

**CORPORATION OF THE CITY OF CAMBRIDGE
HESPELER WEST SUBWATERSHEDS STUDY WORKING COMMITTEE
MEETING NO. 13
MINUTES**

Thursday, June 17, 2004
Allan Reuter Seniors' Centre, 507 King Street, Cambridge (Preston)

Committee Present: Councillor Rick Cowsill (City) (Chair), Erich Ritzmann (MGWA), John Vasiga (MGWA), Charlene Schiedel (MGWA), Nancy Davy (GRCA), Ken Cornelisse (MNR), Wendy Wright (City), April Souwand (City), Brian Cunningham (Small Property Owners), Ian Rawlings (Large Property Owners), Cathy Murphy (MGWA)

Others Present: Ron McKittrick (alternate for Cathy Murphy (MGWA)), Mary and Larry Hammer (landowners), Gus Rungis (GRCA), Jeff Martens (MTE Consultants), Dru Dron and Ray Tufgar (Totten Sims Hubicki Consultants)

1. Call to Order

The meeting was called to order at 3:30 p.m. by Rick Cowsill.

2. Declarations of Pecuniary Interest

None

3. Confirmation of Minutes

Moved by Cathy Murphy Seconded by Brian Cunningham

THAT the Minutes of the Hespeler West Subwatersheds Study Working Committee meeting held June 3, 2004 be amended as follows:

- Brian Cunningham was present
- Page 2, second paragraph – change, “The MGWA is recommending buffers of 15 metres or less from PSWs.” to “The MGWA is recommending buffer strips of 15 m between proposed development and a PSW in disturbed areas.”
- Page 2, third paragraph – add, “(i.e. err on the side of caution)” after “conservative buffer”
- Page 2, third paragraph change “buffers of 3 metres or less” in the last sentence to, “buffer strips of 3 metres from the dripline of trees”.

CARRIED

There was some continuing discussion about buffers arising from the minutes which the Chair requested be tabled for now, in order to accommodate the presentation on floodlines scheduled for today's meeting.

4. Presentation and Discussion– Updated Floodlines – Ray Tufgar, M.Eng., M.B.A., P.Eng., Manager, Waterloo Office, Totten Sims Hubicki Associates

Ray Tufgar reported on the findings of their work updating the floodline information from the Hespeler West Subwatersheds Study (handout attached). In summary, there were some changes recommended to floodlines, generally in the area of Middle Block Road and the intersection of Speedsville and Maple Grove Roads, primarily due to changes in contour information. Dru Dron proceeded to detail the review of the Planning and Engineering Initiatives Limited (PEIL) hydraulic model (HEC-RAS), using the handout as a guide. Next, he discussed the review of the hydrologic model (GAWSER), and some changes that have been made to subcatchment 2120, 2125 and 2115. The net effect of these changes on total flow rates and associated water levels downstream was minimal. He then discussed some future ultimate conditions. In general the conclusion was that there would not be a significant change in the floodplain due to the different scenarios.

Charlene Schiedel asked why the flooding of Middle Block Road, just west of Speedsville Road was not reflected in the floodline mapping. Ray Tufgar explained that this was likely a local drainage problem (sheet flow conditions), not related to the floodplain of the channel of Middle Creek. Overall drainage is generally handled at the servicing of development stage. Erich Ritzmann asked about the storage and split flows in 2115 and what would be the effect of modeling these (similar to what was done with 2125). Ray Tufgar indicated that they would be looking at that scenario and reporting on that in their final report. Jeff Martens indicated that there is a separate culvert that outlets on the downstream side of Middle Block Road that needs to be modeled. Ray Tufgar indicated that they would look at that to see if it would make a difference.

Charlene Schiedel asked about the changes to the subwatersheds boundary and who makes this decision. Wendy Wright indicated that the subwatershed boundaries would be revised when the GRCA reviews the floodlines. This would show up in the Summary Report (not a change to the PEIL report). John Vasiga indicated that he felt that the PEIL report should be fixed with the TSH information. Cathy Murphy wondered when they would get the final reports. Ray Tufgar thought their report would be submitted to GRCA and City staff within the next couple of weeks. John Vasiga asked if the floodline map would be available and Wendy Wright responded that it would when it was finalized.

Gus Rungis indicated that Jeff Marten's input could be considered in finalizing the report. Erich Ritzmann asked if East and West Creeks were also looked at by TSH, and this was confirmed. Gus Rungis clarified that PEIL did update the culvert information sheets with the proper information and new photographs.

5. Other Business

- a) **Revise Natural Heritage Features and Constraint Mapping due to Changes to PSWs** – Wendy Wright indicated that the constraint mapping needs to be updated due to the changes in PSW that Ken Cornelisse has now completed. She felt that Jim Dougan should be asked to do this work. Erich Ritzmann has given Wendy Wright two additional constraint areas of concern that are not related to the PSW changes. Cathy Murphy felt that Dougan had made many errors in the original study and there is not trust for him to do the work. After discussion, it was decided that Dougan could be asked to look at the polygons in question per the committee's terms of reference and Wendy Wright would look after the checks and balances when the work is done. It was also indicated that landowners could be present when Dougan is doing his work.

Brian Cunningham left the meeting.

- b) **Follow-up List** – was found to be acceptable.
- c) **List of Topics for Upcoming Meetings** – Wendy Wright went through the schedule for upcoming meetings, aiming towards a final report to Council in September. There was discussion about having a special meeting of Council to consider the final report and timing of an open house.
- d) **Field Visits** – There was discussion about the field visits to take place over 3 weeks in July. The starting point would be the people who signed up at the public meeting in September 2002.

Rick Cowsill indicated that he needs to meet with Wendy Wright on the buffer issue and bring that back to the committee. This will be done on June 29th and be brought back to the July 8 meeting. Wendy Wright asked Erich Ritzmann if she could have the remainder of errata that the MGWA has so she can pass it on to PEIL as soon as possible so that there is not a delay in getting their information revised.

Rick Cowsill motioned to adjourn.

Meeting adjourned at 5:21 p.m.

Next meeting – Allan Reuter Centre – 3:30 pm to 5:30 pm – Thursday, July 8, 2004

54-22141
HESPELER WEST SUBWATERSHEDS
FLOODLINES CORRECTIONS REVIEW AND SUBCATCHMENTS SCENARIOS

SUMMARY NOTES

INTRODUCTION

- Background
 - Errors and updated information identified since completion of HWSS
 - Hydraulics peer review
 - Update hydrologic model
 - Floodline updates
 - Additional “what-if” scenarios

- Objectives of Project(s)
 - Identify and incorporate recommended revisions to hydraulic model
 - Incorporate latest information and understanding of drainage patterns, drainage system and catchment characteristics into hydrologic model
 - Run simulations for various additional “what-if” drainage scenarios
 - Establish updated Regional floodlines/water levels based on the above

PROJECT ‘A’ – REVIEW OF PEIL HYDRAULIC MODEL

- Sources of Information and Scope of Review
 - Sources of data:
 - Original PEIL HEC-RAS model
 - City’s 0.5m contour mapping and orthoimagery
 - PEIL updated culvert data
 - Delcan hydraulic modeling for Maple Grove Industrial Subdivision
 - Site visit(s)
 - Input data

 - Scope of review:
 - 3 watercourses (West Creek, Middle Creek, East Creek)
 - General review of input data
 - Geometric coding
 - Culvert data

- Updated Culvert Data
 - Updated culvert survey by PEIL has been incorporated
 - Appears to have address comments received by City

- Field Survey – Northeast Quadrant of Maple Grove Road/Speedsville Road Intersection
 - TSH topo survey to confirm contours

- More consistent with contours in Delcan report than City's 0.5m contours
- Revised floodlines have been plotted (see map)
- **General Peer Review of PEIL HEC-RAS Model**
 - Longitudinal positioning of culverts relative to road deck – negligible impact
 - Bank stations – minimal impact
 - Ineffective area stations and elevations – localized significant impact in a few locations
 - Interpolated additional cross sections – maximum 0.5m change in water level between consecutive cross sections – some localized impacts, but not widespread
 - Spacing of culvert end cross sections – would normally recommend placing closer to culvert – minor impact, but should be reviewed in greater detail if future works proposed near culverts (e.g. development, road improvements, culvert upgrades, etc.)
- **Project 'A' Conclusions and Recommendations**
 - Changes made to HEC-RAS model, for the most part, have only a minor impact on water levels – both minor increases and decreases in water level, depending on location
 - Should future development or road improvements be proposed in proximity to any of the culverts having bounding cross sections greater than 5.0 metres away from the end of the culvert, further, more detailed review of the positioning of the bounding culverts should be undertaken as part of the detailed design process for the proposed development or other proposed works.

PROJECT 'B' – SUBCATCHMENT SCENARIOS

- **Technical Review of Previous GAWSER Model**
- **Specific Scenarios and Options to be Modeled**
 - Scenario 1 – Removal of Catchment 2120
 - Scenario 2 – Catchment 2125 drainage patterns, storage characteristics, downstream routing
 - Scenario 3 – Catchment 2115 drainage patterns, boundary, storage characteristics, downstream routing
 - Scenarios 4, 5 and 6 – simple “what-if” scenarios – to be completed in near future (removal of Catchment 2120 already incorporated in model as per Scenario 1, above)
 - Recommendation of final regulatory floodlines – to be confirmed in near future
 - Recommendation for SWM target flows – to be confirmed in near future
- **Scenario 1 – Removal of Subcatchment 2120**
 - North portion of original Catchment 2125 actually drains to north as part of Catchment 2120
 - Very limited portion of Catchment 2120 still drains to Fountain Street
 - Changes incorporated based on information from K. Smart report and discussions with City and GRCA staff
 - Relatively minor impact on its own, so was combined with changes made as part of Scenarios 2 and 3 (i.e. did not document impacts separately)
- **Scenario 2 – Subcatchment 2125 Drainage**
 - Wetland area provides “natural” storage capacity
 - North portion of catchment actually drains to north as part of Catchment 2120
 - Soils distribution adjusted, as required by drainage boundary adjustment

- Subdrains – 200mm field tile drain and catchbasin, 250mm Fountain Street subdrain
 - Low flow to Freeport Creek to the south, via subdrain
 - Fountain Street 825mm CSP culvert, 900mm storm sewer, downstream open channel to creek, etc.
 - Local existing “natural” storage characteristics established based on 0.5m contours
 - Existing stage-storage-discharge relationship established for Fountain Street culvert
 - Drainage split based on contours (i.e. 313.0 contour approximately) - potential spill to northwest
 - Negligible flows through Fountain Street culvert so far this year (2004) – seems consistent with model results for existing conditions (minimal flow in d/s storm sewer for up to 5 to 10 year event)
 - Updated results generally show minor change in Regional flood levels, typically a few centimetres
 - Under future conditions SWM controls assumed to replace existing natural storage
 - Matched post to pre as closely as possible for 2 to 100 year storms
 - Regional assumed uncontrolled for now. Additional scenario with Regional controls intended to be run in near future for comparison.
 - Uncontrolled Regional flows under future ultimate baseline conditions result in maximum water level increases in the range of 0.3 to 0.45 metres at several locations. Overall maximum increase in 0.77 metres at Section 600 (well defined valley so floodlines to not spread significantly)
- Scenario 3 – Subcatchment 2115 Drainage
 - Updated stage-storage-discharge relationship for Middle Block Road culvert
 - Fill placement in north of Middle Block Road taken into account
 - Updated culvert and road profile characteristics
 - Overall impact of TSH revisions reduces peak Regional flow by approximately one third
 - Impact on floodlines is minor
 - Future Ultimate Baseline Conditions
 - Regional flow overtops Middle Block Road (limited control) and increases from 4.1 to 7.8 m³/s
 - Regional water level downstream of Middle Block Road only increases by 0.08 metres over existing conditions
 - Future Ultimate Conditions, Option 1 – North Portion of Catchment 2115 Removed
 - Natural storage area in wetland part of diverted portion – loss of natural storage
 - 2 to 100 year flows only reduced very slightly by reduced area due to loss of storage/control (loss of storage causes increase in flow which tends to balance out reduction in flow associated with reduced drainage area)
 - Regional flows reduced substantially by reduction in drainage area (minimal control under existing conditions, therefore loss of natural storage has less impact)