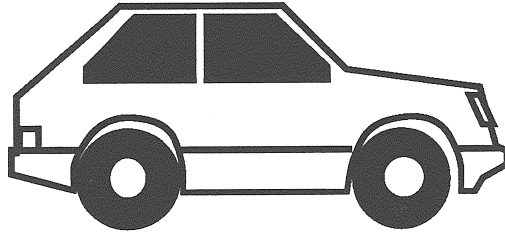


CONNECTICUT AUTO EXCHANGE



WALLINGFORD, CONNECTICUT

KING'S MARK ENVIRONMENTAL REVIEW TEAM REPORT

KING'S MARK RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

**CONNECTICUT AUTO EXCHANGE
WALLINGFORD, CONNECTICUT**

Environmental Review Team Report

**Prepared by the
King's Mark Environmental Review Team
of the King's Mark
Resource Conservation and Development Area, Inc.**

**for the
Inland Wetlands and Watercourses Commission
Wallingford, Connecticut**

September 1996

**CT Environmental Review Teams
1066 Saybrook Road
P.O. Box 70
Haddam, CT 06438
(860) 345-3977**

ACKNOWLEDGMENTS

This report is an outgrowth of a request from the Wallingford Inland Wetlands and Watercourses Commission to the New Haven County Soil and Water Conservation District (SWCD). The SWCD referred this request to the King's Mark Resource Conservation and Development Area (RC&D) Executive Council for their consideration and approval. The request was approved and the measure reviewed by the King's Mark Environmental review Team (ERT).

The King's Mark Environmental Review Team Coordinator, Elaine Sych, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this report.

The field review took place on Tuesday, August 27, 1996.

Norman Gray	Geologist UCONN - Dept. Of Geology and Geophysics (860) 486-4434
Doug Hoskins	Environmental Analyst III/Wetland Specialist DEP - Inland Water Resources Division (860) 424-3903
Don Mysling	Fisheries Biologist Habitat Conservation and Enhancement Program DEP - Western District Headquarters (860) 567-8998
J. Eric Scherer	Resource Conservationist USDA - Natural Resources Conservation Service (860) 688-7725
Julie Shane-Kiritsis	Stormwater Permit Engineer DEP - PERD - Stormwater Management Unit (860) 424-3914

I would also like to thank Brent Smith, the Wallingford environmental planner, Keane Callahan, Bob Amantea, Michael Lefor, Rosemary Aldridge, consultants for the applicant and George Logan, environmental consultant for the intervenors for their assistance and cooperation during the environmental review.

Prior to the review day, each Team member received a summary of the proposed project with a location and soils map. During the field review Team members were

Prior to the review day, each Team member received a summary of the proposed project with a location and soils map. During the field review Team members were given site plans and additional information, with other requested materials delivered to them at a later date. Following the review, reports from each Team member were submitted to the ERT coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project - all final decisions rest with the Town and developer. This report identifies the existing resource base and evaluates its significance to the proposed development, and also suggests considerations that should be of concern to the Town. The results of this Team action are oriented toward the development of better environmental quality and the long term economics of land use.

The King's Mark RC&D Executive Council hopes you will find this report of value and assistance in making your decision concerning this proposed automobile auction facility.

If you require additional information please contact:

Elaine Sych, ERT Coordinator
CT ERT Program
P.O. Box 70
Haddam, CT 06438
(860) 345-3977

INTRODUCTION

INTRODUCTION

The Wallingford Inland Wetlands and Watercourses Commission (IWWC) has requested an environmental review of the proposed Connecticut Auto Exchange, an automobile auction facility.

The ±43 acre parcel is located on Northrop Road on land that is currently open agricultural fields and forest. There are ±9 acres of wetlands present on the site with associated watercourses and a small pond.

The project will include a 40,000 s.q. auction and exchange building with an accessory car preparation and detailing building, parking for 188 cars at the auction building and storage parking for 1000 cars to the rear of the site. A stormwater management control system is proposed that will incorporate biofiltration attributes.

OBJECTIVES OF THE ERT STUDY

The Wallingford IWWC has asked for assistance with the review of the stormwater management system and its potential impacts on wetlands, water quality, fisheries habitats and wildlife, as well as the future viability of the "created wetland" which is part of the proposed stormwater detention basin biofiltration system.

THE ERT PROCESS

Through the efforts of the town this environmental review and report was prepared for the Wallingford IWWC.

This report provides an information base and a series of recommendations and guidelines which cover the topic requested by the commission. Team members were able to review plans and supporting documentation provided by the applicant, as well as information and reports provided by other consulting professionals. Copies of earlier documents provided to the commission by ERT participating agencies are found in the Appendix. This ERT review was unable to obtain the services of a wildlife biologist.

The review process consisted of four phases:

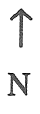
1. Inventory of the site's natural resources;
2. Assessment of these resources;
3. Identification of resource problem areas and review of plans; and
4. Presentation of management and land use guidelines.

The data collection phase involved both literature and field research. The field review was conducted on August 27, 1996. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Individual Team members then prepared and submitted their reports to the ERT coordinator for compilation into this final ERT report.

Location and Topography

Scale 1" = 2000'



 Approximate Site



GEOLOGY

The site proposed for development straddles the crest of a NNE-SSW trending glacial till covered ridge. The till, formed by the glacial erosion of Mesozoic sandstones and shales is poorly sorted and contains a significant number of angular, but glacially polished, sandstone boulders up to a foot or so in diameter. Although the ridge has the general form of a drumlin it appears to be "rock cored" and the total thickness of the till is probably only a few tens of feet. Medium grained, red arkosic bedrock outcrops at the base of a similar ridge just to the east and along Northrop Road just south of its intersection with Carpenter Road. The attitude of the layering (strike N30°, dip 5-10°E) in these exposures parallels closely the trend of the ridges. The coincidence of a bedrock ridge roughly aligned with the glacial transport direction produced a thick drumlin-like accumulation of till along the ridge crests.

GEOLOGIC CONSIDERATIONS FOR DEVELOPMENT

- The possibility that bedrock may be shallower on the flanks of the hill than along the crest should be kept in mind in planning any regrading and in any assessment of shallow groundwater flow on the site.
- As the bedding and most of the open fractures in the bedrock trend roughly NNE-SSW deep groundwater flow is likely to be highly anisotropic towards the SSW. Thus, the North Farms Reservoir probably receives both ground and surface water contributions from the area proposed for development.

STORMWATER MANAGEMENT

The questions asked by the IWWC on the ERT Request Form are answered below as they are applied to stormwater.

What is the potential viability of proposed stormwater detention basin with biofiltration wetland plantings?

The use of biofiltration basins is an effective treatment for stormwater runoff when properly designed and applied. Specifically, created wetlands are effective treatment for nutrients due to nutrient uptake ability, and will assist with other pollutant removal, particularly when preceded by oil grit chambers to remove oil and grease and large particulate matter. However, several considerations not considered by the "Biofiltration Systems Report" and accompanying site maps include:

- A discussion of the groundwater table, and the fact that a clay liner will *not* allow for the infiltration discussed in the report, should be noted and expanded upon.
- To be effective treatment measures, created wetlands need to allow for an adequate retention time for treatment. Typically, this means that the basin design incorporates berms and varied grading so that the flow is directed to "meander" through the system. The report and site maps do not show plan details of the basin showing grading and flow through the system.
- The created wetlands shown are probably not large enough to provide a great deal of detention time or treatment for the proposed site. However, the adjacent detention basin will also allow for removal of sediments and adsorbed particles (including metals and nutrients) and the total size, along with the pretreatment from the oil/ grit separators and swirl concentrator, should be adequate to treat the stormwater runoff.

Will the planned detention basin function properly with the existing water table?

See response above (and also refer to Wetlands Review section) .

Will adjacent water quality be adversely affected by discharge from the site?

If the stormwater runoff from the site is adequately treated, downstream and groundwater water quality should not be affected. (It should be noted that with the obvious exceptions of road salt, oil and grease, most of the common pollutants found in stormwater runoff are more problematic as surface water pollutants than ground water pollutants. This report addresses surface water pollutants.) "Adequate treatment" depends upon all of the comments noted above, as well as the following:

- The use *and maintenance* of pretreatment structures including hooded, sumped catch basins (24" as proposed is the minimum sump depth acceptable), baffled sedimentation structures ("oil/grit separators") to remove oil and grease and particulate matter, and swirl concentrators to improve removal efficiencies and prevent resuspension of particulate matter during subsequent storms. Maintenance is extremely important for continuing function of these structures (see section on commercial activities below).
- Grassy swales with level spreaders which encourage infiltration of some pollutants, and the lack of curbing should mean that velocities to these swales will not be excessive. However, these swales should retain at least a two year storm (which they appear to do, but detailed calculations should be provided to demonstrate this) and will also need to be periodically maintained for sediment removal.
- It is extremely unlikely that a site designed for the storage and frequent movement of automobiles will not need any sand or salt in Connecticut's harsh winter climate, unless the facility plans to shut down between December and March. Unless the applicant proposes the use of a more environmentally friendly alternative to salt, such as calcium magnesium acetate (CMA), structures should be designed with winter sand and salt loadings in mind. Frequent maintenance of stormwater structures and a designated snow storage area should be incorporated into the plan.
- Maximum velocities leaving the basin, even during a 100 year storm, should be adequately controlled by the rip-rap pad and should not have a detrimental effect downstream.

Will any auto drippings be adequately contained within the proposed system?

The proposed sediment chambers should adequately contain auto drippings if properly maintained. It is recommended (and Design Development Group for the applicant has agreed to incorporate) a swirl concentrator to collect runoff from the dealer parking and auto prep areas, to ensure adequate treatment of those areas.

Will the proposed use have a negative impact on storm water leaving the site?

See notes on water quality above.

CONSTRUCTION ACTIVITIES

Since the site construction involves the disturbance of over five acres, Connecticut's General Permit for the Discharge of Stormwater and Dewatering Wastewaters (the "Permit") will cover the project. The Permit requires that the site register with the Department of Environmental Protection (CTDEP). The registrant must then prepare and keep on site during the construction project a Stormwater Pollution Control Plan (the "Plan"). Please note that while this review is based primarily on the state Permit, many of the erosion and sedimentation issues are included in the Connecticut Guidelines for Soil Erosion and Sediment Control (the "Guidelines"),

and are issues that must be dealt with on a local level before being included in the Plan.

The Plan must include a site map as described in Part VI.B.3.a. of the General Permit and a copy of the erosion and sedimentation (E & S) control plan for the site. The E & S plan that has been approved by the Town in conjunction with the CTDEP Inland Water Resources Division (IWRD) and the local Soil and Water Conservation District may be included in the Plan. This plan and site map must include specifics on controls that will be used during each phase of construction. Specific site maps and controls will have to be described in the Plan, as well as construction details for each control used. The Permit requires that "the plan shall ensure and demonstrate compliance with" the Guidelines.

Due to the amount of soil disturbance, it is highly recommended that construction be phased to minimize unstable areas. The Permit (Part VI.B.3.b.(i)~b)) requires that for areas where greater than five acres are disturbed at one time, the Plan must show that a sediment basin will be available that will store a minimum of 134 cubic yards of water per acre disturbed. The Permit (Part VI.B.3.c.) requires inspections at least once every seven calendar days and after every storm of 0.5 inches or greater. The plan must also allow for the inspector to require additional measures if the inspection finds them necessary, and should note the qualifications of personnel doing the inspections. In addition, the Plan must include monthly inspections of stabilized areas for at least three months *following* stabilization.

While the erosion and sedimentation controls included in the Report (SE-1) are useful and should be incorporated, a more detailed site map of erosion and sedimentation controls and a more project-specific description of phasing and controls are needed.

COMMERCIAL ACTIVITY

The completed site will need to register for Connecticut's General Permit for the Discharge of Stormwater Associated with Commercial Activities. This permit requires that the permittee prepare and keep on site a Stormwater Management Plan. This Plan will include schedules for maintenance of all erosion control structures, the proper maintenance of which is a crucial aspect of the designed functionality of the controls. The permit also requires that the facility have an on-site team to maintain the Plan, regular sweeping of all paved areas, minimize outside storage, and have a spill control plan and employee training.

WETLAND REVIEW

Most of the specific questions asked by the Wallingford Inland Wetlands and Watercourses Commission appear to deal more directly with stormwater quality issues which are addressed in the Stormwater Management section of this report. The following comments and suggestions refer more specifically to possible indirect impacts (there are no direct impacts planned) to nearby wetlands and watercourses which may be caused by the proposed project.

The complimentary and somewhat redundant stormwater treatment system proposed, which uses Best Management Practices (BMP's), when installed and maintained properly, should be able to remove a vast majority of the pollutants which can be expected from a land use such as this. Its effect on receiving wetlands and watercourses should be minimal.

To help ensure this outcome, the following suggestions, most addressing erosion and sedimentation control needs, are offered:

- More documentation is needed to verify the proposed water budget for the wet detention area. No groundwater monitoring data was noted for the area of the proposed wet detention system. Reliance on an impervious liner system to retain surface water inflow is a possibility, however it should be documented that this inflow will be theoretically sufficient to sustain wetland vegetation.
- The proposed maintenance plan appears to adequately address only the operation of the wet "biofilter" system. Permanent maintenance schedules for the other components of the stormwater treatment system (catchbasin sumps, grassed swales, check dams, and upland portions of the detention systems were not found and should be called for within the plan.
- Most detention systems are designed to reduce the "peak" volumes of flows that are generated for a particular storm event. Typically, the total volume of water sent through the system is not altered, but only its distribution over time. The peak flows are contained within the detention system and then more slowly "metered" out over a longer period of time. The trade-off under these circumstances is often the removal of a high volume, quick flowing discharge, with a lower volume more sustained, constant flow for downstream watercourses after the storm event. Consequently, these prolonged discharges may have just as much if not more of an erosive effect as the shorter discharge bursts. To guard against excessive sedimentation of downstream areas, the applicant should demonstrate the stability of the watercourse downstream of the proposed detention system given the alterations in its flow regime.

Specific items which should be added to the site plan include:

- Schedule of major construction activities (including erosion and sedimentation control measures), preferably in the form of a “Gant” type bar chart listing each activity in proper sequence and assigning to them start and stop dates. It is recommended that the project be phased so that the entire site is not left disturbed all at once, but that perhaps half of the site is developed and stabilized prior to initiating the next phase.
- An erosion and sedimentation control narrative including the basic principles to be followed and discussion of any potentially serious erosion and sedimentation problems.
- Signatures and seals of the consulting engineer/land surveyor certifying the accuracy of the information contained on the plans.
- Location of subsoil and topsoil stockpiles.
- Temporary erosion protection when time of year or weather prohibit establishment of permanent vegetative cover.
- Planned temporary vegetation if disturbed areas are to remain for thirty (30) days or more.
- Maintenance requirements of temporary measures during construction period including the name and phone number of person responsible for this maintenance.
- Detailed dimensions of the proposed rip-rap swale downstream at the detention basin outlet.
- Plan location and detail for proposed construction entrance pad.

NATURAL RESOURCES CONSERVATION SERVICE REVIEW

The documents reviewed for this section include the following:

“Connecticut Auto Exchange, Northrop Road, Wallingford, CT”, Sheets S-1 (dated May 4, 1995 and revised October 8, 1995), SP-2 (dated May 4, 1995 and revised August 19, 1995), SP-3 (dated November 15, 1995 and revised August 19, 1995), SP-4 (dated November 15, 1995 and revised August 19, 1996), SP-S (dated November 15, 1995 and revised August 19, 1996), SP-6 (dated November 15, 1995 and revised June 20, 1996), SP-7 (dated November 15, 1995 and revised August 19, 1995), SP-8 (dated November 15, 1995 and revised August 19, 1995), SP-9 (dated February 15, 1995 and revised June 20, 1996), “Planting Plan” (revised July 1, 1996), “Planting Notes and Details” (revised July 31, 1996), “Schematic Site Section” (revised July 31, 1996), SE-1 (no date), “Connecticut Auto Exchange, Northrop Road, Wallingford, CT - Permit Application” (dated June 27, 1996), project review reports from Richard Kszystyniak, district conservationist, USDA NRCS, to Mr. Brent Smith, Environmental Planner, Town of Wallingford, dated February 5, 1996 and April 25, 1996.

Based upon a review of the above reports, plans and designs, and discussions with both Mr. Kszystyniak and Mr. Keane Callahan of Robinson and Cole, the following information is offered for consideration:

The overall stormwater management scheme appears to be well thought out and follows current state-of-the-science stormwater treatment practices. The combination of the mechanical and biological treatment measures in the system will help to reduce the potential for stormwater pollutants leaving the site.

Any stormwater management system, such as the one presented, will operate as intended if it is managed and maintained according to a well developed plan. The provisions in the “Proposed Letter of Understanding re: Maintenance Schedule and Declaration of Covenants” helps to provide some assurance that the system will be operated as designed. Never-the-less, it is important to improve any system to a point where it will work without scheduled maintenance. Designs that are, in effect, “self-maintaining” are the most desired. Removing the source of pollutants is the first step towards this end. The hooded outlets on the grit separators will prevent the loading of sediments to the system in the event that maintenance is not completed in time.

Maintenance practices that include regular sweeping and the stockpiling of snow removed from parking areas away from the catch basins will greatly improve the life and functioning of the system.

The created wetland system should consider a design change that will direct all low flow events to the primary treatment area while redirecting larger events away from these areas. This would be desirable since it is the low flow events that are the targeted events for pollutant renovation.

FISHERIES RESOURCES

AQUATIC HABITATS

There are no aquatic habitats or resources of fisheries significance found on the 43+ acre Northrop Road parcel proposed for the Connecticut Auto Exchange.

IMPACTS

Although the site does not contain aquatic habitats or resources for fin fish, drainage from the watershed surrounding the site is directed to wetlands associated with North Farms Reservoir via an intermittent drainage. The 62.5 acre North Farms Reservoir supports a variety of fin fish species and is highly utilized by anglers and recreational boaters. With average water depths of 3 feet and a maximum depth of 5 feet, North Farms Reservoir is susceptible to eutrophication, a process of nutrient enrichment and basin filling. Eutrophic waterbodies are characterized by a very high level of nutrients which cause a significant increase in the rate of aquatic plant growth.

Few lakes are naturally eutrophic but usually result from land use changes in the watershed which increase nutrient and sediment loading. Although land within the North Farms Reservoir drainage has been altered in previous years, the wetlands associated with the waterbody have provided a natural filtering of nutrients and sediments. Without adequate protective measures, degradation to wetlands due to runoff from the proposed site development may ultimately promote impacts to aquatic habitats and resources of North Farms Reservoir.

RECOMMENDATIONS

Provisions for protection of adjacent wetlands have been incorporated into the project design. Such provisions include avoiding disturbance to existing wetlands and the installation of a stormwater drainage system of catch basins and bio-filter detention basins designed to remove both dissolved and suspended contaminants. As recent literature suggests, drainage systems of the design proposed are an effective means of protecting wetlands and other surface waterbodies from site discharge. However, Fisheries Division staff admittedly lacks the ability to determine the site specific efficacy of this stormwater drainage system design and defers comment to Environmental Review team member(s) with such expertise.

Should it be determined that the stormwater drainage system is of adequate design and dimension to treat runoff in a manner protective of the adjacent wetlands, it is recommended that it be installed and be completely functional (including the detention basin's bio-filter component) prior to developing the remainder of the site.

As an additional protective measure, construction activities associated with the drainage system should be attempted for historic low precipitation periods of the year.

APPENDIX



United States
Department of
Agriculture

Soil
Conservation
Service

North Farms Executive Park
Suite A
900 Northrop Road
Wallingford, CT 06492

April 25, 1996

Mr. Brent Smith
Environmental Planner
Inland Wetlands and Watercourses Commission
Town of Wallingford
45 South Main Street
Wallingford, CT 06492

Ref: My letter of February 5, 1996, regarding the Orsini
proposal for use of land off Northrop Road

Dear Mr. Smith,

Since February I have met with principals of Design
Development Group, Inc., and Mr. Orsini's consulting
biologist on several occasions to ensure that the proposed
stormwater wetlands are constructed in accordance with sound
engineering practice and available guidance.

Design changes made since the proposal was first presented
have done much to help assure the long-term effectiveness of
planned stormwater wetlands. Sedimentation chambers are to
be sited at strategic locations to assist in reducing the
sediment load reaching constructed wetlands. Stormwater
discharge from the constructed wetlands will be through a
flashboard-type drop inlet structure to a conduit the outlet
of which will be protected by a rip-rap apron. The
stormwater wetlands have been sized according to tables
equating wetland size with the area of impermeable surface
within the tributary watershed, one of many acceptable
methods. Mr. Michael LeFor, Ph.D., project biologist, has
assured me that a comprehensive maintenance/management plan
has been developed and submitted for your review. The plan
as described to me by Mr. LeFor over the telephone appears
to answer my earlier questions regarding inspection,
maintenance and repair of the stormwater wetlands to be
constructed.

I trust that this information will again assist you and the
members of the Commission. Please feel free to contact me at
your convenience should you have any further questions or
need additional assistance.

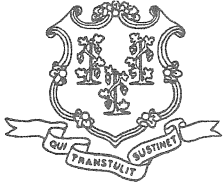
Richard Kszystyniak
District Conservationist

cc: Design Development Group, Inc.
Robinson and Cole



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STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



NATURAL RESOURCES CENTER
79 Elm Street, Store Level
Hartford, Connecticut 06106-5127
Natural Diversity Data Base

August 23, 1996

Elaine Sych
CT Environmental Review Team
1066 Saybrook Road
PO Box 70
Haddam, CT 06438

Re: CT Auto Exchange Proposal
Wallingford, Connecticut

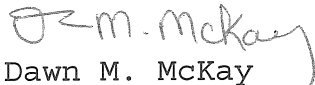
Dear Ms. Sych:

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided. According to our information, there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur at the site in question.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions (424-3592). Thank you for consulting the Natural Diversity Data Base. Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Sincerely,


Dawn M. McKay
Biologist/Environmental
Analyst III

DMM/dmd



United States
Department of
Agriculture

Soil
Conservation
Service

North Farms Executive Park
Suite A
900 Northrop Road
Wallingford, CT 06492

February 5, 1996

Mr. Brent Smith
Environmental Planner
Inland Wetlands and Watercourses Comm.
Town of Wallingford
45 South Main Street
Wallingford, CT 06492

RECEIVED

FEB 05 1996

WLFD INLAND WETLAND

Dear Mr. Smith,

As requested in your letter of January 19, I have reviewed materials submitted in connection with a proposed automobile auction facility to be constructed off Northrop Road. Documents reviewed included a report dated December 26, 1995 and engineering drawings of May 4, 1995, both of which were prepared by Design Development Group, Inc. of Meriden. A brief review of my findings is presented as follows.

The use of constructed wetlands for stormwater quality control has attracted a great deal of attention, both positive and negative, in recent years. When properly designed and constructed, stormwater wetlands can mitigate the adverse effects of runoff on water quantity and quality which often occur during urbanization. However, the design of an effective stormwater wetland is a challenging task and intensive maintenance is needed after construction to ensure that water management objectives are achieved.

Information contained in the report submitted indicates that runoff will be directed to impervious, gravel-lined trenches along the east and west sides of the parcel. Stone check-dams will be constructed at intervals along the trenches to reduce runoff velocity and trap sediment. For additional infiltration and nutrient removal, water will next be conveyed to constructed wetlands vegetated primarily with cattails (*Typha latifolia* L.). The method of stormwater discharge from the constructed wetland to the existing natural drainage system is described differently in the report than it is shown in design drawings: the consultant's report indicates the usage of pervious stone dams with adjustable weirs while engineering drawings show that risers and corrugated metal spillways will be installed. Concept sketches only were presented in the available report, and, as noted in the biologist's report, considerable work on hydrologic modeling and soil characteristics must be completed before actual design and construction can be initiated.

The biologist's report also indicates that excavation to below the groundwater table will be relied upon to fill the basins initially. Given elevations of wetlands surrounding the site and



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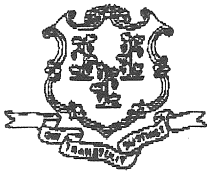
...of the constructed wetlands, it does not appear to me that the water table will be intercepted during basin construction. Given the small drainage area tributary to each of the planned wetlands, it is unlikely that sufficient base flow will be available to ensure reliable water levels in the wetlands. Widely fluctuating water levels will make the establishment of wetland vegetation nearly impossible, and the constructed wetlands will then function much like the familiar detention basin.

In order that stormwater treatment objectives may be achieved, I would suggest that several design considerations be thoroughly evaluated before proceeding further. First, the stormwater wetlands must be sized so as to achieve reliable levels of pollutant removal. Objective criteria should be set for the treatment of runoff volume, be it a number of runoff inches per acre or impervious acre, runoff volume from a storm of specific frequency or any other suitable method. Generally, pollutant removal reliability and efficiency tend to increase as the wetland to watershed ratio increases; a minimum wetland to watershed ratio of 2.0% should be used to size the surface area of stormwater wetlands. To achieve the maximum surface area to volume possible within the constructed wetlands, a series of depth zones could be created within each wetland, increasing their complexity and thereby improving pollutant removal efficiency. An effort should be made to create the longest flow path possible through the wetland system. Finally, a dry weather water balance must be confirmed for the proposed wetland designs. Water losses by evaporation and infiltration must be exceeded by incoming base flow and groundwater inflow in order to ensure survival of the wetland plant community.

Also important will be the development of a comprehensive plan for completing routine maintenance of the stormwater wetlands. This plan should address: 1) inspection of the development of the wetland system; 2) regulation of the sediment supply to the wetlands; 3) maintenance/adjustment of the water balance within the wetlands; and 4) management of the wetland vegetation. Maintenance activities should be fully vested with a responsible party through an enforceable covenant. Ideally such covenant should include a projected schedule for inspections and sediment cleanouts and demonstrate that funding will be available to perform such maintenance.

I trust that this information will prove useful in the Commission's review of the current proposal. I am a firm believer in the utility of stormwater wetlands as an urban best management practice and, given the resource concerns in the upper Wharton Brook watershed, would be happy to work with you further to ensure that stormwater management practices approved are properly designed and constructed.


Richard Kasystyniak
District Conservationist



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



BUREAU OF NATURAL RESOURCES
FISHERIES DIVISION
Western Headquarters
230 Plymouth Road
Harwinton, CT 06791
(860) 485-0226 ~ (860) 567-8998

April 8, 1996

RECEIVED

APR 15 1996

WLFD INLAND/WETLAND

Brent Smith
Environmental Planner
Town of Wallingford
Inland Wetlands and Watercourses Commission
45 South Main Street
Wallingford, CT 06492

RE: Proposed Auto Auction Facility, Wallingford Inland
Wetlands and Watercourses Commission Application #A95-122

The Fisheries Division has recently been made aware of the above referenced proposal submitted by Mr. John L. Orsini for a property located southerly along Northrop Road and of which the Wallingford Inland Wetlands and Watercourses Commission is currently considering application. Although the site does not contain viable fin fish habitat or resources, the Division is concerned with the proposal given it's proximity to wetlands associated with North Farms Reservoir.

The information you had provided at our April 1, 1996 site review indicates the proposed auto auction facility will constitute a significant land use change for the 44 acre property currently managed as agricultural field. Site plans indicate approximately 0.74 acres of land will be occupied by structures and 10.5 acres being paved. Site development will not encroach upon the 9.4 acres of wetland located within the property bounds.

As previously stated, the Division is concerned with the proposed development's impact to wetlands associated with North Farms Reservoir. The 62.5 acre waterbody supports a variety of fin fish species and is highly utilized by anglers and recreational boaters. With average water depths of 3 feet and a maximum depth of 5 feet, North Farms Reservoir is susceptible to eutrophication, a process of nutrient enrichment and basin filling. Eutrophic waterbodies are characterized by a very high level of nutrients which cause a significant increase in the rate of aquatic plant growth.

Few lakes are naturally eutrophic but usually result from land use change in the watershed which increase nutrient and sediment

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loading. Although land within the North Farms Reservoir drainage has been altered in previous years, the wetlands associated with the waterbody have provided a natural filtering of nutrients and sediments. Without adequate protective measures, degradation to wetlands due to runoff from the proposed site development may ultimately promote impacts to aquatic habitats and resources of North Farms Reservoir.

Provisions for protection of adjacent wetlands have been incorporated into the project design. Such provisions include avoiding disturbance to existing wetlands and the installation of a stormwater drainage system of catch basins and bio-filter detention basins designed to remove both dissolved and suspended contaminants. As recent literature suggests, drainage systems of the design proposed are an effective means of protecting wetlands and other surface waterbodies from site discharge. However, I admittedly lack the expertise to determine the site specific efficacy of this stormwater drainage system design and strongly recommend the plans be reviewed and be subject to approval by appropriate staff of the DEP Bureau of Water Management.

Should it be determined that the stormwater drainage system is of adequate design and dimension to treat runoff in a manner protective of the adjacent wetlands, I would recommend that it be installed and be completely functional (including the detention basin's bio-filter component) prior to developing the remainder of the site.

On behalf of the Fisheries Division, I appreciate the opportunity to have reviewed and offered comment on this proposal. Should you have concerns or questions, please feel free to contact me.

Sincerely,



Don Myaling
Fisheries Biologist
Habitat Conservation and Enhancement Program (HCEP)

CC: E. Beckwith, Director, Fisheries Division
W. Hyatt, Fisheries Management Supervisor, Fisheries Division
R. Jacobson, HCEP Supervisor, Fisheries Division
Files <MC-4 NorthropAuto>

ABOUT THE TEAM

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, soil scientists, foresters, climatologists and landscape architects, recreational specialists, engineers and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - an 83 town area serving western Connecticut.

As a public service activity, the Team is available to serve towns within the King's Mark RC&D Area - free of charge.

Purpose of the Environmental Review Team

The Environmental Review Team is available to assist towns in the review of sites proposed for major land use activities or natural resource inventories for critical areas. For example, the ERT has been involved in the review of a wide range of significant land use activities including subdivisions, sanitary landfills, commercial and industrial developments and recreation/open space projects.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision making. This is done through identifying the natural resource base of the site and highlighting opportunities and limitations for the proposed land use.

Requesting an Environmental Review

Environmental reviews may be requested by the chief elected official of a municipality or the chairman of an administrative agency such as planning and zoning, conservation or inland wetlands. Environmental Review Request Forms are available at your local Soil and Water Conservation District and through the King's Mark ERT Coordinator. This request form must include a summary of the proposed project, a location map of the project site, written permission from the landowner/developer allowing the Team to enter the property for the purposes of a review and a statement identifying the specific areas of concern the Team members should investigate. When this request is reviewed by the local Soil and Water Conservation District and approved by the King's Mark RC&D Executive Council, the Team will undertake the review. At present, the ERT can undertake approximately two reviews per month depending on scheduling and Team member availability.

For additional information regarding the Environmental Review Team, please contact the King's Mark ERT Coordinator, Connecticut Environmental Review Team, P.O. Box 70, Haddam, CT 06438. The telephone number is 860-345-3977.