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Water Safety Review

Manchester City Centre for Manchester Water Safety Partnership

# Executive Summary

RoSPA was commissioned by members of Manchester Water Safety Partnership (MWSP) to conduct an independent review of open-water safety within the Manchester city centre zone. The review considered responsibilities, policy expectations and an analysis of fatal and non-fatal events, in addition to an assessment and evaluation of the water bodies within the city centre. The principal output is a series of recommendations with the aim of improving water safety. The review was conducted throughout summer 2018.

There are numerous stakeholders and duty holders invested in managing water safety within Manchester. The city has a longstanding water safety partnership, one that is responsive to community needs. In its current guise, under the chair of Greater Manchester Fire Service (GMFRS), we found the MWSP to be assertive in seeking both to identify and address water safety risk. The MWSP is performing well, it will benefit from greater sponsorship, reporting and oversight at an executive level.

There are multiple policy drivers and programmes which affect water safety directly, or have the potential to, within the city. We believe that a city-wide standard or policy to control the public safety aspects within developments alongside water will help to limit the adoption of unsafe situations, and ensure possible conflicts with programmes such as ‘safer by design’ are addressed.

Over the period 2007 to July 2018, within the city centre zone we found 28 water-related fatalities, between 2 and 3 deaths annually. The majority of these fatalities happened during the hours of darkness, involved men, with inebriation a factor in a significant proportion of cases. Over the shorter timeframe, 2012 to 2018, we further identified 32 non-fatal incidents in the city centre zone, an average of 5 per year.

The features and controls along the waterways within the city centre zone are similar to those found in many locations across the UK. There are a number of areas where space constraints have resulted in an increased risk rating score using our methodology. A number of physical changes that will benefit public safety in the future have been identified. These need to be addressed in a strategic way, including – where they are not already sited – fencing as a catching feature at junctions, lighting improvements, and education/information about routes around Manchester, particularly at night.

In a number of areas there is no method to assist self-rescue or for members of the public to support a rescue of anyone in the water. Therefore additional provision in certain locations is considered to be of benefit. This response will need to be ‘at scale’, and include both the waterway owners and private locations, such as bars and clubs, if it is to be truly effective.

During our visits, waterside locations were being using for rough sleeping, including locations prone to flooding. Addressing vulnerable groups within the work to improve population health outcomes will assist in preventing future drownings.

Throughout this review we held workshops, as well as structured interviews with members of the MWSP, bereaved parents, and executive and political leaders within the city. Within this report we have sought to reflect and recognise these perspectives. Ultimately, this report is independent, shaped by our findings within the city and informed by experience from both within the UK and globally.

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# Introduction and terms of reference

The Royal Society for the Prevention of Accidents (RoSPA) was commissioned by the Manchester Water Safety Partnership (MWSP) members to conduct a review of safety pertaining to specific stretches of open water within Manchester city centre.

Consideration has been given in our recommendations to the implications of case law, changes to health and safety regulations and the findings of accident investigations, where these have a bearing on safety.

RoSPA has endeavoured to identify all the significant risks; however it is essential that the controls identified or the recommendations are continually developed and reviewed in response to changing legislation, best practice documents, *active monitoring* and the *investigation and outcomes of accidents and near misses.*

In carrying out this safety review, RoSPA points out that audits and reviews are by their very nature sampling exercises, and a reviewer cannot guarantee to identify all safety hazards. Opinion is formed by a site visit at a particular time and on a particular day. Therefore, the absence of comment on any issue should not be taken to imply that the site is completely safe in relation to that issue.

The reader should note that the recommendations made within this report are strictly limited to the Manchester city centre zone. They follow in depth consideration of hazard and risk identified, the legal and policy context, and discussions to enable a sustainable at-scale response, for the city. We strongly caution against approaches which seek to apply these recommendations/solutions without first following a similar process of identification, understanding and agreement.

# Methodology

We applied several methods to produce this report. Although we note the elements once below, several steps were repeated, particularly reflecting new or improved incident information, or clarification sought on particular issues.

### Scope and definitions

* This report considers only those locations within the ‘city centre zone’, defined as the space within the inner ring road boundary +200 meters, for open-water locations only (Figure 1).
* This geography approximates the city councils definition of ‘city centre’ for planning purposes.[i](#_bookmark13)
* 01 January 2007 to 01 July 2018 was the fatal incident review period.
* Non-fatal incident data was available for 2012-2018.
* A desktop assessment of the River Irk was undertaken.

### Identify and align incident data

* Fatality data was sought from two primary systems: for 2013 onwards, we used the Water Incident Database (WAID)[ii](#_bookmark14), a system which captures water-related deaths from members of the UK national water safety forum. Fatal events prior to this were sourced from the ‘RoSPA/RLSS UK drowning statistics’ annual publications.[iii](#_bookmark15)
* The fatal reports were cross-checked with MWSP member reports and understanding of events, Coroners’ reports, where accessible, and press and court reporting.
* Open source data for population and daylight hours was aligned with the incident dataset.
* Non-fatality data was obtained from the Greater Manchester Fire and Rescue Service for the city centre zone over the period January 2012 to March 2018.

### Assess, using RoSPA method locations within the city

* Within the agreed boundary, each of the principal open waterways was reviewed using a structured method. The waterways were segmented into distinct areas, enabling the assessment to be repeated and reviewed.
* The assessors repeatedly visited the locations over the summer months of 2018, at different times of day/week, and during expected peak use windows, such as the August Bank Holiday weekend.
* Every section was visited on multiple occasions, with night visits for most sections.
* The assessment programme included a peer review element: assessors overlapped on sections and were instructed not to share thoughts or findings until after the first full pass of all waterways in the city.

### Policy review and stakeholder interviews

* A desktop search was undertaken of policies which affect the waterways, public health and emergency response, historical context and likely future impacts. We interviewed and held semi-structured discussion with members of the MWSP, seeking their views on existing challenges/opportunities. We conducted these under Chatham House Rules to foster frank discussions.

### Synthesis and reporting

* A draft report was produced to allow for fact and error checking, followed by a final version.

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1. Map showing the Manchester city centre assessment zone.  
Defined as being within the inner ring road +200 metres.

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## Context to managing UK water safety risks

It is important to note the legal and policy framework in which the management of water safety operates. This frames the choices available to managers and duty holders and impacts upon delivery of plans.

There are three points to note:

**(i) Legal liability arising from water safety risks** rests primarily with the duty holder who owns or is in effective charge of the water space or facility in question, and/or those who offer an associated service which creates a risk.

The Occupiers’ Liability Acts 1957 and 1984 create a general ‘duty of care’ upon landowners towards visitors and trespassers. Breach of this duty can result in a civil action claim for negligence brought by those affected, and ultimately, if proven, require a remedy for the damages sustained, typically a compensation payment.

The Health and Safety at Work etc. Act 1974 creates a similar set of duties towards staff and others affected, e.g. visitors. These duties create criminal liability for the duty holder if found in breach, leading to prosecution for the most serious offences, with significant fines or imprisonment for the duty holder.

These Acts essentially require that the duty holder consider the risks and take reasonable measures to manage those risks deemed to be significant (i.e. risk assess).

**Under both civil and criminal law, it does not automatically follow that if a visitor is harmed on a premise that they are owed any duty at all, or that the duty holder would be at fault.**

**Where an adult visitor has willingly taken a risk with knowledge, or can be reasonably assumed to have that knowledge, the civil and criminal courts have largely rejected claims to impose a duty.** [iv](#_bookmark16) Inversely, where the duty holder was found to be clearly negligent or acting without reference to – or out of step with – accepted good practice, the courts have applied significant penalties. As such, pursuing a liability management approach to reducing drowning will be limited in its influence.

#### (ii) There is no explicit duty upon a local authority to organise and take preventive steps to address drowning risks.

Unlike fire or road safety, there is no specific regulation or code which states that action must be taken to prevent drowning at the local authority or community level. Local authorities do act to prevent drownings, often from a moral or reputational standpoint, and by virtue of the fact that many are land or asset owners, which gives rise to the occupier liability and workplace law outlined earlier.

#### (iii) Waterways are complex environments to manage

Along any waterway there will be multiple private and/or government landowners, and often more than one political boundary, as rivers are typically the physical boundaries for authorities, e.g. River Irwell (Salford/Manchester).

Furthermore, the Navigation Authority, as the organisation with a legal duty to ensure the waterway is safe and clear for boats and their passengers, may only have limited influence on their ‘landside’ – often a narrow section of a footpath, or structures directly associated with operation of the navigable water. In Manchester city centre zone, the principal navigation authorities are the Canal & River Trust (CRT) and the Bridgewater Canal Company Limited. In addition to land held by councils and navigation authorities, there are multiple landowners alongside these sections of waterways.

**It can often be difficult to identify just who a single stretch of land belongs to. When taken at the city scale, the challenge of identification and coordination/consistency becomes considerable.**

# Results

## Responsibility and leadership for water safety

The Manchester Water Safety Partnership was formed approximately three years ago, based on a pre-existing collaboration of some of the current membership which began in the mid-2000s. The group consists of; the principle navigation authorities Canal & River Trust and The Bridgewater Canal Company Limited ; Royal Life Saving Society UK; CityCo; Manchester City Council; Greater Manchester Police; Greater Manchester Fire & Rescue Service (chair).

As part of the review, we were able to access and ask questions of senior management and directors. The members of the MWSP, and the elected members we met, clearly demonstrated that they take the issue of water safety in Manchester very seriously.

**The fact that this partnership exists, and is well established should be commended** – **particularly despite the absence of clear regulatory guidance for its creation**. By way of context, across the UK there are no more than 60 existing similar water safety partnerships; in our experience most are not as developed as the Manchester partnership. We believe that around 120 similar partnerships are required to effectively address the inland drowning burden in communities.

Historically the MWSP has been largely driven by operational demand. **In its current guise, under the chair of Greater Manchester Fire and Rescue Service we considered it to be responsive to community need and engagement** and proactive in its actions. The meetings are chaired effectively and are focused on outputs towards the goal of reducing drowning death injury and risk. This can be seen in the programme, which includes: the compiling/sharing of incident and risk information; pilot interventions such as training in throwline use for bar staff; and public awareness-raising events and campaigns.

We consider it very positive to have elected members addressing and taking an interest in the work of the MWSP.

There were a number of points we believe will help strengthen the MWSP:

**Principally, the reporting, oversight and sponsorship would benefit from greater clarity**. It was clear why all members had joined the MWSP: as a vehicle for addressing these often jointly held risks. What was less clear is often how the MWSP links into either the wider safer community or public health programmes in Manchester at the city or combined authority level, or within institutions such as the universities.

The practical impact of this can be seen **most acutely when seeking to apply consistent change across the city centre zone**; for example, it is agreed within the MWSP that improvements to safety information and rescue equipment would be beneficial (a pilot scheme is underway). However, the implementation of this at the requisite scale, across the multiple landowners, including on land privately held, would work better if it was clearly of direct sponsorship/oversight to a director and/or political lead when support is needed.

There are secondary, albeit remote, joint liability risks to city and the member organisations by working in this manner; to date, this has not materialised in Manchester, largely owing to the diligence and competence of the members. However, the current reporting structure does not aid the mitigation of these corporate risks.

**Refining the documentation of roles and responsibility within the group** and the associated services called upon would help the members bring clarity to some of the day-to-day tasks that contribute towards the safety at the waterways. There is a considerable range of activity which contributes and impacts upon the water spaces; for example at a practical level the maintenance of lighting columns, or more strategically a response to planning applications.

## Policy context within Manchester

In the following section we have sought to identify and provide a brief overview of the corporate policies and initiatives that either currently or indirectly affect water safety outcomes; or in our opinion, have the capacity to do so.

**Manchester City Council has a statutory responsibility to promote and protect the health** of the people in the city, including a number of explicit objectives, such as preventing communicable diseases. The majority of activity towards this duty is driven by identification of local population health needs through a **joint strategic needs assessment. Priorities include homelessness, alcohol consumption, and falls among the older adult population**.[v](#_bookmark17)

Manchester City Council **planning framework and Core Strategy** is developed under statutory guidance in line with national approaches. Within the framework a number of policies are of note: **EN14 Flood risk; EN10 Outdoor leisure; CC4 Visitors, tourism and culture; SP1 with reference to improved access to the Medlock/Irk.**

Within the Manchester City Council document **‘Manchester’s great outdoors – a green and blue infrastructure strategy and action plan for Manchester’**, waterways are primarily described as linkages for travel. The document follows the Manchester Core Strategy objectives and includes a number of waterway-related actions, including: **‘continue to invest in the river valleys and canals to provide attractive settings for residential communities, leisure and recreation, health, and biodiversity benefits** (Existing GI/Action 1) and **‘enhance river valleys and canal tow paths to improve accessibility and use as active transport corridors** (Connectivity/Action 1). [vi](#_bookmark18)

The Manchester, Salford and Trafford **Strategic Flood Risk Assessment** provides a detailed assessment of the risk to property and people, both the actual risk and residual risk, from rivers, canals and surface water.

Of note among the observations in that risk assessment document is that: “The **River Irk, River Medlock, Corn Brook** andsurface water (including the risk of sewers and culverted lost or hidden watercourses surcharging) **pose the highest risk of more frequent flooding.** Surface water drainage from new developments is critical in reducing the risk of localised flooding.” [vii](#_bookmark19)

The Manchester City Council **central safety team provides a corporate safety service** to departments within the city and wider authority, such as safety support for public events or specialist advice for departments, helping to fulfil operational needs and the legal duties driven primality by the Health and Safety etc. at Work Act 1974.

For the **Greater Manchester Fire and Rescue Service**, the primary obligation is met via an Integrated Risk Management Plan, which has considered **water safety risks for many years and has developed a specialist response** since 2000.[viii](#_bookmark20)

The **Manchester Water Safety Partnership (MWSP)** was originally formed in 2008 as part of a response to a Coroner’s report to prevent future deaths, known then as a Rule 43 report[[1]](#endnote-1). It is a voluntary association, chaired at various times by the city council and GMFRS. The MWSP has been the collective group for addressing a number of high profile water safety issues within the city.[[2]](#endnote-2) Updated in 2016 the present group consists of; the principal navigation authorities Canal & River Trust and The Bridgewater Canal Company Limited; Royal Life Saving Society UK; CityCo; Manchester City Council; Greater Manchester Police; Greater Manchester Fire & Rescue Service (chair). The programme includes outreach and **education work directly to visitors and groups such as schoolchildren, gathering and analysis of incident information, identifying risk issues and developing interventions** to manage for example throwline training for bar staff.

Although the **Manchester Community Safety Partnership** (MCSP) was established primarily in response to the duty on the police and local authority under the Crime and Disorder Act 1998 to develop local crime reduction strategies, its remit is to ensure Manchester is a safe place to live, work and enjoy. The MCSP brings together a wide range of partners, including Greater Manchester Police, GMFRS, NHS and community and voluntary organisations.[ix](#_bookmark21)

Within this Manchester has created the Evening and Night Time Economy Partnership Group, which includes business and statutory/voluntary bodies. Other prioritises include the **identification and impact of drugs and alcohol use.** The focus of the group in strict statutory terms is to address harm from crime; as such, safety from injury is understandably not an explicit objective. However, its programme does have direct impacts upon injury prevention, for example ensuring night-time visitors can get home quickly and easily, and the existence of controlled, licensed premises. Notable projects with a **possible impact on water safety are the Night Heroes** [**x**](#_bookmark22) **and Safety Advice for Students** [**xi**](#_bookmark23)interventions.



Although withdrawn as an official Government publication in 2014, **Safer places: the planning system and crime prevention** [**xii**](#_bookmark24) , sometimes termed ‘Secured by Design’, was cited on several occasions. This was in the context of how planning policy was/is being directed, with the intention of securing locations such as car parks and the built environment from theft etc., with a possible unintended effect in Manchester of creating a “canyon effect along the waterways” (stakeholder quote).

Manchester City Council and Greater Manchester Combined Authority have established a **nightlife expert adviser panel** with the objective of improving the region’s nightlife offer by making it **stronger, safer, better connected and more attractive**. The panel includes representatives from health and emergency services, private bars, event organisers, and industry and community groups.[xiii](#_bookmark25). Projects that could impact upon water safety include a funded programme to train 150 ‘Drinkaware Crew’ across Greater Manchester who “mingle with customers in bars and clubs to promote a positive social atmosphere and help those who may be vulnerable as a result of drinking too much alcohol. Including help to reunite lost customers with friends, help people into taxis or just provide a valuable shoulder to cry on”. [xiv](#_bookmark26)

**The Greater Manchester Canals Heritage Partnership Agreement** (2014-2019) [xv](#_bookmark27) sets out the framework for **the care of specific heritage features** along the waterway, in line with the (then) English Heritage conservation, principles, policies and **Guidance for the Sustainable Management of the Historic Environment**. In addition to CRT, Manchester and Salford councils’ planning authorities are signatories. Works which require the **‘installation of health and safety or information equipment’** at, for example, aqueducts, canal environment or bridges, are **classified as requiring statutory consent within the framework** (pp 4.1 - 4.2). [xvi](#_bookmark28)

Within the **universities there are regular programmes**, particularly during freshers’ week, and ongoing support by way of counselling and health services for students. At least one university operates a ‘safe taxi’ scheme whereby a student can obtain a ride home and pay for the fare he following day.

**CityCo offers training and information updates on water safety** to its members, including bars and nightclubs located near to the waterways. In addition, fresher induction programmes have held mini workshops for students on water safety and safer routes choices at shops and venues that students wish to visit.

Within the **National Curriculum,** there are explicit requirements for **swimming and water safety attainment** within schools, namely that children should be able to: swim competently, confidently and proficiently over a distance of at least 25 metres; use a range of strokes effectively; perform safe self-rescue in different water- based situations. Since 2017, schools have been **required to publish how many Year 6 pupils have met the National Curriculum requirements** relating to swimming and water safety. [xvii](#_bookmark29) xviii **At the time of drafting, figures were not available.**

The **UK Drowning Prevention Strategy** (2016-2026) seeks to **reduce accidental drowning fatalities in** the UK by 50% by 2026 and reduce risk amongst the highest risk populations, groups and communities. The strategy, developed by members of the National Water Safety Forum, sets out a number of objectives to meet the goal. Notable among these are that: **Every community with water risks should have a community-level water safety risk assessment and water safety plan**; and to **Increase awareness of everyday risks in, on and around water.**[xix](#_bookmark31)’

## Incident profile

### Data capture and verification

As outlined earlier, we sought out water-related fatalities within Manchester city centre, using the following agreed critera:

* Occurred between 01 January 2007 and 01 July 2018;
* Within the boundary of the city centre zone, i.e. inner ring road, with a +200m buffer (Figure 1);
* Incidents confirmed as being water-related;
* At open-water settings only; no domestic or built environment such as swimming pools or baths.

To achieve this, we initially sought to identify all available water-related fatalities for Greater Manchester from the WAID database[xx](#_bookmark32) and historical RoSPA/RLSSUK drowning reports.[xxi](#_bookmark33) We verified the completeness/quality of records and cross-checked the data with published reports and sought available information held within the MWSP. A final cross-check of all records was completed with support from the Manchester Coroner’s office.

A death is recorded by the coroner using two principal outcomes: medical cause(s) of death and legal finding. [xxii](#_bookmark34) Where available we reflect those stated by the coroner. The event narrative, age categories and wider causal factors, e.g. presence of alcohol, follow the WAID taxonomy. xxiii

### Un**certainty about and improvements to data collection**

There are variations within the fatal dataset with regard to the completeness and certainty attributable to the events. In those cases with eye witness reports and/or CCTV a largely complete picture can be derived, in many cases information is not available. We have been conservative with our analysis, indicating where there is partial evidence, e.g. the confirmed event time versus the ‘last seen’ time; and excluding attributes from a particular analysis, such as the exact age of the victim. These are indicated by the n = x figure at the bottom of the figures, or the fraction used in the report text, e.g. 18/28 cases v 18/20 cases.

We have reported upon 28 confirmed fatal events. There was one further possible event excluded as we have been unable to confirm if this incident resulted in a fatality at the time of drafting. The lack of evidence and its completeness is a picture that is repeated nationally when water-related fatalities are reviewed, due often to the unwitnessed nature of many events.

The MWSP uses incident data to good effect, and conducts open discussions when reviewing incidents. Further use of tools such as checklists for data completeness may improve structured data held, and importantly help to capture/refine the information discussed in event reviews. Weather and ground conditions, and if the person was considered to be vulnerable or in regular contact with emergency or health services, are two areas where useful information is potentially available.

## Incident observations

We identified over the period 2007 to July 2018:

* In **Greater Manchester** there were **139 water-related fatalities, at all locations** including homes and swimming pools, during the review period.
* In the **city centre zone** there were **28 water-related fatalities at open-water locations,** with one further possible fatality that could not be verified; this has been excluded from our analysis at this time.

**The non-fatal incidents** (NFI) are sourced from fire and rescue service data, available for the period January 2012-March 2018.

* There were **32 non-fatal incidents** attended by emergency services, **within the City Center Zone,** in addition to the fatalities.

### When did the events happen?

* Across the whole period, there were on average between 4 and 5 fatalities every two years, with a peak in events during 2008 and 2014. There was an average of 5 NFI a year, with notable peaks in three of the years (Fig.2).
* July and October are the most common months for fatal events, both with five. NFI events also peaked in July and October (Fig. 2).
* Where date is confirmed, the weekend days Friday to Sunday are the most common days for fatal events (Fig. 4).
* Of those events with confirmed time, the majority (14/16) happened during night-time or during the dusk/dawn period (Fig. 5).
*  The most frequent time for events to happen was between 02:00 and 04:00 (Fig. 5).

### Who was involved?

* Most cases (26/28) involved men (Fig. 5).
* All the cases involved adults.
* The youngest was 19 years old, the oldest 83 years old. The most common age group was those aged 25-29 years old. There was no distinct pattern across the age ranges.
* There are five fatal cases where we do not have sufficient age information to categorise. We know gender in all cases.
* We have confirmed home residence for 17/28 cases. Of these, 12/17 lived in Greater Manchester.
* We do not know the occupational status for most cases (19/28). Three cases were reported to have involved fully employed persons. There were six cases involving university students.

#### Where did the events happen?

* Of the 28 fatal events, the Rochdale Canal (18/28) was the most frequent location, followed by the River Irwell (6/28). The Ashton Canal, Medlock and Bridgewater all had one fatal event (Fig. 6).
* A similar pattern can be seen for NFI events; Rochdale Canal (12/31), River Irwell (12/31), Medlock (4/31). The Bridgewater Canal and Ashton Canal had two and one events respectively.
* Between 2009 and 2014 fatalities and incidents occurred within the Undercroft section of the Rochdale Canal. A Public Space Protection Order was issued as part of a package of measures, ultimately, enabling closure of the section between 2200 and 0700.[[3]](#endnote-3)
* Of the confirmed cases, 9/26 were at locks. The Undercroft area was the locus for 5/9, prior to the above measures being implemented.

### How did the events happen?

* Those walking (17/28), or unclear-entry into water (7/28) account for most events. In 4/28 instances the last known activity was deliberate entry.
* The potential for passer-by intervention was a theme mentioned by coroners: in 10/28 cases, the victim was witnessed or heard to be in trouble. In five of these events, an attempt to assist/rescue by the public was made. In one case this resulted in the death of a rescuer.
* Alcohol was a confirmed or probable factor in two-thirds of all cases. The presence of drugs was confirmed in one case.
* Among those aged 19-30 years old, alcohol was a factor in 8/9 cases.

### Medical and legal findings

* The principal medical cause of death in 19/28 instances was drowning. The remaining nine are not reported.
* A legal verdict of ‘Accident’ was given by the coroner in eight instances.
* An ‘Open’ or ‘Narrative’ verdict was given in eight instances. ‘Misadventure’ was given in two instances. Suicide was returned in two instances. Manslaughter was reported in a criminal court in one instance.
* No legal verdict was available for seven cases at the time of drafting.

## Indicative themes within the 32 non-fatal incidents:

* In a third of all cases, the person had fallen a very significant distance – more than 5 metres.
* In at least one instance, an individual was recovered from the water with their airways submersed, and cardio-pulmonary resuscitation was provided.
* Alcohol was noted in a quarter of these events.

This NFI figure should be considered a narrow interpretation of water risk in Manchester city centre. It reflects cases whereby the person was in the water and required intervention by GMFRS. In at least one instance, an individual was recovered from the water with their airway submersed, and cardio-pulmonary resuscitation was undertaken to be safe, and in our opinion, in at least one instance, to keep the person alive.

A list of the fatalities identified is provided in the appendices. Graphical representations of the results are provided below.

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2. Water-related fatal (n=28) and non-fatal incidents (n= 32) in Manchester city centre zone  
Note: Non-fatal data available only from 2012 onwards

3. Water-related fatalities and non-fatal incidents by month, Manchester city centre zone.   
(Fatal=28, NFI=32)

4. Day of week   
(Fatal=28, NFI=32)

5. Fatal event times and light levels where known (n=16)  
Lighting levels reflect seasonal changes

6. Age and gender where known (n=16)

## Site review findings

The consultants reviewed the waterways and segregated them into defined areas. The RoSPA risk rating scoring system was used to identify and score the likely risks for injury and drowning. Other hazards on site were observed and noted. The risk rating score given below is a comparative rating relating to the risks presented by open water.

### Score distributions

The waterway is split into logical segments; each segment is then evaluated. The process considers how consistently applied a set of controls are, physical factors which may contribute/mitigate against entry into water and drowning, and wider factors such as the presence of people and activities such as bars or on-water activity. Location with change in levels/direction, or those with features such as a weir/lock, will return a raised score irrespective of the condition, due to the inherent risks associated. It is important to recognise that the approach returns a comparative score relating to the risks of drowning at a given location.

The majority of sections assessed fell within the ‘increased’ banding. Two sections sites sat above this, scoring 71 and 74 respectively, within the ‘higher’ band. These locations presented considerable hazards such as a fall from height sufficient for life-changing injuries, in addition to the presence of water. Those sites with ‘medium’ scores were newer builds with complete exclusion approaches. The sections which returned a ‘lower’ score were largely flat, clear sections, which were well lit and not overlooked so that buildings/infrastructure did not prevent ambient light and observation of the canals and persons by it.

An overview of the site assessment scores can be found in Table 1; for each waterway, the scores can be found in the Table 2, with comments against key themes in the text that follows.

| **Waterway** | **Section** | **Side** | **Score** | **Meaning** |
| --- | --- | --- | --- | --- |
| Ashton | From Lock 1 to, inc. Lock 2 and mooring arm | Towpath | 64 | Increased |
| Jutland Basin to Inner Ring Road | Towpath | 52 | Increased |
| New Islington Marina (Cotton Field Marina) | All | 44 | Medium |
| Bridgewater | Hulme Lock and Hulme Island | All | 74 | Higher |
| Castlefield | All | 52 | Increased |
| Footpath to Cornbrook tram | All | 45 | Medium |
| Irwell | Blackfriars Bridge to Victoria bridge | N/A | 71 | Higher |
| Regent Road bridge to approx. Trinity Way bridge (Section part closed) | N/A | 65 | Increased |
| Victoria Bridge to Chapel Street | Offside | 58 | Increased |
| New Quay Street bridge to Bridge Street | N/A | 55 | Increased |
| Bridge street to limit of footpath (St. Mary's Parsonage side). Lowry side closed | N/A | 55 | Increased |
| Victoria Bridge to Chapel Street | N/A | 55 | Medium |
| Mark Addy's bridge to Regent Road bridge | N/A | 54 | Increased |
| Lowry Hotel footbridge to Blackfriars bridge | N/A | 50 | Medium |
| Medlock | New Elm Road | N/A | 60 | Increased |
| Mayfield (Bearing Street/Transport for Gtr. Manchester building) | N/A | 55 | Increased |
| Brancaster Road to Charles Street | N/A | 55 | Increased |
| Charles St to Oxford Road (Rear of Refuge/Euro cark park), Inc. Hulme Street | N/A | 55 | Increased |
| River Street to Anne Horniman Street | N/A | 55 | Increased |
| Access City Road East | N/A | 55 | Increased |
| Rochdale | Minishull St to Lock 85, below Dale St Lock 84 | Towpath | 65 | Increased |
| Tib Lock (89) to before (88) | Offside | 58 | Increased |
| Towpath | 55 | Increased |
| Bridgewater Hall mooring basin to swing bridge | N/A | 62 | Increased |
| Oxford Street Lock (88) to before Princess Street 87 | Towpath | 58 | Increased |
| Deansgate Locks / Lock 91 to before 90 | Towpath | 57 | Increased |
| Princess Street Lock (87) to Minshull Street bridge inc. Lock 86 | Towpath | 53 | Increased |
| Lock 83 to New Islington | Towpath | 53 | Medium |
| Deansgate Lock to nr. Rain Bar before Tib Lock 90 to 89 | Towpath | 52 | Increased |
| Dale St Lock (84), basin to Lock 83 | Towpath | 51 | Increased |
| Princess Street Lock (87) to Minshull Street bridge inc. Lock 86 | Lock 86 | 50 | Medium |
| Dukes 92 to end of tunnel / Lock 92 to before Lock 91 | Towpath | 47 | Medium |

Table 1. Site assessment scores

### Consistency of measures

When taken overall, the waterways do have consistent approaches in the way that safety risks are physically managed. Developments next to the rivers have largely applied an exclusion approach, whereas developments around the canal corridor have largely applied a deflection approach.

There are different approaches to the rivers and canals, as might be expected. Due to the age of the locations and decades of development, there are various inconsistences in application at each setting. Where we have observed inconsistencies of application, these appear to be mostly caused by developments on, around and above the features, putting pressure on the physical environment e.g. available space, headroom, width of paths.

The overarching approaches we identified in Manchester reflect similar waterways nationally, for example Rochdale canal, Brindley Place (Birmingham various canals), those owned by Scottish Canals (various locations), York, Ashton.

Similarities in approach can also be seen in the two basin spaces at Castlefield and New Islington Marina, which keep spaces largely clear of barriers and treat the water as a visually obvious hazard.

Where there is a change in level/height or direction/bottleneck, selected use of fencing has been applied. Similar design approaches can be seen in the newer build spaces of Paddington Wharf (London), and Brindley Place and Gas Street Basin (Birmingham).

### Edge protection and fencing

To be useful, a fence or edge protection needs to be uniform in position, height and design. Gaps underneath, between posts and panels and entry/exit points will, of course, affect the effectiveness of any installation. To be completely effective, a fence or barrier needs to be of a suitable height to limit accidental slips/trips or intentional acts resulting in water entry.

Across the UK, standard fences range from 800mm to 1100mm – effective heights for pedestrian situations – and 1200mm for areas where cycling is expected. Fencing beyond these heights are commonplace across the UK, intended for security protection such as electrical installations and train lines. Higher fences and enclosed areas and pathways are associated with an increase in individuals’ perception of isolation and vulnerability in an area, which could lead to less use and potentially increase antisocial behaviour and higher rates of crime. Where these narrow the effective manoeuvring space, barriers could present an additional hazard to boaters, especially around locks, and to cyclists’/pedestrians’ space.

We observed one location where a vandalised barrier created an immediately unsafe scenario; remedial work has since been completed.

Exclusion approaches were applied where typically a significant fall or very difficult egress was observed. The consultant noted different styles and height of balustrading e.g. 900mm to 1100mm, typically due to different landowners and/or development phases.

In locations where there was a change in level/height on the route or where a bottleneck led near to water, a deflection barrier or limited run had been put in place. There were a small number of locations in which the consultant observed a barrier that might be improved by a small extension, or the finish could be improved or consistently applied in bottleneck locations. There were a small number of locations in which an extended run of deflection fencing (e.g. 50 metres) had been placed; the logic was not immediately apparent until the change in building use/development was understood. We think that in several cases barriers had been placed in response to possible emergency/fire evacuations and escape route scenarios.

Careful thought needs to be given to the placement and use of fences and barriers, as further fencing and barriers could restrict the natural environment and possibly the navigation of some of the waterways.

At the two crossing points at New Islington Marina/Lock (school/homes to tram stop) and Tib Lock (Bridgewater Hall to Whitworth Street), the use of wayfinding information and/or further physical measures to assist preferred routes should be considered.

### Lighting

Most of the sections had good ambient lighting during daylight and early evenings. These are largely dictated by the level height and overhang from surrounding buildings.

The canal sections around Dale Street, Jutland Street Wharf and Deansgate Locks is where the light transition was considered to be the most acute. On the Irwell, the section behind St Mary’s Parsonage was observed to be dark and overgrown. Stretches do have barriers and are being used as rough sleeping locations. Most visitors on foot will be routed to the opposite bank or away from the water.

Overall, the lighting levels within the waterways did vary considerably, lowering in intensity in line with the move out of the city centre. This is to be expected. Where artificial lighting is provided, particularly along the Rochdale Canal, a more consistent and higher luminosity approach would help to highlight hazards.

Consistent and high lighting levels and differentials between lighting levels around junction and passageways is also considered to be a significant benefit for personal safety and crime minimisation. Lighting schemes for both banks should be considered, particularly around locks.

### Pathways and surfaces

The surfaces of the pathways and towpaths along the canals were generally as expected for the features. This means that there are numerous changes in levels due to different surface materials (bricks/ stone/ slab etc.) and that this will result in slip and trip hazards inherent along these routes, which would not usually be expected or acceptable in a new build pedestrianised area. Snagging and repairs to surface damage were noted in a number of areas, which demonstrates that conditions are being monitored and action taken to address issues that had previously been identified.

Essential heritage canal features such as foothold quadrants and mooring rings are necessary for the safe operation of a lock gate and are standard across the country. However, these can be expected to be a trip hazard for anyone unaware or unfamiliar with a waterside environment, particularly in low light conditions. Therefore, a regular inspection of the condition of the towpaths and pathways should continue to ensure that conditions are within acceptable parameters and the lighting conditions are such that anyone unfamiliar with river and canal network can see the intended routes and avoid slip and trips which would otherwise lead to a fall into the water.

The width of the paths alongside the Irwell were sufficiently wide to easily negotiate on foot and bicycle. The towpaths along the canals were very narrow around some of the lock gates, where adjacent development has squeezed the available area. In some areas pedestrians using the towpath would need step over the lock arms to continue along the towpath or find an alternative route across rough ground. Such situations are not ideal, especially in low light conditions.

### Rescue and recovery

Coroners have previously recommended that improvements to information and public rescue equipment (PRE) may be beneficial to preventing future deaths. Ladders to enable a self-recovery are provided within the lock chambers of all the locks (two access/ escape ladders). PRE along the reaches of the rivers and canals was largely absent, although we noted a small number of pubs and hotels that have provided rescue equipment on balconies/terraces etc. Spinningfields, Lowry and New Islington Marina have equipment provided at strategic locations, which is considered good practice for the city.

It should be noted that in many areas the freeboard and design of the water features (particularly so at the Irwell/Medlock) means that emergency services would probably still be required to actually get people out of the water, but rescue equipment would increase the survivability of an accidental fall into the water if assistance could be summoned.

In order for a PRE-based approach to be most effective, a number of conditions have to be met: the equipment must be deployed ‘at scale’ to provide sufficient coverage along a waterway; the equipment must be able to be seen/accessed/used easily, but equally maintained and defended against loss or vandalism; the approach should align and complement other measures such as information provision, infrastructure improvements and/or training of key people and organisations.

Critically, in order to achieve this, there will need to be a community supported approach including community owned PRE.

We understand that limited trials of PRE placement and training have taken place in the city with varying degrees of success. The experience of Bath, Birmingham Brindley Place, Durham and section of the Thames in Westminster show that higher density city centre locations can benefit. We believe that a community-led approach which deploys at bars, venues and strategic public spaces, supplemented by training for key people, will add resilience against drowning within the city centre.

It is important to note that we are not advocating a single factor policy e.g. every x metres, or deployment of PRE along waterways beyond the Manchester city centre zone, or in any other city.

## Information and routing

Tourism and blue waymarking signage help to route people onto the river corridors from the highways. These waterways are frequently used as cycle/foot commuter routes. The increasing use of these spaces for exercise and connectivity within the city, and a more consistent footfall are something very much to be welcomed in our opinion.

We observed variable levels of wayfinding along the waterways and numerous ginnels and dead ends were noted leading from the main canal corridor. On a number of occasions our consultancy team were asked for directions from members of the public who were lost and we also identified people climbing over barriers to exit the canal corridor (on the off side).

Hazard warning signs are used sparingly but most consistently along the canals e.g. on the lock arms. Away from the canals, the age and condition of many signs that we observed was an issue. The placement and visibility of the signage and the information available to aid identifying location was not easily apparent (useful to assist emergency services).

The duty holders and locations such as bars and hotels near to the waterways have tended to use different signs and design language to communicate safety messages. This means that when approaching a location from various angles, different messages are communicated. When these messages are intermingled with advertising and other information, the safety messages are not easy to visually identify and therefore, we believe, for people to absorb and act upon.

New Islington Lock and Tib Lock were noted to be used as pedestrian connection and principal crossing points across the city canals. We noted that a well-designed, dedicated pedestrian bridge is provided across Tib Lock. Despite the temporary barriers in place at the time of our visits we noted about 1% of users used the lock gates to cross, (based on several hours of static observation at this location). A seating area near to the lock gate increases the use of the lockside area. Therefore, we believe that a desire line across the canal lock gate exists. The action in hand by the Canal & River Trust to introduce a suitable design of railing here as a permanent feature is to be supported, given the ongoing need to direct people to the footbridge.

## Other comments

Despite the efforts of the Canal & River Trust, Manchester City Council and local volunteers, during the visits we found that litter and detritus were common along the canal and river corridors. While Biffa staff were observed emptying bins etc. along the canal network in many locations, occasionally the items in the water and along the towpaths and paths were noted to be significant in volume, often discarded food and items of clothing, but also potentially hazardous (e.g. drug paraphernalia) and contaminating (e.g. used condoms). Items in the water generally collect around the locks due to the natural water flow. At four locations, our consultants made observations with regard to visitors’ personal security.

Rough sleeping was noted in various areas, with tents and other bedding and possessions, clearly indicating sleeping locations, some very close to the water and across locks from the main towpath, apparently for reasons of personal security and/or weather protection. The location along the Irwell could easily be affected by flood/spate conditions.

The approaches within Manchester have been summarised within the following table.

| **Theme** | **River Irwell** | **Bridgewater** | **Rochdale Canal** | **River Medlock** | **Ashton Canal** |
| --- | --- | --- | --- | --- | --- |
| Consistency of measures | Visitors on foot traveling alongside the river, despite the disruption of existing works; largely similar approaches to risk control. Barriers at significant fall height or change in levels; clear footpaths and regular egress routes.  The main challenges sit at those locations that are not thoroughfares, and/or at the edge of building developments. | Although Castlefield is a different type of space from the footpath and Hulme Lock spaces, visitors will find consistent approaches to barriers, footpath conditions (if not width) and lighting. | Visitors on footpaths will find a largely consistent approach, albeit constrained in width/height in sections, and by building works at several points. The towpath was originally designed to aid navigation of boaters. | The river is largely canalised and not accessible.  Measures to exclude visitors are the prime intervention. | Visitors on foot or cycle find a largely consistent and uniform section.  Overlooked by housing. |
| Lighting | Space provides for good ambient lighting, supplemented by fixed street lighting. | Good ambient lighting, supplemented by street lighting. There was some question regarding lighting level/position on the footpath. | The section is overlooked and, in some parts, enclosed by buildings.  Ambient light levels vary considerably in short spaces e.g. at Deansgate Locks. Some spaces require lighting for most part of the 24hr period such as the Dale St Undercroft. Street lighting is variable throughout section. | Town centre sections are mostly covered by ambient lighting, or adjacent street lighting. | Ambient lighting with street and spot lighting in sections. Hazards remain obvious on continues section.  Jutland St. mooring arm/basin is secluded and not as well lit. Probably dark in the evening as overlooked by offices. |
| Edge protection and fencing | Extensive but not complete use of 1100mm barriers throughout section, along with walls and physical segregation. Led by the canalised approach to the river.  Sections such as that opposite V&A had change in height width without consistent barriers.  Central areas such as Lowry Hotel frontage had high quality/consistent design in place. This design approach can also be seen at Spinningfields. | Use of catching rails at change in height, levels and direction. Exclusion security fencing used at Hulme Lock. Narrow section. | Typically, limited runs of fencing. Some catching feature applied consistently e.g. under bridges. Sections approaching bottom locks  typically have catching rails; however, these are constrained by either head high or possible entrapment with lock mechanism (worth review).  A small number of locations, such as change in level/direction, would benefit from minor changes. A permanent design scheme is proposed to aid routing around Tib Lock. | Exclusion approach in situ for most of the visible/accessible sections.  Most viewable sections had drops of several metres into water.  The new build accommodation at A34/Brancaster Rd should be reviewed | Edge delineation use of coping tone and texture/colour change.  Bridges use a catching rail use several designs.  At lower water level freeboard might be above 200mm, and difficult to egress. |
| Pathway surfacing | Visitors enjoy paths several metres wide to approximately 2.5m at their narrowest. Tarmac surfacing with edge delineation applied.    Surfaces with edge delineation variable near to HS2 works (Ordsall Chord) does vary in quality.    Bankside sections opposite/adjacent to Lowry and behind NCP car park in poor condition, although not a main thoroughfare. | Several types of surfaces including cobblestones. Some locations at Castlefield require remedial work to reduce slip/trip/fall hazards. | Mixture of surfaces including brick and cobblestone/flags. Edge delineation is maintained with the use of coping stone. There are small sections that could present trip hazards, and signs of wear at a limited number of edges. | Highways overlook water. Barriers typically 1100mm or greater. | Flat, level and largely free of damage and wear. |
| Rescue and recovery | Not consistent use of PRE. Application at Spinningfields and Lowry, and in town centre is good practice.    Fall heights along section are significant in many places, therefore deflection/exclusion is the principal tactic. | PRE in situ at location around Castlefield. Not sited beyond ring road, except at Hulme Lock.      Most of the section has a low freeboard; where there is higher drop, this has catching rails in situ. | Along the level sections between locks, egress in daytime/good weather conditions is possible with lower freeboard height.    Approaching lock and inside arms, fall height can be 3m+. Ladders are main aid to egress. | Specialist rescue teams have aided egress.    There have been incidents near Princess St/Charles Street however, we cannot see any obvious location/scenario beyond scaling a wall/barrier to gain access to riverside. | Some PRE on site emergency call box that did not seem to work. Alarms (for residents?) could be used to get help. |
| Information and routing | Indications of scheme in place that has degraded/needed review once out of town centre.    Building work have impacted egress points, and route is currently disrupted, which could lead to unwanted behaviours e.g. access at Regent Road bridges towards town, no indication of footpath closed at entry point. | Castlefield has tourism centre and  signage/waymarking.  Less clear on safety information.  Warning signs used sparingly e.g. Hulme Lock, low bridges. | Visitors are encouraged by blue tourist signs. In addition, the Manchester heritage trail does use the canal path.  Temporary closures are not signposted, if at all e.g. the wooden foot egress at Deansgate Lock is not indicated as being closed.  There is warning signage and information around locks, mostly for boaters. The approach is comparable with the CRT national approach e.g. white edges/Hazard warning signs and painted cill marker/ladders. | Little to none, no active encourage of access. | Occasional waymarking signs. |
| Other comments | Signs of drug use and rough sleeping at several quieter locations e.g. Mark Addys pub. These are also within flooding zone.    Two locations posed personal security concerns for assessors. | Signs of rough sleeping in quieter parts of Castlefield. | There is significant evidence of the canal being used for rough sleeping, and shelter for Homeless people. This can be seen by the amount of debris and faeces along the sections, particularly underneath covered sections. We understand that the Undercroft and Dale Street areas have been locations for criminality and prostitution, and signs of sign of drug paraphernalia. | River Place/City Road east was a rough sleeping location (into back of Castlefield). Possible signs of debris/access riverside along this section. | Mooring arm/basin below Jutland St (from Dale St/Rochdale Tow path) was more secluded and had pinch points/blind spots. |

Table 2. Overview of findings by waterway

# Conclusions

The risk ratings of the canal navigations and River Irwell are broadly similar to those found in other locations across the UK.

Equally, characteristics and controls on the River Irwell are similar to those found in many locations across the UK. The canal features running through the city centre have similarities to many other cities in the UK. There are a number of areas where usage and space constraints have resulted in an increased risk rating. There appear to be multifaceted reasons why these hazards exist and that risks are increased. These include the presence of developments along the canal, the behaviour of the local populace and visitors, and the use of the canal corridor as a commuter route.

Between 2007 and July 2018, 28 people drowned in Manchester city centre zone. An overwhelming number of these drownings happened during the hours of darkness. These individuals, all bar two, were men and inebriation played a part in a significant proportion of the events that led to their deaths. There has been an average of between 2 and 3 fatalities a year over the period, and a further 5 non-fatal incidents over the shorter period. Our experience in other cities suggests this scale of harm is not unique to Manchester. The MWSP uses incident data to good effect, and fosters open discussions whilst reviewing incidents. Further use of tools such as checklists for data completeness may improve structured data held, and importantly help to capture/refine the information discussed in event reviews.

Lighting along the canal routes is not consistent and areas of antisocial behaviour and crime were apparent during our visits. A programme of actions which improve physical safety, alongside reducing antisocial behaviour, passively reducing crime and providing benefits for the general environment and users, are considered to be preferential as the city develops and grows.

A number of physical changes that will benefit public safety in the future have been identified. These need to be addressed in a strategic way, including fencing as a catching feature at junctions, lighting improvements and education of routes around Manchester, particularly at night.

The use of the waterside areas for rough sleeping was obvious during our visits; people who rough sleep are a particularly vulnerable group, sometimes sleeping in higher risk locations prone to flooding. We expect the locations observed to be comparatively dry/warmer and secluded from passers-by, particularly in winter. We suggest that locations, particularly those in the flood zone and at expected higher water periods, should be a focus for observation/visits. The broader actions taken by the city to address the underlying issues should be commended.

The use of the canal areas at night, and particularly by students and younger males, needs to be addressed so that more appropriate routes and behaviours are encouraged around the waterways in Manchester.

Coroners have previously recommended that improvements to information and PRE may be beneficial to preventing future deaths. A community-led approach which deploys at bars, venues and strategic public spaces, as well as training for key people will, we believe, add resilience against drowning within the city centre.

We noted that a well-designed, dedicated pedestrian bridge is provided across Tib Lock – the action in hand, by the Canal & River Trust to introduce a suitable design of railing here as a permanent feature is to be supported, given the ongoing need to direct people to the footbridge.

The city should be commended for having an established water safety partnership. The leadership for the actions and changes across the city needs to coordinated closely so that the group can work proactively and in step with the fast pace of change across the city. This would be greatly improved if there were a refined focus brought to the political oversight and executive support.

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# Recommendations

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| --- | --- |
| **Ref.** | **Action** |
| 1. | Whilst we commend the city for the development of a water safety partnership. Leaders in the City and Combined Authority should define further the executive reporting route(s) and political oversight of the MWSP and its work. |
| 2. | Subject to recommendation one, the MWSP terms of reference should be updated to reflect these changes. The new terms of reference should be signed off by executive level staff in all organisations. Entry into the MWSP by new organisations, should be conditional on their signed acceptance of these terms of reference or documents on the above terms. |
| 3. | Improve the lighting scheme along the length of the waterways in the city centre zone. Particularly along the canals. |
| 4. | Provide barriers where right angle entry points intersect with the towpath close to the waterway edge in locations where they are not already sited. All landowners should ensure they have a consistent approach to the implementation of barriers at intersection points. |
| 5. | Review the wayfinding and safety information that guides people towards the waterways, and in particular dedicated crossing points. |
| 6. | Create a development standard/policy for Manchester to control public safety developments alongside water bodies, both on a temporary basis (during construction phase) and permanent (once constructed, at adoption). Ideally this should be at the planning authority level so that the council or partners do not adopt unsafe situations or developments unknowingly, and that potential conflicts caused by other policies such as ‘Safer by Design’ are recognised at an early point. An early first step to achieving this could be the hosting of a city workshop to consider the impacts of the above policy on the waterways. |
| 7. | Develop an action plan that enables the provision of rescue equipment - at scale across the city centre zone. This needs to be aligned with design/informational recommendations. It is envisaged that a community approach will be required to achieve this, including private landowners, bar/leisure venues and watersides, underpinned by key staff training. |
| 8. | The MWSP should consider further use of structured methods i.e. data completeness checkslists to improve completeness and coverage of data captured. |
| 9. | Continue with and refine the behaviour/awareness programme relating to the use of the canal areas at night. Within this students and younger males need to be a priority. Support should be sought from community groups and Universities to aid delivery. |
| 10. | The role of licensing should be explored to enhance the safety of night visitors; in particular training and awareness for door staff, including the use of rescue equipment; awareness training to help improve identification of vulnerable adults, particularly lone males; provision of publicly accessible rescue equipment at bar/venues within a set distance |
| 11. | Within existing plans for severe weather events, particularly flooding, MCC should prioritise contact with those rough sleeping along the waterways. |

# Version control

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| --- | --- | --- | --- | --- | --- |
| **Version** | **Date** | **Originator** | **Reviewer** | **Authority** | **Details** |
| Working | 30/10/18 | DW | ND | RoSPA | Incomplete version for fact check |
| Full draft | 16/11/18 | DW | ND | RoSPA | Draft for MWSP |
| Final | 30/11/18 | DW |  | RoSPA | Draft for MWSP |
| Issue | 07/12/18 | DW | ND | RoSPA | Typo check |

# References and footnotes

i Manchester's Local Development Framework Core Strategy Development Plan Document, published July 2012. (Section 2.30)

ii [www.nationalwatersafety.org.uk/waid](http://www.nationalwatersafety.org.uk/waid)

iii https://[www.rospa.com/leisure-safety/statistics/drowning/](http://www.rospa.com/leisure-safety/statistics/drowning/)

iv E.g. In Staples v. West Dorset Council (1995) PIQR P439. The judge concluded that the risk of the wall being slippery when wet was so obvious that no duty existed. They also concluded that even if a warning sign had been in place it was unlikely that the claimant would have acted differently. A warning sign was not therefore necessary.

v https://[www.manchester.gov.uk/info/500230/joint\_strategic\_needs\_assessment](http://www.manchester.gov.uk/info/500230/joint_strategic_needs_assessment)

vi https://naturalcourse.co.uk/uploads/2017/10/Manchester\_Green\_and\_Blue\_Strategy.pdf

vii https://secure.manchester.gov.uk/downloads/download/3871/strategic\_flood\_risk\_assessment-manchester\_salford\_trafford

viii https://[www.manchesterfire.gov.uk/media/3430/irmp-supporting-documentation-2016-20.pdf](http://www.manchesterfire.gov.uk/media/3430/irmp-supporting-documentation-2016-20.pdf)

ix <http://www.makingmanchestersafer.com/downloads/file/133/community_safety_strategy_2018-21>

x <http://www.makingmanchestersafer.com/homepage/27/night_heroes>

xi <http://www.makingmanchestersafer.com/homepage/3/safety_advice_for_students>

xii https://[www.gov.uk/government/publications/safer-places-the-planning-system-and-crime-prevention](http://www.gov.uk/government/publications/safer-places-the-planning-system-and-crime-prevention)

xiii https://[www.greatermanchester-ca.gov.uk/news/article/369/panel\_to\_support\_greater\_manchester\_s\_night-time\_economy\_adviser\_unveiled](http://www.greatermanchester-ca.gov.uk/news/article/369/panel_to_support_greater_manchester_s_night-time_economy_adviser_unveiled)

xiv https://[www.greatermanchester-ca.gov.uk/news/article/411/funding\_secured\_for\_150\_extra\_staff\_to\_help\_keep\_people\_safe\_on\_nights\_out\_across\_greater\_manchester](http://www.greatermanchester-ca.gov.uk/news/article/411/funding_secured_for_150_extra_staff_to_help_keep_people_safe_on_nights_out_across_greater_manchester)

xv https://[www.wigan.gov.uk/Docs/PDF/Resident/Planning-and-Building-Control/Planning-guidance/Greater-Manchester-Canals-Heritage-Partnership-Agreement.pdf](http://www.wigan.gov.uk/Docs/PDF/Resident/Planning-and-Building-Control/Planning-guidance/Greater-Manchester-Canals-Heritage-Partnership-Agreement.pdf)

xvi https://[www.wigan.gov.uk/Docs/PDF/Resident/Planning-and-Building-Control/Planning-guidance/Greater-Manchester-Canals-Heritage-Partnership-Agreement.pdf](http://www.wigan.gov.uk/Docs/PDF/Resident/Planning-and-Building-Control/Planning-guidance/Greater-Manchester-Canals-Heritage-Partnership-Agreement.pdf) xvii https://[www.swimming.org/swimengland/new-requirement-schools-publish-swimming-levels-welcomed/](http://www.swimming.org/swimengland/new-requirement-schools-publish-swimming-levels-welcomed/)

xviii https://[www.gov.uk/guidance/pe-and-sport-premium-for-primary-schools#swimming](http://www.gov.uk/guidance/pe-and-sport-premium-for-primary-schools#swimming)

xix https://[www.nationalwatersafety.org.uk/strategy/info/uk-drowning-prevention-strategy.pdf](http://www.nationalwatersafety.org.uk/strategy/info/uk-drowning-prevention-strategy.pdf)

xx [www.nationalwatersafety.org.uk/waid](http://www.nationalwatersafety.org.uk/waid)

xxi https://[www.rospa.com/leisure-safety/statistics/drowning/](http://www.rospa.com/leisure-safety/statistics/drowning/)

xxii https://[www.cps.gov.uk/legal-guidance/coroners](http://www.cps.gov.uk/legal-guidance/coroners)

xxiii [www.nationalwatersafety.org.uk/waid](http://www.nationalwatersafety.org.uk/waid)

xxiv We undertook no engineering or load-bearing testing of any barrier during our assessment. Non-destructive visual testing only.

1. https://www.judiciary.uk/wp-content/uploads/2013/09/guidance-no-5-reports-to-prevent-future-deaths.pdf [↑](#endnote-ref-1)
2. https://www.manchester.gov.uk/downloads/download/6342/proposed\_public\_space\_protection\_order\_-\_rochdale\_canal\_undercroft\_piccadilly [↑](#endnote-ref-2)
3. https://secure.manchester.gov.uk/news/article/7665/rochdale\_canal\_undercroft\_public\_space\_protection\_order\_comes\_into\_force [↑](#endnote-ref-3)