

## WETLAND EVALUATION

### Wetland Description

The wetland occurs about a channelized portion of Broad Brook, northeast of Starrs Road, and west of Highway 101. The wetland site was surveyed on June 16, 2004, and its apparent boundary was delineated using a hand held Garmin GPS 12 unit. Flagging was also put along perceived wetland boundaries on or near where specific GPS points were taken. While some margins of the wetland were clearly definable through a combination of looking at evident in field elevations, plant associations and soil nature and moisture conditions, other areas had a ill defined transition from say treed swamp and tall shrub swamp, to hygric forest and hygric tall shrub thicket.

Utilizing the wetland boundary outline generated by the GPS, the wetland was calculated to be 2.58 ha in area. The wetland is a complex of wetland types. The vegetation types present in this wetland represent the current associations and level of succession in a wetland that has been subject to frequent anthropogenic alteration (including past livestock grazing, and successive, channelizations, man-made ponds and impoundments, and in fillings), going back at least to the 1950s and beyond. A good example of this is that a 1955 Air photo (A14753-58) of the area shows no significant straightening of the stream channel in the wetland or any impoundments or dug out ponds present. Farmland is present along the wetland and it is possible even in the 1950s that the wetland was used as pasturage. In a 1967 Air photo the wetland shows a large pond dug out or impounded along the portion of the brook above where it crossed under Starrs Road. In a 7-6-1978 air photo (78304205) the large pond is still present but the existing stream course through the wetland has been re-routed and channelized with fresh, little vegetated spoil banks from the ditching excavation still in evidence. Between 1970 and 1978 the new connection of Highway 101 was put in to the east of the wetland. In the 1989 air photo (SW Cor., 89312-07) a massive area of anthropogenic in filling and land clearing has occurred adjacent to and in a portion of the wetland. The large pond is completely filled over and, what appear to be, the present Kent's hardware store under construction and/or the and lumber yard is in place over the former pond area. As well the channelized stream course has been shifted to the east and it's lower section closely parallels Highway 101 before crossing under Starrs Road.

Several wetland habitat types, with specific vegetation communities, which occur within the overall wetland boundary, were described by noting the dominants in each of three main vegetation classes (Trees, Shrubs and Ground Vegetation). Plant species observed were recorded as well as the locations of any rare or possible suspected rare species. Where necessary small portions, sufficient for identification, of not immediately field identifiable plants were retained for closer examination. Given the relative early time in the season of plant growth it was not possible to accurately identify all species encountered. Generally with habitat surveys, a spring/early summer vegetation survey, (perhaps combined with breeding bird survey) and a later summer/early fall survey are ideal for best locating and allowing for identification of flora taxa present in a given area. Many taxa, such as the very diverse sedges (*Carex* spp.) typically must be in a mature flowering or seeding condition to be accurately identified. Though a

single survey was conducted in a less than ideal seasonal period, the surveyor has a knowledge of the general area, (including several area wetlands and other portions of Broad Brook just down stream of the Project site) and of the rare species, previously recorded from the greater region surrounding the site, and of rare species, that could potentially occur in the particular habitats and successional stages evident on site. For example, skunk cabbage (*Symplocarpus foetidus*) is present in several wetlands within a kilometer of the site, and Tuberculed orchid (*Platanthera flava*) occurs with skunk cabbage in a swamp a few kilometres from the site area on Highway 103. This local knowledge, combined with research into rare species recorded from the area, and a species list and habitat observations generated on site make it reasonable to comment on the apparent absence of any rare species of vascular plants or the likely-hood of any being present.

Additionally any sightings or other evidence of the bird, mammal and amphibian and reptile species encountered in the wetland were recorded. Evidence of past and recent human usage was also noted.

Greater than 100% of the wetland is covered by vegetation. The relatively minor in area of open water of the brook, old brook course remnants, and seepage stream inflows are often choked with emergent plants, and in some instances aquatic moss *Sphagnum* sp. Plant community/wetland types that are present within the greater wetland complex include five basic types as follows:

1. Open low shrub swamp (with higher shrub margin and some interspersion) (e.g. Wp41, by wet area with small open pool and drainage line, representing a remnant of the old stream course, prior to post 1970 canalization).

Trees are not present except at the margin of this type of habitat where Treed bog or hygric forest is present. Dominant shrubs include *Alnus incana* (10%), *Rosa nitida* (8%), *Spiraea tomentosa* (5%), *Rhododendron canadense* (5%), *Kalmia angustifolia* (5%), *Viburnum nudum* (5%), and some *Aronia* spp. (1%). The ground vegetation is lush with complete coverage except for small open water flows and pools along an old course of Broad Brook. This remnant of old watercourse is still fed by seepage flow from surrounding treed bog and hygric forest in the surrounding upland. Dominant ground vegetation includes sedges (*Carex* spp.) (40%), *Calamagrostis canadensis* (15%), *Rubus hispidus* (20%), *Sphagnum* spp. (10%), *Juncus effusus* (5%), and scattered *Aster umbellatus*, *Solidago uliginosa*, *Solidago rugosa*, *Osmunda cinnamomea*, and *Dryopteris cristata* (each cover 3% or less individually).

2. Treed swamp/bog and tall shrub swamp/bog

Dominant trees include *Picea mariana* (10%), *Acer rubrum* (10%), and *Larix laricina* (5%). Tall shrub cover includes *Alnus incana* (30%), *Nemopanthus mucronata* (10%) and *Viburnum nudum* (5%). The ground vegetation consists of *Sphagnum* spp. (80%), *Osmunda cinnamomea* (55%), *Smilacina trifolia* (10%) *Rubus hispidus* (5%), and *Mainthemum canadense* (5%).

### 3. Tall shrub swamp transitioning to hygic thicket (e.g. at Wp126)

No trees are present. A single species of shrub (*Alnus incana*), dominates at 70% coverage. Some minor amounts of *Rosa* sp. are evident in the *A. incana* understory. The ground vegetation consists of *Thalictrum pubescens* (35%), *Solidago rugosa* (15%), *Calamagrostis canadensis* (10%), *Aster umbellatus* (10%), leaf litter (15%), and mosses, including *Sphagnum* sp. (5%). The particular patch described above was near the edge of a farm field and perhaps increased nutrient flow in off the field resulted in the dominance of *Thalictrum* in the ground layer. In other *Alnus incana* dominated tall shrub swamp patches, there was less to an apparent absence of *Thalictrum pubescens* and it was replaced by a variety of sedges (*Carex* spp.) and *Osmunda cinnamomea*, in addition to the other species described above

### 4. Open *Calamagrostis canadensis* dominated fen/marsh with scattered shrubs

No trees are present. Shrubs, scattered and marginal in this habitat, include *Alnus incana* (5%), *Spiraea alba* (4%), and *Rosa nitida* (2%). The dense ground cover is dominated by thick *Calamagrostis canadensis* (80% live and 20% dead bases and litter) and some *Onoclea sensibilis* (5%), and a little *Solidago rugosa* (1%).

### 5. Open stream channel with emergent plants and aquatics

This habitat varied along the length of the narrow, not overly deep, channelized brook. In areas of the brook densely shaded by alder and other shrubs, the open water is high and the cover of emergent plant species and aquatics is low. In the little shaded or not shaded shallow portions of the stream, emergent plant species dominate and often appear to “choke” the stream bed. The following description is of an open, little shaded portion of the canalized brook.

Trees are not present. Shrubs occur only along or off the brook edges. The dominant emergent plants include *Ludwigia palustris* (20%), *Sparganium* spp. (15%), *Glyceria* sp. (10%), *Callitriche* spp. (15%), and *Polygonum* sp. (5%). *Scirpis subterminalis* is along with *Callitriche* species the most evident of the aquatic plants. Along the sunny edges of the brook, white flowered, Eurasian species *Cardamine pratensis*, are apparent. Some 103 species of vascular plants were recorded from this wetland (refer to plant list Appendix B). No listed rare species were encountered.

Wildlife observations at the wetland include mammals such as white-tailed deer (*Odocoileus virginianus*), red squirrel (*Tamiasciurus hudsonicus*), meadow vole (*Microtus pennsylvanicus*), meadow jumping mouse (*Zapus hudsonius*) porcupine (*Erethizon dorsatum*), varying hare (*Lepus americanus*), muskrat (*Odonatra zibethicus*), and raccoon (*Procyon lotor*).

Bird species noted in the wetland include Common Yellowthroat (*Geothlypus trichas*), Yellow Warbler (*Dendroica petechia*), American robin (*Turdus migratorius*), Alder Flycatcher (*Empidonax alnrum*), Black-capped Chickadee (*Poecile atricapilla*), Song Sparrow (*Melospiza melodia*) and Swamp Sparrow

(*Melospiza georgiana*). Common Crow (*Corvus brachyrhynchos*) were noted in the vicinity and some geese, likely Canada Geese (*Branta canadensis*), were heard somewhere upstream of the wetland boundary. Amphibian species noted included northern spring peeper (*Pseudacris crucifer*), and green frog (*Rana clamitans*). Nesting habitat was marginal at best for four-toed salamander (*Hemidactylium scutatum*), and searches of the better potential sites yielded no discoveries. This wetland is of marginal value to any turtle species. Only painted turtle (*Chrysemys picta*) or common snapping turtle (*Chelydra serpentina*) would potentially be present. No turtles were observed.

Electrofishing and minnow trapping and visual observations revealed three species of fish to be present in the brook: creek chub (*Semotilus atromaculatus*); golden shiner (*Notemigonus crysoleucas*), and banded killifish (*Fundulus diaphanus*).

There was little evidence of present anthropogenic usage of the wetland. A ground blind and apparent tree stand, in the northern, treed portion suggested probable deer hunting effort. Old onion bags for bait such as apples tended to confirm this supposition. The proximity of the deer stands location to both residential and commercial properties as well as being within town limits makes it almost certain that hunting in the area would be illegal. In an upland forest just out of the wetland near Highway 101 a mounted deer skull top an antlers was found fallen from its wooden base, which was nailed on a young spruce tree. The human use this signified is only conjecture. Fishing is unlikely in the wetland, as the species of fish present are not typically angled for. It is possible that baitfish could be collected from the brook. No significant numbers of edible berry bushes were present in the wetland.

Overall the wetland appears to be of low and not significant social/cultural value. It is not part of any protected area such as a national or Provincial Park, national wildlife area, federal migratory bird sanctuary, ecological reserve, provincial wildlife management area, wildlife refuge or game sanctuary.

The wetland has seen extensive alteration over the last fifty years. There are no rare species of flora or fauna noted or likely to be present. The wetland is not utilized to any significant degree by the local population for recreation, casual or commercial food gathering or production or other significant economic activity. As a wetland located near the head waters of the much channelized brook that flows through it, the wetland's value in controlling potential flooding or regulating flow is limited.

<b>WETLAND VALUES</b>				
	<b>Are Criteria Present?</b>	<b>Level of Criterion Significance</b>	<b>Expected Impact of Project Upon Wetland Values</b>	<b>Describe Function (Provide Highlights Only)</b>
<b>LIFE SUPPORT VALUES: <u>Hydrological Values</u></b>				
Value of the wetland in contributing to surface and groundwater stocks				
* Does the wetland contribute to recharge of regional water supply aquifers?	N	NA	NA	The Town of Yarmouth municipal water system services most of Yarmouth County, including Hebron Industrial Park, from the Lake George reservoir.
* Does the wetland provide flood protection benefits?	N	L	L	The wetland is located at the upper portion of the local watershed, and has been channelised, thus modifying any intervale area and limiting inundation events.
Does the wetland contribute to usable surface water?	P	L	L	It regulates flow somewhat through it, and contributes to the perennial nature of the water course, as base flow is provided to Broad Brook.
Does the wetland provide erosion control?	N	NA	NA	The wetland is located at the upper portion of the local watershed, and has been channelised.
Does the wetland provide flow augmentation to users through a headwater position in the catchment basin?	Y	L	L	In general this wetland functions in this capacity
* Does the wetland reduce tidal impacts?	N	NA	NA	The wetland is not located in a tidally influenced area.
<b>LIFE SUPPORT VALUES: <u>Biogeochemical Values</u></b>				
Value of the wetland in contributing to surface and groundwater quality				
* Does the wetland receive significant pollution of a type amenable to amelioration by wetlands?	P	L	L	Pasturage is located just up-stream of this wetland. Though channelised the abundant plant growth, even in the brook channel is likely taking up many excess nutrients. Unless excessive cattle and outside inputs of nutrition are involved any excess nutrient/pollution into the wetland is likely insignificant and the flooding function has been altered such that the water in the brook is not effectively filtered through the wetland. The brook now more or less by-passes the wetland.
Does the wetland provide storage for agricultural runoff?	L	L	L	Minor run off from immediately proximal, recently extant agricultural fields now possibly given over to development. Minor runoff from pasturage and extant agricultural land up stream.

<b>WETLAND VALUES</b>				
	<b>Are Criteria Present?</b>	<b>Level of Criterion Significance</b>	<b>Expected Impact of Project Upon Wetland Values</b>	<b>Describe Function (Provide Highlights Only)</b>
*Does the wetland provide for containment of toxics contained in surface run-off or through discharge flow?	U	NA	NA	Runoff from agricultural field upstream is a significant source of nutrients that would be at contaminant levels. Former and extant run off from retail business parking lot would contain quantities of pollutants associated with vehicles and everyday urban spillage and litter.
Does the wetland provide for sediment flow stabilization?	N	NA	NA	Due to channelising, the brook by-passes the wetland.
Does the wetland have high nutrient levels which support significant wildlife populations?	P	L	L	Localized eutrophication is likely from upland pasturage run off upstream. Populations of larger charismatic or otherwise highly valued wildlife do not appear significant.
<b>LIFE SUPPORT VALUES: <u>Habitat Values</u></b>				
Role of the wetland in contributing to the well-being of important plant and animal values				
* Are there any rare, threatened or endangered animal or plant species present?	N	NA	NA	See Appendix B for plant species list.
* Does the wetland contain high quality significant habitats for migratory birds?	N	L	L	The wetland appears to have minor potential as loafing and feeding habitat for migratory waterfowl.
Does the wetland provide habitat for sport and/or commercial fish?	N-P	L	L	No edible commercial or sport fishing species present but the three species recorded can be trapped and sold locally as bait fish for angling.
Does the wetland provide significant habitat for reptiles and amphibians?	Y	L	L	Significance level is debatable. Certainly there is some breeding and foraging habitat for various common species noted from the wetland as well as others not noted but likely present.
Does the wetland provide significant habitat for crustaceans?	N	NA	NA	Other than certain small freshwater Isopoda and Amphipoda (neither noted but not extensively sampled for) and smaller sized copepods and similar aquatic crustaceans, no macro-crustacea were observed or expected.
Does the wetland provide significant habitat for mammals?	P	L	L	The mammals recorded in the wetland and other common native species not noted may have part or all of their individual territories within this wetland but area populations are much more widespread and not dependant on this particular wetland.
* Does the wetland support a significant animal or plant species in unusual abundance?	N	NA	NA	
Does the wetland and its associated vegetation protect natural shorelines?	N	NA	NA	

<b>WETLAND VALUES</b>				
	<b>Are Criteria Present?</b>	<b>Level of Criterion Significance</b>	<b>Expected Impact of Project Upon Wetland Values</b>	<b>Describe Function (Provide Highlights Only)</b>
* Is the wetland ranked as a Class I, II, or III wetland by Canada Land Inventory or other accepted evaluation system?	N	NA	NA	
<b>LIFE SUPPORT VALUES: Ecological Values</b>				
Role of the wetland in stimulating relations of plant and animal communities				
Does the wetland support an extensive ecosystem complex including uplands?	N	NA	NA	Agricultural and residential developments
* Has a regional threshold been reached where the significance of wetland ecosystems for the entire region will be compromised by further degradation?	N	NA	NA	
* Is the wetland considered a classic example of its type?	N	NA	NA	
Are there few remaining natural, unimpacted wetlands of this type in the region?	N	NA	NA	
Does the wetland contain, owe its existence to, or is it a part of or ecologically associated with, a geological feature which is an excellent representation of its type?	N	NA	NA	
Does the wetland form an integral part of an important water drainage system?	N	NA	NA	
* Does the wetland display biological diversity that is of interest?	N	NA	NA	
<b>SOCIAL/CULTURAL VALUES: Aesthetic Values</b>				
Role of the wetland in the quality of the scenic environment				
Is the wetland visible from a provincial/territorial highway, a designated scenic highway/road or a passenger railway?	Y	L	L	The wetland is visible from Highway 101, near the Starrs Road junction.
Does the wetland provide a valuable aesthetic or open space function?	L	L	L	All extant wetlands provide green space that is generally more aesthetically pleasing than many human conversions of the landscape. Local environmental groups and environmentally inclined individuals argue for the retention of the basic open aspect of the linear habitat of Broad Brook through the greater Yarmouth town area.
Does the wetland add substantially to the visual diversity of the landscape?	N	NA	NA	
* Is the wetland an important sightseeing locale?	N	NA	NA	
<b>SOCIAL/CULTURAL VALUES: Recreational Values</b>				
Role of the wetland in the quality of the scenic environment				
Does the wetland provide a base for viewing or photographing large numbers of wildlife?	N	NA	NA	
Does the wetland provide opportunities for boating?	N	NA	NA	
Does the wetland provide winter recreation opportunities?	N	NA	NA	No hockey ponds are present, and old fence lines would limit ATV, cross country skiing or snow mobile activities.
Does the wetland provide high quality sport hunting or fishing?	N	NA	NA	Wetland is located in a no hunting zone, and has no sport fish.

<b>WETLAND VALUES</b>				
	<b>Are Criteria Present?</b>	<b>Level of Criterion Significance</b>	<b>Expected Impact of Project Upon Wetland Values</b>	<b>Describe Function (Provide Highlights Only)</b>
<b>SOCIAL/CULTURAL VALUES: <u>Education and Public Awareness Values</u></b>				
Role of the wetland in stimulating public values and understanding				
Is the wetland used for scientific research?	N	NA	NA	
* Is the wetland used for educational and interpretation purposes?	N	L	L	No evidence or data to suggest school groups or other organized natural history or environmental groups utilize the site.
Does the wetland exist close to a large urban population?	Y	L	L	The population of Yarmouth, N.S. is all about the wetland.
Does the wetland receive large numbers of visitors?	N	NA	NA	
<b>SOCIAL/CULTURAL VALUES: <u>Public Status Values</u></b>				
Role of the wetland in creating a sense of public ownership				
Is the wetland part of the pattern of settlement and rural/urban lifestyle?	Y	L	L	The wetland has been fenced, pastured, channelised, had ponds dug in it, and had ponds and wetland filled in within the past 50 years and beyond.
Is the wetland a designated site of special public interest?	N	NA	NA	
* Is the wetland a unique national, provincial or regional resource?	N	NA	NA	
Are there policies/programs to support conservation/restoration of the wetland?	Y			Wetland Directive Species at Risk Act
Does the wetland provide for easy public access?	P	L	L	The wetland is generally accessible to locals from most sides and to the average traveler or other person from along Highway 101 but there are no clear or improved access routes specifically designed to bring one to or through the wetland.
Is the wetland public land?	N	NA	NA	Private ownership
<b>SOCIAL/CULTURAL VALUES: <u>Cultural Attribute Values</u></b>				
Role of the wetland in the identity of the people in the area				
Does the wetland form part of the historical/cultural heritage of a regional population?	L	L	L	Only in so far as, like many places in the town it has variously been utilized and altered by human residents over the years and thus has its own unique though perhaps not especially significant history
* Does the wetland contain archaeological or paleontological resources?	P			Archaeological potential modelling suggest that the area has low potential for sites (ie. non-navigable waterway, presence of areas of better resources nearby).
Is the wetland utilised for cultural events or cultural renewal?	N	NA	NA	
*Does the wetland form part of a native traditional use area?	N	L	L	No information available at this time.
<b>WETLAND PRODUCTION VALUES: <u>Agricultural Values</u></b>				
Role of the wetland in contributing to agricultural production				
Does the wetland provide water for livestock?	N	NA	NA	A pond is formed in Broad Brook to create a water hole for the cattle farm upstream. At present this wetland area is not utilized for such purposes.

<b>WETLAND VALUES</b>				
	<b>Are Criteria Present?</b>	<b>Level of Criterion Significance</b>	<b>Expected Impact of Project Upon Wetland Values</b>	<b>Describe Function (Provide Highlights Only)</b>
Does the wetland provide a source of forage?	N	NA	NA	No evidence of recent hay harvest or pasturage.
* Does the wetland provide a source of water for crop irrigation?	N	L	L	No evidence of recent or past use of this wetland or stream portion for irrigation.
Does the wetland serve to reduce topsoil erosion?	N	NA	NA	
Does the wetland serve to increase soil moisture and enhance agricultural crop production?	N	NA	NA	
<b>WETLAND PRODUCTION VALUES: <u>Renewable Resource Values</u></b>				
Role of the wetland in contributing to the viability of renewable resource harvest				
* Is the wetland used for commercial or subsistence hunting, trapping and fishing?	N-P	NA-L	NA-L	Wetland is or should be in no hunting zone. Bait fish could be trapped and sold locally on a very small scale.
Does the wetland provide opportunities for non-commercial uses of fish, wildlife, crustaceans and/or water resources?	P	L	L	Limited opportunity to catch personal use bait fish. No significant edible berry or plant presence.
Can forest resources of the wetland be harvested?	Y	L	L	The forested area of the extant wetland is neither very large or possessed of particularly large or otherwise valuable tree species.
* Are there other commercial uses of the wetland, such as harvesting opportunities for wild rice, cranberries, or gathering crabs and oysters?	N	NA	NA	
<b>WETLAND PRODUCTION VALUES: <u>Non-renewable Resource Values</u></b>				
Role of the wetland in contributing non-renewable resources for consumption				
* Is the wetland used as a commercial source of peat for horticulture or energy?	N	NA	NA	
Does the wetland occur over known mineral or gas and oil deposits?	N	NA	NA	
<b>WETLAND PRODUCTION VALUES: <u>Tourism and Recreational Values</u></b>				
Role of the wetland in stimulating tourism and recreation economic benefits				
* Does the wetland represent an important local, regional, or provincial tourism or recreation attraction?	N	NA	NA	Some desire or talk of making a green corridor or trail line along parts of Broad Brook but this watercourse is much channelised by various past wetland draining activities at various points both up and downstream of this wetland. Not much consideration of its ecological integrity has gone on in the past.
Does the wetland contribute to the local, regional, or provincial tourism and recreation economy?	N	NA	NA	Highly unlikely at present, other than the postulated minor bait fish production potential.
Does the wetland contribute to national and international tourism development?	N	NA	NA	
<b>WETLAND PRODUCTION VALUES: <u>Urban Values</u></b>				
Role of the wetland in contributing to urban economic values				
* Is the wetland used to provide water for industry?	N	NA	NA	
* Is the wetland used as a means of sewage treatment?	N	NA	NA	

<b>WETLAND VALUES</b>				
	<b>Are Criteria Present?</b>	<b>Level of Criterion Significance</b>	<b>Expected Impact of Project Upon Wetland Values</b>	<b>Describe Function (Provide Highlights Only)</b>
* Is the wetland a direct source of domestic water supply?	N	NA	NA	
Does the wetland enhance residential, commercial or industrial development values?	P	L	L	The wetland may be a potential limit to industrial development aspirations dependant on regulator opinion and directives. Dependant on resident attitude as well as industrial concerns.
Does the wetland contribute to urban flood protection and associated land values?	N	L	L	As the wetland is near the head of the local brook watershed flood control values are likely not greatly significant. The brook provides a repository however transient for local run off from commercial business parking lots and roads.
<b>Key:</b>				
<b>Are Criteria Present?:</b> Y = Yes: confirmed presence L = Likely: data suggests the presence but the presence is unconfirmed P = Possibly: location and circumstance suggests presence but no data are available N = No: not present U = Unknown		<b>Level of Criterion Significance:</b> N = National P = Provincial R = Regional L = Local NE = Negligible NA = Not Applicable		<b>Expected Impact of Project Upon Wetland Values:</b> H = High M = Moderate L = Low NA = Not Applicable

## SUMMARY OF WETLAND EVALUATION

### Summary of Wetland Values Significance and Expected Impact

	Critical Criteria Present				Level of Criterion Significance					Expected Impact		
	Y	L	P	C	N	P	R	L	NE	H	M	L
<b>Life Support Values</b>												
Hydrological	1	0	1	0	0	0	0	3	0	0	0	3
Biogeochemical	0	1	2	0	0	0	0	3	0	0	0	3
Habitat	1	0	2	0	0	0	0	4	0	0	0	4
Ecological	0	0	0	0	0	0	0	0	0	0	0	0
<b>Social/Cultural Values</b>												
Aesthetic	1	1	0	0	0	0	0	2	0	0	0	2
Recreational	0	0	0	0	0	0	0	0	0	0	0	0
Education and Public Awareness	1	0	0	0	0	0	0	2	0	0	0	2
Public Status	2	0	1	0	0	0	0	2	0	0	0	2
Cultural Attribute	0	1	1	0	0	0	0	2	0	0	0	2
<b>Wetland Production Values</b>												
Agricultural	0	0	0	0	0	0	0	1	0	0	0	1
Renewable Resource	0	0	2	0	0	0	0	3	0	0	0	3
Non-renewable Resource	0	0	0	0	0	0	0	0	0	0	0	0
Tourism and Recreational	0	0	0	0	0	0	0	0	0	0	0	0
Urban	0	0	1	0	0	0	0	2	0	0	0	2
Total Occurrences	6	3	10	0	0	0	0	24	0	0	0	24
<b>Key:</b>												
<b>Are Criteria Present?:</b> Y = Yes: confirmed presence L = Likely: data suggests the presence but the presence is unconfirmed P = Possibly: location and circumstance suggests presence but no data are available C = Critical value: value whose product, service or function is very important to society or where an important threshold may be exceeded, resulting in loss of the function and value.					<b>Level of Criterion Significance:</b> N = National P = Provincial R = Regional L = Local NE = Negligible					<b>Expected Impact of Project Upon Economy:</b> H = High M = Moderate L = Low		

**Trigger Factors:** a combination of factors may suggest wetland protection, project acceptance and/or mitigation of project **if** 3 or more critical criteria are marked "yes", criteria are present **and/or** over 50% of criteria have national/provincial/regional significance **and/or** over one third of expected project impact is high **then**, the evaluator should recognize that the wetland has major significance and/or could be significantly affected by the proposed project.

## SUMMARY OF CRITICAL VALUES

In the wetland evaluation process, some functions are considered more important than others and are identified as critical values marked with an asterisk (\*) in the tables. Critical value notation indicates a wetland value whose product, service or function is very important to society or where an important threshold or function may be exceeded, resulting in the loss of the function and value (Bond et al. 1992).

The wetland is not considered to have major significance.

## RECOMMENDED ACTION

It is recommended that the project proceed.

The wetland is not valuable from ecologically nor functions hydrologically to the extent to warrant restoration of the infilled portions. The parking lot should be designed to eliminate erosion and sedimentation into the wetland during construction and post-construction. The wetland complex below Starrs Road should be protected by controlling water quality and quantity generated from this commercial zone to protect those resources.

## INFORMATION SOURCES

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