

Feedmill Creek Stream Rehabilitation Measures – Class Environmental Assessment
 Comments Received during Consultation Period (November 24, 2016 – January 16, 2017)

Comment	Response
<p>The previous Kanata West studies mentioned that the ancestral channel should be retained but I do not recall them saying that it should become the main channel.</p>	<p>The new recommendations are based on the most up-to-date information including recent survey data and a detailed fluvial geomorphologic assessment. Once approved by Council, the new recommendations will overwrite the recommendations from the previous studies.</p>
<p>Minto’s June 2011 Setbacks Report (see the attachment for the title) identified corridor width, meander belt width, hazard limits, and the 30m setback which is to be implemented for their Arcadia MUC east site – realigning the channel will require Minto’s study to be revisited. The Report has a lot of detail on the creek with photos – these need to be reviewed and resolved with Minto.</p>	<p>It is anticipated that this issue will be addressed through the approval process of Minto’s development. This issue will be flagged at detailed design for the rehabilitation measures.</p>
<p>The Reach 1 Map doesn’t show the confluence area in enough detail.</p>	<p>We have only completed a functional design. The detailed design will be done in 2017.</p>
<p>Minto's report had identified a lot of beaver dams along the creek. Beaver dams are also a problem in all the naturalized or undeveloped areas</p>	<p>During the 2015 field assessment, notes were made of various features, including beaver dams. These features have been documented in the appendix of the criteria study (photo, location and recommendations). Beaver dams have not been included in the hydraulic model.</p>
<p>Explicit reference should be made to walking or multi-use trails along the watercourse, and to constructing wetlands and ponds within the watershed.</p>	<p>Coordination with Park and Recreation will be required during detailed design to avoid conflict between the proposed measures and the existing/future multi-use pathways.</p>
<p>City of Ottawa should also require that future plans of development in the Feedmill Creek watershed minimize impervious surfaces, maintain or enhance topographic diversity, and retain or enhance tree cover, noting that these measures will decrease flooding risks during extreme storm events and improve aesthetics, property values, and wildlife habitat.</p>	<p>The current study is an update from the Council-approved Carp River Watershed/Subwatershed Class EA Study (Robinson, 2004) and provides new recommendations to mitigate the impacts resulting from the approved land use with a focus on flood and erosion control in the creek (there is no opportunity to minimize the watershed imperviousness). While maintaining tree cover and topographic diversity may decrease flooding risk, these measures are typically not considered as SWM measures and are normally managed through the development approval process.</p>

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<p>In future there will likely be more attention to how municipal infrastructure projects can make a positive contribution to combating climate change and biodiversity loss. This may include explicit recognition of soil carbon dynamics (e.g., wetland creation to enhance carbon sequestration) and habitat enhancement (e.g., retention of standing dead trees for cavity nesting species and coarse woody debris for reptiles and amphibians; enhancement of-stream habitat for fish species). These are straightforward measures to implement. They should be addressed in the Feedmill Creek Class EA and other Class EAs of Municipal Infrastructure Projects in the City of Ottawa. The City of Ottawa may also wish to propose more formal guidance on these matters for consideration by the MEA.</p>	<p>The proposed stream rehabilitation measures are based on a detailed fluvial geomorphologic assessment, which include field investigations, continuous modeling and a detailed erosion assessment. The recommendations are based on natural channel design principals and, while their focus is on erosion control, they also aim to improve the functionality of the creek form both a hydraulic and habitat standpoint. For example, one of the measures proposed on Reach 1 is to re-plant the riparian area to allow the creek to return to a more natural state. This would serve to improve aquatic habitat by moderating the thermal regime and providing refuge, as well as improving stream bank stability and reducing sediment input from adjacent agricultural lands.</p>
<p>We see that this project will involve the maintenance and improvement of Blanding's Turtle habitat to mitigate the impact of future development projects on Feedmill Creek. This is very important to us, as all turtles are sacred to the Anishinabeg people, and the Blanding's Turtle in particular is a Schedule 1 Species at Risk. Conserving the health of the creek and surrounding riparian habitat is also important to our community because water is sacred and is essential for all life on Earth. We hope that these stormwater management measures are successful, and that the creek as a whole will benefit from them.</p>	<p>The stream rehabilitation measures proposed on Feedmill Creek are intended to mitigate the impacts of future development on stream functions, peak flows and water levels including erosion control and flood control. During detailed design, we will follow the Ministry of Natural Resources directions and requirements related to the <i>Endangered Species Act</i> to ensure that the Blanding's Turtle natural habitat will not be affected by the construction of the proposed measures.</p>
<p>Rehabilitation measures in your EA report focus on water capacity concerns with no apparent reference to habitat protection or enhancement.</p>	<p>During detailed design, the City will retain the services of a certified biologist who will conduct on-site investigations along Feedmill Creek identify species and their habitat. MNR will assess the potential effects of the activity on the protected species at risk or habitat and determine if an overall benefit permit under the <i>Endangered Species Act</i> is required.</p>
<p>Aside from Reach 2 where there's mention of re-planting a riparian woodlot, there's no indication of protecting or improving the creek's ecosystem</p>	<p>The proposed stream rehabilitation measures are intended to improve the natural environment within the creek's corridor.</p>

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<p>Detention work is defined in your report as involving SWM ponds yet the presence of 6 existing and 2 proposed ponds in the subwatershed aren't even referred to, nor is there any indication of constructing any new ones. So what was the purpose of referring to this type of stormwater management when there no apparent connection with the EA report? The only retention work will be done in Reach 2 with the replanting of the riparian woodland area, but there's no mention on what's being planted, how many or with what kind of guarantee they'll actually grow?</p>	<p>Every existing SWM pond located within the subwatershed have been included in the analysis. As mentioned above, the new SWM criteria include SWM detention (ponds) and SWM retention (LID measures). Under future conditions, the target release rates presented in the Criteria Study will require the construction of new ponds for future developments, which have been accounted for in the analysis at a conceptual level. The actual location and design of the future ponds will be determined through the plan of subdivision approval process.</p>
<p>There's no indication how aquatic life will be protected during the reshaping of the channel and all the other in-stream work. Will the erosion and sediment control requirements outlined in your 2011 Monitoring Report for the Carp River, Feedmill Creek and Poole be the standard? And, what assurance will there be that implementation will be more carefully monitored to prevent the sloppy unfinished work illustrated in the below photo taken last week from behind the Brick Lazyboy Mall?</p>	<p>During detailed design of the stream rehabilitation measures, the City will be going through the appropriate steps dictated by the permitting process to ensure that the aquatic life will be protected during construction. For example it is anticipated that the reshaping of the channel and all other in-stream work will require a permit from MNR and DFO.</p>
<p>My recommendation is to leave things as they are until there's more information on habitat protection and flow monitoring data to support the need for all the in-stream work.</p>	<p>The analysis completed in support of the proposed measures is based on an independent study that is intended to mitigate the impact of future development on Feedmill Creek. The need for stream rehabilitation work was demonstrated through an extensive analysis that includes field survey, modeling, erosion analysis and fluvial geomorphologic assessment. We would not be recommending these measure if we weren't certain that they will be beneficial for the creek. Erosion and sediment control will be required through the permitting process. We will ensure that the work will be properly implemented to protect existing habitats.</p>

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<p>Pleased that all the existing and future SWM ponds have been accounted for in relation to water quantity but what about water quality beyond what Fisheries and Oceans and the MNR will require? What about the wetland itself? Although stormwater flow control remains the primary function of stormwater ponds the wetland itself can play an important role in improving the quality of stormwater discharge related to suspended solids, organic matter, nutrients, bacteria, metals, hydrocarbons and pesticides etc. No where in the Feedmill catchment is there mention of improving or even maintaining the filtering capacity of the wetland and from what can be seen so far from what's happening on the Carp floodplain rehab it is a topic of concern.</p>	<p>The Criteria Study did not include any water quality modeling. The filtering capacity of the existing wetland should be maintained in the future (any alteration to the wetland would require a permit from MVCA).</p>
<p>As for the ponds the way the City designs them can be improved to facilitate better community awareness/education activities – simple things like designing for easy and safe access to sample water flowing from an outfall and a drainage map to relate one's property to the pond's water. This is assuming an educated public utilizes ponds more appropriately, provides more support for costly clean-out projects because the benefits are understood and most importantly encourages better management of one's own stormwater.</p>	<p>The design of ponds is reviewed during the development approval process, and is therefore not addressed in the criteria study. That being said, a number of poorly designed ponds have been approved in the past, causing maintenance issues and other concerns. The City is doing its best at reviewing all development applications, and trying to improve safety, operation and maintenance. Should you have any specific comment regarding one of our pond(s), please contact John Kukalis (john.kukalis@ottawa.ca), Program Manager of SWM & Invasive Species Management.</p>
<p>Still wondering whether “erosion control” is the best way of rationalizing SOCIAL criteria in the EA. Would have thought a healthy meandering stream that supports a broader biodiversity would have been a more obvious rationale. And, if there was a real belief in this value there would then be informal pathways to and along the creek to facilitate access as well as interesting flora to encourage birds and other predators to eat all those "nasty mosquitoes plus more trees etc.</p>	<p>“Erosion Control” will be relocated under “Environmental” criteria in the “Evaluation of Alternatives” table. The “Healthy Meandering Stream” will be added under “Social” criteria.</p>

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<p>While the Feedmill Creek Stormwater Management Criteria Study uses the 1:100 year to test the above noted criteria , based on the class of road and the size of the culverts, the design flow listed in the <i>Highway Drainage Design Standards</i> is actually the 1:50 year return period. This inconsistency was noted to the City previously and may have been corrected in the final report which the MVCA has not yet been circulated.</p>	<p>The report is now referring to the 1:50 year return period for the design flow at MTO structures.</p>
<p>In general, I like the "Option 2 Detention & Retention" plan.</p> <p>What else can be done to encourage/incentivize more sustainable development practices for new and existing developments? For example, reduced parking (pavement), green roof, water recycling, landscape engineering, etc. - should all be encouraged or required for developments, beyond the detention and retention measures mentioned in the slide deck.</p>	<p>In addition to the standard stormwater management requirements, any future development located within the subwatershed will be required to retain runoff from either a 10 mm or 5 mm rainfall on-site through implementation of Low Impact Development (LID) controls, which typically include green roof, permeable pavement, rain garden, bioretention, infiltration trench, and other measures intended to infiltrate the runoff.</p>
<p>I want the creek to be maintained/enhanced to support the turtles and fish</p>	<p>An ecological site assessment will be carried out to determine the presence of natural heritage features and species at risk and their habitat on site. MNRF permitting process will ensure that the natural environment be maintained or enhanced.</p>
<p>Proper signage for Feedmill Creek along its route especially at road crossings (identifications signs at appropriate places. Public awareness generated by such signage can only help to increase support for the preservation of this creek and its ecological features.</p>	<p>The idea of adding signage along the creek at appropriate location is great. This will be considered at detailed design according to budget allowance.</p>

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<p>The Feedmill watershed area upstream of Kanata West required SWM controls and the 2004 CRWSS was referenced in both the SWM Criteria Report and Fluvial Geomorphology reports, the latter being used to design the Rehabilitation works based on the proposed modelling and criteria. The problem with this is that extensive work, including fluvial geomorphological, Carp River confluence and environmental studies, had been done in Carp River Restoration/Kanata West documents and had provided a Restoration Plan for Kanata West. These documents are not referenced in the current reports and the consultants were therefore not aware that the Reach 1 recommendations conflict with the Transitway and that the CRRP Tender included parts of the Feedmill channel. The adjacent developers had also undertaken studies and these also were not referenced, e.g. Minto had done studies in 2011 for Reach 1 adjacent to their lands, Taggart had done channel modifications, etc. The CRRP Restoration Plan identified 4 locations where improvements were supposed to be undertaken by adjacent developments, but there was not a detailed design for the corridor in Kanata West.</p> <p>The problem now is that, because the previous studies were not referenced, a new Restoration Plan is proposed which didn't consider the previous plan or the fact that natural areas were to be protected. The SWM Criteria Report and Appendices did not provide sufficient environmental information or an environmental impact report – these could have impacted the Restoration Plan recommendations. The Reach 5 natural area and fish habit compensation should not be altered unless the problems will significantly impact flows. Re-aligning the channel reduces the channel length. Reach 8 already had a restoration plan which is not mentioned</p>	<p>The criteria study is based upon an updated and independent assessment of the creek in its current state, including all works undertaken to date such as the channel modifications implemented by Taggart in 2006. The detailed design for the rehabilitation measures along Reach 1 will be integrated into the work proposed for Phase 1 of the Carp River Restoration Plan. Coordination with Transportation Services Department (TSD) will be required during detailed design to avoid any conflict between the proposed measures and the alignment of the future Transitway near the confluence with the Carp River. This aspect has not been considered during functional design and is expected to have an impact on the measures proposed along the downstream end of Reach 1. During detailed design, coordination will also be required with DRS to avoid any conflict between the proposed measures and the adjacent future development north of Reach 1 and 2 (Kanata West Pond 1 development area owned by Minto).</p> <p>Overall, the proposed stream rehabilitation measures are intended to improve the natural environment within the creek's corridor. During detailed design, the City will retain the services of a certified biologist who will conduct on-site investigations along Feedmill Creek identify species and their habitat. MNRF will assess the potential effects of the activity on the protected species at risk or habitat and determine if an overall benefit permit under the <i>Endangered Species Act</i> is required.</p> <p>Reach 5 will see the greatest relative increase in erosion potential. The recommendations for this reach will focus on grade control for slope reduction rather than substantial channel cross-section changes. The proposed riffle-pool system will allow the channel to have a flatter slope between the pools.</p>

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<p>“the remaining future development” gave the impression that all SWM criteria for all areas would be provided with controls, however, the report does not evaluate the Kanata West criteria or require that the 8.0L/s/ha or other criteria be used for Kanata West. The 195 Huntmar application is saying they were told by staff to use the 8.0L/s/ha. There is also a significant amount of undeveloped lands downstream of Huntmar Drive, but will these also be required to use the 8.0L/s/ha?</p>	<ul style="list-style-type: none"> – KW Pond 6 (east and west): the new criteria presented in the Feedmill Creek SWM Criteria Study do not apply to Kanata West Pond 6 development area (including the Site Plan Control application for 8750 Campeau). When the study was initiated (in May 2015) Pond 6E was already constructed and pond 6W had already been draft approved based on the Kanata West Master Servicing Study using the target flows. For the Criteria Study, both ponds were modeled according to the approved design briefs. – KW Pond 7: the new SWM criteria (i.e. the 8 L/s/ha) will apply to the Kanata West Pond 7 development area which has not been draft approved yet. – KW Pond 1 and 2 (development downstream of Huntmar): These developments do not outlet to Feedmill Creek. The new criteria do not apply. – Potter’s Key: Based on the 2006 SWM Design Brief for Jackson Trails, the minor system flows from Potter’s Key will be directed to the existing Jackson Trails (JT) SWM pond. The 8 L/s/ha release rate does not apply to this development. – All other vacant industrial and residential lands: the new criteria will apply.
<p>There is no discussion of the feasibility and timing of implementation e.g. renovation works are proposed on MTO land – will MTO approve or do this work? Or the impact of works not being implemented e.g. exactly what problem was each work supposed to resolve?</p>	<p>The implementation plan (timing and funding) is currently under discussion. The details will be presented in the staff report going to Planning Committee in May 2017. The description and the expected benefits of the proposed stream measures are presented in Appendix B of the Criteria Study (page 33 to 44). The criteria study and the EA report were circulated to MTO as part of the public consultation process. As a member of the study’s Technical Advisory Committee, MTO is very aware of the proposed measures.</p>

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<p>In the upstream area, Reach 6 is problematic in that it will be part urban and part rural. There is very little work proposed for this area. It may be appropriate for adjacent developers to undertake the design and resolve the problems, but this won't work if one side of the channel is rural and not being developed. Urban Expansion Area 3 owners wouldn't cooperate despite having an application due soon – they are clearcutting the area so they won't have to deal with the environmental studies and processes. The channel in this area may require re-alignment as it reduces and may landlock developable area. The Kanata West roads may be coming into the area. All of the future plans, potential requirements, and constraints for this area should have been identified. The City's suggestion in the 195 Huntmar documents that the spill wouldn't be a concern because the corridor would be 70m wide, didn't consider that there would be no plan and no cooperation from the rural landowners and possibly MTO, to change the channel and floodplain to control the spill. In this case, the City needs to acquire the corridor ROW, prepare a design and implement it</p>	<p>The upstream half of Reach 6 was excluded from the analysis since permission to access the land (Expansion Area 3) was not granted at the time of the study. The City of Ottawa will require a detailed fluvial-geomorphologic and erosion assessment of the existing reach (see footnote on page 5 of the Criteria Study).</p> <p>While there are currently no details available regarding the implementation plan, it is anticipated that the City will implement all of the proposed stream restoration works as a single project if possible by the end of 2018 (detailed design in 2017, construction in 2018). It is our understanding that the spill area will be removed once KW Pond 7 development area will be developed. The flow will then be contained within the main channel of Feedmill Creek.</p>
<p>The area east and west of Carp Road are on the Stittsville Esker. There is no geotechnical report to define the boundaries – LID implementation will depend on those boundaries and subsurface conditions being known</p>	<p>Eskers (and other hydro-geological characteristics) can be very challenging to model at a subwatershed level and require specific data (including detailed geotechnical data and calibration data) which are rarely available. This falls beyond the scope of the study and will be addressed through the review of the plan of subdivision.</p>
<p>The area between the Moonstone quarry, Timbermere Subdivision, and A.G. Reed Industrial Park and Hazeldean is not well understood, flows are coming from all three and clearcutting has been done on the parcel containing the quarry outlet channel. All 3 are dependent on the Rothbourne Wetland which is located north and south of Rothbourne Road. This storage node was not identified in the modelling and may be critical to the ability to develop the remaining industrial parcels and expand pumping capacity for the quarry. This area need analysis of the requirements and impacts of future development in relation to the ability of the Timbermere Ponds and Feedmill downstream channels to handle increased flows</p>	<p>In order to represent the low runoff potential from the Rothbourne Wetland, a low Curve Number of 54 was used instead of a dummy storage node. This approach is typically used for subwatershed level models with large catchment where detailed characteristics of natural storage feature are unknown. As per Section 4.1.3 of the Criteria Study, this area will need to be assessed separately to identify the need for appropriate mitigation measures. Until the Timbermere facility is assessed to determine if the simulated 100-year water levels are acceptable, the future development upstream of the Timbermere pon should not proceed. The new SWM criteria are not sufficient to remediate the existing peak water level issues in that existing SWM facility.</p>

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<p>Pathways are required along Feedmill Creek in the Kanata West area and will likely be required in other parts of the watershed. These need to be considered with the Renovation Plans, not left as an add-on later, as is generally done. Topographic and other constraints may impact the ability to place pathways at top-of-bank, in which case, they may be at-grade or above-grade, in the floodplain, the latter impacts flow and floodplain storage.</p>	<p>During detailed design, the City’s Design and Construction team will ensure to incorporate the pathways shown in the Kanata West CDP.</p>
<p>The Restoration plan should not proceed as proposed until the CRRP/Kanata West plans have been reviewed and until the environmental, topographic, geological, and hydrogeological conditions and constraints are understood. The studies and plans produced by the developers duplicated part of the 2016 work, but also have provided greater detail about the channel. These should all be reviewed to pull in new information which may be useful for the detailed design and to ensure that their plans will not, or did not, result in problems</p>	<p>The stream rehabilitation measures proposed along Reach 1 will integrate the Carp River restoration work proposed in Phase 1 of the CRRP. Environmental, topographic, geological, and hydrogeological conditions and constraints will be considered during detailed design. The criteria study is based upon an updated and independent assessment of the creek in its current state, including all works undertaken to date such as the channel modifications implemented by Taggart in 2006. Any investigations completed as part of the remaining Kanata West development area adjacent to Feedmill Creek (Pond 1, 2 and 7) were not included into this analysis as there is currently no approval status for these developments.</p>
<p>The identification of Blanding’s Turtle habitat in 2 development applications (Potter’s Key and 195 Huntmar) will require the entire corridor to be evaluated. OMNR habitat compensation works may require changes in and near the corridor</p>	<p>See response for Comment #1. A species at risk (SAR) survey will be completed this year by a certified biologist to identify and characterize the presence of SAR and their habitat along Feedmill Creek. Potential SAR include Blanding’s Turtle, butternut trees, cavity trees, and large trees that could serve as habitat for bats. MNRF will review this information and determine is an overall benefit permit is required for the proposed work. Changes to the functional design or compensations may be required (TBD at detailed design).</p>