North Oakville Creeks Subwatershed Study Addendum

September 5, 2007

Environmental Water Resources Group Ltd.

Addendum
to
North Oakville Creeks
Subwatershed Study

General:
This addendum summarizes changes required to the North Oakville Creeks Subwatershed Study (NOCSS) to reflect the outcome of the mediation and settlements for the North Oakville Secondary Plan.

These items affect only the Management Report and Implementation Report of the NOCSS. This addendum is intended to identify the changes required in the main areas of the report. Other minor changes may be required, but do not affect the strategy that is to be implemented for North Oakville. For example, adjustments have been made to core boundaries that have been illustrated in Figures 6.3.6, 6.3.7, 6.3.9, 6.3.11, 6.3.13, 6.3.15, and 7.4.2 in this addendum. This will require other figures to be updated, however this work is not being carried out at this time.

Addendum Items

Management Report

Table 6.2.1 – Objective 1.2, under Targets Column
- Delete last bullet point

Table 6.2.1 – Under Objective 1.3, Targets Column
- Change 2nd bullet to read " Achieve MOE "enhanced" level of storm water protection (80% TSS removal) for all reaches of streams supporting resident redside dace populations (14 Mile Creek (14W-1, 14W-1a, 14W-2 and 14W-12) and East Morrison Creek (MOC-4))"

Table 6.2.1 – Objective 2.3, Under Targets Column
- Add the following bullet points:

  - Adopt a conservative target of maximum daily temperature of 20°C for 14 Mile (14W-1, 14W-1a, 14W-2 and 14W-12) and East Morrison Creeks (MOC-4). A conservative dissolved oxygen target of 6mg/l should also be adopted which is the Provincial Water Quality Objective for cold water fisheries associated with a water temperature of 20°C.
  - The existing temperature and dissolved oxygen regime of these creeks have not yet been determined. It may be that existing maximum daily temperatures in the above-mentioned creeks already exceed 20°C and the dissolved oxygen is below 6mg/l. If this is the case, it would be reasonable to adopt a target based on the existing conditions. In other words the target would be to keep temperatures below the existing maximum daily temperature and the dissolved oxygen above the existing concentrations.
  - A temperature and dissolved oxygen monitoring program should established for these systems and initiated prior to development to establish a baseline against which the recommended targets of 20°C and 6mg/l can be assessed, and modified where appropriate.

Table 6.2.1 – Under Objective 2.7, Targets Column
- Change the 6th bullet to read:

- Enhanced level of stormwater quality control for 14 Mile (14W-1, 14W-1a, 14W-2 and 14W-12) and East Morrison Creeks (MOC-4)

Section 6.2.1.3 – Page 6-6

- Under the heading "targets" change second bullet to read "Achieve Ministry of the Environment (MOE) "enhanced" level of stormwater protection (80% Total Suspended Solids (TSS) removal) for all reaches supporting redside dace populations (14W-1, 14W-1a, 14W-2 and 14W-12) and East Morrison Creeks (MOC-4))"

- Under the heading "targets" change 3rd bullet to read "For all other streams achieve a "normal" level of stormwater protection (70% TSS removal) to adequately protect aquatic habitat and resident fish. Note that "enhanced" protection of these streams will be required to achieve Total Phosphorus targets (See Section 5.7 of NOCSS Analysis Report)."

Table 6.2.2 – Page 6-8

- Under the column entitled "Targets" change text under the heading "Dissolved Oxygen" to read:

    - "A target of minimum dissolved oxygen concentrations of 6 mg/l is recommended for 14 Mile and East Morrison Creeks. If the minimum dissolved oxygen in the above-mentioned creeks already is below 6 mg/l the target then becomes to keep dissolved oxygen above the existing levels. A dissolved oxygen monitoring program should be established for these systems and initiated prior to development to establish a baseline against which the recommended target of 6mg/l can be assessed."

Table 6.2.2 – Page 6-8

- Under the column entitled "Targets" change text under the heading "Temperature" to read:

    - "A maximum daily temperature of $20^{O}C$ is recommended for 14 Mile and East Morrison Creeks. If the maximum daily temperatures in the above-mentioned creeks already exceed $20^{O}C$ the target then becomes to keep temperatures below the existing maximum daily. A temperature and dissolved oxygen monitoring program should be established for these systems and initiated prior to development to establish a baseline against which the recommended target of $20^{O}C$ can be assessed."

Section 6.2.2.7 – Page 6-13

- Replace fourth bullet point:

    - Designate reaches which support redside dace populations where stream sections cannot be relocated.

Section 6.3.3 – Page 6-24

- Add a fifth bullet at the end of the existing four bullets:

    - "Identification, delineation and management of linkages"

- Change "three" to "four" in the first sentence after the bullets.

Section 6.3.3.5 – Page 6-40

- Replace the 2nd full paragraph (starting with "The analysis of Cores..."), the following two items and the following paragraph (ending with "...further in this section."), with the following:

"The analysis of Cores includes recommendations regarding linkages between the Cores based on the identified Cores and the description of linkages (Section 6.3.3.4). Linkages provide connections of suitable habitat between Cores. Recommended habitat of the linkage is to be the same as the Cores it connects. Linkage width is 100m, other than a few exceptions that are discussed in the Core descriptions below."

Page 6-46

- Replace third paragraph with:

"The linkage to the south of this Core is associated with the west branch of East Morrison Creek, which historically sustained a downstream population of redside dace. As such, the width of this linkage is recommended to be based on the Redside Dace Recovery Strategy (*Dextrase et al., 2005*). This is approximately 120 m in width. A fisheries setback of 30 m from the limit of the bankfull channel is required and supported by the Ministry of Natural Resources. Due to the presence of open country bird species, as well as recommendations for the maintenance of herbaceous vegetation next to redside dace habitats, the linkage is recommended to be maintained primarily as open habitat."

Page 6-53

- Delete the last sentence of paragraph one and all of paragraph two.

Section 6.3.4.2 – Environmental/Fisheries – Page 6-53

- Replace third paragraph with:

"For the purposes of this Subwatershed Plan, only reaches which contain redside dace and have been designated as critical aquatic habitat (14W-1, 14W-1a, 14W-2 and 14W-12 and MOC-4) are considered as survival habitat requiring this 30 m setback."

Table 6.3.4 – Aquatic and Riparian Habitat Management by Reach

- Delete the following rows (Green Streams)

- Joshua's Creek
  JC-10
  JC-11
  JC-15
  JC-27
  JC-29
  JC-30
  JC-31A
  JC-32

  East Morrison Creek
  MOC-5

  West Morrison Creek
  MOC-W5

  Munn's Creek
  MUN-1

- Shannons Creek
  SHC-3

- 16 Mile Creek
  SMC-4
  SMC-5

Table 6.3.4

- Under Stream Reach MOC-4, replace second sentence with:

  "This will allow for a 20 m buffer from bankfull width on either side."

Page 6-55

- Replace second bullet point from top of the page with:

  - Except to provide for restoration or enhancement with proper approvals and/or permits, do not modify channel form if redside dace are supported in reach. Riparian plantings and vegetation enhancement can occur but the channel is stable and should not be modified in any way.

Section 6.3.4.3 – Page 6-56

- Insert the following after the paragraph at the top of the page:

  "Any modification to a stream or its associated floodplain must address the storage characteristics in such a manner as to protect both the downstream receiving reach and upstream reaches from adverse impacts as follows:
  - Storage-discharge characteristics must be preserved in a manner to prevent increases in peak flowrates in downstream reaches.
  - Any changes to a stream reach must address upstream impacts as well, specifically ensuring that there are no adverse impacts on hydraulics (i.e. no increase in flood levels) on adjacent and upstream properties
  - Where application of the storage-discharge criteria results in an adverse impact to an upstream or adjacent property (i.e. increase in flood elevation), adherence to stage-storage discharge criteria (i.e. thereby avoiding the impact), or alternatively obtaining the consent of the impacted property owners, will be required.
  - In addition the lowering of a stream must consider the potential lowering of flood elevations in upstream reaches that are not lowered thereby, reducing floodplain storage and potentially increasing peak flows. This potential is to be evaluated and mitigative measures proposed to prevent increases in peak flows.
  - The storage-discharge characteristics are to be evaluated for all range of design events 2, 5, 10, 25, 50, 100 year and Regional storm events."

Section 6.3.4.5 – Pages 6-58, 6-59

- Replace third and fourth paragraph with the following:

  "The stream corridor widths of the reaches (Table 6.3.4a) encompass three components. For unconfined systems (i.e., valley wall height ≥2 m), these three components are the meander belt width (defined in Table 5.8.3), a factor of safety (representing 10% of the meander belt width to be applied on each side (for a total of 20%) or as determined through a 100-year erosion rate of channel bends that define the belt width), and a setback (15 m for major valley systems and 7.5 m for minor valley systems) which includes a 6 m erosion access allowance. For confined systems, the corridor width is equivalent to the greater of the belt width, 20% factor of safety and setback (7.5-15 m) or the stable slope top of bank (as delineated through an independent geotechnical stable slope assessment) plus toe erosion allowance (where applicable) and the setback (7.5-15 m). These components are illustrated in Figures 6.3.15a (confined systems) and 6.3.15b (unconfined systems). Figure 6.3.15c provides a decision making flow chart that outlines the riparian corridor width determination protocol."

Section 6.3.4.5 – Pages 6-60, 6-61

- Delete figures 6.3.15a and 6.3.15b and replace them with the attached Figures 6.3.15a-6.3.15c.

Section 6.3.5.2 – Page 6-69

- The first part of Section 6.3.5.2 (including subsections I, Core 11, II. High Constraint Streams (Requiring Rehabilitation) and Medium Constraint Streams (Blue Streams) and III SWM Facilities in Linkages at Road Crossings) requires updating to correspond to mediation and settlement as outlined in the North Oakville Secondary Plan.

Page 6-69

- Replace second bullet point in list at bottom of page with:

    - Appropriately address redside dace corridors (East Morrison and Fourteen Mile Creeks);

Section 6.3.5.3 – Page 6-71

- Replace first sentence of first paragraph with:

    "It is generally preferred that the toe of slope for any grading on lands neighbouring the Natural Heritage System watch the existing grade at the outer boundary of the Natural Heritage System."

Table 6.3.6 – Following Page 6-73

- Replace Table 6.3.6 with new version (attached)

Section 6.3.6.3 – Page 6-75

- Replace the second paragraph with the following:

    "The water quality control approach for stormwater management is recommended to focus on phosphorus, suspended solids, chloride, and temperature. These are intended to provide controls to meet the objective of not permitting further enrichment of the streams (i.e., nutrient control), fisheries protection and overall water quality protection. In addition, the control of phosphorus loadings in runoff will not cause further algae problems in the Lake Ontario shoreline. Stormwater management is to be designed to meet the targets specified in Section 6.2 under goals and objectives as outlined in Table 6.2.1."

Section 6.3.6.4 – Page 6-82

- The text with the subheadings: "Treatment Train Evaluation of Performance; Results; Scenario Description and Results; and Conclusion" needs to be updated as per mediation.

Table 6.3.13 – Objective 2.2 under Management Element Column

- Replace fourth bullet point with:

    - "Level 1 controls are needed to meet Phosphorus Target"

Implementation Report

Section 7.2, Page 7-2

- Third paragraph, replace second and third bullet point with:

    - A combined Environmental Implementation Report (EIR), and Functional Servicing Study (FSS) for the catchment area

Section 7.2, Page 7-3

- Replace Figure 7.2.1 with attached new Figure 7.2.1

Figure 7.4.2

- Replace Figure 7.4.2 with attached new Figure 7.4.2

Section 7.4.4, Page 7-20

- Paragraph beginning with "The flow targets represent...", replace with:

"The Subwatershed Study recommends that stormwater management targets include control of the peak flow to predevelopment levels for the 2 year to 100 year return period events and the Regional Storm. However, future land use development applications may carry out an investigation of the potential increase to flood risk to confirm if Regional Storm controls are necessary. This analysis is to include the increase in risk life as well as the potential for flood risk to private, Municipal, Regional, Provincial and Federal property under Regional Storm conditions. If the study finds, and the Town and Conservation Halton concur in that finding, that no increase in risk occurs to downstream landowners or public uses, the Town in conjunction with Conservation Halton will conclude, subject to considerations of any other relevant factor within their respective mandates, that control at the Regional Storm level is not required. Evaluation of risk may include but not be limited to:

- The analysis will be conducted for all development within Oakville North for the watershed under consideration;
- The analysis for potential increase in flood risk will be conducted for the entire downstream watercourse to its outlet at Sixteen Mile Creek;
- That the examination of potential increase to flood risk include:
  - Potential increase in flood elevations;
  - Potential increase in flood velocities;
  - Potential for the foregoing increases to adversely effect all landowners including individuals, municipal agencies, provincial agencies (MTO, MOE, etc.), and federal agencies;
  - Potential for the foregoing increases to adversely effect all land uses including road crossings, private access roads, parks, storm sewer outlets, etc.;
  - Potential for the implementation of mitigation measures to address any increase in risk as an alternative to the requirement to control Regional Storm flows.

It is understood that not all increases in flood velocity or flood elevation will necessarily lead to an increase in risk."

Table 7.4.1 – Following Page 7-20

- Replace Table 7.4.1 with new version of Table 7.4.1 attached.

Section 7.4.4, Page 7-21

- First paragraph on Page 7-21, omit last sentence.

- Replace seventh and eighth bullet points with:

  - Confirm sizing and release rates for ponds, including assessment of the release rate in terms of the most sensitive downstream reach and associated governing erosion threshold;
  - Confirm that quantity controls are in place and functioning as required to ensure no downstream increases in the frequency and duration of peak flow events;

Section 7.4.4.1, Page 7-23

- Insert the following after the first partial paragraph at the top of the page:

"The procedure to demonstrate that topographical depression storage is preserved is as follows:

1. In general, the hydrologic model incorporates depressional storage to establish unit area target flow rates. The calculation and comparison of depressional storage to SWM storage is intended as a check to ensure that existing condition peak flow rates do not increase as a result of land development. The principle behind this approach is to ensure that the hydrologic analysis and SWM approach reflects the existing site conditions that include a number of topographic depressions.
2. The principle is to ensure that the natural depression storage is maintained in the SWM system. This approach is not to include artificially created storage such as that created by embankments or dug facilities. The topographic depressions are illustrated on Figure 7.3.1, referred to as pits, ponds and depressions. Current mapping does not provide for accurate delineation of these depressions.
3. During the EIR stage, more detailed topographic mapping and other relevant investigations are to confirm the existence, nature, (natural or artificial), and storage volume of these depressions.
4. To ensure that the storage volume of the depressional areas is maintained, the calculated depression volume is to be compared to the SWM pond volume of the proposed SWM facility within the same drainage area. If the depressional volume is less than or equal to the SWM facility volume, no additional analysis or change to the SWM facility design is required. In the event that the depressional storage is greater than the SWM facility volumes, the SWM facility volume (as noted in item 5) is to be adjusted to be equal to the depressional storage volume.
5. Calculations and volume comparisons shall be done as follows:
   - 2 year event: Calculate the 2 year depressional volume and compare this volume to the water quality (extended detention and permanent pool) volume in the SWM facility.
   - 100 year event or Regional Storm (whichever is applicable): Calculate the 100 year or Regional Storm depressional volume and compare it to the total storage volume (permanent and active storage) in the SWM facility (up to 100year or Regional Storm event)."

Section 7.4.5, Page 7-25

- Replace the first bullet point with:

  - Any underground services must consider hydrogeologic functions/characteristics and must use Best Management Practices, where feasible and practical, to preserve:
    - Groundwater sources to terrestrial features;
    - Wetland features (*i.e.,* maintain water levels);
    - Base flow to streams;
    - Groundwater quality;
    - Groundwater recharge (*i.e.,* use of perforated storm sewers – Etobicoke Infiltration System);

- Replace the last bullet point with:

  - Designing servicing to minimize net changes to hydrological and hydrogeological conditions.

Section 7.5 – Monitoring Strategy, Page 7-26

- Section 7.5 is to be rewritten to correspond to Mediation.

Section 7.5.4, Page 7-29

- Third paragraph, delete sentence:

  "A protocol that could be followed by the developer is attached as Appendix KK"

Appendices

- Appendix JJ is to be replaced with EIR Terms of Reference agreed to in Mediation.
- Replace Appendix KK with attached and rename as Monitoring.
- Appendix AA is to be updated as per Mediation.

APPENDIX KK - MONITORING

Introduction:

The subwatershed study included monitoring requirements for: A. erosion and sediment control, B. stormwater management facilities, C. monitoring of modified streams, and D. monitoring of stormwater management works, municipal services and trails installed by a landowner within the Natural Heritage System. The summary is to provide the principles of monitoring for which the landowners/developers are responsible in respect of A, B, C, and D above. It does not include data collection or characterization that may be required as part of the Environmental Implementation Report.

Approach:

A. Erosion and Sediment Control (ESC)

1. An ESC plan will be required to be submitted to the Town of Oakville. The plan must be reviewed and approved by the Town prior to any clearing and grading.
2. The ESC requirements will follow applicable approved guidelines and bylaws in effect at the time of development. Deliverables will include a site alteration design report, an existing site conditions survey plan, an ESC plan, and a schedule of monitoring and reporting.
3. The ESC plan will include inspection, sampling for total suspended solids at all outlets from the site, and reporting of results.
4. Remedial action to correct deficiencies of erosion and sediment control practices and facilities may be required based on either inspection or sampling results.

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B. Stormwater Management Facilities

1. Stormwater management (SWM) facilities constructed in the conveyance system and at the end-of-pipe will be included in the monitoring program, which applies to the period prior to the assumption of the facilities by the Town. The monitoring plan will include monitoring of the receiving system for the effectiveness of the stormwater management facilities at the location of the outfall for the purpose of water quality monitoring, and at a location or locations to be determined through the EIR for the purpose of erosion control. Monitoring will follow applicable approved guidelines in effect at the time of development. These guidelines will replace Appendix KK – Stormwater Pond Monitoring Protocol from the Subwatershed Study. The Town of Oakville and Conservation Authority will consult with the North Oakville landowners in the preparation of such guidelines. Monitoring requirements will be reflected in subdivision agreements.

2. Privately owned SWM facilities are not included in this mediation document and will be subject to site specific requirements at the time of application.

3. All SWM facilities to be assumed by the Town will be monitored by the owner for design conformance, maintenance of function and hydraulic performance. Monitoring and reporting plans are to be reviewed and approved by the Town.
4. Facilities with water quality function(s) will be monitored by the owner for performance in meeting the specific pond design target for total suspended solids (80% removal). Total phosphorus and temperature sampling will also be required.
5. Facilities subject to Ontario Water Resources Act approval may be required to do additional monitoring as a condition of the Certificate of Approval.

C. Monitoring of Modified Streams

1. A multidisciplinary monitoring program approved by the Town and Conservation Halton will be implemented for all stream modifications. The monitoring program will be implemented by the proponent of the stream modification.

2. Notwithstanding Principle C 1, additional monitoring associated with Department of Fisheries and Oceans approvals under the federal Fisheries Act may be required and shall be the responsibility of the proponent.

D. Monitoring in Relation to Stormwater Management Works, Municipal Services and Trails Installed by an Owner within the Natural Heritage System

In addition to items A, B, and C, above:

1. A monitoring program will be implemented for all municipal services such as roads, watermains, sanitary sewers, stormwater management works or trails within the Natural Heritage System;
2. A monitoring program approved by the Town and Conservation Halton is to be developed based on the natural features and functions potentially affected by the specific works noted above;
3. The details of the monitoring program are to be included in the EIR; and,
4. The monitoring program will be implemented by the landowners installing the stormwater management works, municipal services and trails.

North Oakville Creeks Subwatershed Study Addendum Figures

September 5, 2007

TSH engineers architects planners

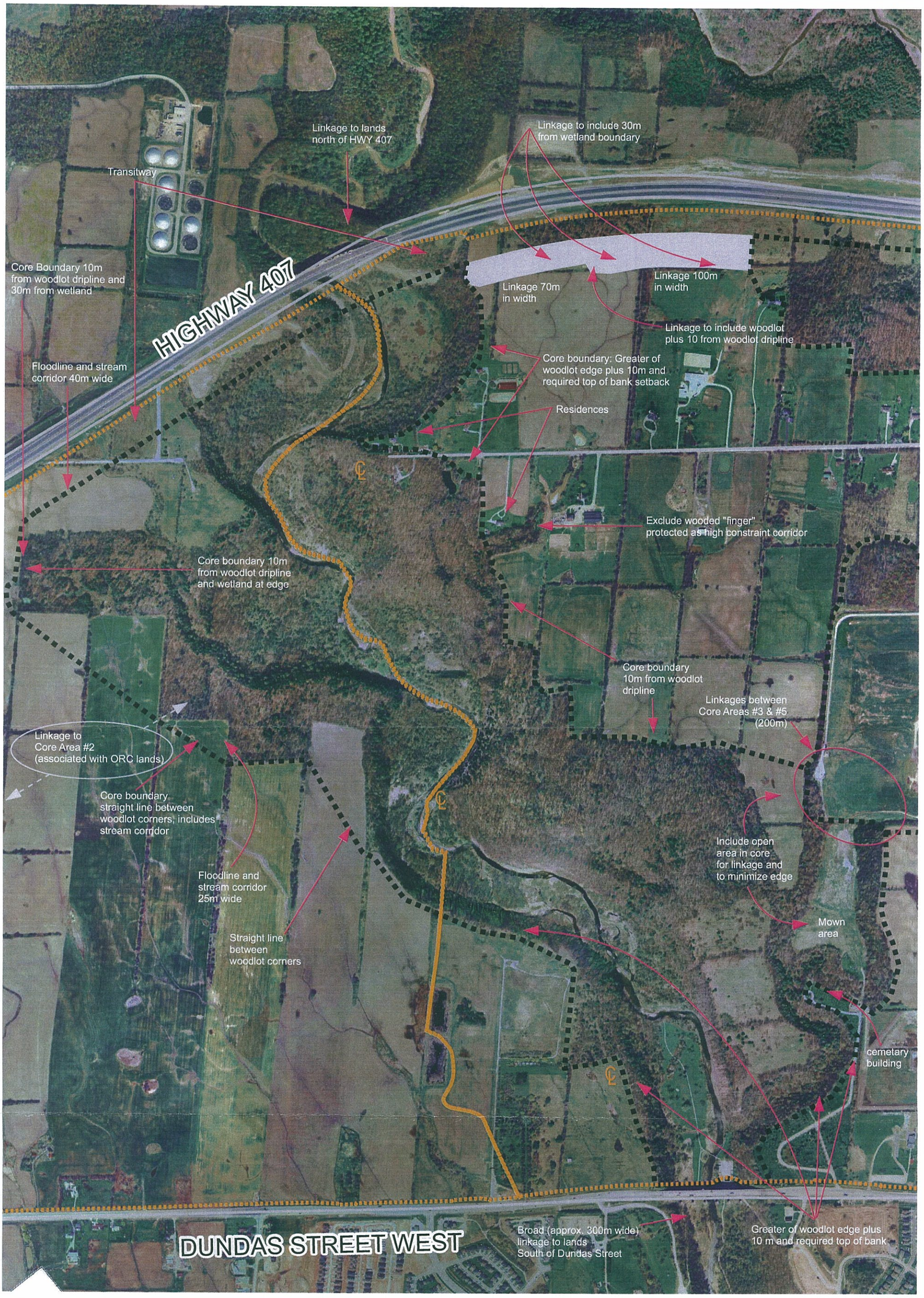
PARISH geomorphic

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Donald G. Weatherbe Associates

Morrison Environmental Limited
Groundwater Consultants

EWRG Environmental Water Resources Group Ltd.



NORTH OAKVILLE CREEKS SUBWATERSHED STUDY

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0 100
Meters

Legend
- Core Area 2006
- Road
- Watercourse
- ELC
- Wetland
- Linkage
- Secondary Plan Boundary

Core Area #3
16 Mile Creek Valley
Scale: 1:10,000
August 2007

Figure 6.3.6

Revised September 5, 2007

NORTH OAKVILLE CREEKS SUBWATERSHED STUDY

Legend

- Study Area Boundary
- Core Area 2006
- Linkage
- ELC
- Wetland
- Watercourse
- Road

N

0 100 200 300
Meters

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Meridian Environmental Limited
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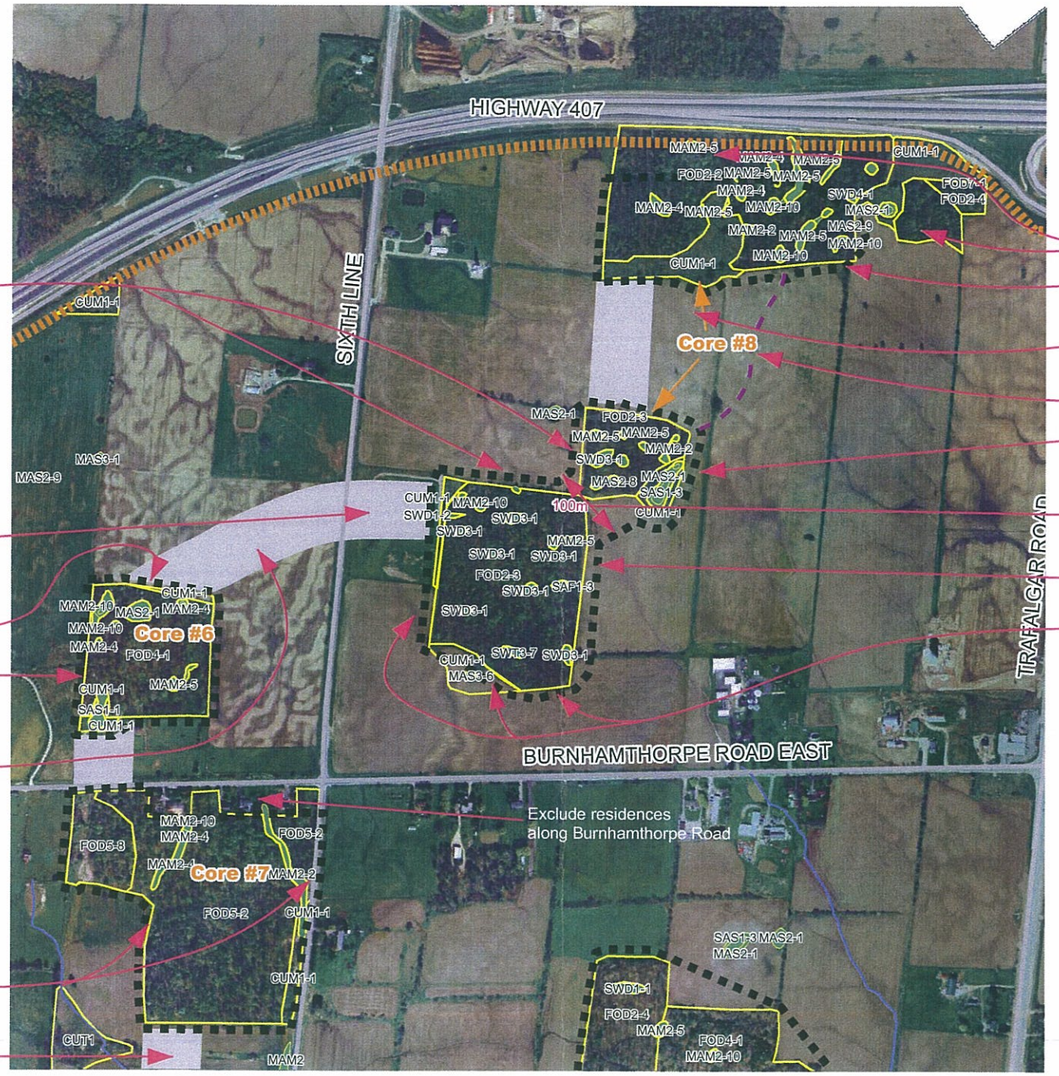
Core Area #4
Highway 407 - East of 16 Mile Creek

Scale: 1:3,500

September 2007

Subwatershed Study
Figure 6.3.7



NORTH OAKVILLE CREEKS SUBWATERSHED STUDY

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0 100 200
Meters

Legend
- Study Area Boundary
- Core Area 2006
- Linkage
- ELC
- Wetland
- Watercourse
- Road

Core Area #6
NW of Burnhamthorpe and 6th Line

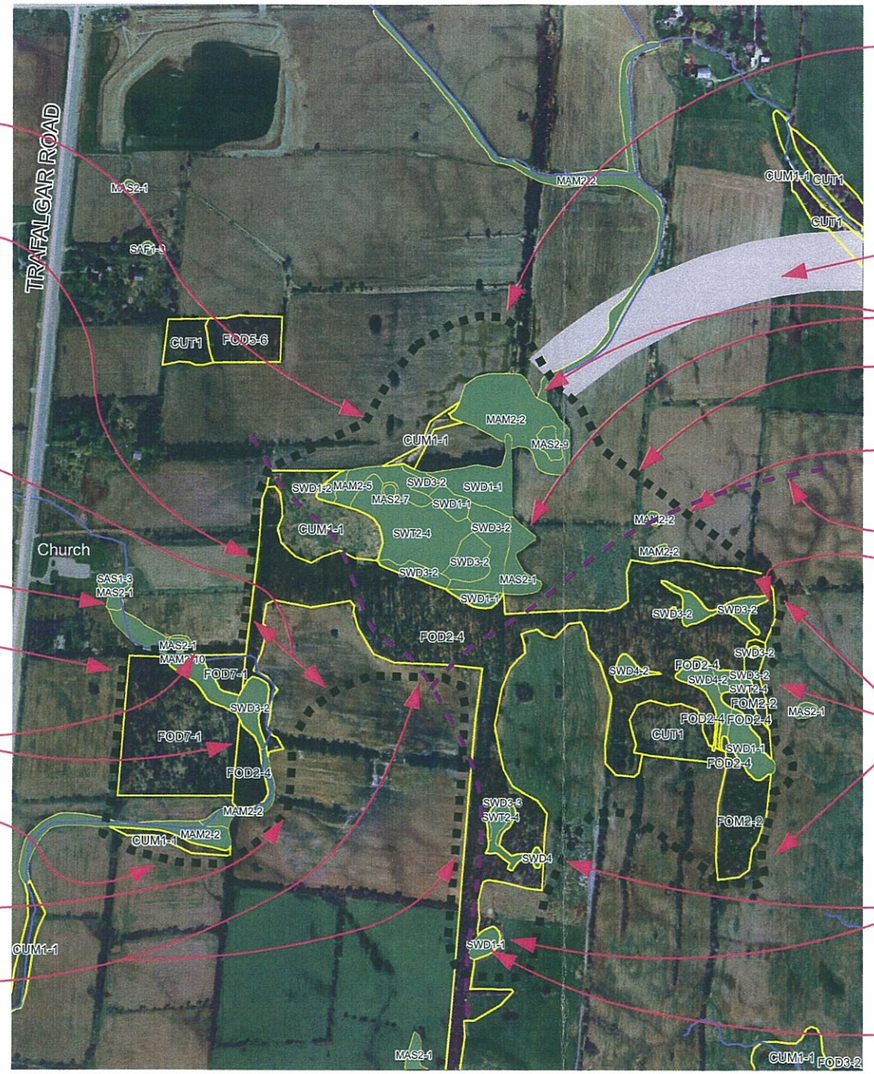
Core Area #7
SW of Burnhamthorpe and 6th Line

Core Area #8
Earth Science Woodlots

Scale: 1:10,000
August 2006

Figure 6.3.9

Revised September 5, 2007



Core boundary includes 100m buffer from buttonbush swamp (Coincides approximately with floodlines)

Core boundary 10m from woodlot dripline

Core boundary provides minimum 200m width

Exclude wetland "finger" protected by high constraint stream corridor

Core boundary 10m from woodlot dripline

Note floodlines in woods and extending along channel

Core includes creek floodplain and wetlands (30m from wetland coincides approximately with floodline and stream corridor

Core boundary 30m from wetland boundary

Core boundary 10m from woodlot dripline

100m from marsh wetland edge

Optional 100m linkage to Joshua's Creek Core #11 if the linkage is not located on the Joshua Creek Tributary (associated with floodplain and stream corridor)

Buttonbush swamp and associated wetland

Core boundary connects corner of woodland and wetland

Core boundary 30m from wetland

Approximate Drainage Divide

Deciduous and mixed forest. Note wetlands adjacent to edge.

Core boundary 10m from woodland dripline and 30m from wetland edge

Core boundary 30m from wetland

Include high quality wetland: important frog breeding pond; several rare plant species, including swamp white oak stand

NORTH OAKVILLE CREEKS SUBWATERSHED STUDY

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0 100 200 300 400
Meters

Legend
- Study Area Boundary
- Core Area 2006
- Road
- Watercourse
- ELC
- Wetland
- Linkage

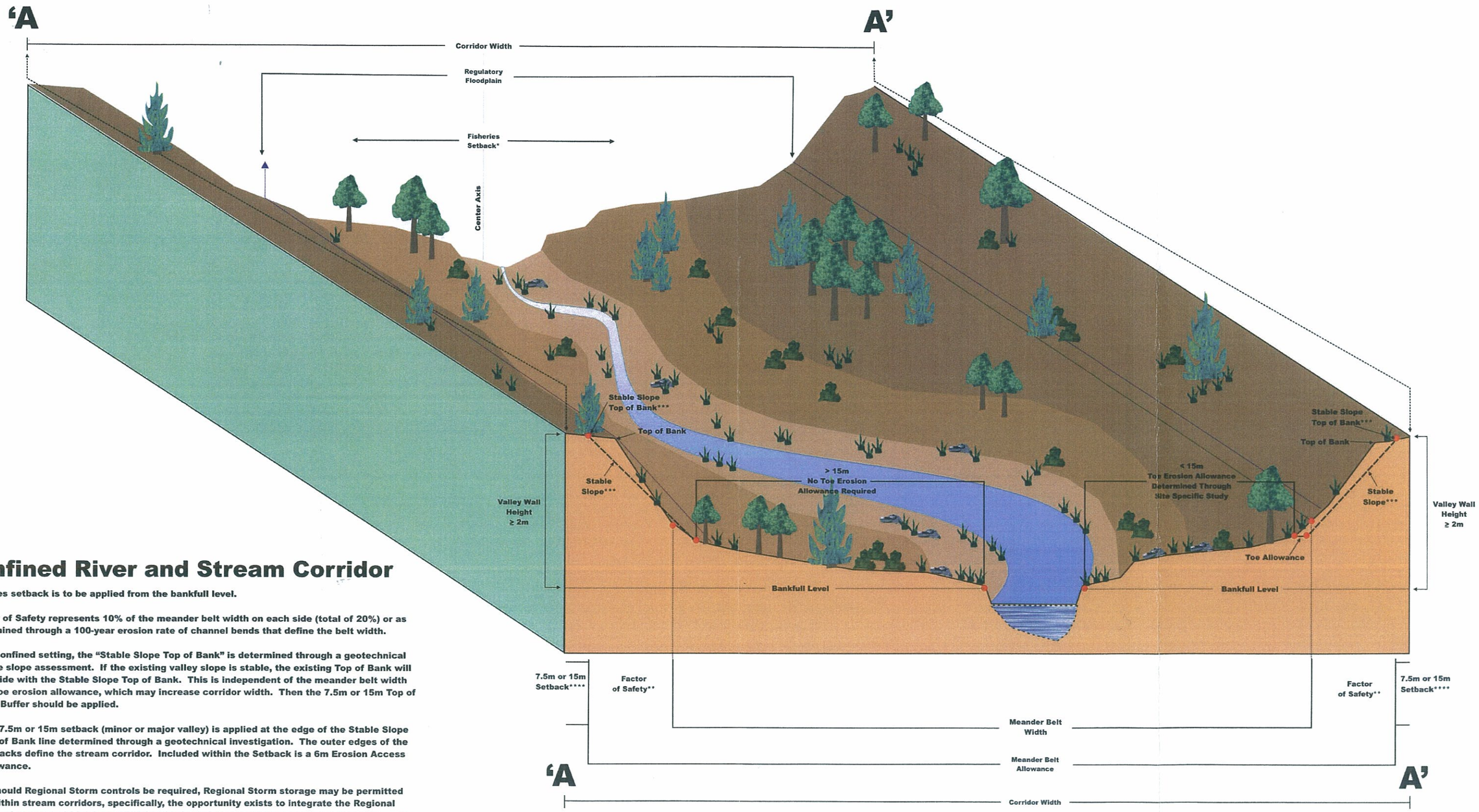
Core Area #10 Buttonbush

Scale: 1:10,000
August 2006

Figure 6.3.11

Revised August 28, 2007

Figure 6.3.15a



Confined River and Stream Corridor

*Fisheries setback is to be applied from the bankfull level.

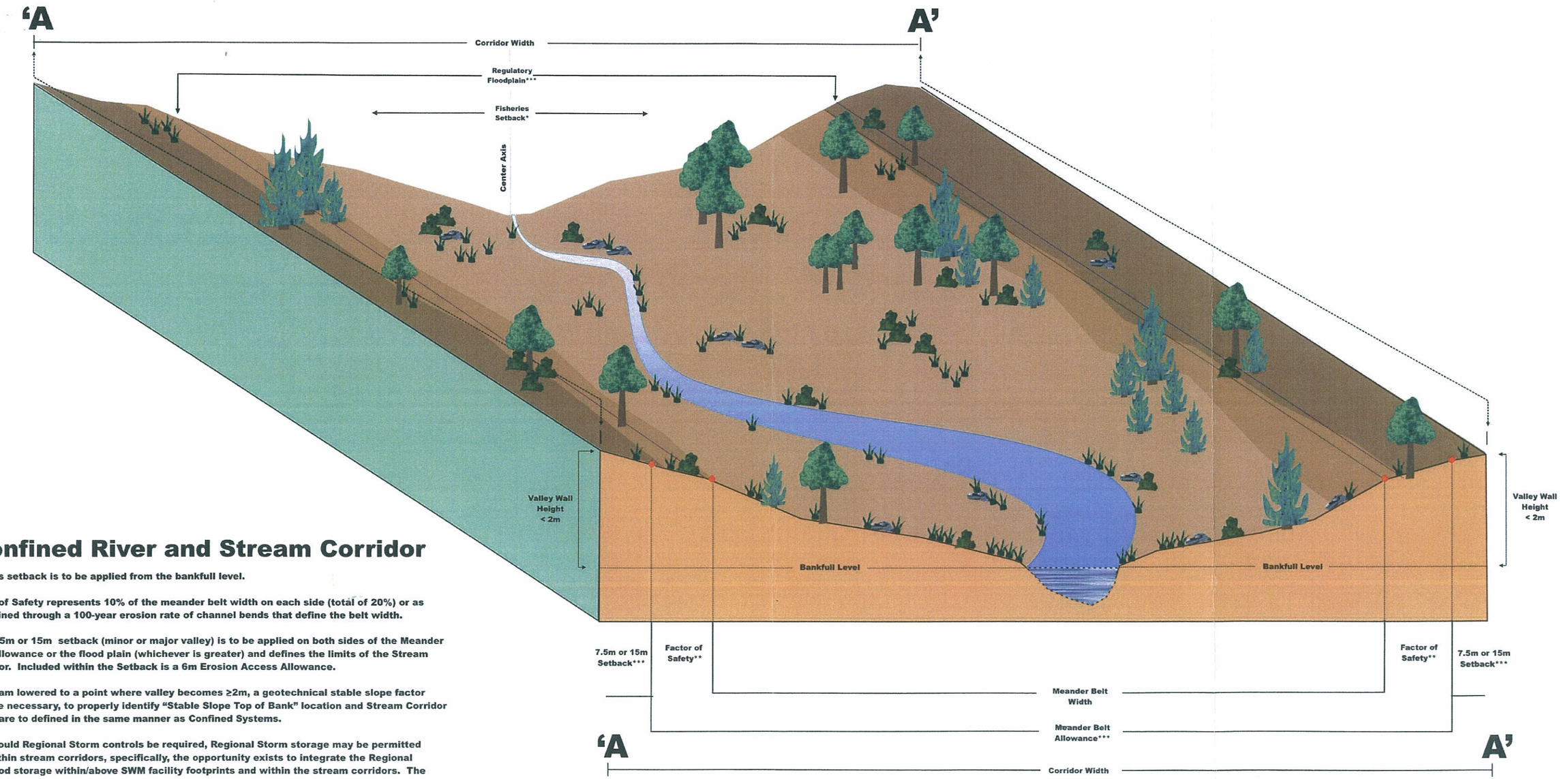
**Factor of Safety represents 10% of the meander belt width on each side (total of 20%) or as determined through a 100-year erosion rate of channel bends that define the belt width.

***In a confined setting, the "Stable Slope Top of Bank" is determined through a geotechnical stable slope assessment. If the existing valley slope is stable, the existing Top of Bank will coincide with the Stable Slope Top of Bank. This is independent of the meander belt width and toe erosion allowance, which may increase corridor width. Then the 7.5m or 15m Top of Bank Buffer should be applied.

****The 7.5m or 15m setback (minor or major valley) is applied at the edge of the Stable Slope Top of Bank line determined through a geotechnical investigation. The outer edges of the setbacks define the stream corridor. Included within the Setback is a 6m Erosion Access Allowance.

Note: Should Regional Storm controls be required, Regional Storm storage may be permitted within stream corridors, specifically, the opportunity exists to integrate the Regional flood storage within/above SWM facility footprints and within the stream corridors. The applicability of this design flexibility will be determined at the EIR and FSS stage based on grading/servicing considerations and ensuring that any natural heritage features, valley and aquatic functions are not adversely impacted.

Figure 6.3.15b



Unconfined River and Stream Corridor

*Fisheries setback is to be applied from the bankfull level.

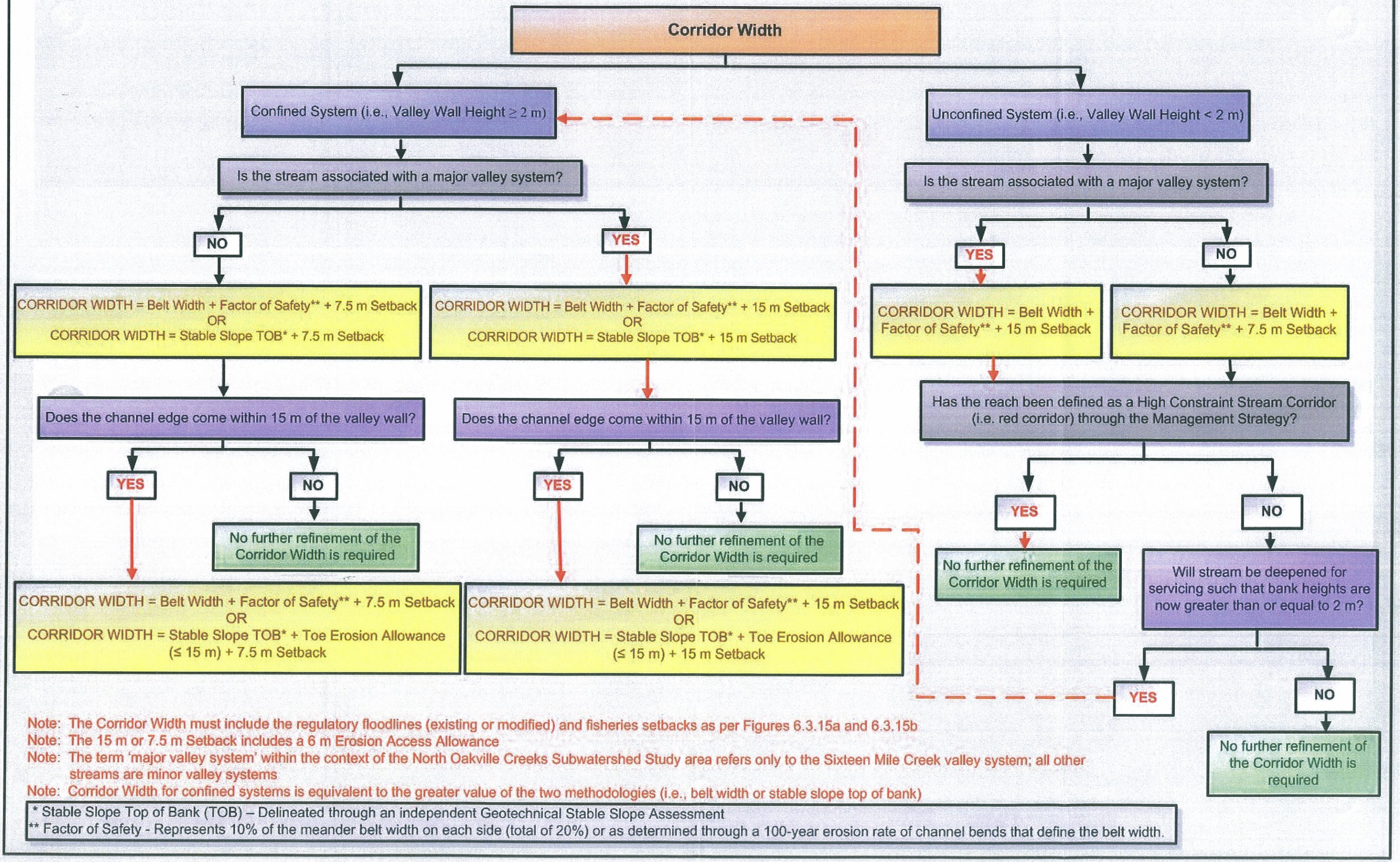
**Factor of Safety represents 10% of the meander belt width on each side (total of 20%) or as determined through a 100-year erosion rate of channel bends that define the belt width.

***The 7.5m or 15m setback (minor or major valley) is to be applied on both sides of the Meander Belt Allowance or the flood plain (whichever is greater) and defines the limits of the Stream Corridor. Included within the Setback is a 6m Erosion Access Allowance.

***If stream lowered to a point where valley becomes ≥2m, a geotechnical stable slope factor may be necessary, to properly identify "Stable Slope Top of Bank" location and Stream Corridor limits are to defined in the same manner as Confined Systems.

Note: Should Regional Storm controls be required, Regional Storm storage may be permitted within stream corridors, specifically, the opportunity exists to integrate the Regional flood storage within/above SWM facility footprints and within the stream corridors. The applicability of this design flexibility will be determined at the EIR and FSS stage based on grading/servicing considerations and ensuring that any natural heritage features, valley and aquatic functions are not adversely impacted.

Figure 6.3.15c



Note: The Corridor Width must include the regulatory floodlines (existing or modified) and fisheries setbacks as per Figures 6.3.15a and 6.3.15b

Note: The 15 m or 7.5 m Setback includes a 6 m Erosion Access Allowance

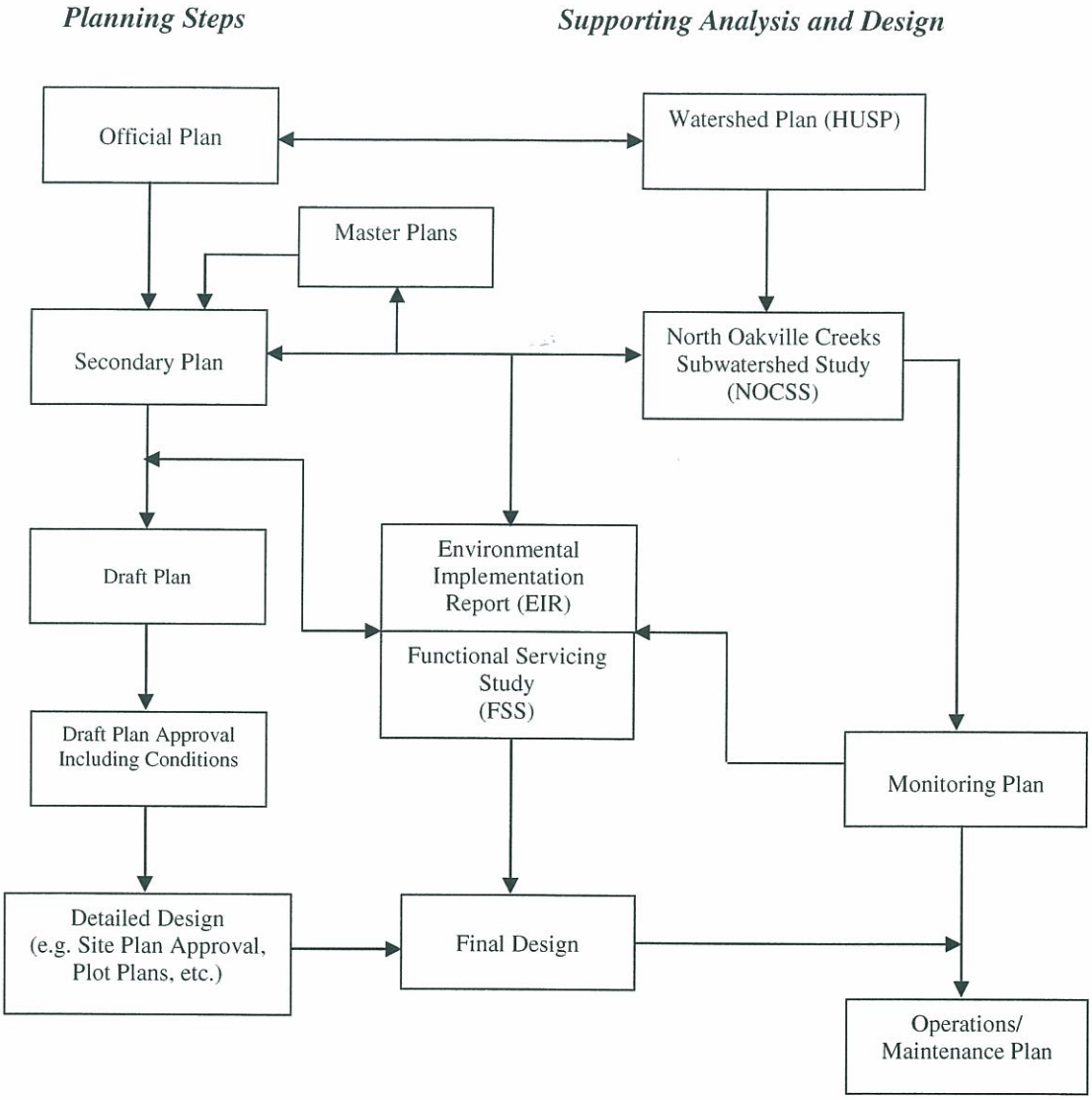
Note: The term 'major valley system' within the context of the North Oakville Creeks Subwatershed Study area refers only to the Sixteen Mile Creek valley system; all other streams are minor valley systems

Note: Corridor Width for confined systems is equivalent to the greater value of the two methodologies (i.e., belt width or stable slope top of bank)

* Stable Slope Top of Bank (TOB) – Delineated through an independent Geotechnical Stable Slope Assessment

** Factor of Safety - Represents 10% of the meander belt width on each side (total of 20%) or as determined through a 100-year erosion rate of channel bends that define the belt width.

Figure 7.2.1
Implementation Process



Footnotes for EIR Subcatchment Plan Map

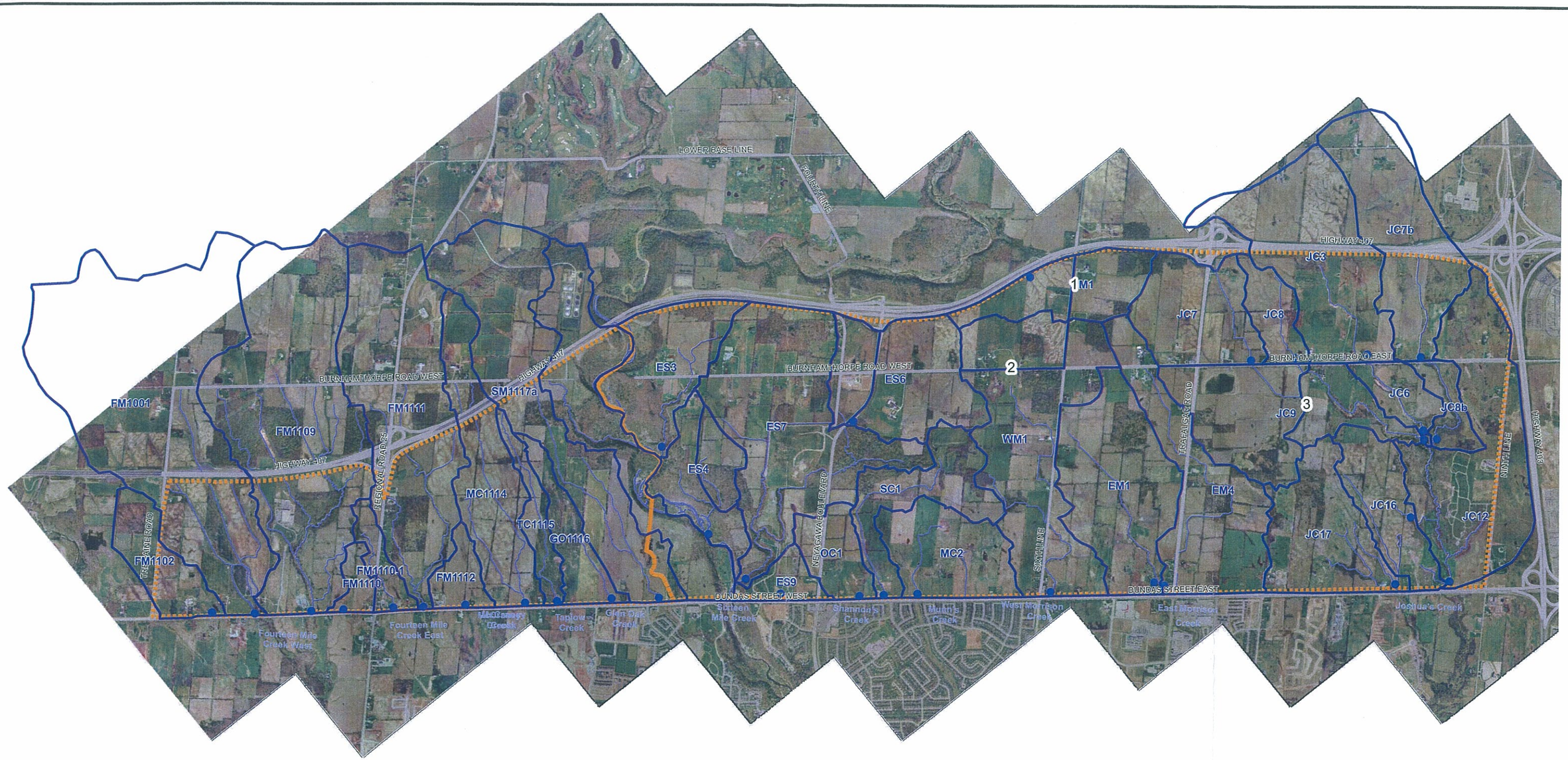
1. This EIR boundary separates EIR and FSS studies east and west of Sixth Line. The issue shared by both areas is the outlet of drainage from lands east of Sixth Line through lands west of Sixth Line and pond locations. Separate EIR/FSS studies may be completed for each subcatchment as long as whichever EIR/FSS proceeds first prepares a scoped drainage and stormwater management plan addressing drainage area boundaries, outlet elevation, outlet location and potential grading implications of outlet conditions as well as SWM control needs for both areas (conceptually only in area not proceeding first; FSS level of detail on area proceeding first).

2. This EIR boundary separates EIR and FSS studies north and south of Burnhamthorpe Road. The issue shared by both areas is the outlet of drainage from lands north of Burnhamthorpe Road through lands south of Burnhamthorpe Road and pond locations. Separate EIR/FSS studies may be completed for each subcatchment as long as whichever EIR/FSS proceeds first prepares a scoped drainage and stormwater management plan addressing drainage area boundaries, outlet elevation, outlet location and potential grading implications of outlet conditions (i.e., potential stream relocation/lowering including consideration of possible alternative conditions relating to minimum interim requirements versus ultimate final conditions) as well as SWM control needs for both areas (conceptually only in area not proceeding first; FSS level of detail in area proceeding first).

3. This EIR boundary separates EIR and FSS studies on either side of the Joshua's Creek. The EIR/FSS that proceeds first, (on either side of this line), is to prepare a scoped drainage and stormwater management plan addressing drainage area boundaries, outlet elevation, outlet location, potential grading implications of outlet conditions, potential stream relocation/lowering including consideration of possible alternative conditions (i.e., minimum interim requirements versus ultimate final conditions) and SWM control needs for both subcatchments (conceptually only in area not proceeding first; FSS level of detail in area proceeding first), as well as the potential new linkage east of Joshua's Creek and potential stream relocation into this linkage. As part of the assessment of stream relocation into the linkage, the preservation of the function of the Joshua's Creek floodplain must be addressed.

   With respect to the potential relocation of stream JC-9, this agreement, which specifies technical requirements, does not identify or assign responsibility to the Town of Oakville or any landowner(s) for the design, approval or construction associated with such potential relocation.

EIR Subcatchment Plan – Notes
Figure 7.4.2



NORTH OAKVILLE CREEKS SUBWATERSHED STUDY

TSH engineers architects planners
PARISH geomorphic
Natural Resource Solutions Inc. Aquatic, Terrestrial and Wetland Biologists
Donald G. Weatherbe Associates
Morrison Environmental Limited Groundwater Consultants
Environmental Water Resources Group Ltd.
OAKVILLE

0 500 1,000
Meters

Legend

- Road
- Watercourse
- Secondary Plan Boundary
- EIR Nodes
- EIR Subcatchments

Note:

Numbers indicate notes which are on page 2

EIR Subcatchment Plan

Scale: 1:36,000

August 2007

Figure 7.4.2

Revised September 5, 2007