

Infrastructure Division Meeting
August 18, 2014 7:00 p.m.
Tim Tyler Boardroom, HSCA

In attendance: Charlie Lund, Reg Jans, Brian Castle, Krista Kaert, Paul Galachiuk, Kerri Treherne, Richard Bolt, Amanda Palmer, Brad Larson, Francois Bouchart

1. Alberta Community Resilience Program (ACRP) funding

Three milestones:

- a) *Development of the statement of municipal priorities by the City's Recovery Operations Centre*
- b) *The development, presentation and approval of a prioritized list of projects for City Council on September 14*
- c) *Submission of all materials to meet the provincial deadline of September 30*

Note: it was discovered after the meeting that the ROC report for Provincial funding will be going to the Priorities and Finance Committee on September 16th. Keep this in mind when determining timelines and lobbying.

- Want to see our Sunnyside-related projects prioritized reasonably high, or at least the priority list written so that ours are looked at favorably
- City Council meeting to discuss this September 14. We probably want to talk to Druh before then.
- After September 14 the challenge is to meet the September 30 provincial deadline, which is really the City's issue, but we need to be mindful of this when we ask questions.
- Need to figure out how we're going to connect with our MLA, David Swann.

- In terms of application to this funding program, the City is putting together a package. It is a corporate package, not a Water Resources package. Right now the program is very dynamic – in preparation for this meeting Francois talked to the person looking after the submissions for Water Resources to the Recovery Operations Centre, who will give it to City Council.
- As late as last week, the province was still providing clarification and modifying some of the parameters that they wanted to use. And the feedback as to the kinds of projects they are looking at.
- Any indication of the amount of money they are looking to award from the September 30 call? The money is for 2014-15 with the possibility of applying for more money later.
 - o City looking to get in as many projects as possible, but with the parameters of 'shovel-ready'.
 - o In terms of the City, we have potentially a list of project that equals the total amount for the entire project. No surprises there. In terms of Water Resources list that's been put together, we've made an attempt to rank the projects on a basis of the criteria that the Province has told us to date. But keeping that in mind our ranking is not necessarily the finally ranking that ROC will select. ROC will make the selection based on the priorities of the City of a whole.
 - o Can you share on the parameters the Province is giving?
 - Asking whether it is a protection, 'keeping the river in the river' – type projects.
- Who is the ROC? What department?

- That is made up of a steering committee. The General Managers are on that steering committee. Representative for Water Resources is Rob Pritchard. Only City of Calgary employees are on the Committee.
- How can we work with the ROC to make them understand our needs/concerns? Asked Druh's office in late July, never heard back.
- Water Resources strategy has been to break Sunnyside's projects down into five smaller ones. The Upper Plateau Diversion (Sunnyside pieces) and four lift stations.
 - Not applying for phase 2 stuff because it is regular city upgrades and do not involve the river.
 - They have all ranked pretty high in terms of everything else amongst Water Resources.
 - Project to raise the berm has not been identified because it is still in study. There will be several opportunities for the City to apply to these funds.
- There will be rounds for funding every six months (3 Septembers and 2 Marches).
- Working on two different priority lists – the ACRP list and the normal November capital projects list which is based on the triple bottom-line.
- The City is going to have to find the 10% of whatever is funded, so they're going to have to keep tweaking their budget. Once they get direction from the province as to what projects were successful, they'll be able to have a better sense of their entire budget.
- Will whatever is funded be ready for next June?
 - The September 14 deadline is just to get things ready to send. Not sure when we'd hear back from the project. The funding has a five-year timeline for completion.
 - We'd have to work with our engineers on the delivery side of things and identify whether they can secure the resources, if they have a contractor who can deliver, and what the price premium would be to complete it so quickly.
 - The things that don't get the funding will go onto the normal priority list, and that can take up to 15 years for a capital project to come to completion.
 - In the interim the emergency procedures are in place (e.g. the pumps).
 - CRRD group will have to sit down with the City and talk about what was done last year, see if we can do it again (or something different and better) next year.
- Is there anything else we can do? Who else can we talk to, other than Druh? We don't know anybody on the ROC...
 - The GMs are on there, which is public information. UEP is our (Water Services) General Manager
 - There are meetings happening this week. Not sure if things will be finalized though. Deadlines are coming up quick – reports need to be prepared several weeks in advance of Council. Probably need to be ready by the end of the month.
- Will the priority list be made public after September 14th?
 - Not sure, don't know the parameters to go in camera.

ACTION: Kerri will follow up with Druh.

- Charlie is guessing they will be making an announcement in November, so we'll need to do a lot of our lobbying in October.

- David Swann did offer to write a letter of support. We'll take him up on that, which will be possible after September 14th.
- David Swann offered to meet in Edmonton as well, which we should also follow up on. Who should go if we decide to lobby? Charlie is away first three weeks of October. Can talk about this at our next meeting. We should probably do this the first half of October.

ACTION: Infrastructure Division needs to figure out how/when to engage David Swann, and look at possible meeting times.

2. Follow-up on Phase 1 of the Sunnyside Community Drainage Improvement Study

- When we looked at the number of pipes that would have to be replaced in Sunnyside we were all concerned of the number of streets to replace pipes. Are there opportunities to lower costs or lower reductions to the neighbourhoods? There were some ideas thrown around last meeting.
 - o Brad asked Associated Engineering to look at all the pipe proposals they've made to minimize digging up. By dissecting the main trunks that cause flooding for Sunnyside, you have a lot of catch basins that need to be picked up and brought to the right sides. Sometimes there is no way of doing it other than by putting pipes down the entire the street. There are also pipes that also need to be the right size for a 50-year event.
 - A lot of the orange pipes [shown on the map associated with phase 1] don't exist currently, so there is no upgrade to be had, but there is a catch basin that cannot cross the wall of the triple ducks. So you'll need to have a new pipe to service the area. It largely comes down to physical servicing.
 - The three blocks in the North West part, we've decided to just rely on the back flow valves and double up on them so there is no chance of backing up there. That is about a 20% reduction in what would have been down, which is also reflected in the cost of the project.
 - In that area, Venn comprises of about a third of the area, and they have to provide 1:100 year servicing for their land with onsite (typically underground) storage. They deal with their runoff on-site. Requires that the duct they are flowing in is accepting water though. They have an allowable discharge at all times. There are also some low spots that will naturally fill up with the runoff just for the area. The consultants will find out exactly how much back up is there, can they drain and at what capacity, and if no, we may put in a temporary pump (one of the 6-inch ones, since we'll have proper lift stations). We don't know where they will pump yet, details need to be sorted out. * Note all this only matters if the river is high
 - We did discuss this briefly a few months ago, but if removing the gates is what we do, we'd replace them with a flapper gate, so that if the river is high but no rainfall, we'll stop the river from going back up. Flapper gates just move with the flow, so would protect the pipes in the winter.
 - Brad has asked Associated Engineering to valuate if we need all those pipes. We'll have a better idea on this when the draft of the final report is ready, which should be early October.
- Communication Engagement event can still go ahead on the 23rd even if the report isn't done, because we have all three tech memos.

- Tech memo one will have to be revised with these suggestions.
- The consensus is that we are more or less okay with Water Services going ahead and writing up Phase 1, having heard our input for Phase 1. So we don't need another meeting on Phase 1 with this group.
 - Caveat: we don't know the basis without having read the Tech Memos.
 - Brad's plan was to have Associated Engineering to finish the draft, then he'd read it and make revisions, then share it with us so we could, and then the public could see it. Because of the new changes, it might have to happen out of order.
 - Phase 1 is best reviewed and made comments on in the Final Draft of the report. Phase 2 may have modifications on Phase 1, and Phase 3 will on Phase 2, etc. To go back and discuss just Phase 1 wouldn't work the best at this point.
 - If we could get it a few days in advance, that would be great.
 - This is a study, not a final design. Even after the study is out and incorporates input from the public, there will be detail design afterward. This is just a direction, well-developed concept. There will be an engagement piece for that as well.
 - Suggestion that the Infrastructure committee stays engaged in that process. Especially when the construction projects do come along.
- The Final Report won't be chaptered as Phase 1, Phase 2, and Phase 3. It will have everything together in a systematic way. There will still be opportunity to express thoughts on it at that.
- The norm for CDI engagement is for Water Resources to lead. About questions and feedback.

Amanda Palmer 14-8-20 12:32 PM
Comment [1]: Brad to get Infrastructure Division a copy of the final draft as soon as it is available for review.

ACTION: Brad & Francois will work with Amanda for the publicity for the event.

3. Review of the Terms of Reference provided to the consultant for Phase 3 of the Sunnyside Community Drainage Improvement Study

- Objective of Phase 3: What to do with a high river event? Prior to that, it was assumption of no river concern. Also assumes the changes in Phase 1 and Phase 2 have been met.
- Pick a level of rainfall under those conditions. We've picked a 1:50 rain with a high river, to explore whether it is possible.
 - Sunnyside is a guinea pig for us in that historically we've provided the 1:50 year rainfall level of service for communities that we retrofit. That's what all other communities experience because they don't have gates. What we're looking at now is the next level of service, which is a rainfall event with a high-water event. This is uncharted territory because it is not a level of service we've offered in the past. It wasn't even contemplated in terms of a level of service that would be provided in the previous study. This does not eliminate the possibility of then having an emergency response plan around larger events, but we're not looking at that emergency response, that's not within the scope of this study.
- One reason we say high river event more vaguely is because the gates in Sunnyside and Hillhurst operate at different levels (but roughly all closed by 1:20 water level¹), and gates can be closed

¹ Fictitious concept, and the flows we actually see are based on the Bears Paw reservoir. Depends on TransAlta. We might have a 1:50 event, but may only get a 1:10 year event because of actions they take. A chart shown at the

at different times for different reasons. The gates can be closed even when a high river event isn't happening, but was forecast to occur. So we've decided gates are closed when they are closed, whether the river is high or not. And then to assess what is the impact?

- If the cost is astronomical, we may have to choose a lower level of rainfall protection for when the river is high.
- When you're doing the presentation in October and say river is high, I'm sure residents will want to know what the impact at their homes.
 - Would require an overall probability analysis, based on this gate being closed at 1:20, this gate is closed at 1:5, etc.
- Design parameters:
 - There was a workshop done internally to the City awhile ago to determine a palatable number of pump station the City is willing to build, own, maintain, etc. We knew all outfalls was too much. Strategized physically locations, land already owned by the city, pipe network, where things are physically...
 - Red marks (on Brad's map) are going to be where the proposed pump stations will be. (3rd St., 5A, 10th)
 - Sunnyside Station #1. We're not building two, it will be A or B.
 - A is where current sanitary lift station is. They have to rebuild the sanitary lift station. Should they choose to build it on the west, they can dismantle the old one. We'd like to be able to put both on the same piece of lands. The City also owns a piece of land beside it, so they could put it there too (option B). B43 will be connected to B42, B46 only has two catch basins attached to it. Idea would be to close the gate, it will fill the area and then just run down Memorial where it reaches the pump station and is pumped back into the river. It will be connected to a Force Main and forced into the river.
 - Sunnyside Station #2. Where the existing lift station is at present. It will take care of B47A, the B49. Here is a very interesting thing for people to think about. These pipes (49, 51, 53, 53A) could be put directly, syphoned underneath (not a huge fan of syphoning because small pipes can get clogged, but will be used so infrequently that it shouldn't be a big concern and it will be big enough that debris likely won't clog it). Each of these outfalls could be connected directly straight through, but there is a good chance this quantity of water would be too great to get the pumps you need to facilitate the station. Possibly a non-conventional dry pond to prevent the homes in the area from being the low area? Next best alternative? Cost differential?
 - No pump station at B49, which seems to be an obvious choice?
 - Hillhurst: West part goes to B54, per phase 2 would all have proper sizing, etc.
 - Hillhurst Pumping Station #1: B54 and B57. Phase 2 proposes bypassing some of the water, flow split. Only so much room in elevation to make a pipeline along the southern part. Revising level of service possible due to physical constraints. Involves Kensington Close being dug up, very small

April Symposium demonstrates that the stats are based on a flat average, but what we're seeing is that the data is having a tilt to it – seeing more extremes. But we'll use the numbers we have because it's what we have.

portion of Kensington Road. The proposed pumping station would be by the parking lot of the old Fire Hall.

- Hillhurst Pump Station #2: B60, B61, B62, and possibly the others up to B66 inclusive. Aware that 14th St. at present the grading encompasses a vacant lot that may have a ramp, which would be close to where we'd want to build the station. There would be internal conversations about the placing of the station with Transport.
- Any way of using these for more than a one in 50 event? Making it more marketable and appealing?
 - Ideally having it used on an annual basis in a safe and small manner.
 - Transform them to public art by painting them? Annual Water Festival?
- What happens to B48 and B48A?
 - Flapper gates hold water out.
 - How far back does the water flow in the trunk if the river is at berm height?
 - The trunk is backed up to 10th St., need to check this.
 - Another factor is that these pipes are built for gravity application. So they are not built for pressure applications. If the pressure gets great enough in these pipes, is there a failure point? There is not a lot of cover for these pipes – worry that they would break and then pop out of the ground.
 - Would Phase 1 even work? Yes. Phase 3 talks a lot about this as well.
 - Well on our way to figuring these details out.
 - These pipes are square, the corners are more likely to fail than a circular pipe that doesn't have corners.
 - Becomes what can these handle at present under these scenarios, and then combined probability. Then the question is, what's the cost to do nothing? To what level of service does that get you? Are we willing to accept that level of service. If not, then we're looking at doing something different, which is costly, and are we willing to deal with that? We'll be exploring the costs, etc. First step is if there's an issue.
 - One thing to curtail that is a dry pond in the HSCA park, so that the flows that come down have reduced pressure on the pipes closer to the river. Two pipes run down on 8th Ave., if you were able to tap into that at a strategic elevation at peak flow you could bring it down to HSCA park where a dry pond could be. Wouldn't touch the tennis park – would be pretty much grass area. Water would then be drained at a small controlled rate through Hillhurst to Hillhurst pump station #1.
- What is the assumption for McHugh bluff drainage? What has the Golder report told you?
 - Covers ground water coming from McHugh bluff. Consultants are taking the flows from this in consideration. Small relative to storm water flows. Comes slower but for a longer period of time.

4. Status of other projects underway that might have an impact on the Sunnyside community

- a) Flood Protection Study
- b) Updated Hydraulic Modeling
- c) Lift Station Resiliency
- d) River Ice Study

Amanda Palmer 14-8-20 12:45 PM

Comment [2]: City needs to look into how far up 10th St. trunk the river water goes

- Water Services progressing with these four projects.
 - o A) Study expected to be completed by end of December. Looking at all communities, sub-section specifically for Sunnyside. Expecting first run draft by end of September that includes front-end chapters and Sunnyside sub-section. In talks with the committee about sharing drafts.
 - o B) Modeling completed, in the next phases. Looking at the driver for the hydraulic modeling, which is to re-visit the Emergency Response Manual during floods and identifying evacuation areas. We are continuing or conversations with the province of the flood risk maps.
 - o C) Internal meeting this week to look at the design concepts, which have been developed by consultants. Based on that meeting will finalize the front-runner concepts.
 - When can you review that with this committee?
 - Don't have a specific date other than the meeting this week and the final report which is expected by end of October. Francois will talk to them about that. Challenge around how much becomes publicly available when they're still having internal discussions.
 - Let Infrastructure Division know so if there is some lobbying that we need to do, especially around if it is a problem with the Province mapping.
 - Are you making the assumption that flood protection fails or it works? Traditionally they take the assumption that it fails.
 - Model for Sunnyside and Hillhurst is based on looking at the two scenarios – the scenario where we don't have a breach of the berms, and we have the scenario where there is a breach of the berms. We did that in the 2012 modeling exercise.
 - Totally different funding mechanism for the September 30? Not shovel ready?
 - It is something Francois will explore with them – at what point they think they can start sharing the draft report with this group. Looking at draft by the end of September internally.
 - o D) That is progressing well, this was always going to be a longer-term project. They've got data of last year's winter. We've learned already some things about ice formation as a result of that. Our study is going to extend into this winter so that we have a second year of data. The end date of the work is anticipated to be after June 2015, because that's when we're going to end our monitoring on what's happening. We're doing more in terms of monitoring this year than last year. We're actually going to have cameras and probes to help us understand the process. Based on the results we may re-investigate whether we need to do it in subsequent years
- Is there a ground water study?
 - o We have a research project with the University of Calgary to start exploring ground water issues. We've talked about before river interactions in Sunnyside, which is touched on in the Flood Protection Study. But trying to more broadly understand ground water.

5. Next meeting

- Cancel the meeting scheduled for next Monday, because there won't be much else to talk about.

ACTION: Amanda to cancel the meeting room

Amanda Palmer 14-8-19 4:12 PM

Comment [3]: Francois to talk with committee looking at Lift Station Resiliency about when our Infrastructure sub-committee can be engaged and review their report.

Amanda Palmer 14-8-19 4:14 PM

Comment [4]: Water Services will let Infrastructure sub-committee know of areas that may require or benefit from lobbying

Amanda Palmer 14-8-19 4:15 PM

Comment [5]: Francois will follow up on how Lift Station Resiliency could be funded – mainly if it would be a project to submit to the ACRP.

- Next meeting to be held September 29th at 7 p.m. to discuss:
 - Priority List
 - Phase 3 of CDI study
 - Possibly the flood protection study?

- Meeting on October 27 to discuss how the flood engagement event went and other studies?
 - Kerri has agreed to take minutes in Amanda's absence.

ACTION: Amanda to book the room for the meetings

ACTION: Amanda will send minutes to people in attendance.