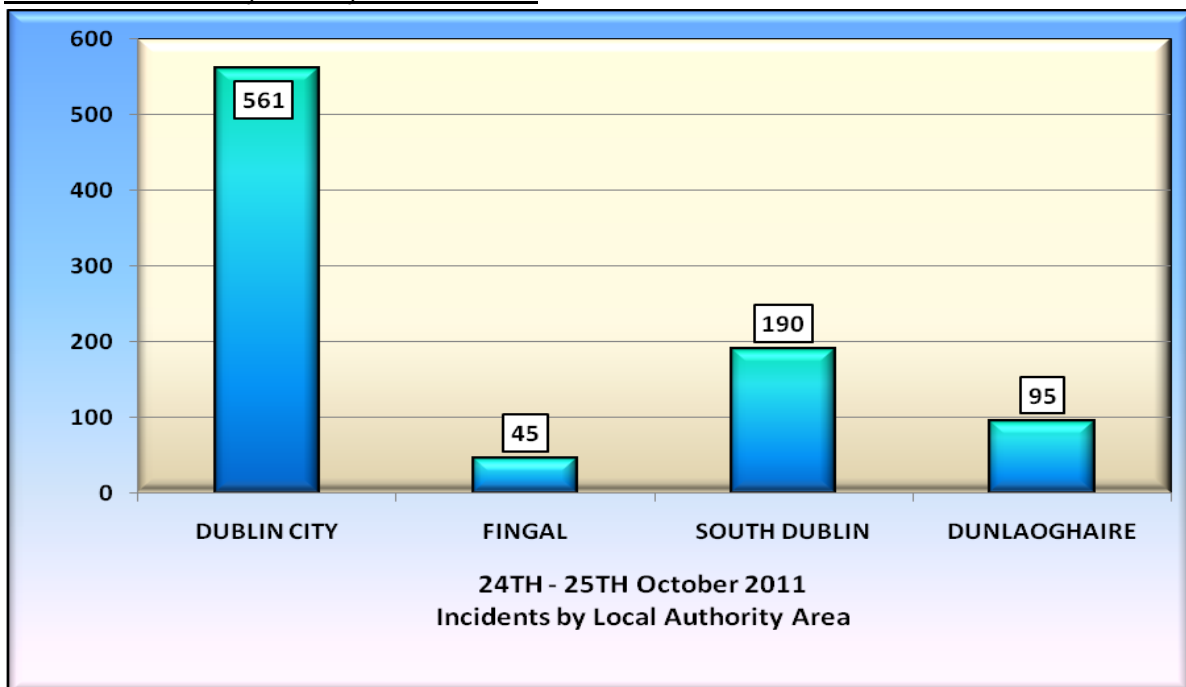
The Eastern Region Fire Control Centre receives 999/112 calls for the Dublin Area along with 10 other Counties in Leinster and South Ulster. Dublin Fire Brigade is the Principal Emergency Service (PES) for the 4 Local Authorities in the Dublin Region. Dublin Fire Brigade was a key resource deployed during the flood emergency and was in constant contact with the Local Co-ordination Centre team activated before and following the declaration of the major emergency in Dublin City and South Dublin County Council. Approx. 900 calls for assistance as a result of flooding were received for the Dublin Area in the 24hour period from midday on Monday 24th October 2011. The majority of these were received in the period leading up to midnight, with a peak period from commencing around 5:00pm with peak requests for emergency assistance at 8.00pm reducing thereafter to 11.00pm

Flooding Calls handled from 14:00 to Midnight on 24th October



After Midnight the call volume reduced considerably. The busiest Station Areas were: Tallaght (South Dublin County Council), Dolphins Barn, Donnybrook, North Strand in Dublin City and Dun Laoghaire (Dun Laoghaire Rathdown County Council).

Location of Calls by County Council Area



Distribution of Calls

The problems encountered by the public were widespread throughout the Dublin Area. The Control Centre prioritised calls, based on the information received and on feedback from responding crews. It was necessary at times for calls to be queued and this situation required careful management to ensure that the more serious incidents were identified and given priority.

Response

It was not possible to respond to all requests for assistance, such as minor house flooding, and priority was given to rescue of persons trapped by the floodwaters. Typical rescues by the Fore Brigade involved:

- Persons trapped in cars and underground car parks
- Persons trapped in individual houses or groups of houses
- Evacuation of particularly vulnerable housing areas
- Persons trapped in apartment complexes requiring assistance
- Elderly or non-ambulant persons requiring assistance to move to upper floors

In addition, the Fire Brigade assisted with the protection of property and salvage of personal belongings in securing flood defences in the Ballsbridge area and along the Liffey Boardwalk, and in pumping operations, particularly in the latter stages where the flood waters were receding.

As part of the City response to flooding in the Dublin Flooding Initiative Dublin Fire Brigade trained fire fighters in swift water rescue and trained personnel were deployed during this flood emergency.

There were up to 20 personnel processing calls in the control centre at the height of the emergency.

Fire Brigade Resources:

- 29 Officers and 140 Fire fighters on duty throughout period
- Approx. 50 Fire fighters qualified as swift water rescue technicians (SRT)
- 21 pumping fire appliances
- 2 Emergency tenders with specialist rescue equipment
- 3 high-reach ladder appliances
- Various specialist support units and vehicles
- 12 emergency ambulances

At the height of the emergency all available personnel and pumping fire appliances were deployed.

Areas affected by flooding – Geographical and spatial distribution

The areas affected by the flooding covered the entire city and indeed the entire Eastern seaboard. Information from a variety of sources is being assembled and cross referenced to ensure accuracy. For this reason it will be some time before fully verified data is available. In order to brief Council this interim report relies on information which is not yet fully verified.

Information available to Drainage Division on flood locations has been plotted on a City Map. To this is being added information on Dublin Fire Brigade response, reported locations from the Area Managers, Councillors (who provided particularly helpful information) and other responders. Both on Monday night and from Tuesday onwards Area staff carried out inspections in affected areas. Staff from the local offices and the Area Public Domain Teams assisted members of the public and supported works departments in dealing with the aftermath and the clean up.

Based on the mapping information so far the outline picture emerging is as follows.

List of calls received by Drainage and Customer Services, by area in the City

Area	No. of Calls
South Central	167
South East	134
Central	142
North Central	153
North West	65

The total number of calls is 661 as of 2nd November with possible additions from the fire brigade & area offices.

The entire City, North and South, was affected. Impacts included:

- Restrictions on traffic movement due to local ponding of water (see section on Design Standards).
- Property flooding.

Based on the current information a picture is emerging of clusters of flooding reports. These clusters fall into two distinct categories namely:

- Flooding contiguous to the underground network of buried rivers.
- Flooding associated with local low spots.

The intensity of the floods exceeded the design capacity of the drainage system much of which was constructed well before the current urbanisation. In turn the practice of permitting widespread unregulated paving of grassed areas (particularly front and back gardens) creates no room for the rain and conveys additional water into a drainage system never designed to cope with this.

The intention, within available resources, is to work with the Council to develop a plan as part of the Dublin Flood Initiative to mitigate as far as it is possible the impact of this Pluvial flood risk. The Flood resilient City Project will form the basis of this plan.

There have been a number of particular queries in relation to the Clanmoyle Flood Risk Reduction scheme. This matter was the subject of previous discussion with the City Council. The up to date position is as follows:

Study Phase

- (1) December 2008 - Local Area Study carried out by Dublin City Council Sept. Drainage network surveyed and improved. Maintenance of local drainage network in Clanmoyle and elsewhere in Wad Catchment prioritised. Louvres installed in Clanmoyle to lower future flood levels.
- (2) August-September 2009 - Local computer modelled study of Clanmoyle Collins Avenue East area carried out by Consultants RPS for Dublin City. They recommended full catchment study.
- (3) Consultants procured for full catchment study. Nicholas O'Dwyers appointed. Full Catchment study was completed in July 2010. The brief was extended to produce document for Phase 1 of Study, Clanmoyle Scheme. After consultation with Residents modifications were made to the proposed scheme and estimated cost increased from €1m to €1.25m.
- 4) Land acquisition - Negotiations over purchasing 3, Clanmoyle Road to install new culvert were only recently completed.
- 5) Drawings are being compiled to get agreement from Clontarf Golf Club for pipe work and 50,000 cubic metre storage tank in area owned by them. Assurances to Irish rail over risk to railwayline in progress.

What has to be done:

- (1) Land acquisition to be completed - Agreements with Clanmoyle residents, Clontarf golf club, Iarnród Éireann and Department of Marine & Natural Resources to be finalised.
- (2) Statutory and Legal - Part 8 procedure with certain environmental reports required. Foreshore licence at Wad outlet to Bay at Clontarf Road has been applied for over a year ago.
- 3) Contract preparation and tendering following OPW approval - Tunnelling contract under Howth Road downstream also to be procured.
(The Golf Club centenary year is in 2012 and this will have to be borne in mind as works will affect a significant part of the course).
- (4) Programme. Finalise all agreements including property purchase. Draft Part 8 to be prepared for Q2 2012. Only then can detailed tender documents be prepared and contractor procured.

In the presentation to Council on Monday night there will be comment on other affected areas. This will include a detailed explanation on the operation of the tidal flood gates on the lower Dodder.

The overall intention is to work through a programme, within available resources, to mitigate where possible impact on each of the flood affected areas.

An example of the magnitude of the challenge facing this City is demonstrated below.

Camac River – This is Dublin's fourth largest River. It has a catchment of 26 Sq Miles is 17 Miles Long and of this 6.4 miles are hidden (Extract from The Rivers Of Dublin by Clair L. Sweeney). It rises near the village of Saggart in South County Dublin and is the main river draining Clondalkin. Those in the City can view the huge valley near Davitt Road through which this river flows. It was piped in parts over a hundred years ago and houses have been built in the valley of this major river over the centuries. The strategy for defence is likely to require a combination of attenuation at source, strong control and reversal of unsustainable practice of paving over gardens coupled with additional construction works.

Communications

Before, during and after the flooding the three Principal Response Agencies (PRAs) namely the local authorities, Gardai and HSE maintained full communication to share best available information on the evolving situation. Traffic and transport information and location of changing traffic impacts was co-ordinated through the City Traffic Control Centre. Best information was sourced from City staff, traffic cameras and feedback from public transport operators including Dublin Bus who were part of the Local Co-ordination Centre Response Team. Particular attention was devoted to ensuring that as many commuters as possible could safely make their journey home. This information was broadcast through AA Roadwatch who were able to give best traffic advice on a constant basis. The Press Office issued press releases and provided a single point of contact for media and linked in with Garda Press Office to give best available information (See Appendix 1 for separate Media Report).

VMS signs broadcast latest information and traffic radio broadcast was extended. The Customer Services Centre drafted in additional staff but it took time to access the Civic Offices due to traffic congestion.

Civil Defence Response and Evacuation

Civil Defence was mobilised by Dublin City Council to assist in the flooding emergency. Civil Defence turned out the following during the course of the evening and early morning.

- 10 Fire Engines
- 2 Pumps
- 1 Catering Team
- 1 Hostel/Evacuation Centre Team
- 2 Rescue Teams
- 6 Ambulances

This involved about 100 personnel.

Emergency accommodation was offered to one family of five persons from Harold's Cross Avenue, and two people from Kilmainham and Inchicore.

Civil Defence assisted in the rescue of two families /abandoned motor vehicles on Wolfe Tone Quay and offered them accommodation and arranged transportation for them to locations where their family collected them to take them home and later towed the cars to our HQ for security.

At the request the Gardai, volunteers collected a member of the public who had abandoned their house and was temporarily at Kilmainham Garda Station.

Civil Defence Crews were deployed in all areas of the City region. Units from Swords, Marino, Nutgrove, Dun Laoghaire, Clondalkin, Blanchardstown and the City Centre were

mobilised. The Clondalkin Unit assisted South Dublin County Council to fill and deploy sandbags.

The Crews from Swords and Marino set up a Reception Centre at the OBI in Marino, members of the public from the East Wall and Fairview met up at this Centre for transportation to the Regency Airport Hotel where they were to be accommodated.

Crews from Nutgrove and Central were deployed to the area of Harold's Cross to assist DFB in the evacuation of homes and the pumping of flood water.

Crews from HQ/Central pumped flood waters from Wolfe Tone Quay to the River Liffey. A Welfare Team set up a Rest Centre at our HQ and provided hot food. Some of these families were returned to neighbours and family by our 4-wheel drive transport.

A team from the D/L Unit deployed their Boat to Ballsbridge and evacuated 20 members of the public to a hotel. They also assisted Dublin Fire Brigade in knocking on doors to warn the public of a possible rise in flood water level.

In Walkinstown units assisted in pumping out houses and assisting in evacuation. Sandbags were delivered to the Ballsbridge area and personnel also assisted people in flooded houses in Stillorgan.

Two Hagglunds (all terrain amphibious vehicles used for rescue in mountains during snow and deployed to Sandymount for coastal flooding rescue in previous emergencies) were on stand-by throughout. Crews stood down at 3.00am but over-night crews stayed on duty to man the Evacuation Centre.

Councillors and Customer Service

In situations such as occurred on Monday the volume of calls to our out of services number are enormous. Given previous experiences with severe weather and wanting to ensure Councillors had a separate mechanism to make contact the City Council provided mobile numbers for our Customer Services Department for use by Councillors. In April and July 2011 City Councillors were contacted by Customer Service Team Manager and Deputy Manager and given their mobile numbers to use if other communication channels were unavailable.

Funding for Hardship Cases

The Department of Social Protection, Department of Environment, Community and Local Government, and the Office of Public Works (OPW) are working together on this issue. Community welfare officers have been making house-to-house calls and allocating emergency payments to help with the immediate needs. In addition the Red Cross has launched an appeal to create a fund to assist affected persons.

Early Warning Systems

As part of work on the Smart Cities Initiative, the City Council is exploring the possibility of the development of a pilot alert and warning system. This involves the use of specialised computing in flood warning and forecasting systems in different cities. Three cities are currently involved in this project and the common characteristic is that they are in areas of

intense rainfall and face historical flooding problems. People request information about flooding processes and how to respond to floods, which have a lead in time of less than one hour. SMS messages linked to new sensor technology is at the core of this aspect of the response initiative. The Council will be briefed on progress at subsequent meetings. MET Éireann have also agreed to assist the City in exploring options to improve weather related flood warnings recognising that forecasting can still not predict when, where or to what extent flooding might impact on property.

As pointed out this is an interim report and a further report will issue as more information comes to hand. However additional information will be provided as part of the presentation to the Council on Monday night particularly in relation to the most affected locations.

Tom Leahy Executive Manager Engineering

Seamus Lyons Assistant City Manager

Appendix 1 - Media Report following declaration of Major Emergency on 24th October 2011

8.15pm - 24/10/2011

Once the Major Emergency was declared by Dublin City Council and South Dublin County Council at 8.15pm, the City Council Press Officer made telephone contact with his counterpart Media Liaison Officers (MLOs) in the Gardai, the HSE and South Dublin County Council, to put in place the structures prescribed in the '*Major Emergency Inter-Agency Media Plan*' for the East Region, for dealing with the media during a Major Emergency.

In-keeping with the above mentioned plan, it is the duty of An Garda Síochána (AGS) to issue the initial Press Release to media outlets, following sanction by the Local Coordination Group (LCG). The Principal Response Agencies (PRA's) namely Local Authorities/Garda Síochána/HSE were co-ordinating an interagency response prior to formal declaration of major emergency and following the first LCG teleconference ,AGS issued the initial press release, stating that a major emergency had been declared by Dublin City Council and South Dublin County Council, copy of which is contained in the attachment.

In line with the Inter-Agency Media Plan, it became the responsibility of the Lead MLO to field queries from the media and issue Press Releases, subject to agreement and sanction of the LCG, once AGS had disseminated the initial Press Release. The Lead MLO was DCC Press Officer.

20.25hrs - 24/10/2011

DCC Press Officer received a call from Mary Campbell, RTE News & Current Affairs Editor, requesting details of the status of the emergency, for the 9.00pm Radio and Television News, and for news reports for the following morning and for Morning Ireland. She was advised as follows:

- Major Emergency had been declared at 8.15pm by Dublin City Manager, John Tierney and South Dublin County Manager, Joe Horan;
- Structures were in place in line with the Framework for Major Emergency Management in DCC, South Dublin County Council, the HSE and AGS;

- Local Co-ordination Centre established at Dublin Fire Brigade HQ, Tara Street;
- DCC's own Crisis Management Team was operating from Civic Offices;
- Further updates would be given during the emergency response.

20.30hrs – 24/10/2011

Conor McMorrow, Researcher, RTE Radio, Morning Ireland rang and requested that a Spokesperson be available for the Morning Ireland Show the next morning (25th). DCC Press Officer advised him that following a further teleconference of the LCG, a decision would be taken on a prospective Spokesperson.

Newstalk Breakfast Show also requested that a Spokesperson be available for the morning of 25th October and were also advised that following the LCG teleconference, a decision would be taken in that regard.

Researcher, Pat Kenny Show, RTE Radio rang requesting Spokesperson for the Show on 25th October at 11.00am. Advised as above.

21.25hrs – 24/10/2011

A number of Dublin Radio Station News desks rang looking for updates on the flooding and the response. Following sanction by the LCG, they were advised that DCC was mapping the best available information from each of the Principal Response Agencies (PRAs). They were also informed that as a matter of priority resources in the response were being deployed to ensure that those in danger or in imminent risk of danger arising from the floodwaters were being attended to. No specific flood locations were given owing to the City wide nature of the flooding.

22.45hrs – 24/10/2011

An East Region MLO teleconference was held following an instruction to do so, given by the LCG at their teleconference which took place at 22.00hrs. The next press release was sent out at 00.30hrs by DCC Press Officer. DCC Press Officer was in contact with Government Press Secretary and updated him on the media response.

00.30hrs – 25/10/2011

DCC Press Officer contacted News talk Breakfast Show and Morning Ireland Show to advise them that Chairperson of the LCG - Tom Leahy, Executive Manager, Environment & Engineering, would be available to do an interview and provide an update on the response.

Researcher, Pat Kenny Show, RTE Radio advised that Tom Leahy would be available for interview as earlier requested.

8.20am – 25/10/2011

Following the LCG teleconference at 07.00hrs, and notwithstanding that the Dublin City FM Traffic Programme was being broadcast at that stage, a decision was taken to send out another press release, containing information for the public and to commuters about difficult road conditions and public transport information.

Updated Press Releases were sent out at **09.15hrs and 10.00hrs** advising of Road conditions etc.

City Engineer, Michael Philips and Executive Manager Tom Leahy also did interviews on **Lunchtime RTE television News; The Right Hook (News talk Radio) at 17.05hrs; Drivetime RTE Radio at 17.30hrs; The Last Word (Today FM Radio) at 17.30hrs; UTV Northern Ireland Television News**, and several other national and local **Radio News Bulletin soundbites** throughout the day.

17.00hrs – 25/10/2011

DCC Press Officer issued a Press Release advising that the status of the Regional Response had been reduced to Standby mode.

Other interviews were arranged for the print media with the key spokespersons mentioned above.

Seamus Lyons
Assistant City Manager