ROSEMOUNT WETLAND FUNCTIONAL ASSESSMENT

VEG: _____	(100)
WQ: _____	(150)
WILD: _____	(150)
FLOOD: ____	(150)
SHORE: ____	(50)
GW: _____	(100)
ED/REC: ____	(190)
COM: _____	(10)
TOTAL:____	(1000)

EVALUATOR:

DATE:

WETLAND ID:

TOTAL SCORE

FLORAL DIVERSITY AND INTEGRITY: SCORE

Choose the eco-type description that best describes the wetland.

A. Mature trees are present (d.b.h. > 6 inches) and form closed stands (> 17 trees/acre; > 50 percent canopy cover) on wet, lowland soils (usually floodplains and ancient lake basins)..**WOODED SWAMPS, CONIFEROUS BOGS AND FLOODPLAIN FORESTS.**

1. Hardwood trees are dominant; usually alluvial, peaty, or poorly-drained mineral soils.

   a. Silver maple, American elm, river birch, green ash, black willow, and/or eastern cottonwood are dominant; growing on alluvial soils associated with riverine systems..**FLOODPLAIN FOREST.**
   b. Black ash, yellow birch, silver maple, and/or red maple are dominant; northern white cedar may be subdominant; growing on poorly-drained mineral soils or peat/much soils, often associated with ancient lake basins..**LOWLAND HARDWOOD SWAMP.**

B. Mature trees are not present, or if present, form open, sparse stands; other woody plants, if present, are shrubs or saplings and pole-size trees (d.b.h. less than 6 inches) less than 20 feet and growing on wet, lowland, or poorly-drained soils, or in groundwater seepage areas.

1. Community is dominated by woody shrubs.
   a. Tall (usually greater than 3 feet), deciduous shrubs; sphagnum moss mat ground layer absent. **SHRUB SWAMPS.**

2. Community dominated by herbaceous plants.

   a. Essentially closed communities, usually with more than 50 percent cover.

      ii. Over 50 percent of the dominance contributed by the sedge family (Cyperaceae), cattails, giant bur-reed and/or phragmites.
      * Major dominance by the sedges growing on saturated soils..**SEDGE MEADOW.**
      * Major dominance by cattails, bulrushes, water plantain, arrowheads, and/or lake sedges, on saturated soils to areas covered by standing water up to 6 inches in depth throughout most of the growing season. **SHALLOW MARSH.**
      * Major dominance by cattails, hardstem bulrush, pickerelweed, and/or giant bur-reed in areas covered by standing water greater than 6 inches in depth throughout most of the growing season. **DEEP MARSH.**

      iii. Over 50% of the dominance contributed by grasses or forbes.
      * Soils saturated to inundated during the growing season; prairie grasses such as big bluestem, prairie cord-grass, and/or Canada bluejoint grass are usually dominant, various species of prairie lowland Forbes can be present..**LOW PRAIRIE.**
      * Site rarely inundated, but soils are saturated for all or part of the growing season; dominated by Forbes such as giant goldenrod and/or grasses such as red-top grass and reed canary grass.**WET MEADOW.**

   b. Essentially open communities; either flats or basins with less than 50 percent vegetative cover, or shallow open water with submergent, floating and/or floating-leaved aquatic vegetation.

      I. Areas of shallow, open water (to 6.6 feet in depth) dominated by submergent, floating and/or floating-leaved aquatic vegetation.**SHALLOW, OPEN WATER COMMUNITIES.**
      ii. Shallow depressions or flats; standing water for a few weeks each year, but are dry for much of the growing season; often cultivated..**SEASONALLY FLOODED BASIN.**

Consult the , moderate and low quality descriptions for the appropriate plant community. Also, read the following description for "exceptional" quality plant communities applicable to all communities.

Exceptional Quality: (**200**)
Plant communities undisturbed, or sufficiently recovered from past disturbances, such that they represent pre-European settlement conditions. Non-native plant species are absent or, if present, constitute a minor percent cover of the community. Rare, threatened and/or endangered species (consider both State and Federal listings) may be present. Unique features (e.g., patterned peatlands, virgin prairie, old growth forests) may also be present.

Y(**200**) N(**0**) Is the wetland plant community scarce or rare within the wetland comparison domain?

I. **SHALLOW, OPEN WATER COMMUNITIES**
High Quality (**100**): Diverse aquatic bed communities dominated by 3 or more species of native aquatic plants such as pondweeds, water lilies, bladderworts, wild celery, duckweeds, water crowfoots, native milfoils, etc.
Moderate Quality (**25**): Dominated by 1 or 2 species of native aquatic plants.
Low Quality (**0**): Dominated by Eurasian water milfoil; or minimal aquatic vegetation present.

II. **DEEP AND SHALLOW MARSHES**
High Quality (**100**): Dominated by a diverse assemblage (3 or more species) of native aquatic plants (e.g., bur-reeds, bulrushes, arrowheads, cattails, sweet flag, pondweeds). Cattails comprise less than 40 percent cover. Purple loosestrife absent or comprises less than 5 percent cover.
Moderate Quality (**25**): Dominants include at least 2 species of native aquatic plants, often arranged in a band or interspersed as patches. Purple loosestrife, if present, comprises less than 25 percent cover. Cattail, if present, comprises 40 to 85 percent cover.
Low Quality (**0**): Purple loosestrife comprises more than 25 percent cover; or cattail comprises more than 85 percent cover.

III. **SEDGE MEADOWS**
High Quality (**100**): Stands of sedges with 5 or more species of native Forbes. Grazing, haying, artificial drainage, stormwater input, excavation and/or impoundment absent or minimal. Reed canary grass, purple loosestrife and/or stinging nettle absent or cumulatively comprise less than 5 percent cover. Buckthorn absent or comprises less than 10 percent cover.

Moderate Quality (**25**): Stands of sedges subjected to moderate degree of the disturbances listed above. Two to 4 species of native Forbes present. Reed canary grass, purple loosestrife and/or stinging nettle cumulatively comprise less than 40 percent cover. Buckthorn absent or comprises less than 30 percent cover.
Low Quality (**0**): Stands of sedges highly impacted by grazing, haying, artificial drainage, stormwater input and/or cropping. Reed canary grass, purple loosestrife and/or stinging nettle cumulatively comprise more than 40 percent cover; and/or buckthorn, if present, comprises greater than 30 percent cover.

IV. **WET MEADOWS**
High Quality (**100**): Composed of a diverse assemblage (10 or more species) of native grasses, sedges and/or Forbes. Reed canary grass, if present, comprises less than 20 percent cover. Purple loosestrife absent or comprises less than 5 percent cover. Buckthorn absent or comprises less than 10 percent cover.
Moderate Quality (**25**): Community moderately impacted by disturbances (e.g. haying, grazing) and composed of 5 to 9 species of native grasses, sedges and/or Forbes. Reed canary grass comprises less than 40 percent cover. Purple loosestrife, if present, comprises less than 20 percent cover. Buckthorn, if present, comprises less than 30 percent cover.
Low Quality (**0**): Community highly impacted such that reed canary grass comprises more than 40 percent cover; and/or purple loosestrife comprises greater than 20 percent cover; and/or buckthorn, if present, comprises greater than 30 percent cover, and any cropped wetland.

V. **LOW PRAIRIES**

High Quality (**100**): Community composed of native grasses (e.g., prairie cord-grass, Canada bluejoint grass), sedges, and Forbes characteristic of low prairies. Site is undisturbed or has minimally disturbed by grazing, haying, and/or artificial drainage. Reed canary grass, purple loosestrife, quack grass and/or Canada thistle absent or cumulatively comprise less than 5 percent cover. Buckthorn absent or comprises less than 10 percent cover.

Moderate Quality (**25**): Community subjected to moderate degree of disturbances listed above. Reed canary grass, purple loosestrife, quack grass and/or Canada thistle cumulatively comprise less than 40 percent cover. Buckthorn absent or comprises less than 30 percent cover.

Low Quality (**0**): Community highly disturbed by activities listed above and reed canary grass, purple loosestrife, quack grass, Canada thistle and/or other undesirable species cumulatively comprise more than 40 percent cover; and/or buckthorn, if present, comprises greater than 30 percent cover, and any cropped wetland.

VI. **SHRUB-CARRS**

High Quality (**100**): Dominated by native shrubs (e.g., dogwoods, willows) with a ground layer composed of 5 or more native grasses, sedges and/or Forbes. Community undisturbed or minimally disturbed by artificial drainage, grazing, filling or impoundment. Buckthorn, honeysuckle and/or box elder, if present, cumulatively comprise less than 10 percent cover.

Moderate Quality (**25**): Community moderately impacted by the disturbances listed above. Buckthorn, honeysuckle and/or box elder comprise less than 50 percent cover. Ground layer composed of less than 5 species of native grasses, sedges and Forbes; and/or reed canary grass present but comprises less than 50 percent cover.

Low Quality (**0**): Community highly impacted by the disturbances listed above and buckthorn, honeysuckle and/or box elder comprise more than 50 percent cover. Ground layer composed of greater than 50 percent cover of reed canary grass.

VII. **HARDWOOD SWAMPS and CONIFEROUS SWAMPS**

High Quality (**100**): Stands undisturbed or minimally disturbed by artificial drainage, grazing, logging, impoundment, filling, etc. Seedlings and/or saplings of native tree species evident indicating regeneration. Ground layer composed of native grasses, sedges, ferns and/or Forbes. Box elder, buckthorn and/or reed canary grass, if present, each have less than 10 percent cover.

Moderate Quality (**25**): Stands moderately impacted by the above disturbances. Disturbance indicator species such as box elder, quaking aspen and/or eastern cottonwood may comprise up to 50 percent cover of tree/sapling strata. Shrub stratum has less than 40 percent cover of buckthorn. Ground layer stratum has less than 50 percent cover of reed canary grass.

Low Quality (**0**): Stands highly impacted by the disturbances listed above. Box elder, quaking aspen, eastern cottonwood, buckthorn and/or reed canary grass comprise more than 50 percent cover in 2 or more strata (e.g., tree, sapling, shrub, ground layer). Few to no indications of regeneration of native tree species.

VIII. **SEASONALLY FLOODED BASINS**

High Quality (**100**): Located within an area of permanent vegetative cover (e.g., forest, prairie, non-agricultural settings) undisturbed or minimally disturbed by artificial drainage, haying, grazing, plowing, stormwater input, or other disturbances.

Moderate Quality (**25**): Moderately impacted by the above disturbances -- e.g., partially drained, infrequently cropped subject to some stormwater input.

Low Quality (**0**): Located in frequently cropped agricultural fields, subjected to substantial inputs of stormwater, or other disturbances.

WATER QUALITY PROTECTION: SCORE

A wetland is rated as exceptional if it contributes significantly to the water quality protection of a recreational water or potable water supply source downstream within the local watershed. A wetland is rated as high if it is in the local watershed of a water supply source, waterbody or watercourse and directly contributes to it's water quality. A wetland is rated as medium if it is in the local watershed of any other surface water and contributes indirectly or potentially to it's water quality. A wetland is rated as low if it performs minimal water quality functions (e.g. ditched flow-through systems that have minimal detention times).

1. Y(**20**) N(**0**) Does the wetland receive direct discharge of managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater)?

2. Y(**20**) N(**0**) Do the surrounding or upstream land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland?

3. Y(**20**) N(**0**) Does the wetland shape, flow inputs, and outlet configuration allow adequate residence time so that sediments are able to settle?

4. Y(**15**) N(**0**) N/A For non-isolated wetlands, does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?

5. Y(**15**) N(**0**) Does the wetland have significant vegetative material to potentially increase uptake of dissolved nutrients?

6. Y(**15**) N(**0**) Does the wetland have a vegetative buffer area on upland adjacent to its boundary which slows and filters overland flow?

7. Y(**15**) N(**0**) Are there recreational lakes, watercourses or water supply sources downstream in the local watershed?

8. Y(**15**) N(**0**) Is the position of the wetland in the landscape such that run-off is held or filtered before entering a downstream surface water?

9. Y(**15**) N(**0**) Are there signs (or historical reports) of excess nutrient loading to the wetland (e.g. algal mats, excessive submergent macrophyte growth or monotypic vegetation)?

FISH & WILDLIFE HABITAT: SCORE

Wetlands with exceptional wildlife habitat value are those that represent relatively undisturbed, pristine conditions, and/or are inhabited or frequented by unique or rare species, including those that are state or federally listed or species that are rare locally. Other exceptional value wetlands are wetland types that have been substantially eliminated within the reference domain and those that provide critical habitat components that are not generally available elsewhere, even if the species dependent on them are not particularly rare (e.g. colonial waterbird nesting colonies, amphibian breeding sites). A wetland should be rated as providing high quality wildlife habitat if it is relatively undisturbed and exhibits nearly the full range of flora and fauna that would be expected to be present in a wetland of that type within the wetland comparison domain.

Generally, the value of a wetland for fish habitat is related to it's connection with deepwater habitats. A wetland should be rated as having high or exceptional value for fish if it provides spawning/nursery habitat, or refuge for fish in adjacent lakes, rivers or streams. Permanently flooded isolated wetlands that support native populations of minnows should be rated as moderate. Isolated wetlands that are not permanently flooded do not generally support fish populations.

1. How does the plant species diversity of the evaluation wetland compare with an undisturbed reference standard wetland of the same type within the wetland comparison domain? more diverse(**20**)---same(**10**)---less diverse(**0**)

2. Y(**10**) N(**0**) Is purple loosestrife absent? If no, estimate the percent coverage within the wetland: ____ %

3. Y(**15**) N(**0**) Is the wetland known to be used by locally rare species or species that are state or federally listed? List species:

4. Y(**15**) N(**0**) Is the area surrounding the wetland mostly undeveloped and uncultivated?

5. Y(**15**) N(**0**) Is wildlife access from associated upland habitat to the wetland mostly uninhibited?

6. Y(**15**) N(**0**) Is the wetland part of a wildlife travel corridor?

7. Y(**5**) N(**0**) Is the wetland of a type that has been lost or experienced a significant decline within the wetland comparison domain, relative to other wetland types?

8. Y(**10**) N(**0**) Does the wetland provide seasonal or intermittent habitat components (e.g. amphibian breeding, resting/feeding by migrating waterfowl/shorebirds)?

9. Y(**15**) N(**0**) Is the wetland actively managed for wildlife habitat purposes? By whom?

10. Y(**15**) N(**0**) Is the wetland contiguous with a permanent water body or watercourse such that it provides spawning/nursery habitat for gamefish?

11. Y(**15**) N(**0**) Were fish or minnows observed in the wetland?

FLOOD/STORM WATER ATTENUATION: SCORE

1. Y(**15**) N(**0**) Is the wetland identified as a holding area in the Rosemount Stormwater Management Plan?

2. Describe the functional level of the outlet characteristics in providing flood and stormwater storage/attenuation:
High (**15**) = No outlet
Moderate (**10**) = Constricted or managed outlet
Low (**0**) = Excavated or enlarged outlet

3. Estimate the flood damage potential within the *major* watershed in which the wetland is located.
High (**15**) = History of flood damages
Moderate (**10**) = Potential future flood damages
Low (**0**) = No flood damage history and low potential in the future

4. Estimate the flood damage potential within the *local* watershed in which the wetland is located.
High (**15**) = History of flood damages
Moderate (**10**) = Potential future flood damages
Low (**0**) = No flood damage history and low potential in the future

5. The functional level of flood and stormwater storage/detention in relation to land cover in the *major* watershed:
High (**15**) = Watershed runoff conditions highly modified due to existing development
Moderate (**10**) = Watershed runoff conditions reflect moderate development
Low (**0**) = Watershed runoff conditions essentially unaltered

6. The functional level for providing stormwater storage/detention in relation to land cover in the *local* watershed:
High (**15**) = Watershed runoff conditions highly modified due to existing development
Moderate (**10**) = Watershed runoff conditions reflect moderate development
Low (**0**) = Watershed runoff conditions essentially unaltered

7. The functional level of stormwater storage/attenuation based on predominant upland soils for the local watershed:
High (**15**) = Clays or shallow to bedrock
Moderate (**10**) = Silts or loams
Low (**0**) = Sands

8. Describe the flood/stormwater management level of the wetland.
High (**15**) = Receives directed stormwater and water level managed to maximize flood/stormwater retention
Moderate (**10**) = Receives directed stormwater and water level unmanaged for flood/stormwater retention
Low (**0**) = Receives no directed stormwater and water level unmanaged for flood/stormwater retention

9. Describe the history of wetland losses in the major watershed.
High (**15**) = Most wetlands drained or filled (more than 50% lost).
Moderate (**10**) = Some wetlands drained or filled (20 - 50% lost).
Low (**0**) = Few wetlands drained or filled (less than 20% lost).

10. Describe the location of the wetland within the watershed:

local watershed:	upper (**15**)	mid (**10**)	lower (**0**)
major watershed:	upper (**15**)	mid (**10**)	lower (**0**)

SHORELINE PROTECTION: SCORE

Shoreline protection is evaluated based on the wetland's proximity to lakes, streams or open water basins and whether the wetland is positioned to absorb erosive forces (i.e. wave action, land uses, unstable soils). Wetlands are rated as exceptional if they are positioned adjacent to lakes, rivers or perennial streams such that they commonly absorb erosive energy. They are rated high if they are similarly positioned adjacent to intermittent streams or large open water wetland basins or if they provide interception of storm event overland flow to open water areas. They are rated medium if they are adjacent to open water areas but are not strategically positioned so as to warrant a higher rating. They are rated low only if they are located in a shoreline area but provide no obvious benefits to the open water area.

1. Y(**10**) N(**0**) Is the wetland a fringe area of a lake or watercourse? If NO, enter "0" at score blank .

2. Y(**10**) N(**0**) Is the shoreline wetland vegetated with submerged or emergent vegetation in the wash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?

3. Y(**10**) N(**0**) Is the stream/lake bank prone to erosion due to unstable soils, land uses, or ice flows?

4. Y(**10**) N(**0**) Is the stream/lake bank vegetated with densely rooted shrubs that provide upper bank stability?

5. Y(**10**) N(**0**) Does the fringe wetland intercept storm event overland flow before reaching the open water area?

GROUNDWATER RECHARGE AND DISCHARGE: SCORE

Ground Water Recharge (1-5 Y's may indicate ground water recharge conditions, U = Unknown)

1. Y(**20**) N(**0**) U Is the water table of adjacent uplands below the wetland water level or is the wetland located on or near a groundwater flow divide?

2. Y(**20**) N(**0**) U Does the wetland have a fairly permeable substrate (e.g. consider if there known aggregate or borrow sources in the adjacent area)?

3. Y(**20**) N(**0**) U Does the topography slope steeply below the wetland?

4. Y(**20**) N(**0**) U Is this wetland without a defined outlet?

5. Y(**20**) N(**0**) U If "no" for #4, does the outlet restrict outflow?

AESTHETIC/RECREATION/EDUCATION AND SCIENCE: SCORE

The aesthetics/recreation/education and science function of each basin is evaluated based on the wetlands visibility, accessibility, evidence of recreational uses, evidence of human influences (e.g. noise and air pollution) and any known educational purposes. Accessibility of the wetland is key to its aesthetic or educational appreciation. Thus, proximity to population centers may increase its perceived importance. However, proximity to population centers and locations in public areas may have associated noise and/or pollution factors that could degrade the aesthetic and educational functional level.

1. Y(**50**) N(**0**) Is the wetland adjacent to a Public park, forest, trail or recreation area?
2. Y(**15**) N(**0**) Is the wetland visible from any of the following kinds of vantage points: roads, waterways, trails, public lands, houses, and/or businesses? (Circle all that apply.)
3. Y(**15**) N(**0**) Is the wetland in/near any population centers so as to generate aesthetic/recreation/educational use?
4. Y(**15**) N(**0**) Is any part of the wetland in public or conservation ownership?
5. Y(**15**) N(**0**) Does the public have direct access to the wetland from public roads or waterways?
6. Is the wetland itself relatively free of obvious human influences, such as:

a. Y (**5**) N (**0**) Structures?
b. Y (**5**) N (**0**) Trash/pollution?
c. Y (**5**) N (**0**) Filling/dredging/draining?
d. Y (**5**) N (**0**) Invasive vegetation?

7. Is the area surrounding the wetland relatively free of obvious human influences, such as:

a. Y(**5**) N(**0**) Buildings?
b. Y(**5**) N(**0**) Roads?
c. Y(**5**) N(**0**) Other structures?

8. Y(**5**) N(**0**) Does the wetland provide a spatial buffer between developed areas?
9. Is the wetland and immediately adjacent area currently or potentially used for:

a. Y(**5**) N(**0**) Education/scientific study
b. Y(**5**) N(**0**) Hiking/biking/skiing
c. Y(**5**) N(**0**) Hunting/fishing/trapping
d. Y(**5**) N(**0**) Boating/canoeing
e. Y(**5**) N(**0**) Food harvesting
f. Y(**5**) N(**0**) Wildlife observation
g. Y(**5**) N(**0**) Exploration/play/photography
h. Y(**5**) N(**0**) Others:

COMMERCIAL USES: SCORE

1. Y(**4**) N(**0**) Is or has (circle one) the wetland used to provide a commercial crop, agricultural commodity, or a non-commercial consumptable use? If NO, enter "not applicable" for this function in the page 1 summary. If YES, list the products the wetland provides:

2. Y(**0**) N(**3**) Is the hydrology or vegetation artificially permanently or temporarily controlled or modified to sustain the commercial use (circle those that apply)? Describe any alterations.

3. Y(**0**) N(**3**) Is or has (circle one) the commercial use permanently or temporarily (circle one) diminished the wetland's functional level? If so, what percentage of the wetland's overall function has been lost? _____%