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Workshop Name:	CCRA Workshop Notes - Carlow County Council
Workshop date:	23 November 2022
Workshop location:	Carlow Town Hall

Attendees

Name	Initials	Sector/Service
Ciaran Brennan	CB	Carlow Municipal District
Bernard Duff	BD	Finance
Tadgh Madden	TM	Environment
Barry Dowling	BD	Muinebheag Municipal District
Michael Brennan	MB	Housing/Community/Recreation/Amenity
Seamus Loughlin	SL	Active Travel/Roads
Padraig O Gorman	POG	Roads/Water/Emergency Services
James Byrne	JB	Water Services
Jannette O Brien	JOB	Climate/Environment
Ray Wickham	RW	Roads & Transport
Brendan Doyle	BD	Housing
Sara Jane Condon	SC	Planning
Liam Carroll	LC	Fire Services
Padraig Cahill	PC	Housing & Civil Defence
Gerrard Doyle	GD	Water & Civil Defence
Eamonn Brophy	EB	Corporate Services
Donnacha Lynch	DL	Environment
Barry Knowles	BK	Carlow Municipal District
Tim Cooke	TC	RPS
James Peters	JP	RPS
Aidan Ware	AW	RPS

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Effects on Services:

TC invited each attendee to discuss what they saw as the biggest impacts on their service due to climate change and were asked to identify the hazards impacts, exposures and vulnerabilities.

Carlow Municipal District:

- There is a large draw on resources for the increased demands on the management of parks, green areas, seasonal planting etc. in particular for watering during long dry periods and the warmer summers we are experiencing. There is a lot of money spent to put these in place, so the upkeep and maintenance is required to protect the investment made and keep them looking attractive for use by the public.
- As the climate is changing the use of seasonal planting may need to be addressed as it is a high cost to plant and maintain, exploring more resilient planting in our green areas those better suited to the climate we now have and require less upkeep and draw on resources could be more sustainable approach.
- Rainfall is more tropical in nature these days and a direct result of this is more localised flooding as infrastructure cannot keep up with removing the rainfall and areas that never experienced flooding in the past are now flooding. A comment was made that even if there is no blockages of gullies or pipes its still is a major issue as the capacity in the drainage network is not there for these intense downpours.

Finance:

- There was a flood relief scheme installed in Carlow town in recent years and that represented the most significant capital investment into climate change adaptation in recent times.
- Finance plays a key role in the approach to adapting and mitigation against climate changes in terms of budgeting for projects as well as trying to budget for contingencies for emergency works that may crop up during the year after damage to infrastructure to hazard events.
- The impacts of rivers flooding and the damage it caused has been the most significant drain on funds in recent times including the requirement for the flood relief scheme in Carlow town.
- There is strategic planning in place to determine what projects can be done across the county with the annual budget available but the increased frequency of emergency works being required is having a significant impact on available funding as the money has to be pulled from budgets of other planned projects or services budgets.
- There is an issue in relation to gaining insurances in flood prone areas and the council see this as a growing issue as flooding is occurring in areas where it has not in the past and once an area floods once insurance companies become nervous.
- A comment was made around rates collected by the council and if they are affected by businesses being impacted by flooding, weather events etc. They are not but there is always complaints received from business if they have to close and looking for reduction in rates if its for a long period of time.

Landfill:

- Civic Amenity sites must close during high winds due to the H&S of the public bringing waste to site and the staff operating the site. Closing the sites can impact on where the rubbish ends up being dumped in some cases.
- There are some capped landfills in the county, the gas collected from these is flared as the gas is not of good enough quality for energy generation.
- They have leachate collection systems in place which store the leachate in lagoons which is then removed offsite for treatment. The leachate coming off the landfills is slowly reducing over time and they have no issues with the impacts of climate change on the management of the leachate run off.

Muinebheag Municipal District:

- Muinebheag Municipal District is primarily a rural area, and the hazard of most concern is flooding and the potential it has to cut off communities.
- Due to increased rainfall events and an increase in their intensity there has been a noted increase in pluvial flooding on tertiary roads where run-off from land banks is collecting on the roads and flooding

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them as they either have no drainage network or insufficient capacity to deal with the quantity of the run-off coming off the land.

- Blockages of drainage systems is a big issue which can exacerbate the flooding experienced.
- The impact on the roads is typically short-term closures with temporary diversions, however diversion can be quite long and add significant time to journeys given they are in a rural area with limited options.
- The increased damage being seen on tertiary roads was also noted and the main cause is due to pluvial flooding as mentioned above. All the issues in relation to damage from flooding on roads and intense rainfall mentioned by other councils were brought up.

Housing and Community:

- Parks have to be closed during periods of bad weather with the biggest culprits being intense rainfall and high winds (typically associated with weather warnings from met Eireann).
- There is retrofit scheme in place on the LA housing stock (approx. 2000 houses) to improve their energy efficiency. It was noted that air to water is the primary heating source that they are installing on houses and they have been experiencing issues with the length of time that houses take to re-heat after a power outage (same issues as brought up by Kilkenny and Tipp).
- A comment was made on a bit more thought would have to go into the suitability of seasonal planting in the public realm and how it needs to be made more resilient by justifying if its needed (where & why), looking at planting more resilient species that are drought resistant and done need as much maintenance to keep areas looking well, planting of more trees in areas rather than just seasonal planting that lasts a few months. By planting more substantial trees and vegetation vs seasonal planting you could potentially benefit air quality also.
- They drive to passive housing in recent times could be a potential vulnerability to the housing stock in the future as they may have issues with cooling in increased temperatures and may not be suited to the future climate.
- Reactive maintenance has increased significantly over recent years due to the damage being done by storm events.
- The older housing stock is becoming an increased risk to climate events and this is made more vulnerable by the fact they are typically populated by the older and poorer groups within the community.
- Lack of temporary housing available for tenants affected by flooding events.

Active Travel:

- There is increased instances of flooding of roads and in particularly the more rural network and tertiary roads.
- Higher temperatures being experienced and heatwaves is having an impact on surfaces dressing of roads, heaving of footpaths and road surfaces, this tends to have a disproportional effect on active travel as these issues that vehicles may be able to avoid or drive through can be a much bigger worry for cyclists and pedestrians and also be a much higher risk to their safety if the designated walkways/cycleways are effected and they need to go out into the main road.
- In 2016 there was significant flooding which caused damage to bridges and infrastructure in the county.
- Active travel is typically more exposed to the impacts of climate change as it is exposed to the elements. Additionally in the aftermath of storm events the clear ups focus firstly on clearing roads and the debris can be pushed onto footpaths and cycleways prevent active travel for longer periods of times.
- 80% of the cycleways in the county are mostly roadside tracks space is not available to sperate them from the trafficked roads.

Roads/Environment/Water/Emergency Services:

- The frequency and intensity of weather events and impacts of climate change are increasing across the board.
- The monitoring and preparation for weather events, flooding etc is becoming an increased stress on resources and is almost a job in itself across the county. It is something that is drawing more and more

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resources which has a financial cost as well as a cost of pulling resources away from their day-to-day duties.

- Services during prolonged periods of bad weather and storm events become really stretched and come under significant pressure.
- An increasing amount of the annual funding is being used up reacting to climate events and their impacts on the county and this draws funds away from the planned annual spend. Access to national funds can be difficult unless it is a wide spread incident that has effected a lot of the county meaning that in most cases the money for emergency works has to be sourced from the councils annual budget or go hat in hand to other sources of funding.
- The existing measures put in place to mitigate against the impacts of climate change need to be re-examined in some cases. An example given was the flood relief scheme put in place in Tullow over a decade ago, since then the river levels have been continually rising and the risk of flooding from the Slaney is now a concern of the council.
- A Carlow has no coastline the majority of swimming waters are on rivers, and this presents a major risk for public safety, they can be picturesque on a good day but can change quickly and be extremely dangerous during or after flooding events.
- Existing infrastructure struggles to cope with the intensity of the weather events being experienced in particularly storm networks coping with intense rainfall.
- The H&S of people responding to emergencies be it emergency services or council crews is becoming more of an issue due to the increased risks they are facing. Weather events are becoming more and more extreme and as a result the hazards to personnel safety are increasing and mobilising crews is putting people in more risk than what would have been see in the past and a more frequent basis.
- Concern of electric vehicles combust due to battery problem if adopting electric vehicles.

Environment and Climate Action:

- There is increased pressure on SAC's & SPA's due to increased population movements and development of infrastructure etc.
- The changes being experienced in Irelands climate is beginning to favour invasive species, both flora and fauna, and as a result are outcompeting native species at a quicker rate. It is not 100% know what exact changes are facilitating this (ongoing research) but it is thought that the primary driver is the increasing temperatures and changes to the growing season.
- The increased frequency of flooding events and more intense rainfall is also aiding in the spread of invasive species seeds and spores aiding them in spreading to new areas.
- There was a comment made in relation to how Ireland will be able to deal with large scale population movements across the globe as areas become harsher for humans to live in and they start to move to different areas and the potential effect this may have on our future population and how can this be dealt with infrastructure planned appropriately.
- Air pollution & air quality is something that is being impacted by climate change. Dry spells are increasing the incidence of dust in the air, overuse of fossil fuels in city areas.
- The issue of the council being the place where blame typically lands in the case of any issues being experienced by the public is an ongoing problem, be it through councillors or directly from the public they have to deal with a lot and solve a lot of problems even if its not directly their responsibility. This brings a sharp focus on the effects on reputation of the council and having to go above and beyond to keep the public on side.
- Communication & transparency with the public plays a vital role to ensure that the public knows the reasoning behind why things are being done and how long they will be impacted etc.
- The changes being experienced in Irelands climate is causing a significant increase in the pollen count in the air which is effecting people's health and wellbeing.
- A very valid point raised is the fact that the impacts that are experienced along rivers are typically a result of upstream events that are not in the control of the local council and limits what the council can do in order to prevent the impacts they experience in their county. Invasive species was used as an

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example the river can carry seed down stream but if not dealt with at source they will continue to be an issue even if there is something being done downstream.

- There needs to be a joint up thinking across counties and even at a national scale to allow a coordinated approach to dealing with impacts along the extent of rivers.

Water Services:

- The existing storm network relies on storm water pumps in some areas and these can struggle to cope with the flows being experienced due to increased intensity of rainfall events, failure of these pumps would result in significant flooding and is exacerbated by the fact that some are on combined networks.
 - Maintenance programme for these pumps is critical and must be kept on top of and kept up to date.
- IW taking over the operation of water services is a major vulnerability as the council are now reliant on a third party for water supply and wastewater collection and treatment. Communication is between IW and all council services will be key in decreasing this vulnerability.
- Drinking water supplies are coming under increased pressures due to longer dry spells, increased temperatures and droughts that have been experienced in recent years.
- Given a large portion of the wastewater network is combined the increased storm flows through can have a significant impact on the storm management systems in place at WWTP and result in significant overflows of untreated effluent directly to the environment.
- In Carlow town there are 4 major storm water PS relied upon during flooding events and none of these have permanent stand-by power generation making them vulnerable to power outages. The council only have one portable generator in the area and have to rely on renting another 3 to have them on stand-by during potential flood events so there is a significant reliance on the availability of these generators, access to be able to get them to site, people being available to get them in pace etc.

Roads:

- Funding is a major barrier to getting things done and the council is heavily reliant on grants and outside funding and if any significant damage is done to infrastructure then they can't just go out and fix it they need to go searching for the money and this can take time. Given the size of the county the revenue they generate internally is just not to the same scale as in other larger counties.
- Rivers susceptible to flooding in the county are very different the Barrow has a very slow rise and fall while others rise and fall "like a fiddler's elbow" which causes different issues and different ways of reacting to flood events and the approach to preparing and reacting to the events.
- A big issue on the road network particularly tertiary roads is the lack of maintenance on open drains and culverts resulting in increased incidences of flooding.
- The roads are salted/pre-treated for cold weather approximately 5 times a year. Since the issues experienced in 2009/10 with a national shortage of road salt there has been no issues in road salt stocks. However, there can be an issue in accessing the stockpiles themselves and getting the salt from the national storage depots to the council storage depots can be a vulnerability, but they try to keep on top of this.
- Over the last decade there has been three large snow events that have resulted in huge costs to the council as they were bigger than what the council could handle on their own and using their own equipment so had to hire in sub-contractors to aid them in particularly to access larger machinery.
- While the thaws experienced in these events was slow the impact of the thaw was still seen in very soft ground conditions that caused issues in the clear up processes and areas were un-accessible due to ground conditions and effected the substructure of roads and foundations of bridges (approach ramps on overpass collapsed).
- Higher surface temperatures can result in increased wear and tear of roads surfaces in particularly on bitumen based surfaces and surface dressed roads. During hot weather HGV's passing over these surfaces can cause large sections to be ripped up.
- There is a noise action plan in place across the county with noise monitoring ongoing across the roads network.

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- Damaged caused by storm events and climate impacts to the roads infrastructure must be fixed but there is no guarantee of re-cooping the money spend from national funds or other sources as such there is risk to the annual budget of the roads department potentially impacting on what projects can be completed or even on annual maintenance programme.
- There is requirement for the improvement of the storm network across the county to mitigate against pluvial flooding and intense rainfall events, it is no longer fit for purpose and cannot cope with the level of rainfall being seen now in particularly the more intense rainfall events being seen. As has been seen in other counties this issue has resulted in more localised flooding being experienced.

Strategic Planning:

- The main point made by the planning dept. was that the planning framework and strategic planning accounts for climate change and is to the fore of the planning process.

Fire Services:

- The frequency of call outs has increased over recent years and being called out to more non-life-threatening events that are directly caused by climate hazards such as flooding, storm damage etc. The fire services in Carlow respond to all calls they do not have a procedure in place similar to Tipperary where they wait for the storm event to subside before responding to non-life threatening calls.
- There has been a definite change in the types of fires been seen across the county in this year alone there has been three occasion to call on helicopters to put out wildfires on mountains and forests.
- The increased incidence of wildfires are putting SAC's & SPA's at more risk.
- In addition to more wildfires there is also a higher risk from fires in urban areas typically in relation to anti-social behaviour and setting small fires that can quickly become out of control due to dry conditions in green areas. Typically if this happens once it happens a number of time as there are people copying the acts of others after seeing the impact it had.
- Call outs to storm events have become more frequent and they are experience more severe impacts making going out in them more dangerous.
- A statistic of note is that due to the increased incidence in flooding events and the need for entering into flowing water the number of members trained in this has increased from 5 to 18 in the last number of years.
- As mentioned previously and by other councils the incidence of localised flooding is becoming more and more common and flooding in areas that have not experienced it before.
- There is a significant draw on resources to respond to calls related to climate hazards (approx. 40-50% of calls) which puts added pressures on the fire service to respond to their baseload and life threatening emergencies and significantly impacts on response times which can cost lives.
- A wildfire on mount Leinster in August 2022 required 38 fire fighters form four stations for day and any other emergency during that period the response time would have been impacted by a minimum of 1hr. It was noted that the fire services went from one of the biggest fires they have fought in years due to prolonged dry spell and increased temperatures to having to enter flood water to rescue people approx. 3 days later due to the River Barrow bursting its banks due to intense rainfall.
- Fires, Land and Atmospheric Remote Sensing of Emissions (FLARES) undertaken by UCC aims to develop systematic approaches to the acquisition and collation of a range of data on agricultural and uncontrolled wildland burning burn events from satellite datasets.

Civil Defence:

- Flooding of an apartment block in 2008 was the largest call out that they have had for many years. Typically, they are called out for snowfall and flooding events but can be called upon for anything and everything the council and emergency service need support with.
- As experienced in other counties there is a huge demand on the crews and they are reliant on volunteers. They have a major role in supporting vulnerable communities that become cut off due to climate hazards, transport of fuel and supplies, transport too and form medical services, getting personnel in and out of areas, meals on wheel etc etc. it is a big draw on resources during storm events.

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They are seeing the need for these services increasing due to an increase in storm event frequency and intensity.

- Undertaking standard task that the civil defence are responsible for can become very difficult in the more severe weather events being experienced and can affect their ability to effect efficient search and rescue.

Corporate Services:

- There is a crisis management team gathered during any emergency event and they are responsible for communications and organisation of the council services during the emergency event.
- The county hall is used as the base of operations, and it has a back up generator in the event of loosing power.
- They have dedicated mobiles for the team as well as critical people within the services who are out in the field and have a number of back up GPS phones if the mobile network goes down.
- The crisis management team is based on LA staff volunteering and it is a big ask for people to take this on. As events are lasting longer periods of time there is more of a demand on theses resources for longer periods of time which can impact on the amount of people volunteering in the first place or volunteering again.
- COVID has bolstered the ability for business continuity with more people able to work from home.