CONSERVATION COMMISSION
MINUTES FOR
JANUARY 17, 1990

MEMBERS PRESENT: Andrew Sheehan, Pam Resor, Carol Place, Ann Shubert, Ken Dow, John Chalmers

CONSERVATION ADMINISTRATOR: Tom Tidman

RECORDING SECRETARY: Andrea MacKenzie

VISITORS: Thomas Mahanna, John MacLeod, Charles Orcutt, Cindy Sorensen, Martha McNeil, Jane Smith, Elinor Calef

8:05 Mr. Sheehan called the meeting to order.

CITIZEN'S CONCERNS

There were no concerns presented.

ZONING CHANGES - MASTER PLAN - Pam Resor

Ms. Pam Resor presented a map of the proposed zoning changes for Acton at the next Annual Town Meeting.

8:29 **MINUTES**

Staff received comments for minutes of January 3, 1990. The minutes of November 15, December 6, and December 20, 1989 were approved and signed.

8:30 NOTICE OF INTENT - 960-962 Main Street - Acton Water District
75-213 Kennedy Well Site

Upon query by the Commission, the applicant provided proof of notification of the hearing to abutters.

Mr. Sheehan opened the hearing under MGL Chapter 131, Section 40 of the Wetlands Protection Act, and the Town of Acton Bylaws for the construction of a new well and associated access drive.

Mr. Tom Mahanna, of Dufresne & Henry, presented plans for the construction of a water pump station within the wetland buffer zone. This station will consist of four gravel packed wells, an aeration tower 30' x 70' in size, and a 27' x 22' concrete vault. There will be no work directly in the wetlands, and the haybales indicated on the plans are the limit of work. The proposed access road to the site will be off an existing gravel haul road, which follows the existing contours of the land. Any ground material cut for the road will be used where fill is needed to level the proposed road to create minimal impact. The proposed well will be

tied into the water main in Main Street by digging a 5 1/2' - 6' deep trench for the water line. Stone dust (?) or woodchips will be used around the pump station as ground cover keeping the existing grade. This station will pump no more less than 350 gallons a minute.

Mr. Mahanna summarized the report dated 1/12/90 composed by Goldberg/Zoino & Associates regarding the wetlands impact at the proposed site, (attached to these minutes). This report was delivered by hand to Commissioners prior to the meeting. Basically, the report indicates that the red maples will prevail and thrive, and the woody shrubs may die off under drought conditions over an extended period of time.

9:00 Hearing no further comments or questions, Mr. Sheehan closed the hearing.

9:00 **NOTICE OF INTENT** - 360 Great Road - Quick Lube 75-214

Upon query by the Commission, the applicant provided proof of notification of the hearing to abutters.

Mr. Sheehan opened the hearing under MGL Chapter 131, Section 40 of the Wetlands Protection Act, and the Town of Acton Bylaws for the construction of a commercial building, parking lot, and drainage, involving 4400 c.y. of fill within the 100' wetland buffer zone.

George LeMasurier, of Stamski & McNary presented plans for Mobil's proposed Quick Lube. The site is 1.3 acres in a General Business zone for a one story, two tenant building. One side is proposed to be an auto glass repair center, and the other side would be a three bay quick lube facility.

Approximately two thirds of the proposed project will be within the 100' buffer zone. The project as proposed will call for 4400 cubic yards of fill within the buffer zone due to the grade of the land towards Wills Hole Brook; one of the deepest points of fill on the site will be approximately 18 feet deep. To keep this fill from eroding and settling they propose to construct a retention wall with a riprap base. The retaining wall as proposed will be 10' from the edge of Wills Hole Brook. This wall height will be approximately 20 feet at the drop to the adjacent wetlands/brook; the wall will be one and a half feet wide graduating downward to a two foot wide base with riprap constructed on a 19' x 19' footing. The roof drainage will drain directly down into an 8' diameter dry well. The parking lot runoff will be drained through gas traps; the first inch of storm runoff (the dirtiest of runoff) from the parking lot will flow through a diversion box to a clay lined retention basin, and the rest of the runoff will be diverted through 15 precast cement leaching galleys. The clay based retention basin will have a slow drain rate which will allow any toxics and volatiles to evaporate, therefore, not being discharged

into the groundwater. The rate of drainage from the retention basin is one inch in six days (1" = 6 days).

Total proposed impervious cover on the site will be 14,570 ± s.f., the proposed building will be 2345 s.f. containing three service pit bays (no lifts), and related office/lobby space. The building will have a concrete basement with a floor to wall seal, inside basement tanks (vault), and a monitoring well with an alarm system. Traditionally a customer's car will have waste oil drained into a bucket which is connected (sealed) to a pump piped to the basement tank. An oil recycling company will come in and pump the waste oil into a truck, meaning that no hands will be in contact with the oil. Hydro Environmental Technologies, Inc. has devised a "Preliminary Contingency Plan" for possible spills and emergency clean up. This plan is on file in the Conservation Office.

The Commission stated concerns on the 10' setback from the wall to edge of the brook, stating that this is a sensitive area, and their policy of a minimum 25' undisturbed natural setback.

10:23 Mr. Stamski asked for a continuation of this hearing, seeing the possibility of changes to the plans at the Planning Board and the Selectmen's meetings in February.

10:40 Upon the applicant's request, Mr. Dow moved to continue this hearing until March 7, 1990, time to be announced. Ms. Resor seconded the motion. The motion passed unanimously.

The Commission informed abutters present that this hearing is continued until 3/7/90, and they can call the Conservation Office for a set time on that date, or they can watch the legal ads in the March 1, 1990 issue of the Beacon.

DECISION - NOTICE OF INTENT - 960-962 Main Street - Kennedy Well

Mr. Chalmers moved to issue a standard Order of Conditions to the Acton Water Supply District for the project located at 960-962 Main Street. Ms. Resor seconded the motion. The motion passed unanimously.

AVERETT CONSERVATION LAND - NAME CHANGE

Ms. Resor stated that she has contacted Zilah Averett, and informed her of the Commission's wish to rename the land to Pratt's Brook Conservation Area, due to the fact that Pratt's Brook runs through the land parcel.

Ms. Place moved to rename the Averett conservation land parcel to the Pratt's Brook Conservation Area. Mr. Chalmers seconded the motion. The motion passed unanimously.

WINTER WALK - ARBORETUM

The Administrator reminded the Commissioners of the February 2, 1990 Winter Walk through the Arboretum, at 1:00 P.M..

10:56 Meeting Adjourned.

Andrew Sheehan, Chairman

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rainfall recharge rate, thereby allowing a significant quantity of rainfall to pond in the wetlands. For example, using a reasonable permeability of $1x10^{-6}$ cm/sec for wetland sediments and a gradient of one yields a 1.25 in/month infiltration rate as compared to 3.75 in/month average annual rainfall. The water balance per month varies as function of precipitation and evapotranspiration. During summer months the wetland will be drier, but during wetter months, lesser is anticipated. It is also noted that lowering of the water table below the bottom of wetland sediments is not expected to increase the infiltration rate. The rate is controlled by the character of the overlying sediments.

We note that most municipal water supply wells in New England are located near wetlands and streams. Other wells in Acton, for example, have been operating for many years adjacent to wetlands. Wetland soils near supply wells can provide improved water quality by removing nitrate or other contaminants from surface water.

It is also noted that the proposed pumping of less than 500 gallons/minute is a small fraction of the total water available in the drainage basin (approximately 7,000 gallons/minute). Only the area in the immediate vicinity of the well (radius of 500 feet) is expected to have drawdown which is more than may be expected due to normal variations in annual recharge.

We have appreciated working with you on this project. Please contact the undersigned for any questions or discussion.

Very truly yours,

GOLDBERG-ZOINO & ASSOCIATES, INC.

Charlotte Cogswell
Wetland Ecologist

Paul F. Reiter
Senior Project Manager

For/ Duncan W. Wood
Associate

PFR/DWW/CC:ah

WETLAND EVALUATION
KENNEDY WELL SITE, ACTON, MASSACHUSETTS

Wetlands located in the vicinity of the proposed well site and within the well "zone of influence" were field inspected on January 3, 1990 by GZA personnel Susan P. Miller (Wetlands Scientist). The wetlands were characterized as to their cover type, based on Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al., 1979), which considers plant community and hydrologic regime. A description of the wetlands based on visual observations of the plant community and other important wetland characteristics can be found below, along with a description of some anticipated drawdown impacts resulting from the proposed well operation.

Wetland A

Wetland A is located adjacent to the northern edge of the proposed well site. This wetland would be classified as a broad-leaved deciduous forested wetland. The cover type of this wetland can be characterized as a Red Maple swamp based on the observed plant community and water regime.

The area contained ponded water at the time of inspection to an approximate depth of 4-6 inches. The wetland appears to be an isolated basin, as there was no hydrologic connection (i.e. culvert or stream) between this area and nearby wetlands observed.

The swamp contained an overstory of predominantly Red Maples (Acer rubrum) and White Pines (Pinus strobus); the average dbh (diameter at breast height) of the overstory trees was observed to be approximately 12 inches. The shrub layer was composed of various species of wetland shrubs, such as Swamp Azalea (Rhododendron viscosum) and Highbush Blueberry (Vaccinium coryumbosum). In the herbaceous stratum, an abundant cover of Cinnamon Fern (Osmunda cinnamomea) grows in the hollows between the hummocks which surround the bases of the trees. The hummocks support a thick layer of Sphagnum in most areas.

At least 15 - 20% of the tree layer is comprised of white pine snags (rotting dead trees). This may be indicative of a change in hydrology, during which this area has become wetter. This, in turn, may have resulted in a die-off of White Pines and the subsequent establishment of a Red Maple swamp community which is more tolerant of seasonally saturated conditions.

Wetland B

Wetland B, which is directly to the south of the proposed well site (see Figure 1), is similar in nature to the wetland previously described. This wetland appears to experience a lesser degree of seasonal flooding than Wetland A, based on the depth of ponded water (2-5") observed and the lower abundance of Sphagnum moss observed around the base of the trees. Unlike Wetland A, which is isolated, Wetland B borders on the Butter Brook and Nashoba Brook confluence to the south.

While both areas support a plant community characteristic of Red Maple swamps, Wetland B contains a greater diversity of shrub species. In addition to the shrubs listed for Wetland A, Wetland B contains Maleberry (Lyonia lingustrina), Winterberry (Ilex verticillata), Juneberry (Amelanchier sp.), and Speckled Alder (Alnus rugosa).

Adjacent Upland

The wetland areas lie within a parcel which was historically utilized for gravel excavation operations. The site contains large contiguous bare areas sparsely populated by weedy species such as Evening Primrose (Oenothera biennis), 3-veined Grass-leaved Goldenrod (Euthamia tenuifolia), Sweet Fern (Comptonia peregrina), Pineweed (Hypericum gentianoides), and White Pine (Pinus strobus) seedlings.

Anticipated Effects of Drawdown

Variations in the hydrologic regime occur in many wetland ecosystems and are characteristic of marshes. The period of inundation (hydroperiod) is especially important to wetland vegetation because it controls many of the physical and chemical properties of the substrate e.g., oxygen, nutrients, and the presence of toxins such as hydrogen sulfide (Kelly et al., 1985). Plant species which live in flooded soils have special physical and morphological adaptations. The change in environmental conditions brought on by drainage and the resulting changes in community structure alter the rates and patterns of energy flow and nutrient cycling. The role of hydrology in controlling these processes is not well studied.

It can be expected that a drawdown of the existing water table will cause increased infiltration and result in some changes to the wetland plant community. It is expected that a groundwater drawdown in the vicinity of a swamp will potentially have the greatest effect on the herbaceous layer and the least effect on the tree stratum, depending on the final average groundwater elevation achieved.

Wetlands A and B are presently comprised of a large proportion of OBL and FACW species in the lower strata (mosses, ferns, grasses and herbaceous vegetation), FAC and FACU- in the tree stratum, and a variety of indicator status designations in the shrub layer (OBL to FACU). The plants observed in the wetland areas have been listed in Table 1, along with their respective Fish and Wildlife Service Indicator Status designations.

The vegetation comprising the lower strata can be expected to be the most greatly affected by the drawdown, due to the fact that: 1) this layer collectively has the greatest moisture requirements (based on their respective indicator status designations), and 2) the drawdown may cause reduced moisture in the root zone. On the other hand, the tree layer, comprised of FAC and FACU species, can be expected to fare well, relatively, under the anticipated dryer conditions. This is because 1) this layer collectively has the lowest moisture requirements and 2) the drawdown may <u>not</u> withdraw the water table completely from this root zone, which is significantly deeper than that of the herbaceous layer. The shrub layer, containing species with varying moisture requirements, can be expected to be affected by the drawdown to an intermediate degree.

Long-term changes which can be expected to occur in the wetlands as a result of drawdown include: 1) a die-off of those species requiring the greater degree of flooding/moisture that the wetlands currently provide, and 2) the subsequent establishment of understory species adapted to dryer conditions. The tree layer may not be greatly affected by the drawdown if sufficient moisture remains in the root zone. Water received by the wetland areas as a result of surface water run-off may replace some of the water lost by drawdown and serve to maintain the plant community as a wetland.

TABLE 1

LIST OF PLANT SPECIES OBSERVED DURING THE INSPECTION OF THE KENNEDY WELL SITE, ACTON

Species are classified by their frequency of occurence in wetlands versus uplands based on the U.S. Fish and Wildlife Service 1989 National Wetlands Inventory categories. Obligate species (OBL) are always found in wetlands under natural conditions (frequency greater than 99%). Facultative wetland species (FACW) are usually found in wetlands (67 - 99% frequency). Facultative species (FAC) are sometimes found in wetlands (34 - 66% frequency) and facultative upland species (FACU) are seldom found in wetlands (1 - 33% frequency). If a species does not occur in wetlands, it is not included on the National Wetlands Inventory List. A plus sign (+) indicates frequency on the high end of the category; a negative sign (-) indicates lower frequency.

Common Name	Scientific Name	FWS Indicator Status
MOSSES		
Sphagnum Moss	Sphagnum sp.	OBL
"Carpet" Moss	Musci	
FERNS AND FERN ALLIES		
Cinnamon Fern	Osmunda cinnamomea	FACW
Sensitive Fern	Onoclea sensibilis	FACW
GRASSES, SEDGES, AND RUSHES		
Sedges	Cyperaceae	OBL, FACW
Common Reed	Phragmites australis	FACW
Wool Grass	Scirpus cyperinus	FACW+
HERBACEOUS VEGETATION		
Aster	Aster sp.	
Beggar's Ticks	Bidens sp.	OBL, FACW
American Bugleweed	Lycopus americanus	OBL
Goldthread	Coptis trifolia	FACW
Jewelweed	Impatiens capensis	FACW
Male-berry	Lyonia linqustrina	FACW

TABLE 1 - (con't)

Common Name	Scientific Name	FWS Indicator Status
SHRUBS		
Highbush Blueberry	Vaccinium corymbosum	FACW-
Juneberry	Amelanchier sp.	
Maleberry	Lyonia lingustrina	FACW
Meadowsweet	Spirea latifolia	FAC+
Sheep Laurel	Kalmia angustifolia	FAC
Speckled Alder	Alnus rugosa	FACW+
Steeplebush	Spiraea tomentosa	FACW
Swamp Azalea	Rhododendron viscosum	OBL
Winterberry	Ilex verticillata	FACW+
TREES		
Hemlock	Tsuga canadensis	FACU
Red Maple	Acer rubrum	FAC
White Oak	Quercus alba	FACU-
White Pine	Pinus strobus	FACU