PLANNING FOR A FLOOD RESILIENT FUTURE

EPCOR'S STORMWATER INTEGRATED RESOURCE PLAN

January 2019

Large rainfall storms can cause flooding, sometimes isolated, sometimes widespread. As recently as 2016, significant flooding has impacted Edmonton. The costs of flooding to citizens, the environment, society and property are substantial.

EPCOR is working to reduce the risk of flooding in Edmonton due to extreme weather. Our goals are to identify areas of Edmonton that have the highest risk of impact from flooding, develop drainage infrastructure and program improvements, and educate homeowners on the actions they can take to reduce their risk. Our Stormwater Integrated Resource Plan (SIRP) builds on initial work by the City of Edmonton before September 2017.

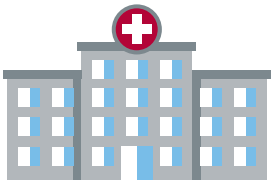
Edmontonians' priorities for flood impacts

We conducted public engagement in summer 2018 to understand citizens' priorities for protecting against floods and inform our risk model. We used a comprehensive survey to get input on four different types of potential flood impacts:

- Public health and safety — for example, ability to access hospital services, risk of illness or injury, and the possibility of loss of life.
- Social issues, such as loss of essential utilities and emergency services, displacement of vulnerable populations, mental health and major inconveniences.
- Environmental damage, including damage to natural habitat, loss of wildlife and vegetation and waste management.
- Financial losses, including property damage, costly repairs, loss of business and loss of work.

Top priorities for Edmontonians

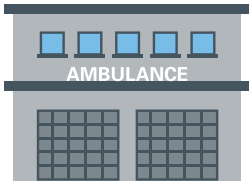
Through the survey process, Edmontonians reported that their highest priorities for flood protection were hospitals and urgent care facilities; and essential services such as fire, police, EMS and essential utilities.



Hospitals and Urgent Care Facilities

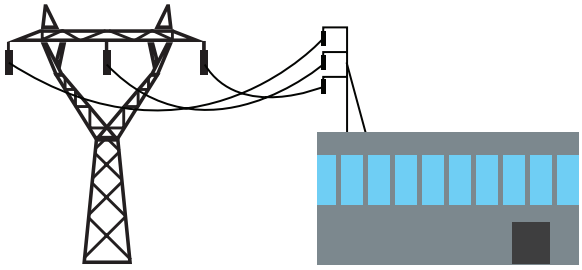
Police Stations

Fire Halls



Ambulance Stations

Water and Wastewater Plants



Utility Infrastructure, e.g. Electrical Substations

The next most important priorities for protection were against risks to human life and agencies that provide services to or housing for vulnerable populations.

For the city overall, citizens put the greatest priority on protecting against health and safety and social impacts from flooding (financial and environmental impacts were ranked as less important). Impacts that were reversible, temporary or insurable were of lower relative importance.

IMPACTS PRIORITIZED BY PUBLIC OPINION

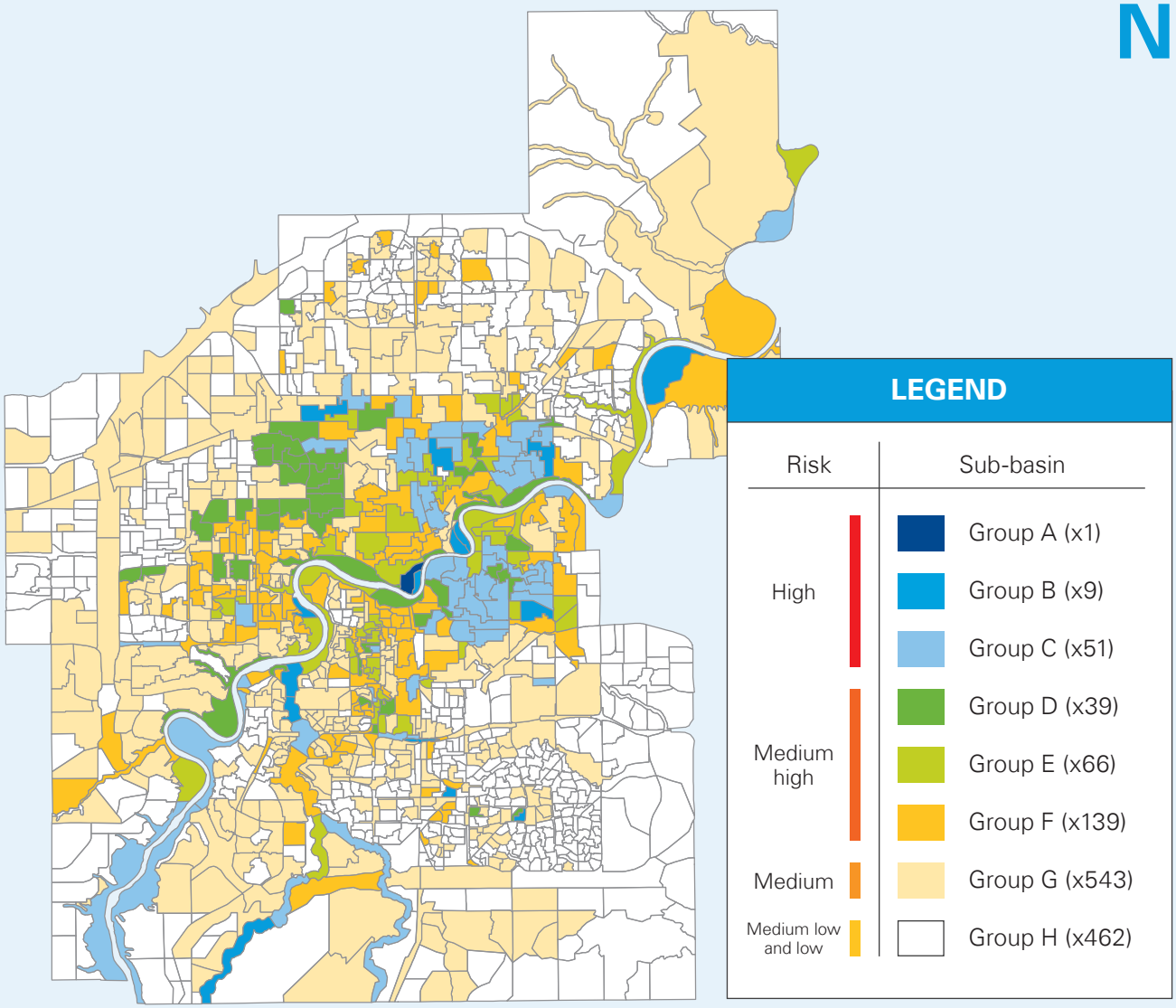
- Health and Safety | **30%**
- Environment | **15%**
- Social | **30%**
- Financial | **25%**

EPCOR's proposed plan for sub-basins

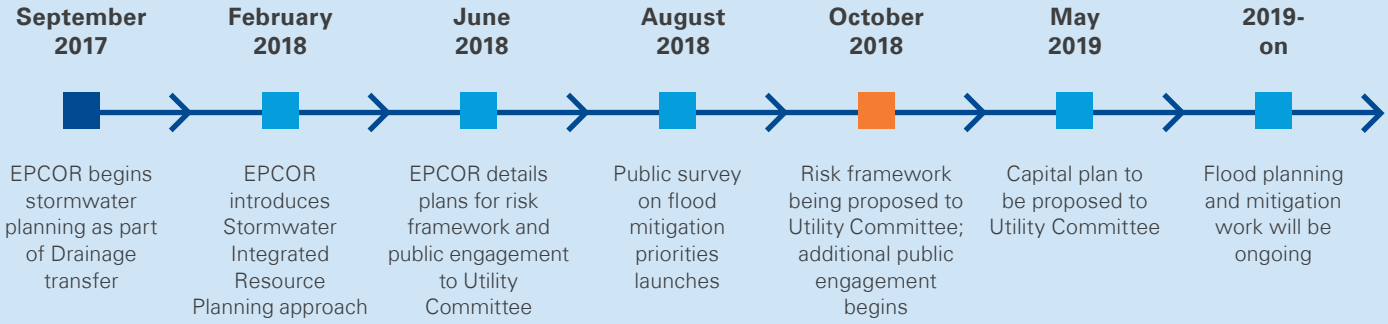
- **Groups A-E:** Prioritize flood mitigation to reduce flood risk to a medium risk level
- **Social Service Agencies:** Reduce risk to social service agencies and threats to life to the Group G level of risk
- **Hospitals and Essential Services:** Reduce risk to hospitals and essential services to the Group H level

The full-size map, along with additional risk maps and our full report, are available at **epcor.com/floodmitigation**. We will continue to refine the risk assessment as flood mitigation projects are constructed and we will share updated information on our website.

Map last updated October 2018



TIMELINE FOR ACTION



Understanding risk

In a risk-based model, we consider both the potential impacts and the likelihood that they could occur over multiple storm intensities over the life of a property. This model is a process of continuous improvement and design choice based on a range of factors including community input, risk assessments, financial analysis, planning and operational responses and environmental concerns.

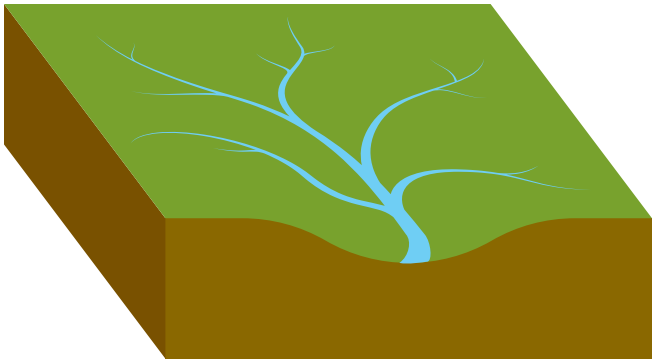
We have developed three scenarios to inform the framework for how we identify flood mitigation solutions. The map included in this summary shows which sub-basins need to be addressed based on what Edmontonians told us about safety, environment, social and financial risks due to flooding.

EPCOR's proposed plan

Based on public input and the risk rankings of Edmonton's 1,300 drainage sub-basins, we are proposing a plan to the Utility Committee to:

1. Protect hospitals, essential services, and social services by reducing their flood risk exposure.
2. Prioritize flood mitigation work at locations where flooding could put human life and social service agencies at risk.
3. Target sub-basins in risk classes A - E (as shown on the map in this summary), and reduce their flood risk to be no greater than Medium (Class G).

What is a sub-basin?



A sub-basin is the combination of local storm water pipes and topographical depressions into which storm water collects. The water then drains to a network of larger storm pipes that ultimately connect to creeks and rivers. There are more than 1,300 sub-basins in Edmonton, about three-quarters of which are considered medium or low-risk in terms of potential flood impact.

HAVE YOUR SAY

Community input and involvement is important, and we want to continue hearing what you think about flood mitigation priorities and strategies. Here are a few ways you can be heard and stay connected:

- Contact us with any questions or feedback at **epcordrainage@epcor.com** or **780-509-8080**.
- Watch **EPCOR.com/floodmitigation** for updates on SIRP.

WHAT CITIZENS CAN DO TO PROTECT THEIR PROPERTY AGAINST FLOODING

In many neighbourhoods throughout Edmonton, flood mitigation projects have been completed or are underway to reduce the risk of flooding. Maintaining good drainage on your residential property is also an important part of the flood prevention equation.

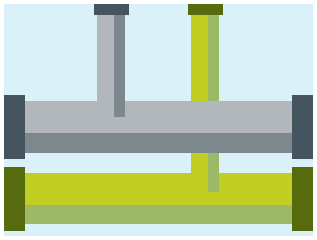
EPCOR is responsible for the drainage system up to your property line. Homeowners are responsible for infrastructure and surface drainage on their property. The most effective ways for property owners to protect homes are to:

1. Maintain good drainage on your residential property.
2. Sign up for our free home flood protection inspection that will provide homeowners with information on how best to protect their property from flooding.
3. Install a backwater valve — we're offering qualifying homeowners a subsidy of up to $800 to help reduce the costs. *(Note: homes built after 1989 will have a backwater valve; anything prior to that year will not likely have one).*

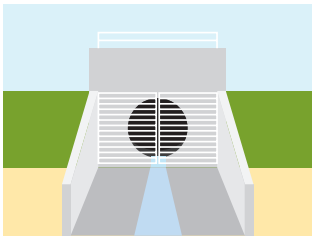
To learn how to maintain good drainage on your property, and find out about EPCOR's programs for homeowners, visit: **epcor.com/floodprevention**.

Potential improvements

In May 2019, EPCOR will present recommendations for infrastructure and programming that will reduce the risk of flooding in the highest-risk areas of the city. Once that plan is approved, we'll be informing the public and seeking input about the design of specific projects. Solutions for every sub-basin will be determined based on a number of factors and could include any of the measures below. Visit **epcor.com/floodmitigation** for more information.



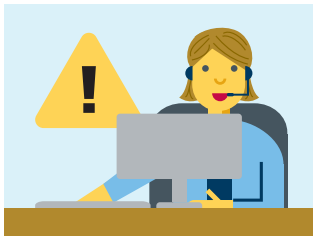
Trunks and sewer separation



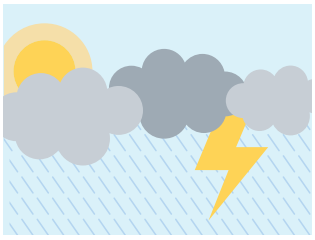
Outfalls and control gates

Dry ponds

Maintenance programs

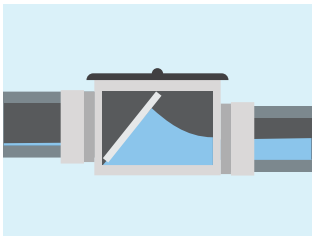


Emergency response



Weather forecasting

Low-impact developments



Homeowner responsibilities