

**City of Edmonton Drainage Services  
Summary Notes of Riverdale Flood Mitigation Meeting  
Held May 14, 2015 at Riverdale School**

**Presenters**

Miressa Fola, Project Manager, Drainage Planning  
Maxime Belanger, Project Manager, Sameng Inc.

In attendance were approximately 35 residents.

**River Valley Neighbourhoods Flood Risk Study**

*Please note: a copy of the presentation is available on the City's website under the name Riverdale Flood Risk Study at:*

[http://www.edmonton.ca/residential\\_neighbourhoods/flooding\\_prevention/flood-proofing-public-consultations.aspx](http://www.edmonton.ca/residential_neighbourhoods/flooding_prevention/flood-proofing-public-consultations.aspx)

The presentation began with the review of the floodplain map and the existing drainage system in Riverdale. The results of a detailed study by Sameng, which included a survey of residents, were then shared. Main issues for the neighbourhood when rainfall is intense are:

- A few catchbasins are still connected to the combined sewer, which may cause local sewer backup.
- Several homes have roof leaders connected to the combined sewers, which may cause local sewer backup.
- Large ponding in three areas of the neighbourhood threaten to surface flood homes.

Flood mitigation improvement options for intense rainfalls include:

- Provide additional sewer separation (catchbasin reconnections, new storm sewers)
- Roof leader disconnection from combined sewer pipes at select locations.
- Provide drainage and storm sewer improvements to reduce surface ponding (e.g. new sewers, additional catchbasins, swales)

Main issues for the neighbourhood when the river level is high are:

- A few catchbasins still connected to the combined sewer are in the floodplain, which may cause widespread sewer backup as the river water will flow into them.
- The river could backflow into the pump station storage tunnel and the pump station itself causing widespread sewer backup.
- Water levels in the river which have 4% chance of exceedance (or higher) in any given year can spill into the floodplain, and may cause widespread flooding.

Flood mitigation improvement options for high river levels include:

- Prevent river water from entering the combined sewer system via one of the outfalls.
- Prevent river overflow from entering the sewer system by sealing manholes.
- Reconnect catchbasins located in the floodplain to the storm sewer system.
- An additional, alternative solution is to look at the feasibility of a permanent or temporary flood barrier along the river.

The Alberta Government is conducting a study on the North Saskatchewan River Basin, which includes Edmonton river valley neighbourhoods and other upstream and downstream communities. The study will investigate the risks of floods and identify alternative solutions for mitigation or defences for all at risk communities in the basin. Drainage Services will integrate the findings of that study (expected to be completed in the fall of 2015), and action the provincial government might take, into its own future planning for Cloverdale and other floodplain neighbourhoods.

While prioritizing, financing, designing and constructing flood mitigation improvements in the neighbourhood will take some time, Drainage Services will as next steps:

- Improve communication to residents should there be a potential flooding threat from high river levels.
- Take community input, further validate the options and prioritize recommended improvements.
- Look at how high priority projects can be advanced as quickly as possible.
- Follow up with the provincial North Saskatchewan River Basin Study and integrate provincial plans into City planning where feasible and appropriate.
- Continue to support homeowners via Drainage Services' Flood Prevention Home Check-up, flood proofing subsidies, and responsive drainage repair and maintenance.

### **Comments and Feedback**

**Q. I need clarification of the work that was recently done on 89<sup>th</sup> Street. What work was done there and why? It would have been around 2012-13.**

**A.** We're not sure who did that work, but we can find out. We do know that there was neighbourhood-wide storm sewer installation done about 20 years ago, around 1997-1998. It's possible more recent work could have been a water line fix, or transportation, or Neighbourhood Rehabilitation which are all separate from Drainage. *Note: After the meeting, it was confirmed that the most recent drainage work done in Riverdale affecting 89<sup>th</sup> Street was sewer upgrading in 1998.*

**Q. Are you sure there are catch basins in our area that are still attached to the combined sewer system that could lead to river flooding causing sewer back-ups?**

**A.** Records show there are five or six still connected. We will do a physical inspection to confirm that.

**Q. I live on 87<sup>th</sup> Street near the Dragon Boat launch. Last year someone reduced the berm there to allow easier access to the dock and the city says they have no record of this being done. The berm's height was reduced by a metre and I'm worried this will lead to flooding.**

**A.** We will check into this and report back on what we find. *Note: After the meeting, a check with the Sustainable Development department (who looks after City parkland) confirmed they have no record of work being done there last year or a request from another department or interest to have work done there. The request has been also passed to City's Community Services Department to follow up with the Dragon boat group.*

**Q. What other solutions are you looking at for the areas that are prone to chronic river flooding?**

**A.** We are looking at sandbagging more areas, flood walls or berms but it will depend on what's feasible and reasonable given the cost benefit.

**Q. You show in 2013 a seven meter river flooded 87<sup>th</sup> Street...but the historic highs in 1915 and 1986 are only one meter higher...is this correct?**

**A.** The 2013 event was 7.0 m in depth and it did barely overflow 87 Street. The 1915 flood reached 11.2 m in depth, and the 1986 event reached 9.5m in depth. The river's banks are steep but the neighbourhood itself is fairly flat. Once the river tops the banks it doesn't take much more water to flood the neighbourhood.

**Q. What would a temporary flood wall look like and what would it be made of?**

**A.** One of the concepts would be pre-installed anchor points that would be permanently set in place. When flooding appears imminent, steel columns are installed into the anchor points, and steel beams slide between the columns to create a barrier. They have been used at several flood prone locations in other countries. The other temporary flood damage mitigation alternative is sandbag some locations when they are threatened on a case by case basis. The City has 20,000 sandbags on standby. *Note: Pictures of flood wall examples are included on the last page of these notes.*

**Q. How much does infill impact the way the ground absorbs water?**

**A.** Each lot has a maximum area of impervious surface (e.g. asphalt or concrete) that is allowed and that will increase runoff for most rainfall events. But an intense rainfall event which has a 1% chance of exceedance in any given year would overwhelm the ability of any lawn to absorb water.

**Q. I believe upstream dams had an effect on flooding in 1986 didn't they?**

- A. Most of the rain in the North Saskatchewan River basin falls downstream of the dams. A previous study indicates that most of the rainfall from the 1915 rainfall event fell downstream of the location where the dams currently are such that these dams would have very little impact on peak flows in the river. We are not aware of the impact of the dams on the 1986 floods. We can't count on dams to control the river levels because they have little impact.

**Q. Do the City's emergency planners work with the Canadian Forces to ensure a coordinated effort should the city need their help in an emergency?**

- A. Yes. We plan to take care of situations ourselves but we also coordinate with our provincial and federal counterparts.

**Q. There needs to be better communication with residents when there is a risk of flooding.**

- A. We have heard that feedback and we are working with communities to make sure we communicate better with you. We are working to be more proactive with our communications. Residents can also sign up for Alberta Emergency Alerts from the province. This is often the same information that the City gets.

**Q. What are the top flood prevention action items for our area and what are the associated costs?**

- A. Separating the remaining catchbasins from the combined sewer system would be a top item. In total the drainage improvements we have suggested for flood mitigation could be up to \$20 million. The City will follow up with the provincial North Saskatchewan River Basin Study and work with the province to integrate river flood mitigation alternatives into City planning where feasible and appropriate.

**Resident comment:** I appreciate that the City is continuing to work on flooding solutions for this area. My main concern is overland flooding from the river. I hope the city and the province can get together on a solution. I think most would be in favour of a flood wall.

**Q. Are flood events increasing due to climate change?**

- A. The City is anticipating more short duration but very intense rain events that could cause more localized flooding in the future. We do not know if climate change will increase the frequency and severity of high river flows.

**Q. The river level marker on the west side of the Dawson Bridge needs to be repaired. Can someone please look into it?**

- A. Yes. *Note: After the meeting, it was confirmed that river water level markers are the responsibility of the provincial government. Alberta Environment and Parks have been notified of the damaged marker.*

**Q. Is there a provincial or municipal restriction on building in a flood plain area?**

**A.** Building is allowed within the floodplain that has a 1% chance of flooding in a given year but there are certain restrictions. There is a total ban on building in the floodplain which has 4% chance of flooding in a given year. Note: *Flood overlay details can be found at [http://webdocs.edmonton.ca/zoningbylaw/ZoningBylaw/Part2/Overlays/812\\_%28FPO%29Floodplain\\_Protection\\_Overlay.htm](http://webdocs.edmonton.ca/zoningbylaw/ZoningBylaw/Part2/Overlays/812_%28FPO%29Floodplain_Protection_Overlay.htm)*

**Q. Wouldn't the money spent on a berm be better spent on flood proofing homes?**

**A.** That is an option that could be reviewed, but nothing has been finalized.

**Q. What are the backflow valve subsidies?**

**A.** The City's 311 service can provide you with all the information. They can also help set up a complementary one-on-one interior and exterior drainage assessment for your property at a time that works best for you.

**Resident's Comment:** The city's website needs to be a better tool for communication. Also, it's more than just sump pumps draining to the streets that causes spring icing; there are problems with infill causing this too.

