

**Big Creek Watershed Plan
Steering Committee Meeting
Thursday, September 24, 2009**

**Town of Amherstburg Municipal Office
271 Sandwich Street South, Amherstburg
6 p.m. to 8p.m.**

1. Welcome and Introductions
2. Approval of Meeting Agenda
3. Public Question and Answer Session
4. Review of July 9th, 2009 Meeting Summary and Action Items (attached)
5. Technical Program
 - a. Natural Heritage Update
 - b. Water Quantity Update
 - c. Water Quality Updates
 - i. Big Creek Surface Water Quality Study Update (R. Bejankiwar, ERCA)
 - ii. General Chemical Groundwater Quality (S. Abernethy, MOE)
6. Discussion of Revised Draft Table of Contents (attached)
7. Discussion of Proposed November 2009 Open House
8. Other Business
9. Next Meeting Date and Agenda Items
10. Adjournment

Big Creek Watershed Plan Steering Committee Meeting
Thursday, July 9, 2009 Meeting Summary
Town of Amherstburg Council Chambers (6:00 p.m. to 8:00 p.m.)

1. Welcome and Introductions

Jackie Hubbs chaired the meeting and welcomed everyone in attendance. The meeting was attended by:

Matthew Child, Essex Region Conservation Authority
David Coates, Community Representative
Ed Faucher, Community Representative
Rick Fryer, Town of Amherstburg Councilor and ERCA Board Member
Carl Gibb, Community Representative
Teri Gilbert, Ministry of the Environment
Jackie Hubbs, Town of Amherstburg
Allan Parks, Amherstburg Committee on the Environment
Ari Varsa, Community Representative
Rick Visser, Ministry of Natural Resources

Project Support Staff in attendance included:
Rebecca Belanger, Essex Region Conservation Authority

Residents in attendance included:
Greg Nemeth
Dan Struhar
Billy Brydges

2. Approval of the Meeting Agenda

The meeting agenda was reviewed by the Committee and no errors or additions were identified.

Moved by Allan Parks, seconded by Ed Faucher to approve the July 9, meeting agenda. Carried.

3. Public Question and Answer Period

Greg Nemeth identified the large amount of wildlife, particularly the diversity of birds that he has recently observed in the Big Creek Watershed.

Dan Struhar mentioned that he believes the water levels in Big Creek are presently higher than in the past. He is also noticing a large number of muskrat in the watershed. Dan mentions that he believes that the muskrats are contributing to shoreline erosion in his area. Dan requests information regarding the ownership of the channel of Big Creek and is concerned about the on-going problem of phragmites.

4. Review of the April 23, 2009 Meeting Summary and Action Items

The meeting summary was reviewed with no comments or questions. The Committee reviewed the Action Item List. Teri provides details regarding the dumping by Heaton Sanitation on the Hearn property. She states that this is a possible approvals issue at the Ministry level and that it is important for concerned residents to contact the MOE Area Office directly or (519)948-1464, so that they can identify what and when dumping is occurring in this and any other case.

Rick Visser comments on the question of the navigable channel in Big Creek. Rick Visser clarified that while historical mapping of the Big Creek Marsh channel (Crownland) was mapped, it is no longer applicable due to changes in the marsh that have occurred over the years.

Allan Parks thanks Matthew and Jackie for bringing reports to the Amherstburg Council and ERCA Board of Directors Meetings.

Moved by Rick Fryer, seconded by Allan Parks to approve the April 23, 2009 meeting summary and running list of action items. Carried.

5. Technical Updates and Discussion

a. Natural Heritage Study- Landowner Consents, Field Program

Matthew stated that since the last meeting additional landowner consents have been provided and that 82% of lands are available to the study team for the natural areas inventory work. Dean Ware and Dave Martin, faunal biologists, and Dan Lebedyk and Gerry Waldron, floral biologists, have completed their spring field work. Two rounds of faunal surveys and one round of floral surveys have been completed, with one additional round planned for each in August. Erin Sanders, a qualified Wetland Evaluator from the Ministry of Natural Resources will be attending sites, where permission is granted to update Provincially Significant Wetland (PSW) boundaries. All areas of the watershed, where property owner consent has been granted including lands around Texas Road will be evaluated as part of this study. A presentation indicating environmental trends in the watershed will be available for the Committee in the late fall. The formal report and detailed site records will not be available until later in the year.

b. Water Quality and Quantity Field Program

Dr. Coates questions whether the Big Creek work overlaps with issues in the Canard River. Matthew advises that there has been a historical diversion of flow and the analysis of water quantity may conceptually consider low flow augmentation from the Canard River watershed. Dr. Coates questions whether benthic information is available for Big Creek. Matthew advises that Raj Bejankiwar is addressing benthics through his water quality analysis. Regarding fish, it was determined during the drafting of the Terms of Reference that fish data collection would not be completed as part of this study as there is a substantial amount of fish information available for Big Creek from DFO and that fish are considered a less important component of the natural heritage values for the watershed. Dr. Coates questions whether PCBs are being addressed. Matthew notes that a PCB screening study completed by Environment Canada for many Lake

Erie tributaries is being reviewed and additional sampling will be undertaken if necessary. He identifies that the water quality program is following Ministry of the Environment protocols and parameters for water quality analysis. Raj is regularly in contact with the MOE to discuss program considerations.

Based on Steering Committee input, an additional monitoring station was added on the west branch, to monitor during dry periods and also during rain events when flushing occurs. Tile drainage monitoring is also being undertaken on three farms. Matthew also advises that the monitoring in the marsh is for dissolved oxygen to focus on nutrients and the metabolizing of contaminants as well as the impact on the marsh from upstream. The Committee agrees to address any critical issues as they arise and to wait for completion of the water quality study later this year prior to taking any additional actions in the watershed.

c. Town of Amherstburg Interim Control By-Law – General Chemical Site

The Interim Control By-Law is presently being drafted. The Committee will be advised when further public meetings as scheduled to review the details of the By-Law.

6. Watershed Plan

a. Review of Preliminary Draft Table of Contents

The Committee discussed the draft Table of Contents for the Plan. Rick Visser requests clarification whether there are any differences between the Terms of Reference and the draft Table of Contents. Matthew advises that one study component that has changed from the Terms of Reference is the geomorphology study. It is suggested that a report be provided on this matter for the next meeting. Matthew and Allan advise that a number of major rain events have caused the erosion during the spring.

A revised Draft Table of Contents will be provided at the next Steering Committee Meeting.

b. Related Policy and Consultations Discussion

The Committee discusses the timing for addressing matters, as they are identified by the Committee or brought forward by the public. There was general agreement that issues have been dealt with appropriately to date, and that all issues will be dealt with on a case by case basis. Issues can only be addressed when the true nature of the problem has been confirmed and this will require additional monitoring and analysis in many cases. A list of issues to be addressed as part of the Plan will be collated and kept up to date. The Committee considers a Compendium of Actions a positive idea for inclusion in the final Plan.

c. Other Business

Dr.Coates requests to have Raj Bejankiwar attend the next meeting if possible. He believes that there needs to be clarification regarding information about chloride results to date. Matthew and Rebecca will confirm Raj's availability to make a brief presentation at the next meeting. Teri offers the support of MOE technical staff to make a presentation on the General Chemical site, at

Big Creek Watershed Plan Action Items- April 23/09

Date	Task	Resolution	Assigned To	Completed
Dec-09-08	Confirm possible point source locations of contamination in Big Creek	Teri Gilbert from MOE has been contacted and has passed this information along. Teri will report back once the investigation is complete	Teri Gilbert	Ongoing
March-10-2009	Identify water quantity monitoring stations	Prior to field measurements	Matthew/ Allan/ Teri	Ongoing
Apr-23-2009	Steve Mickle advises of dumping on the Hearn property on Thomas Sideroad	MOE has attended the site and is assessing permit requirements, if any	Rebecca/ Matthew/ Teri Gilbert	Ongoing
Apr-23-2009	Steve Mickle advises of peat being removed and replaced with clay at a property north of County Road 20 westside	Matthew will discuss the matter with ERCA's Regulations Department	Matthew	Completed
Apr-23-2009	Research and compile list of items for inclusion into the Watershed Plan	Rebecca will review all meeting records and public comments received to date and prepare list	Rebecca	Ongoing
July-9-2009	Provide water quality update	Raj Bejankiwar to provide presentation at September 24 meeting	Matthew	Planned
July-9-2009	Evaluation of geomorphology study.	Prepare a report for September 24 meeting	Matthew	Planned
July-9-2009	General Chemical site	MOE to provide presentation	Teri Gilbert	Planned

REPORT

TO: Big Creek Steering Committee

FROM: Matthew Child & Stan Taylor, ERCA
Dr. Tirupati Bolisetti, University of Windsor

DATE: September 17, 2009

SUBJECT: GEOLOGY, SOILS AND CHANNEL MORPHOLOGY

At the July 9, 2009 Big Creek Steering Committee meeting there was a discussion of the technical studies that are being undertaken in relation to those that were proposed in the *Big Creek Terms of Reference Discussion Paper* (Terms of Reference) dated February, 2008. Members will recall that the Terms of Reference was developed prior to the initiation of the study and was structured to respond to the perceived resource management issues prevalent in the watershed.

In the Terms of Reference, four technical studies were proposed:

- Geology, Soils and Channel Morphology
- Natural Heritage and Fauna
- Surface Water Quality
- Surface Water Quantity

Since the Terms of Reference were developed various technical analyses and professional opinions have been sought to 'fine tune' the focus of the supporting studies. These activities have been instrumental in better focusing the technical programs. Although the Natural Heritage and Fauna study and the Surface Water Quality Study have proceeded in a manner similar to the Terms of Reference, refinements to the other two proposed studies have occurred.

Analysis undertaken since February, 2008 has revealed important information on the history of water quantity changes (and therefore channel morphology and erosion) in the Big Creek watershed. Historically, it appears that substantial parts of both the Cedar Creek and Canard River watersheds were part of the Big Creek watershed, and that drainage works led to the diversion of headwater (upstream) flows from Big Creek. Further, evidence suggests that historically a portion of the lower (downstream) Big Creek watershed was a distributary (delta) channel of the Detroit River. Again, infilling or other works near the current day Coast Guard station appear to have diverted Detroit River flows from the Big Creek channel. These various apparent significant diversions would have had the effect of significantly reducing current day flows in the Big Creek from what would have been experienced historically.

Currently, Big Creek exists as a comparatively small watercourse in a large channel/valley; the capacity of the channel to convey flows is generally adequate and the channel itself is relatively stable. This is very often not the case in many parts of the region, where existing watercourses experience lengthy sections of channel instability and erosion. As a result, issues related to channel morphology are felt to be relatively insignificant in Big Creek.

To better focus study resources, and to respond to the requirements of some funding partners, the Surface Water Quantity study proposed in the Terms of Reference has been expanded to better consider the characteristics and impacts of surface water and tile drain flows from agricultural lands. Specifically, soil erosion in the watershed will be assessed through the Water Quantity Study as follows:

- (i) Use different levels of modeling to characterize any erosion
- (ii) Characterize the transport and fate of eroded soil in the watershed through the use of a modeling tool i.e., Annualized Agricultural Non-Point Source (AnnAGNPS) model. This includes understanding the factors that make the watershed more or less erodible, and where erosion is occurring; and,
- (iii) Use the model outputs to inform strategies related to agricultural lands sustainability (e.g., location and extent of needed Beneficial Management Practices, innovative drain management practices, etc.).

Hence, the study will address the primary erosion related issue in the watershed, that of erosion occurring at or near the drains and watercourse that drain to the Big Creek proper. Related study elements include increased emphasis on groundwater over what was originally proposed, and an assessment of stormwater management and drain maintenance procedures.

This refined focus of the Water Quantity study addresses the intent of the Soils, Geology and Channel Morphology Study originally proposed in the Terms of Reference in a manner that accounts for what we have learned about the watershed since February, 2008.

Big Creek Watershed Plan Table of Contents
Revised Draft
September 17, 2009

Executive Summary

Table of Contents

List of Figures and Tables

Introduction

General Watershed Description

Historical Context

Land Use

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Watershed Planning Process

Steering Committee

Technical Work Groups and Agency Participation

Community Participation

Relationship to Other Local and Provincial Legislation, Policy and Initiatives

Existing Watershed Conditions

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Surface Water

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Natural Heritage

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Surface Water

Watercourses

Wetland

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Groundwater

Threats, Opportunities & Conclusions

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Critical Issues

Implementation and Policy Direction

Recommendations & Targets

Protection of Existing Environmental Features and Functions

Species at Risk and Invasive Species

Restoration of Corridors and Linkages

Landowner Stewardship and Public Education

Surface Water Quality

Stormwater Management

Baseflow Protection and Augmentation

Water Takings

Land Use Planning and Policy

Agency Operations

Schedule, Resource Requirements and Responsibilities

Coordination

Monitoring and Evaluation

Literature Cited

Appendices (if necessary)

What Do You Value About Big Creek?

No.	Important Issue	Rate of Importance
1	Ensuring proper drainage of farmland	4
2	Defining Crown Land, navigable waters	7
3	Concern about impacts of phragmites – what can be done? – blocking view -	19
4	Abundance of muskrat – impacts on water quantity? trapping – is there an oversupply and if so, determine remedial actions	1
5	Dam-restricted flow of natural waterway – mother nature takes care No dam – allow natural flow	4
6	Original Problem – when coast guard cut off flow to Big Creek	0
7	Urban sprawl – development – where it should be? out into watershed area (stormwater management, pre-post flows)	23
8	Flora/fauna – what about protecting plants & animals in the watershed	14
9	What is to prevent further degradation? purpose – pinpoint issues / facts, good science – for plan development	3
10	Monitoring station – hwy 18 – north to Texas – will there be an additional monitoring station? Greenway access? fine tuning monitoring stations	3
11	Has there been an inventory of flora/fauna? who will do this? MNR, ERCA, Dave Martin, Dean Ware, Gerry Waldron? (It is part of this study?)	2
12	Have there been endangered species? Yes – through other studies – NHIC identified database – contact landowners for data collection where possible	2
13	Have we tried to work with university – yes – water quantity	0
14	No channel – can't see a channel? vegetation growth/changing in flooding on property – property taking longer to drain – absence of flow – municipal storm sewer	28
15	Btwn-Alma / Texas Rd – Schedule 'A' Official Plan – Reassessed as a wetland – rather than natural environment (riparian area) – future classification – MNR – if permission is received	4
16	Pesticides/herbicides necessary for farming – what will the impacts be on farming – water quality testing helpful – Right-to-Farm legislation – normal now, may not be normal later	1
17	Good community representation + support – people selected to do <u>process</u> work	4
18	What is being tested – water quantity + quality?	4
19	Quality of environmental impact assessments – in the Town	1
20	Creation of trails – access to marsh – residents to have public access. Rails-to-Trails.	5
21	Need active management – spatially – can't let everyone in – “love it to death”	1
22	Fill – pile – in the EP Area – impact on creek – why can Amherstburg do this?	3
23	Permit to take water – no fee – creating habitat	0
24	Plants & animals	10
25	Public domain – if we want access – message needs to get to the Town	1
26	Drainage – how long will this take?	0
27	Consideration of development – public meetings that are accessible for people	1

**Summary of Results from the
Town of Amherstburg – Big Creek Watershed Study Questionnaire – November 17, 2008**

For each of the following statements, please indicate your level of agreement, ranging from Strongly Agree to Strongly Disagree.

	Strongly Agree	Agree	Disagree	Strongly Disagree	No opinion
<p>1. The Town or ERCA should undertake an educational program about appropriate planting programs on property adjacent to the shoreline.</p> <p><i>Comments: Is this to counter “inappropriate” plantings; or to encourage any planting as being appropriate.</i></p>	4	8	1	<input type="checkbox"/>	<input type="checkbox"/>
<p>2. The Town or the Ministry of the Environment should undertake an educational program about the importance of having septic tanks inspected to determine if it was operating properly.</p> <p><i>Comments: The Town should lead this followed by the Health Unit; then ERCA.</i></p>	4	7	1	<input type="checkbox"/>	<input type="checkbox"/>
<p>3. The Town, ERCA or MOE should undertake an educational program about the impact of livestock getting to close to the waters edge.</p> <p><i>Comments: How much of this is occurring? Perhaps simply engage the few directly?</i></p>	3	7	3	<input type="checkbox"/>	<input type="checkbox"/>
<p>4. The Town should impose a ban on the use of fertilizers or chemicals within the watershed or within a specified distance of the waters.</p> <p><i>Comments: Already chemical restrictions</i></p> <ul style="list-style-type: none"> - <i>Province is/has developing ban on cosmetic use of pesticides/herbicides. This question seems to broad.</i> 	3	6	1	2	<input type="checkbox"/>

5. In your opinion, area residents are aware of how they should use pesticides and fertilizers.

3

4

3

3

1

Comments: Probably yes.

	Strongly Agree	Agree	Disagree	Strongly Disagree	No opinion
<p>6. In your opinion, the Town, ERCA, Ministry of Natural Resources, Ministry of the Environment, Ministry of Agriculture and Food and Rural Affairs, etc. are doing enough to educate property owners, farmers, tourists, etc. about the importance of protecting the watershed, water quality and habitat.</p> <p><i>Comments: Probably could re-focus this on encouraging management-for beneficial uses.</i></p>	<input type="checkbox"/>	5	6	2	<input type="checkbox"/>
<p>7. In your opinion, farmers in the area are aware of Beneficial Management Practices for manure storage, for manure spreading, soil conservation practices, fertilizer and pesticide storage and application, fuel storage and livestock access restrictions.</p> <p><i>Comments: As for Q3; how much of this is occurring?</i></p>	<input type="checkbox"/>	5	4	<input type="checkbox"/>	3
<p>8. In your opinion, well users in the area know about why they should get their water tested and where and how often.</p> <p><i>Comments: Probably if they use their wells.</i></p>	1	7	<input type="checkbox"/>	<input type="checkbox"/>	4
<p>9. In your opinion, local wildlife / hunt clubs are educated enough on best management practices.</p> <p><i>Comments:</i></p> <p><i>These “hunters” start hunting in August, trespass openly& brazenly and shoot anything that walks/crawls/flies. These “sportsmen” have 0 interest in conservation.</i></p> <p><i>Yes, for wildlife mngt; probably could be encouraged to collaborate on complimentary natural heritage values.</i></p>	2	5	3	1	1

	Strongly Agree	Agree	Disagree	Strongly Disagree	No opinion
10. There should be an educational program aimed at public school children on the importance of the watershed and all the activities that take place within the watershed. <i>Comments:</i> - As long as all rider of environmental and farming issues are presented. - Would benefit from curriculum development that included access to the watershed.	4	8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. If a source of pollution is found, to what extent do you agree that the following steps are appropriate for the Town to take:					
a) fine	4	4	1	<input type="checkbox"/>	<input type="checkbox"/>
b) correct and bill the property owner	3	3	1	<input type="checkbox"/>	<input type="checkbox"/>
c) correct and absorb the cost	1	1	1	3	<input type="checkbox"/>
d) inform the property owner and suggest they correct the problem	7	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) do nothing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6	<input type="checkbox"/>
<i>Comments:</i> - Notify offender give opportunity to correct problem; if not corrected apply a and b. - Within a given time limit, if not corrected then go to b). - If the property owner continues to pollute they then should absorb the cost. - All of these are inter-related and often escalate from e) to the others. Strictly speaking, e) is not an option still it is against the law not to report pollution.					

12. What should be the Town and ERCA's priorities?

	Strongly Agree	Agree	Disagree	Strongly Disagree	No opinion
a) <ul style="list-style-type: none"> -Eradicating invasive species -Protecting watershed. -Businesslike decisions -Water quality -Drainage -Keeping control down and parameters of ERCA in check -“Return” water levels back to mother earth - Highest possible quality of the water in our watershed. - Inform 					
b) <ul style="list-style-type: none"> -Protecting the environment. -Protecting wildlife. -Make trees available -Water quality -Erosion -Put back into nature more than you have taken out - The environment of this watershed for plants and animals - Encourage 					
c) <ul style="list-style-type: none"> -Stop development completely in the watershed area. -Police hunting/hunters -Phragmites “control/eradicate” -Get the hunt club to “quit” pumping everyones water out of the waterway. Their priorities are just “ducks” and everyone elses priorities are to use the waterway much differently - Regulate 					

	Yes	No	No Opinion
13. Did you know that ERCA offers grant programs for things such as:			
a) helping repairing septic tank systems	2	7	2
b) capping of abandoned well heads	1	10	<input type="checkbox"/>
c) safe sealing of used wells	1	9	1
d) extending well heads so that they are at least 16 inches above the ground	2	9	<input type="checkbox"/>
e) grading or seeding soil surface around private wells	2	9	<input type="checkbox"/>
f) preparing Conservation Farm Plans for individual farmers	3	7	1

	Strongly Agree	Agree	Disagree	Strongly Disagree	No opinion
14. Providing funding for programs such as those identified in Question 13 is a good idea.	1	8	2	<input type="checkbox"/>	<input type="checkbox"/>
<i>Comments:</i>					
- We are presently overtaxed.					
- Maybe best if cost shared. I will speculate that people also value service (knowledge, advice) more than money.					

	Yes	No	No Opinion
15. Did you know the Town has set up a web site to keep people informed, educated and to allow complaints to be filed or suggestions made?	3	9	<input type="checkbox"/>
<i>Comments: I do now.</i>			
16. Is there anything else you want to add to what you have already commented on or on issues not raised?			

	Yes	No	No Opinion
<p><i>Comments: 1. Wildlife/nesting areas need to be protected;</i></p> <p><i>2. Private interests ie. Hunters should not be dictating watershed action.</i></p> <p><i>3. Suggest alternatives to pesticides.</i></p> <p><i>4. Suggestion to have a water quality monitoring station at the culvert beside 3157 Meloche since it collects the runoff from the subdivision to the west, almost exclusively.</i></p> <p><i>5. We wouldn't be here tonight if the Hunt Club would stop pumping the waterway and return it to its original condition.</i></p> <p><i>6. I am particularly concerned about the individual homeowners use/misuse of herbicides and pesticides. Lack of knowledge often themselves and those they hire.</i></p> <p><i>7. I'll keep in touch. Hal Shraeder MOE, (519)873-5109.</i></p>			

Priorities List

Of all the things we have talked about tonight, what are the top 5 actions or issues that should be addressed first?

Please record your first priority with a #1, second priority with a #2, and so on until #5. A maximum of 5 boxes should be marked.

- a) Undertake or require septic tank inspections
2, 1
- b) Regulate the application of fertilizers and pesticides 3,5
- c) Educate property owners on best management practices 2, 4, x
- d) Provide funding for specific improvements like septic tanks, capping wells, testing wells, preparing environmental plans x, 5
- e) Encourage planting along water's edge 3,
- f) Fence of livestock from water's edge 1,
- g) Undertaking an educational campaign
4,4,3,2
- h) Other (specify)
 - control of phragmites/muskrats.
 - drainage 1,
- i) Conduct more workshops 5,x,3
- j) Better communications 4, 3, x,1
- k) Provide more funding to property owners to do any of these projects 3,
- l) Impose stiffer fines for poor environmental practices 2,
- m) Increased monitoring of water quality 3,1,4,1, x,4
- n) Do more clean ups 2,2,5,2
- o) Stricter enforcement of existing legislation and regulations 1
- p) Other (specify)

	Strongly Agree	Agree	Disagree	Strongly Disagree	No opinion
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Issues from Meeting Records in the Final Watershed Plan

1. Investigation into a point source of contaminants into Big Creek.
2. Appropriate water level management in the Creek.
3. Chloride migration from the General Chemical site, impacts of chloride on ecosystem health.
4. Concern regarding arsenic levels.
5. Water Quality investigation/testing for the west branch of Big Creek.
6. Documentation of all wildlife in Big Creek including species not previous known to exist there.
7. Substantial number of muskrats in the Creek, stealing crops and causing erosion to the bank.
8. Navigable portions of the Creek to be identified.
9. Should the Canard watershed be connected with Big Creek?
10. Benthic information and analysis for this undertaking.
11. PCBs – levels and health impacts.
12. Nitrates and management methods.
13. Screening and reporting of non-conventional toxins at the mouth of tributaries.