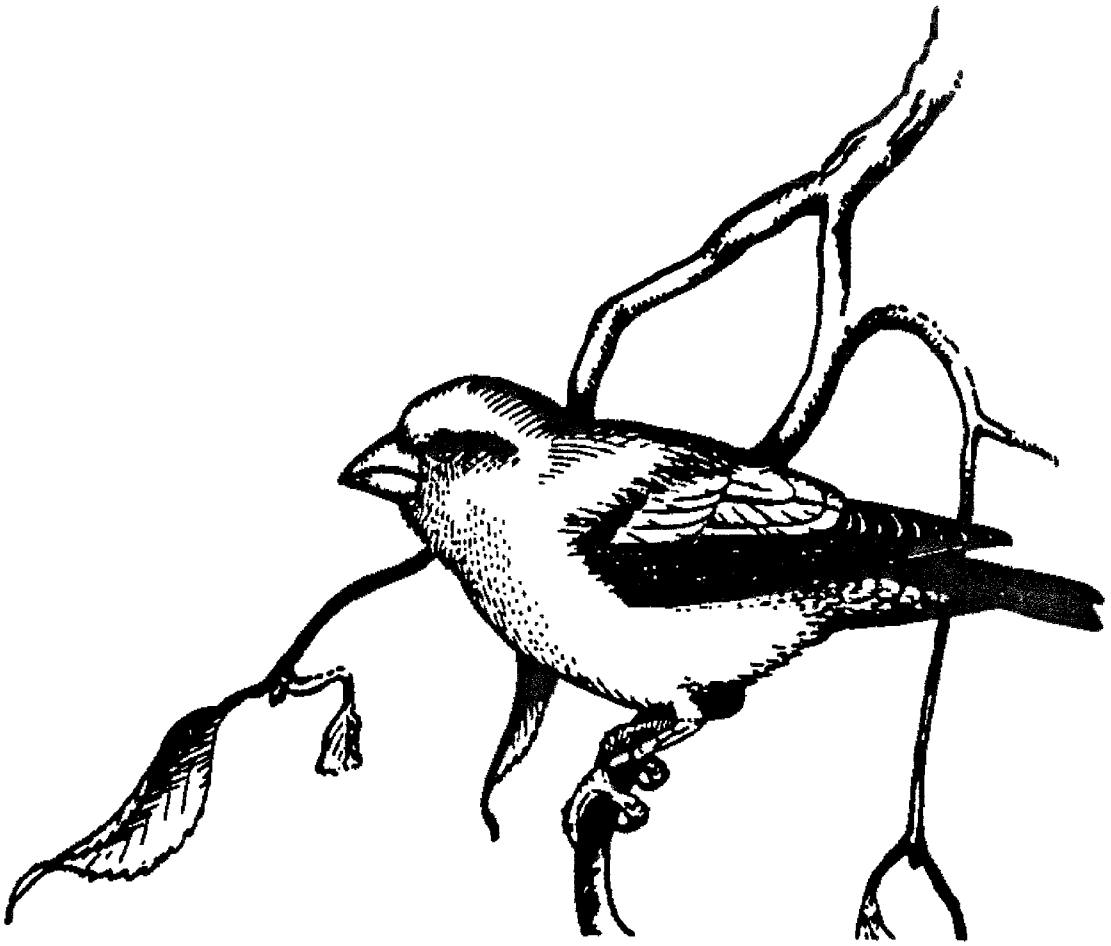
KING'S MARK ENVIRONMENTAL REVIEW TEAM



REPORT FOR

WESTWOODS CENTER

HAMDEN,
CONNECTICUT

King's Mark Resource Conservation and Development Area, Inc.

WESTWOODS CENTER

HAMDEN, 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.

Wallingford, Connecticut

for the

Hamden Planning and Zoning and Conservation Commissions

This report is not meant to compete with private consultants by supplying site designs or detailed solutions to development problems. 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 Commissions and the Town. The results of the Team action are oriented toward the development of a better environmental quality and long-term economics of the land use. The opinions contained herein are those of the individual Team members and do not necessarily represent the views of any regulatory agency with which they may be employed.

JUNE 1990

ACKNOWLEDGMENTS

The King's Mark Environmental Review Team Coordinator, Nancy Ferlow, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this study:

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Finally, special thanks to the Planning and Zoning Commission, Howard Benedict, Ruth Benedict and Elwood Hoyt, owners, Carl Porto and William Colweil, attorneys for the owner, Stanley Novack, Barakos-Landino, Inc, George Logan, Soil Science Services and Jean Paupeck and Lawrence Newman, Jr., neighbors, for their cooperation and assistance during this environmental review.

EXECUTIVE SUMMARY

Introduction

The Hamden Planning and Zoning and Conservation Commissions have requested an environmental review for Westwoods Center, a 7.62-acre site proposed for commercial development. The site contains second growth hardwood forest with a large area of steep slopes. A small intermittent stream is found on the eastern border and is piped across Route 10 to the Mill River. Presently, 2 small stores are located on the southern portion of the site. The Canal Line (an abandoned railroad right-of-way) runs through the site. The Town wishes to use the right-of-way for a linear park, if easements can be obtained.

The developer proposes construction of a 74,660-square-foot shopping center with associated parking. Approximately 275,000 cubic yards of the hillside will be removed. The site is served by municipal sewer and water, but there are several private water supply wells in the area. Stormwater will be directed to a leaching gallery system. The edge of the aquifer for the Mount Carmel Wells is located on the site. The Town is concerned about the effect of blasting on neighboring wells, noise pollution, the change in hydraulics, stormwater runoff, erosion and sedimentation, water quality, site design, access, traffic, natural hazards and the loss of recreational potential.

The review process consisted of 4 phases: (1) inventory of the site's natural resources; (2) assessment of these resources; (3) identification of resource problem areas; and (4) presentation of planning and land use guidelines. Based on the review process, specific resources, areas of concern, development limitations and development opportunities were identified. The major findings of the ERT are presented below.

Location, Land Use and Zoning

The site is bounded by Route 10, West Woods Road and wooded undeveloped land. Land use in the area includes commercial and office space and low to medium density residences. The site is located in a business zone.

Topography

Topography is controlled by the underlying bedrock. Except for the level grade along the railroad bed, the site is characterized by steep slopes.

Project Description

The proposed development includes the construction of a grocery store (approximately 47,560 square feet), 4 retail buildings (totaling 27,100 square feet) and parking lot. Extensive alterations, including quarrying approximately 275,000 cubic yards of rock and soil material, are planned. The end result will be a nearly level site bounded on the west by a 100-foot nearly vertical rock cut.

Geology

The bedrock underlying the site has been mapped as the lower member of the New Haven Arkose, an interbedded conglomerate of arkose and arkosic siltstone. The majority of the bedrock underlying Hamden is sedimentary or igneous.

Geologic History

The tensional forces responsible for the separation of the continents created rift valleys. Rivers flowed into these valleys laying down sediments. The New Haven arkose formed from the initial sedimentary deposits. The formations were tilted and eroded to form the current landscape. Because of its susceptibility to erosion, New Haven Arkose will not make an aggregate suitable for construction products. The volume of material to be removed is large, and consideration should be given to where this material will be placed after construction. The Mount Carmel Fault lies 2,000 feet east of the site. The fault is not currently active. Average depth to bedrock on the site ranges from 1 to 2 feet. Shallow depth to bedrock is the principal limitation for construction. Overlying the bedrock is glacial till. Artificial fill has been placed over the till along the railroad line.

Geologic Development Concerns

Extensive land alterations are needed to develop the site. Municipal water and sewer lines will allay many hydrogeologic concerns. Other concerns include blasting required for site preparation, a steep rock cut and alteration of the character of the site. Major blasting concerns include seismic shock and air blast. Nearby bedrock wells may be affected. Nitrate contamination of soil and groundwater could occur from the charges and should be addressed. A pre-blast survey, which includes data on surface and groundwater quantity and quality, is recommended. There are blasting techniques that can be used to minimize disturbance and should be considered for use on the site. A large rock cut is proposed along the western border of the site. The layering in the New Haven Arkose dips toward the cut. There exists a potential that the rock will slip along the bedding planes and cause a public safety hazard. Adequate rock coring data is required for determining the discontinuities in the rock and may indicate the stability of the rock. Reducing the size of the development and/or implementing a greater separating distance between the building and the rock cut could reduce the threat to public safety. Also, a gentler slope or a terraced rock cut may be more stable. The 10-foot setback from the western property line may result in a "taking" of property in the event of rock slide or severe erosion. A retention wall or other structural measures could prevent mass movement along the bedding planes and fractures. Another alternative is increasing the setback. Abutting septic systems should be shown on the plans and should be at least 75-feet away from the rock cut. Fencing will be required around the rock cut for safety.

Hydrology

Drainage from the site flows into the Mill River. Surface water on the site has not been classified by the DEP, but is assumed to be Class AA, designated for use as a

public water supply. The Mill River east of the site is classified B/AA and is known or inferred to be degraded. The State's goal is to improve water quality to Class AA. Groundwater beneath the site is designated GAA. The development will change the hydrology of the site. Surface water quality will probably be lowered during excavation and after construction by parking lot runoff. Most of the sand and litter will be trapped by the stormwater galleries, but suspended solids and dissolved materials will be transmitted to downstream areas. Best Management Practices should be developed as part of the proposal. E&S controls are imperative during the quarrying operation.

Stormwater from the site will be collected by galleries. The galleries are designed to hold increases in peak runoff for the 10-year storm. Despite the proximity to the Mill River and the pipe designed to pass the 50-year storm, there is potential for flooding for storms over the 10-year event. The developer used a modified version of the Rational Method to calculate post-development flows. Consideration should be given to comparing this method with the TR-55 method.

Hydraulic Considerations

Extensive land use changes will alter the hydrologic characteristics of the site. Average depth to bedrock is 2.5 feet. The overburden is glacial till and rock fragments. Under these conditions, it is difficult to estimate the pre- and post-development runoff. Water quality issues may impose more rigid constraints on the design of the stormwater management system than the hydraulic limits. Under post-development conditions, the majority of the site will be impervious. Pollutants are deposited on paved surfaces and washed off by stormwater. The stormwater management system for the development contains a number of pollution abatement mechanisms. The system only detains water for the 10-year storm. Higher frequency storms can cause the sediments to scour out the sediment and oil separator tanks. For this type of pollution control, the system should be designed for the 25-year storm interval. If the sediment and oil separator tanks are designed as diversion structures and located upstream of the galleries, the removal efficiency will be improved. Peak discharges from the 2- and 25-year storm events should be analyzed.

Soil Resources

The site is characterized by bedrock controlled relief and outwash terrace. There are no inland wetland soils. Most of the natural soils will be removed from the site.

Erosion and Sediment Control

The E&S control plan for the subdivision is basically adequate. Recommendations include determining the fate of the excavated material, providing a detailed maintenance schedule for the sediment and oil separator tanks, restricting reed canary grass from the stream channels, phasing the clearing and grubbing, designing the temporary swales to the standards of temporary diversions

and addressing possible erosion problems at the stormwater outlet pipe at the Mill River.

Wildlife Considerations

Habitat on the site includes hardwood forests, a disturbed area with early successional vegetation and a portion of an intermittent watercourse. Although the site supports some wildlife, its value as habitat is limited. The development of the site will be extensive and will have a tremendous impact on wildlife habitat. There are measures which can reduce the impact on wildlife. These include providing buffer strips and using natural landscaping techniques.

Threatened and Endangered Plant and Animal Species

According to the Natural Diversity Database, there are no Federally listed Endangered Species or Connecticut "Species of Special Concern"on the site.

Planning Considerations

The site is located in a B-2 zone. The site abuts low-density residential zones. Most or the area residences are served by public sewer and water. Many residents in the area might appreciate a conveniently located supermarket, but the site does not appear to be ideal, and site preparation will constitute a major disruption. The 1981 Hamden Plan of Development pays special attention to the protection of aquifers and regulated land uses which are detrimental to drinking water quality. The plan also discourages high traffic generators. The unofficial 1990 Plan of Conservation and Development reiterates these concerns. Amended zoning regulations restricting excavations were passed after the application for this project was submitted. Branford has recently passed excavation standards which could be considered.

Traffic Impacts

A traffic study was submitted by the consultants. Numerous other developments are planned for the area. The traffic report deals with signalization and access. According to the report, improvements in the level of service will be difficult without major intersection reconstruction. Alignment improvements at the intersection of West Woods Road and Mount Carmel Avenue should be considered. The impact of truck traffic for the excavation phase should be considered. Trucks should be adequately covered when leaving the site.

Recreation Planning

Hamden is attempting to develop a rail-to-trail linear park along the abandoned railroad bed. The applicant has offered to provide an easement across the site. Ideally, the site plan should provide one delineated path for pedestrians and bicycles.

Noise Considerations

Construction noise is exempt from regulation. If off-site blasting noise is a concern, blasting should be restricted to the hours between 8:00 am and 5:00 pm at times previously announced to the neighbors. After construction, the facilities must comply with the operational property line noise standards.

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INTRODUCTION

The Hamden Planning and Zoning and Conservation Commissions have requested an environmental review for Westwoods Center, a 7.62-acre site proposed for commercial development. The site is located in northern Hamden near Sleeping Giant State Park. Access is provided by Route 10 (Whitney Avenue).

The site contains second growth hardwood forest with a large area of steep slopes. A small intermittent stream is found on the eastern border and is piped across Whitney Avenue to the Mill River. Presently, 2 small stores are located on the southern portion of the site. The Canal Line (an abandoned railroad right-of-way) runs through the site. The Town wishes to use the right-of-way for a linear park, if easements can be obtained.

The developer proposes construction of a 74,660-square-foot shopping center with associated parking for the site. Approximately 275,000 cubic yards of the hillside will be removed. The site is served by municipal sewer and water, but there are several private water supply wells in the area. Stormwater will be directed to a leaching gallery system. The edge of the aquifer for the Mount Carmel Wells is located on the site. The Town is concerned about the effect of blasting on neighboring wells, noise pollution, the change in hydraulics, stormwater runoff, erosion and sedimentation, water quality, site design, access, traffic, natural hazards and the loss of recreational potential.

The primary goal of this ERT is to inventory the natural resources of the site and provide planning information. Specific objectives include:

1) Assess the hydrological and geological characteristics of the site, including geological development limitations and opportunities;

2) Assess the potential for blasting impacts on the surrounding properties;

3) Discuss soil erosion and sedimentation concerns;

4) Discuss water quality concerns, including stormwater management;

5) Assess the impact of development on wildlife;

6) Assess the impacts of noise from blasting and discuss how to mitigate the effects;

7) Assess the impact on recreational use of the Canal Line right-of-way; and

8) Assess planning and land use issues.

THE ERT PROCESS

Through the efforts of the Planning and Zoning and Conservation Commissions, the developer's representatives and the King's Mark ERT, this environmental review and report was prepared for the Town. This report primarily provides a description of on-site natural resources and presents planning and land use guidelines. The review process consisted of 4 phases:

1) Inventory of the site's natural resources (collection of data);

2) Assessment of these resources (analysis of data);

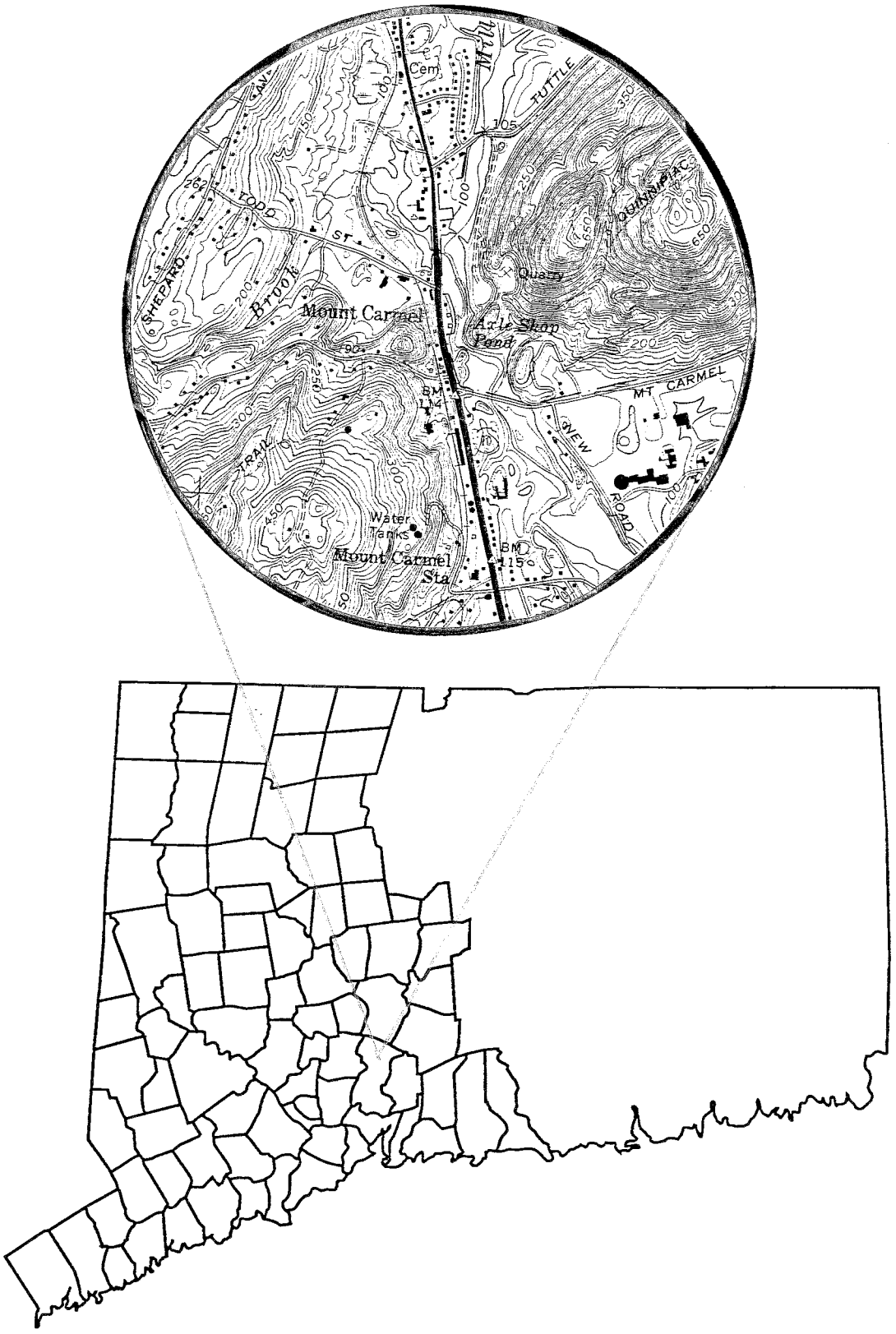
3) Identification of resource problem areas; and

4) Presentation of planning and land use guidelines.

The data collection phase involved both literature and field research. The ERT field review took place on May 16, 1990. Field review and inspection of the proposed development site proved to be a most valuable component of this phase. The emphasis of the field review was on the exchange of ideas, concerns or alternatives. Mapped data or technical reports were also perused, and specific information concerning the site was collected. Being on-site also allowed Team members to check and confirm mapped information and identify other resources.

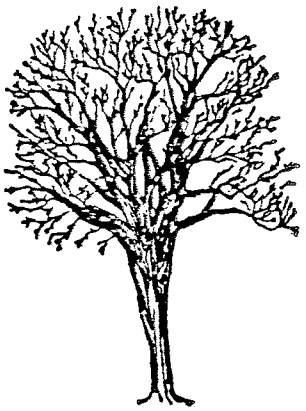
Figure 1

LOCATION OF STUDY SITE



Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. The results of this analysis enabled the Team members to arrive at an informed assessment of the site's natural resource development opportunities and limitations. Individual Team members then prepared and submitted their reports to the ERT Coordinator for compilation into the final ERT report.

NATURAL RESOURCE CHARACTERISTICS



LOCATION, LAND USE AND ZONING

The site, approximately 7.62 acres in size, is located in the Mount Carmel section of Hamden. The site is bounded by Route 10 on the east, an unnamed, intermittent streamcourse and residential properties on the north, West Woods Road on the south and wooded, undeveloped land on the west. The vicinity is characterized by mixed land uses, including commercial/office space (mainly along Route 10), low to medium density residential properties and undeveloped land. Sleeping Giant State Park is located on the east side of Route 10 opposite the site. An abandoned Boston and Maine railroad bed bisects the eastern limits of the site in a north-south direction. Man-made drainage structures associated with the railroad bed occur at the eastern limits of the site.

The site is mostly wooded, but there is an open area in the central parts and several commercial buildings on the east. The site is located in a B-2 (business) zone.

TOPOGRAPHY

The site encompasses the central and eastern parts of a rock-cored knoll which is covered by only a thin blanket of unconsolidated (surficial) materials. Therefore, the topography and drainage is largely controlled by the underlying bedrock. Except for a nearly level grade along the abandoned railroad bed, the site is characterized by steep slopes (15-35%). The west side of the abandoned railroad bed is approximately at elevation 130 feet. From this area, the land rises steeply westward to an elevation of 220 feet at the top of the knoll near the western property line. This represents a difference in elevation of 90 feet. Slopes in the northern parts of the site are also steep. A small area of very steep slopes occur in the southern parts.

PROJECT DESCRIPTION

The proposed development consists of a retail and office center. Specifically, the development includes the construction of a grocery store (approximately 47,560 square feet), 4 retail buildings (totaling 27,100 square feet) and parking lot.

Steep topography and shallow to bedrock soils characterize the site and present severe limitations to the proposed development. Extensive alterations, including quarrying approximately 275,000 cubic yards of rock and soil material, are planned as part of the proposed development. The end result of the excavation will be a nearly level site bounded on the west by a 100-foot nearly vertical rock cut. The entire development will be served by municipal water and sewers. Access to the site is provided by Route 10.

GEOLOGY

Bedrock (GQ-199) and surficial (QR-12) geologic maps of the Mount Carmel quadrangle have been published by the U.S. Geological Survey and Connecticut Geological and Natural History Survey, respectively. These maps show the general geology of the site. The developer's geologic consultant witnessed and interpreted a 68-foot rock coring within a single test boring that is located in the area planned for the maximum rock cut. Also, groundwater levels were monitored in this boring twice in November 1989 and once in February 1990. On these occasions, the level of groundwater in the boring was reported to range between 62 and 63 feet below the ground surface.

The bedrock formation underlying and cropping out on the site is known as New Haven Arkose. In general, New Haven Arkose consists of an interbedded conglomeratic arkose and arkosic siltstone. The term arkose refers to a red to brown,

medium- to coarse-grained, sandstone-like sedimentary rock that contains quartz, feldspar and rock fragments. More specifically, it comprises the lower member of New Haven Arkose and is characterized by coarse-grained beds that are grayish-orange-pink to very pale orange and fine-grained beds that are grayish-red to dark-reddish-brown and contain pebbles of gray phyllite schist.

The majority of the bedrock underlying Hamden consists of sedimentary rocks and igneous rocks. Sedimentary rocks are composed of bits and pieces of older rocks that were eroded from an area, transported to and redeposited in another area and then cemented together. The entire process occurred over long periods of time. Igneous rocks were formed by the solidification of molten rock. Molten rock is termed "magma" if it exists below the surface of the earth and "lava" if it is extruded onto the surface.

GEOLOGIC HISTORY

Tensional forces responsible for the separation of Pangea (the term for the ancient landmass that included all of the continents) into the North American, European and African continents produced major faults along the eastern margin of North America that resulted in "rift valleys." At this time, approximately 200 million years ago during the Late Triassic Period, the Connecticut Central Valley originated as a north-south trending rift valley. The Connecticut rift valley slipped down along a series of boundary faults. Considerable escarpments were produced during the period of faulting. Rivers flowed into the rift valley from the adjacent highlands, spreading sediments that resulted in the formations of conglomerate, sandstone and siltstone.

The New Haven Arkose which underlies the site formed from the initial sedimentary deposits. It is estimated to be approximately 6,000 feet thick.

Subsequently, a sequence of sedimentary and volcanic deposits were laid down within the rift valley. From oldest to youngest these deposits include the Talcott Basalt, the Shuttle Meadow Formation (a sedimentary unit), the Holyoke Basalt, the East Berlin Formation (a sedimentary unit), the Hampden Basalt and the Portland Arkose. The entire sequence of sedimentary and volcanic deposition probably occurred in a span of approximately 20 million years, beginning in the Late Triassic Period and ending in the Early Jurassic Period. The "layer cake" of sedimentary and igneous rock is estimated to be approximately 11,000 feet thick and, in places, has been intruded by dikes and sills of basaltic magma. There are 2 igneous intrusions into the New Haven Arkose located near the site. These intrusions are the West Rock Diabase that forms the Sleeping Giant/Mount Carmel body east of the site and a narrow dike of Buttress Diabase that occurs west of the site. Sedimentary rock formations and lava flows in the rift valley were tilted from 10° to 30° generally toward the east and then eroded.

Erosion of the relatively soft sedimentary rocks resulted in a relatively flat surface. The basalts and diabase are much more resistant to weathering and erosion and have consequently been left as high ridges and peaks within the rift valley. Smaller, rounded hills of sedimentary rock such as the one on the site have been formed principally by glaciation.

Because of its relative susceptibility to erosion, the New Haven Arkose will not make an aggregate suitable for quality construction products. The rock may have value for fill material in places where durable material is not necessary, but it does not make a good road base material due to the presence of calcium carbonate (calcite).

Because the volume of material planned for excavation is large, consideration should be given in advance to where the quarried rock will be deposited and plans for

its use. New Haven Arkose is one of the poorest quality rocks in the State for construction aggregate.

Map GQ-199 (Bedrock Geology of the Mount Carmel Quadrangle by C. E. Fritts) shows a northeast/southwest trending fault known as Mount Carmel Fault approximately 2,000 feet east of the site. This fault bisects the "neck" of the "Sleeping Giant" in the park. Near the fault zone the upper few hundred feet of bedrock should be considerably fractured. The fault is not currently active.

Based on information from 24 deep test holes, depth to the bedrock surface in areas covered by natural soils ranges from 1 to 8 feet. However, most holes indicated 1 to 2 feet of soil. Shallow depth to bedrock is the principal geologic limitation.

The surficial geologic material overlying bedrock on the site is a thin blanket of till, a glacial deposit. Till is a non-sorted accumulation of rock materials of all shapes and sizes. Moving glacial ice chipped or broke the particles from rock outcrops or collected them from pre-existing soils. In general, the texture of the till on the site is sandy and loose.

Artificial fill material has been placed over till and bedrock along the former railroad bed in the eastern parts.

GEOLOGIC DEVELOPMENT CONCERNS

Extensive land alterations, including the removal of approximately 275,000 cubic yards of rock and soil, are necessary to develop the site as proposed. Municipal water and sewer lines are available to the site and will allay the hydrogeologic concerns that are typically associated with the installation of on-site septic systems and water supplies. Nevertheless, the effects resulting from site preparation and construction of the land warrant very careful examination. Geologic and hydrologic limitations and concerns include:

1) The presence of shallow to bedrock soils across the site will require a tremendous amount of blasting (quarrying may take up to a year) in a heavily developed area.

2) A nearly 100-foot rock cut whose final slopes will range from 1 Horizontal:2 Vertical to 1 Horizontal:3 Vertical will be made along the western property line and may be erosionally unstable and potentially dangerous. In general, the layering in the bedrock at the cut dips from 10° to 28° toward the east into the area planned for excavation. The 100-foot rock cut will leave these dipping layers unsupported as a result of the removal of rock material, thereby creating a serious risk of rock slide.

3) Due to the tremendous amount of blasting, filling and grading required to develop the site, the proposed commercial/office space use of the land and the drainage directing measures to be employed, the character of the site and vicinity will be altered markedly.

The presence of shallow to bedrock soils throughout the site suggests that a tremendous amount of blasting will be required for development. Based on the information reported in the single rock coring log, the upper 20 feet of the bedrock surface is highly fractured. If a single boring hole can characterize the site, it might be possible to remove this zone with heavy construction equipment. Below this zone extensive blasting will be necessary. All blasting requires great care and strict supervision by persons experienced with modern blasting techniques. A geotechnical engineer who has considerable experience with blasting should monitor, evaluate and oversee all blasting on the site.

Major blasting concerns for the area include seismic shock and airblast. These concerns are especially significant due to the proximity of residential homes and commercial establishments. Flyrock is another potential problem, but it should be satisfactorily contained within the site. Increases in groundwater turbidity in the vicinity of the blasting are expected as well as an increase in fracture porosity of the rock, possibly creating enhanced hydraulic conductivity and water storage capacity. Nearby bedrock wells may be adversely affected.

Nitrate contamination to the soil from explosives could occur, and nitrates could leach into the groundwater. Because of the large amount of explosives necessary to run the quarry operation, surface and groundwaters are likely to be adversely affected by nitrates. These concerns must be addressed in more detail by the applicant's technical staff. The applicant's technical consultant should calculate the amount of nitrates that will be released by the proposed blasting. Once this is completed, a nitrate dilution calculation should be performed to determine the potential water quality impacts to surface and groundwater in the area.

Specific blasting techniques may minimize the potential environmental impacts of blasting, depending upon the blasting requirements of the site, which have not been fully determined to date. Blasting methods such as multiple smallcharge blasting, use of decked charges and/or use of millisecond delays between detonation can be employed to reduce blasting shock and seismic air blast.

Any blasting should be accompanied by a pre-blast survey. The applicant's engineering geologist indicates that a pre-blast survey radius of 500 feet is proposed around the site. Depending on the blasting requirements of the site, it may be necessary to expand the survey radius beyond 500 feet. The pre-blast survey should include collecting background water quality data for nearby domestic wells and surface water. Yield tests for potentially affected wells should be strongly considered. Removal of rock material on the site may result in the lowering of the watertable in the vicinity of the site to the extent that water is no longer available or severely diminished in any given well. If groundwater contamination occurs or if well yields diminish, provisions should be made by the applicant to extend the municipal water main or re-drill wells to the affected residences.

Because the New Haven Arkose includes silts, fine sands and clays, the chance for increased turbidity problems in bedrock wells may be high due to the blasting requirements for the site.

Certain blasting techniques can be and should be employed to minimize the environmental effects of blasting such as flyrock, ground vibrations, air blast and dust and gases resulting from the explosions. A number of rock corings are required to determine the blasting requirements and bedrock geology of the site. To date, only a single rock coring has been advanced through the bedrock on the site.

Site preparation will result in a rock cut along the western border. In places, the proposed rock cut will range from 80 to 90 feet high and will be 25 to 35 feet from the rear parts of the grocery store and attached retail building. Because the elevation of the rock cut is near the building and because the layering in the New Haven Arkose dips towards the buildings, rock slabs may slip along the bedding planes, posing a serious threat to public safety and the proposed buildings. The tremendous amount of blasting required may weaken the bedding planes, increasing the possibility of slope failure.

A rock cut in the New Haven Arkose behind Talbot's near the site contains dissolution channels along some of the bedrock layers. Dissolution channels are the result of calcium carbonate cement being dissolved. Additionally, the rock core log indicates the presence of conglomeratic zones, which because of their water carrying capacity (more permeable than the siltstone layers) may be susceptible to accelerated erosion due to groundwater flow increases after the rock cut is made. Because of the length and height of the rock cut and its proximity to the proposed building, more rock corings should be made, particularly near the proposed rock cuts. Adequate rock coring data will allow the determination of discontinuities in the rock such as fracture and joint sets that could further aggravate the potential for rockslides. The resulting data may indicate the stability of the rock cut. Also, this work will allow determination of the probable surface bearing load values of the bedrock so that the data could be evaluated. These values are likely to vary across the site due to the varying lithology of the New Haven Arkose.

Reducing the size of the proposed development and/or implementing a greater separating distance between the rock cut and proposed buildings might reduce the threat to the building or public safety in the event of rock failure. Also, a gentler slope (e.g., 1 H:1 V) or a benched/terraced rock cut may result in a more stable condition.

Only a 10-foot setback is proposed from the top of the rock cut to abutting properties to the west. Consideration should be given to structural measures that minimize the risk of a "taking" of abutting properties along the rock cut in the event of a rock slide or severe erosion. A properly engineered retention wall or other structural measure could prevent mass movement along the bedding planes or fractures. If these structural measures cannot be utilized, the setback of the rock cut from abutting properties should be increased.

Abutting properties may be served by on-site septic systems. All septic system locations serving abutting properties near the rock cut should be shown in the plan. A 75-foot setback should be maintained between any portion of the septic system and the rock cut. This should prevent partially treated effluent from bleeding out at the rock cut and causing a public health hazard.

If the site is developed as proposed, measures should be taken to install adequate fencing along the cut for public safety.

HYDROLOGY

The entire site drains to Mill River which is located approximately 250 feet to the east. At its point of intersection with Mount Carmel Avenue southeast of the site, Mill River drains an area of 24.5 square miles or approximately 15,680 acres. Therefore, drainage from the site represents a small portion (<0.05%) of the watershed area. A small, unnamed, intermittent stream flows easterly through the

northern parts of the site enroute to Mill River. Surface runoff on the site flows downslope towards the unnamed streamcourse or moves directly towards Route 10. In the eastern parts, the water is intercepted by man-made structures that route it under the former railroad bed and Route 10 and ultimately to Axle Shop Pond, a small impoundment in Mill River.

Surface water on the site has not been classified by the Department of Environmental Protection (DEP) Water Compliance Unit, but is presumed Class AA. Class AA water resources are considered uncontaminated and designated for use as public water supply. The State's goal is to maintain the existing natural quality characteristics by banning discharges to the surface water. The segment of Mill River east of the site that will receive drainage from the site is classified as a B/AA water resource. Class B/AA water resources are known or inferred to be degraded in water quality and are generally suitable for recreational, agricultural or certain industrial uses such as process or cooling water. The State's goal is to improve, through Best Management Practices (BMPs), the water quality of that segment of the Mill River to a Class AA water resource.

Groundwater beneath the site is currently classified as GAA which means it is within a public water supply watershed or within an area of influence of public water supply wells and is presumed suitable for direct human consumption. The State's goal is to maintain that condition by banning almost all discharges to groundwater.

The proposed development will greatly change the hydrology of the site. Because of the enormous amount of blasting required for development, the amount of impermeable surfaces to be created and the drainage directing measures to be employed, the character of the site and vicinity drainage will be altered markedly.

Surface water quality within and downstream from the site will probably be noticeably lowered by the proposed development. During the 1 year or more rock excavation period, surface and groundwater flowing through the blasted New Haven

Arkose fill will probably pick up significant amounts of suspended and dissolved solids and transmit them to downstream areas, resulting in strong coloration of both surface and groundwaters, and turbidity will increase in the streamcourse.

After construction, debris from the parking areas, including sand and salt used in winter, spilled hydrocarbons and other automobile residues, will be carried directly by surface runoff through the new drainage system into the proposed underground pre-cast storage galleries. Although most of the sand and litter should be trapped within the galleries, salt and other dissolved materials and some suspended particles probably will be transmitted to downstream areas. BMPs which are consistent with the Water Compliance Unit should be developed and required as part of the development proposal. Consideration should be given to grit removal chambers, catch basins equipped with hooded outlets and sumps for trapping sediments and floatables. Responsibility for maintenance of the gallery structures and other runoff control measures should be assigned. The Town should require the applicant to determine whether or not a wastewater discharge permit for stormwater discharge from the Water Compliance Unit is necessary. Richard Mason (566-7139) should be contacted regarding this matter.

During the one year or longer period of rock quarrying proposed, it is imperative that erosion and sediment (E&S) control measures be properly installed and maintained. Strata in the New Haven Arkose, which contain fine-grained particles such as silt, clay and fine sand, pose a serious threat to surface water quality. Blasting will inevitably disturb and mobilize the finer-grained particles causing dust control problems and siltation problems. The quarry operation, including loading, hauling and crushing, will probably produce considerable dust. A detailed E&S control plan that is properly enforced will minimize the potential adverse impacts occurring to water and air resources on- and off-site.

Present plans indicate that most increases in runoff from the proposed development will be artificially collected by catch basins and piped to underground water tight galleries located in 3 areas on the site. This stormwater detention facility will hold the net volume increases of peak runoff from the site up to the 10-year storm event. It is not known if the volume of water that will bleed out of the rock cut and be intercepted by the drainage system was considered in the design of the runoff management plan.

Despite the site's proximity to the Mill River and the proposed installation of a new 42-inch pipe to outlet galley systems G2 and G3 designed for a 50-year storm, there is potential for flooding on- and off-site during storms above the 10-year storm event. Chapter 8-68 of the Connecticut Guidelines for Soil Erosion and Sediment Control, which covers detention basin design, should be followed. Additionally, mitigative measures used to treat post-development water quality on the site may fail for storms beyond the 10-year storm event.

The consultant's engineer used a modification of the Rational Method to calculate post-development runoff conditions for the site. Peak flow calculations for ungaged streams may be made by several methods, and the results may vary greatly. For example, the Soil Conservation Service runoff curve number method TR-55 typically produces higher estimates for peak flows then the estimates derived by the Rational Method. These differences show the uncertainty involved in this type of calculation and do not suggest a preference for one method over others. The developer's estimate is based on a well-established procedure and provides a reasonable prediction for the 10-year peak flow. However, consideration should be given to calculating peak flows for the proposed development using TR-55 and comparing the differences with the existing peak flow values (see Hydraulic Considerations).

HYDRAULIC CONSIDERATIONS

The proposed development involves extensive land use changes that will permanently alter the hydrologic characteristics of the site. The site is located in the vicinity of the Mill River, which directly feeds the Lake Whitney area public water supply reservoir. The site also lies on the periphery of the primary aquifer recharge area of the South Central Connecticut Regional Water Authority. The existing topography of the site consists of a wooded hillside with several rock outcrops visible along the slope. There is a small, intermittent stream that runs along the eastern border of the site.

The geotechnical report prepared by Heynen Engineers states that "the overburden soils in the project area consist of glacial till mixed with rock fragments." Test pits excavated at the site showed a relatively shallow depth to bedrock, varying from 1 to 12 feet in depth. The thicker cover was found in areas of fill. If filled areas are not included, average depth to bedrock is approximately 2.5 feet.

Hamden applies a "zero net increase" policy to quantify the effects resulting from land use changes when comparing pre-development runoff and post-development runoff conditions. Since the site contains a shallow overburden consisting of a coarsely graded glacial till, it is difficult to estimate the amount of runoff under pre-development conditions. Considering these site conditions, applying the Rational Method to estimate runoff, under both pre-development and post-development conditions, is theoretical. While the Rational Method is most applicable for estimating runoff in small urban watersheds, it can be used for estimating runoff in partially impervious and pervious watersheds as well. More important than the method employed, for all of the accepted methods have their limitations, is the development of the parameters used to define the specific

conditions that exist at the site. The estimates of runoff produced by these empirical methods are just that, estimates. As long as reasonable and practical parameters are employed to accurately qualify the site conditions, the method will produce acceptable results. Therefore, the hydrologic and hydraulic analyses performed by the consultant is reasonable.

Due to site conditions, water quality issues may impose more rigid constraints on the design of the stormwater management system when compared with the hydrologic and hydraulic limits. The plan calls for the removal of the overburden layer and the excavation of approximately 275,000 cubic yards of material. Once excavation is completed, the proposed retail complex and associated utilities will be constructed upon bedrock.

Site plans for the proposed shopping center indicate that under post-development conditions, the majority of the site will be impervious, including roof areas and paved areas. Based on the proximity of the site to a public water supply reservoir, concerns have been raised about the pollution potential of the stormwater that will be discharged from the site, specifically the runoff that will be shed from the pavement surface.

Pollutants are deposited on paved surfaces from a number of sources, including deposition of airborne particulates, natural contaminants and vehicular traffic. Analysis of urban stormwater runoff has shown that pollutants such as solids, heavy metals, nitrogen, phosphorous, oil, grease and bacteria can be present in varying concentrations. Concentrations of pollutants such as solids, heavy metals and organics (found in fuels and motor oils) have been found to be directly related to traffic volume. Therefore, parking areas are most susceptible to this type of contamination.

The mechanism by which these contaminants are transported to receiving waters depends highly on the chemical nature of the substance, its physical

properties and its tendency to bond with other sediment particles. Many of the contaminates naturally exist in particulate form. In contrast, organic chemicals and heavy metals in solution tend to bond to other suspended sediments present in the collected runoff and settle. Since this mechanism is so critical for the removal of these pollutants, specific standards must be applied in the design of urban pollution/stormwater management systems to insure that the removal process is effective.

The stormwater management system, designed by Barakos-Landino, Inc., employes a number of pollution abatement mechanisms to contain the sediments and outwash discharged from the site. The plan shows that the catch basins will include 2-foot sumps to contain the sand deposited within the parking areas. Hooded outlets will also be included in each parking lot catch basin to trap floating materials and oils. The parking area will include curbing so that runoff can be contained within the complex, to the extent feasible. The system also contains 3 stormwater detention galleries. The entire system is designed to retain the net increase in runoff volume estimated to occur under developed conditions for the 10-year storm event. A series of sediment and oil separator tanks have also been included within the system. By employing this system of detention galleries and sediment and oil separator tanks, an effective level of pollutant removal will be maintained.

The design of the stormwater management system is flawed because it only accounts for detention of runoff resulting from a storm with a 10-year recurrence interval. When used for this type of pollution control, the storage capacity of the detention system should be sized to control a storm with at least a 25-year recurrence interval. Since the system is designed to contain the post-development runoff associated with a 10-year storm event, higher frequency storm events may cause bottom sediments to scour out of the sumps and the sediment and oil separator tanks. If the sediment and oil separator tanks are designed as diversion structures and

located upstream of the galleries, the removal efficiency of the system will be improved for flood-producing events in excess of the 10-year frequency storm.

The stormwater management system contains a number of practical and reasonable pollution abatement measures that will effectively maintain the quality of the stormwater discharged from the site. However, some modifications to the system should be considered. Additionally, the peak discharges from the 2-year and the 25-year frequency storms should be analyzed in the design of the stormwater management system to ensure that the detention galleries will effectively minimize flooding for a more reasonable range of precipitation events.

SOIL RESOURCES

The soils map generated by Soils Science and Environmental Services, Inc. should be used for evaluation of the site due to the greater mapping intensity. The soil map symbol for Holyoke-Rock Outcrop on slopes greater than 15% is HZE in the New Haven County Soil Survey. The site is characterized by bedrock controlled relief in the western section and outwash terrace along Route 10 and the small stream. There are no inland wetland soils on the site. Since most of the natural soil material will be removed from the site, a soils table showing the limitations of the various soils present for construction uses is included in Appendix A.

EROSION AND SEDIMENT CONTROL

Public Act 83-388, "An Act Concerning Soil Erosion and Sediment Control," requires most applications for development have a comprehensive E&S control plan to "reduce the danger from stormwater runoff, minimize non-point sediment

pollution from land being developed and conserve and protect the land, water, air and other environmental resources of the state."

The proposed development has an E&S control plan which has been reviewed twice in the past by the New Haven County Soil and Water Conservation District. Most of the comments from these reviews have been addressed by the applicant and copies of the correspondence which occurred between January 31, 1990 and March 10, 1990 are included in Appendix B.

Additional comments for this development include:

1) There is still uncertainty as to the fate of the excavated material, and it may be prudent to provide general specifications for its ultimate disposal. Specifications could include items such as placement in level upland areas away from wetlands and watercourses.

2) A detailed long-term maintenance schedule should be provided to the Town for the sediment and oil and grease chambers. A provision for periodic joint inspection with a municipal enforcement officer is recommended.

3) Reed canary grass should not be planted in or near stream channels due to its aggressive nature and tendency to clog watercourses.

4) A note should be included directly on the plans that clearing and grubbing are to occur in phases as material is mined from the site.

5) The temporary swales should be designed according to the criteria for temporary diversions contained in the Connecticut Guidelines for Soil Erosion and Sediment Control.

6) The weathered material on an existing exposed rock face observed during the field review was characteristic of coarse sand. There is a potential for gradual weathering back of the excavated slope and undercutting of trees along the upper slope.

7) The stormwater outlet into the Mill River does not address possible erosion problems downstream between the stone arch pipe and the Mill River.

WILDLIFE CONSIDERATIONS

Description of Area/Habitats

The 7.6-acre site contains hardwood forest, a small portion of an intermittent stream and a disturbed area that contains early successional stage vegetation.

Wildlife habitat is the complex of vegetative and physical characteristics that provide for all the requirements of wildlife, including food, shelter, resting, nesting and escape cover, water and space. Generally, the greater the habitat diversity and degree of interspersion of various habitat types, the greater the variety of wildlife there is using an area. Due to the small size of this site and low diversity and quality of habitat types, the site has limited value for most types of wildlife. Despite this, the site does contain some forestland and a variety of early successional stage grasses, weeds, herbs and shrubs that some mammals, birds, reptiles and amphibians, could utilize. Although it supports some wildlife, the site's value as wildlife habitat is limited.

As proposed, the development will greatly alter the existing habitat and represents a net loss of wildlife habitat. Because the site is small and is proposed to be developed with buildings, roads and parking areas after extensive blasting and leveling, the impact to the existing habitat and wildlife will be tremendous.

In general, as the amount of development and disturbance increases in an area, the value of the wildlife habitat correspondingly decreases. Although habitat value is limited at the site currently, habitat value and the species using the site will be greatly diminished during and after development.

In a small but heavily developed and populated State like Connecticut, where available habitat continues to decline on a daily basis, it is critical to conserve, maintain and enhance, where possible, existing wildlife habitat.

Ways To Minimize Some Development Effects In General

In planning and constructing a development, there are measures that should be considered to minimize adverse impacts on wildlife. Despite these measures, wildlife habitat will increasingly be adversely affected as the amount of development increases on a site. These measures include:

1) Maintain a 100-foot (minimum) wide buffer zone of natural vegetation around all wetland/riparian areas to filter and trap silt and sediments and to provide some habitat for wildlife.

2) Utilize natural landscaping techniques (avoiding lawns and chemical runoff) to lessen acreage of habitat lost and possible wetland contamination. See Appendix C for a list of suggested shrub and tree species that can be encouraged and/or planted to benefit wildlife.

THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

According to the Natural Diversity Data Base, there are no known extant populations of Connecticut "Species of Special Concern" or Federal Endangered and Threatened Species occurring at the site.

The Natural Diversity Data Base includes all information regarding critical biologic resources available 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. Consultation 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. New information is incorporated into the Data Base as it becomes available.

LAND USE AND PLANNING CONSIDERATIONS

PLANNING CONSIDERATIONS

The applicant proposes construction of a 74,660-square-foot shopping center on Route 10 between West Woods Road and West Todd Street just north of the Mount Carmel intersection. The 7.6-acre site lies entirely within the B-2 zoning district of Hamden. The site is currently the only vacant commercial parcel which would permit such a shopping center from West Todd Street to the Cheshire Town Line. The site abuts low density residential districts of Hamden to the west and north to the Cheshire Town Line. A few of the local neighbors currently enjoy a clean private water supply, but most are served by public water. Much of the residential development presently occurring in Hamden is taking place in the northwest section of Town, and the trend is expected to continue for the next decade. Many residents in this area of Town would probably appreciate a conveniently located supermarket or grocery store. However, the site does not appear to be ideal. Whether a shopping center is an appropriate use of the site based on environmental constraints should be considered, not merely whether it is a permitted use. Approximately 275,000 cubic yards of rock will be blasted and removed from the site to accommodate the proposed shopping center, constituting a major disruption to the area.

In the 1981 Hamden Plan of Development, the Route 10/Mill River Corridor was given special attention to assure the protection of the water supply (aquifers) through regulation of land uses and activities which are detrimental to drinking water quality. The site lies within the secondary recharge area in the northern section of the corridor. The Planning and Zoning Commission (PZC) in this Plan listed recommendations for the Route 10/Mill River corridor, including:

1) Uses along the corridor which are high traffic generators should be discouraged. These include such uses as supermarkets, fast food restaurants, banks, convenience markets and service stations.

2) New development along the northern portion of the corridor should be compatible with the objective of protecting the residential character of that area.

In the current unofficial Hamden Plan of Conservation and Development (1990), the Route 10/Mill River Corridor recommendations of the 1981 Plan were reviewed with these comments:

> "The 1981 PZC recommendation concerning new development in the northern portion of town being compatible with the objective of protecting the residential character of that area was incorporated into the 1982 zoning regulation revisions."
>
> "The 1981 PZC recommendation concerning the discouragement of high traffic generators such as supermarkets, fast food restaurants, banks, convenience markets and service stations was imposed for the northern portion of the corridor."

Amended zoning regulations pertaining to "Natural Resources Removal, Regrading and Filling" were adopted in Hamden after this development application was submitted. The new regulations place a cap on the total amount of material which can be excavated from approved site plans (2,000 cubic yards) and subdivision grading plans (10,000 cubic yards). Other key changes to Section 640 - Natural Resources Removal, Regrading and Filling include:

Section 643 - Application

"m) An estimate of the number of cubic yards of material to be filled, excavated, graded or removed and an estimate of the time necessary to complete the operation.

n) An estimate of the number, types and hours of operation of trucks and other machinery to be used on the site and the locations and types of any buildings including temporary buildings to be erected.

o) Details of proposed blasting and storing of explosives."

Section 645 - Standards

"f) No excavated rock will be stockpiled on the premises.

i) The work shall be limited to the hours of 8 am to 5 pm Monday through Friday. No work shall be permitted on legal holidays. Truck access to the excavation shall be so arranged as to minimize danger to traffic, nuisance to surrounding properties, and such access on the premises shall be provided with a dustless surface. Truck access to the excavation shall not be carried out during school bus hours."

The Town of Branford is currently proposing revisions to Section 44 "Grading, Excavation, Removal or Deposit of Earth Materials" of their zoning regulations. The Hamden PZC could review and consider similar regulation amendments.

Proposed amendments of the Branford excavation standards include:

> "44.5.9 Disposal of Excavated Material: The total volume of earth materials to be removed from the site and its destination shall be stated in the application. Deposition of such materials on any site(s) within the Town of Branford shall be carried out in conformance with these regulations. If earth materials in excess of 100 cubic yards are to be transported to a location outside of the Town of Branford, such location shall be identified and evidence of proper disposal provided to the Commission."
>
> "44.7 Additional Conditions: The Commission may establish such additional standards as it deems necessary to satisfy the purposes of these Regulations, including, but not limited to, the following: a) limitations on the day of the week or the hours of the day during which any work, including any blasting, may be performed on the lot; b) limitations as to size and type of machinery to be used on the lot; c) limitations on the place and manner of disposal of excavated material on the lot; d) requirements as to the control of dust, noise, and lighting; and e) limitation on the type of fill material permitted for deposit."

TRAFFIC IMPACTS

A traffic impact/site access study was submitted by the consulting firm of Barakos-Landino, Inc. In the report, the firm referred to the numerous significant projects planned, proposed or under construction near the site. This information was used to calculate accurate trip generation rates. These projects included:

1) Evergreen Avenue - proposed 1,583 condominium, apartment and single-family cluster units;

2) Whitney Avenue - 31 condominium units under construction;

3) Whitney Avenue - approved 31 condominium units;

4) Whitney Avenue - approved 51 condominium units;

5) Sherman Avenue - Sherman Heights Industrial Subdivision - approved 8 lots for warehouse/office space, 62,000 square feet; and

6) Sherman Avenue - Enterprise Park Commercial Condominiums - 47,700 square feet total, partially occupied.

The Hamden Plan of Conservation and Development (1990) discussed developing an approval process which explicitly considers the cumulative and off-site impacts of individual developments.

The recommendations and conclusions of the traffic report submitted by Barakos-Landino deal mainly with the access drives and signalization improvements. The report indicates that a revised signal phasing plan for the intersection of Mount Carmel Avenue and West Woods Road at Route 10 has been proposed which will provide some improvement for the level of service along Route 10 at the peak hours of travel. The report also states that any significant improvement in levels of service in the peak directions of travel is very difficult to achieve without major intersection reconstruction. Alignment improvements at the intersection of West Woods Road and Mount Carmel Avenue should be seriously considered before granting approval for any major development proposal.

Another issue is the impact of the truck traffic during the excavation phase of the development project. The owners plan to use 10 trucks which each hold 15 cubic yards of material. The maximum Gross Vehicle Weight (GVW) for the 10 wheeled 15 cubic yard truck is 58,000 pounds. According to the developer, the 10 trucks used will make 9 to 10 round trips per day to remove the rock from the site. The owners apparently have possible sites for disposing the material in New Haven and East Haven. According to the developer, 275,000 cubic yards of rock and till will be

removed. A total of 210 working days is anticipated, not including inclement weather or holidays. Calculating the amount of time required to remove 275,000 cubic yards of material on a weekday (M-F) schedule, the operation will take approximately 9 months (183 actual work days). Current Hamden Zoning Regulations limit the excavation of material from a site to the hours of 8 am to 5 pm Monday through Friday, with no work occurring on legal holidays. The Hamden PZC should require that the trucks are adequately covered when leaving the site. The dust and runoff from the excavated material (shale and sandstone) will be very hard to control.

RECREATION PLANNING

Mayor Carusone of Hamden has appointed an advisory committee to oversee a Town effort to create a rail-to-trail linear park along the abandoned railroad bed which runs parallel to the historic Farmington canal. Consultants have been retained to design and work with property owners to negotiate easements over the old rail line. There are 4 recent land developments in Hamden which have put the linear greenway project in possible jeopardy, including Westwoods Center. The consultants have reviewed 4 different site plan proposals with the applicant. Apparently all of the site plans call for splitting the cyclists and pedestrians which is unacceptable to the consultants. The applicant has offered to provide some sort of easement across the site. The advisory committee and consultants main focus has been on retaining the continuity of the greenway for bicyclists and hikers across the properties. The required parking calculations and traffic circulation patterns make it difficult for developers to propose safe easements for cyclists and pedestrians to maneuver effectively. The final site plan should ideally provide a delineated path for both pedestrians and cyclists to utilize across the site and not split the pedestrians

and cyclists, allowing the pedestrians to circulate along the perimeter and the cyclists to maneuver as best they can amongst vehicles and carts.

A linear greenway is not a new idea. The Connecticut Statewide Comprehensive Outdoor Recreation Plan 1987-92 (SCORP) states that the DEP has advocated a network of hiking/biking trails to connect Connecticut's urban centers for decades. The President's Commission on American Outdoors (PCAO) in 1986 found that the average citizen travels 12 miles to participate in outdoor recreation. The DEP's most recent study in 1982 found that the average distance traveled to State recreational areas is approximately 15 miles. The PCAO was appointed by President Reagan in 1985 and is considered the major proponent of trail and corridor planning. In hearings across the country, the PCAO heard from citizens who wanted recreation facilities closer to home. Recreational corridors that citizens could enter and use whenever convenient could satisfy this request.

Current issues of National Geographic and the American Planning Association Journal describe the growing citizen-led movement of establishing successful greenways along abandoned linear corridors. The word greenway is a combination of the terms greenbelt and parkway. Urbanization has reduced open land and made it too expensive to set aside for parks. However "abandoned" corridors such as rivers, streams, old canal lines and railroad beds lend themselves beautifully to linear greenways. A 4-year-old national organization called Rails to Trails Conservancy is urging that abandoned rail lines be converted to recreation corridors wherever possible. They estimate that 3,000 miles of rail lines go out of service every year in the United States. A total of 150,000 miles of rail lines have been abandoned and so far 3,100 miles in 35 states have become trails. Greenways serve a number of purposes. They connect parklands and open space, link urban and suburban populations, improve recreation, aid wildlife migration and protect scenic regions. Both adjacent municipalities (New Haven & Cheshire) are very interested in creating

a linear greenway linking the communities. The Town of Cheshire in conjunction with the DEP has been actively pursuing the purchase of property and easements along the abandoned rail lines for a greenway. Cheshire presently maintains a lock along a portion of the old Farmington canal as a Town park area.

NOISE CONSIDERATIONS

Section 22a-69-1.8 (g) of the Connecticut Regulations for the Control of Noise (Appendix D) exempts construction noise. This exemption applies to noise from blasting associated with construction activity. Section 22a-69-1.8 (h) deals with blasting not associated with construction work. This section exempts non-construction blasting noise, provided the blasting is conducted between 8:00 am and 5:00 pm at specified hours previously announced to the public or provided a permit for such blasting has been obtained from local authorities.

Impulsive noise levels from construction sites are usually not at high enough levels at off-site locations to cause hearing damage. Primarily, the noise startles people. As stated in the U.S. Environmental Protection Agency's report Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare, "Impulsive noises which are novel, unheralded, or unexpectedly loud can startle people and animals. Even very mild impulsive noises can awaken sleepers."

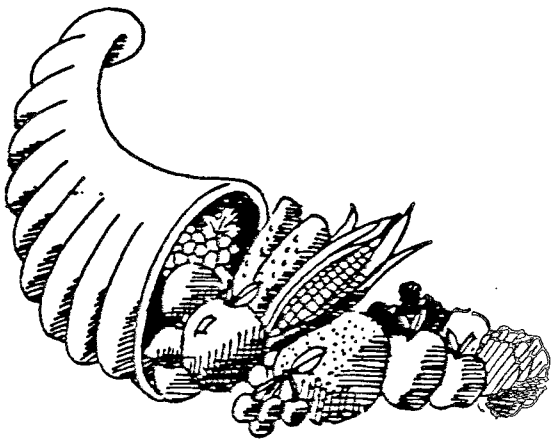
If the off-site blasting noise associated with the proposed development is a concern, blasting should be restricted to the hours between 8:00 am and 5:00 pm at times previously announced to the neighboring residents as stated in section 22a-69-1.8 (h).

After construction, the facilities located on the site must comply with the operational property line noise standards contained in the regulations. Specifically, the applicable standards for a commercial emitter to a residential receptor are:

45 dBA (10:00 pm to 7:00 am)

55 dBA (7:00 am to 10:00 pm).

APPENDICIES



Appendix A: Soil Limitations Chart

MAP UNIT NAME	GENERAL SOIL PROPERTIES	DRAINAGE CLASS AND DEPTH TO SEASONAL HIGH WATER TABLE	MAJOR LIMITATIONS FOR USE AS: ROADFILL	SAND	GRAVEL	TOPSOIL
CyC - Cheshire-Holyoke complex, 15-35% slopes	Cheshire are very deep soils formed in glacial till derived mainly from red sandstone, shale and conglomerate	Well-drained >6.0 feet	Fair - slope	Improbable - excess fines	Improbable - excess fines	Poor - slope
	Holyoke are shallow well-drained soils formed in a thin mantle of glacial till derived mainly from red sandstone, shale, conglomerate and basalt	Well-drained >6.0 feet	Poor - thin layer, slope	Improbable - excess fines, thin layer	Improbable - excess fines, thin layer	Poor - thin layer
En - Ellington silt loam	Ellington are very deep soils formed in loamy over sandy and gravelly outwash materials	Moderately well-drained 1.5-2.5 feet Nov.-Apr.	Fair - wetness	Probable	Probable	Poor - small stones
HZE - Holyoke-rock outcrop complex	Holyoke are shallow well-drained soils formed in a thin mantle of glacial till derived mainly from red sandstone, shale, conglomerate and basalt	Well-drained >6.0 feet	Poor - thin layer, slope	Improbable - excess fines, thin layer	Improbable - excess fines, thin layer	Poor - thin layer
Ur - Urban land	No rating					

Appendix B: Correspondence

United States Department of Agriculture

Soil Conservation Service

322 North Main Street
Wallingford, CT 06492
January 31, 1990

Ms. Shirley Gonzales
Town Planner
Town Hall
2372 Whitney Avenue
Hamden, CT 06518

RE: Westwoods Center Proposal

Dear Ms. Gonzales:

I have reviewed plans for the above development and met with Mr. Hoyt, the applicant, and his engineers on January 18, 1990. The proposal involves intensive site modifications which should be carefully reviewed by the town. The development is situated near the "head" of Sleeping Giant and may be visible from locations in the park. The development would also eliminate a section of railroad right of way which may be under consideration for a regional bike trail. Attached is an erosion and sediment control plan worksheet which is part of this review. In addition to notations on the worksheet I have the following comments:

1. A major portion of a hill which rises roughly 110 feet above the elevation of Route 10 is to be removed under this proposal. There is a need for information on the amount of material, both rock and overburden, to be removed. There will be some filling along Route 10 which would result in approximately 8 feet of fill along the thoroughfare. The amount and kind of fill is not specified and such information is important to evaluate the proposal. For example, if the fill is to be mostly blasted rock, the fill slopes will be difficult to stabilize with vegetation and planned grades will be more difficult to achieve. Information on the proposed length of time for the mining operation, the expected truck traffic and routes, and the areas where this material is to be deposited should also be provided.

2. Test pit data showing the depth to overburden would be helpful along with some cross sections of the proposed excavation.

3. More details on the proposed clearing, grubbing and rough grading operations are needed. For example, is the entire hillside to be cleared at once? If so, the proposed single row of silt fence will not be adequate to contain eroded materials. If the entire site is denuded of vegetation and graded to remove overburden and the mining operation continues for an extended length of time, there will be an ongoing erosion problem.

4. Maintenance details are needed for the detention galleries. The maintenance program should also include cleaning of rock rubble from the swale at the base of the cut slope. Sediment measures should be evaluated for their ability to settle rock dust, a product of blasting operations which may take more time to settle out than

typical soil materials. Blasting can also open cracks in the bedrock which may make the area more susceptable to groundwater contamination from the subsurface galleries. There is a stratified drift aquifer identified along the eastern side of Route 10.

5. It should be noted that detention is planned only for the 10 year storm event.

6. A detail is needed for the stormwater outlet east of Route 10.

7. A typical cross section is needed for the swale located at the top of the cut slope. The outlet area for this swale may require some stabilization to prevent erosion in this area.

8. In the "Installation of Sediment and Erosion Controls" note 1a the trench should be 6 inches instead of 6 feet.

9. Overall, the sequence of construction and installation of sediment and erosion control measures is better than average and some time was invested by the preparer to address the specific conditions of the proposal.

If you have any questions please call me at 269-7509.

Sincerely,

Patricia S. Leavenworth

Patricia S. Leavenworth
District Conservationist
Assisting the New Haven County Soil and Water Conservation District

Copy to: E.L. Hoyt, 3552 Whitney Ave., Hamden
Charles E. Teale, Heynen Engineers, Manchester, NH
Stanley Novak, Barakos-Landino, Inc., 215 Sherman Ave., Hamden

FEB. 6, 1990

EROSION AND SEDIMENT CONTROL PLAN WORKSHEET
#2, DUE TO LOSS OF #1

This is a guide for the development and review of erosion and sediment control plans. Local commissions should be consulted for regulatory requirements concerning erosion and sediment planning.

Checked (✓) items are those that have been provided on the current erosion and sediment control plan. Items identified with a star (*) should be incorporated into final plans.

Name of development WESTWOODS CENTER, HAMDEN
Materials received FOUR SHEETS OF PLANS DATED 11/15/89, LATEST REVISION 12/13/89

Total Area 7.91 Location ROUTE 10 AND WESTWOODS RD.
Engineer BARAKOS-LANDINO
Date Received JAN 18 1990 Site Visit 12-89 Reviewed by PEL
Submitted by TOWN PLANNER, HAMDEN

NARRATIVE SECTION DESCRIBING:

- ✓ The development
- ✓ Major land uses of adjoining areas
- ✓ The number of total acres and acres to be disturbed in the project
- ✓* The schedule of grading and construction activities including:
  -Start and completion dates. SEE LETTER
- ✓* Application sequence of all E & S control measures SEE LETTER
- * The design criteria for all proposed E&S control measures SEE LETTER
- * Construction details and installation procedures for all proposed E&S control measures SWALE, STORMWATER OUTLET
- * The operations and maintenance program for all proposed E&S control measures
- ✓ The name of the person or organization that will be responsible for the installation and maintenance of the E&S control measures
- * Organization or person responsible for maintenance of permanent measures when project is completed. Measures include: STORMWATER OUTLET, SWALES, DETENTION GALLERIES

A SITE PLAN AT A SUFFICIENT SCALE SHOWING:

Natural Features

- ✓ Existing topography
- ✓ Existing vegetation
- ✓* Soils information, including test pit data if available
- ✓ Identification of wetlands, watercourses, major drainageways and water bodies on the site
- ✓* Name of soil scientist who performed wetlands delineations and flag numbers
- * Rock outcrop areas
- — Seeps, springs
- * Major aquifers
- — Floodplains (100 yr.) and floodways
- — Channel encroachment line (DEP permit required)
- — Coastal zone boundary
- * Public water supply watershed boundaries
- — Possible Army Corps Sec. 404 or Sec. 10 Permit Areas (Contact Corps @ 1-800-343-4789).

Project Features

- ✓ The location of the proposed development
- ✓ A plan legend
- ✓ Adjacent properties
- ✓ Property lines
- ✓ Lot lines and setback lines
- ✓ Lot and/or building numbers
- ✓ Planned and existing roads
- ✓ Proposed structures
- ✓ Location of existing and planned utilities
- = Location of wells and septic systems
- ✓ Proposed topography
- ✓ North arrow

Clearing, Grading, Vegetative Stabilization

- ✓ * The sequence of grading, construction, and sediment and erosion control activities NEED MORE DETAIL FOR MINING OPERATION
- * The location of and construction details for all proposed E&S control measures

Recommended measures include SWALE, STORMWATER OUTLET

- ✓ Limits of disturbed areas
- ✓ Extent of areas to be graded
- * Disposal procedure for cleared material
- * Location of stockpiled topsoil and subsoil
- ✓ Temporary erosion protection for stockpiles
- * Areas to be vegetatively stabilized
- ✓ Temporary erosion control in disturbed areas
- * Method for protection of disturbed areas when time of year or weather prohibit establishment of permanent vegetative cover
- * Seedbed preparation (including topsoiling specifications)
- ✓ Seeding mixture, rates, and seeding dates
- * Fertilizer and lime application rates
- * Mulch application rate
- * Mulch anchoring measures

Drainage System

- ✓ Existing and planned drainage pattern
- * Drainage areas used in design of stormwater management system
- ✓ Size and location of culverts and storm sewers
- ✓ Drainage calculations for review by town engineer
- ✓ Stormwater management measures and construction details
- ✓ Groundwater control measures (footing drains, curtain drains)
- = Planned water diversions and dams (DEP permit may be required)

House Site Development

- = Sediment and erosion control measures for individual lot development

Additional Comments

SEE LETTER TO SHIRLEY GONZALES DATED JAN. 31, 1990

Barakos-Landino, Inc.

Engineers / Planners / Surveyors

February 14, 1990

Ms. Shirley Gonzales
Town Planner
Hamden Town Hall
2372 Whitney Avenue
Hamden, CT 06518

Re: Westwoods Center
Whitney Avenue

Dear Ms. Gonzales:

In response to a letter dated January 31, 1990 from Patricia S. Leavenworth of the New Haven County Soil and Water Conservation District to you we offer the following responses:

1) Approximately 275,000 cubic yards of material is to be excavated as part of this proposal with about 8 percent of the material as overburden, primarily glacial till and the remaining 92 percent as bedrock consisting of New Haven Arkose.

Proposal along Route 10 is the filling of part of the site utilizing a mixture of glacial till and excavated rock. This mixture will be placed in one to two foot lifts and compacted to eliminate large voids. No plate like rock pieces are to be placed within the fill in order to minimize voids. Largest rock diameter will be approximately 18 inches in its greatest dimension. Along Whitney Avenue the fill slope will be approximately seven feet above the present ground surface elevation with the toe of the slope supported by a 3 foot retaining wall. The remaining nine feet of exposed slope surface (four feet vertical at 2:1 slope) will be topsoil and if necessary overlaid with jute mesh to promote planted vegetation growth.

Runoff from parking areas above will be contained by curb on site so not to overrun the slope.

The length of time for the rock excavation will be approximately 210 working days depending on the number of equipment pieces utilized to perform the excavation and haul process along with the length of the haul.

215 Sherman Avenue • Hamden, CT 06518 • (203) 248-2960 • FAX (203) 248-9507

At this time an offsite location for depostion of excavated material has not been determined with the exception of a small site on Todd Street under construction, just north of the Westwoods Center site, which could accept 18,000 cubic yards of material.

Presently that site contains a former gravel pit which was excavated below surrounding grades and would be refilled with waste rock.

The remaining material will likely be removed from the site via Whitney Avenue.

2) Test pit data with depth of overburden information along with cross sections are contained in the Geotechnical Engineering Feasibility Study for Westwoods Center, a copy of which will be forwarded to you under seperate cover.

3) The proposed clearing and grubbing of the hillside is to be conducted over time as excavation proceeds into the hillside, not at one time.

However a second line of silt fence has been added to the Erosion and Sediment Control Plan as an added measure. Runoff from the excavation area will be directed to shallow swales then directed toward rirapped areas and protected with hay bales above the large stone culvert on site during construction. These rirapped areas will be cleaned on a regular basis and haybales replaced on a regular basis.

4) Detention galleries will contain clean out manholes for removal of accumulated debris from the galleries. Oil and sediment tanks will abut the galleries prior to or after the galleries and will also trap debris and floating matter such as grease and oil. The oil sediment tanks will also have clean out manholes.

Inspection of galleries and sediment tanks will occur quarterly with cleaning of debris performed twice a year or sooner if the need arises.

Oils will be removed by a licensed waste hauler while sediments will be handled seperately and removed from the site.

Rock rubble will be removed from the swale at the base of the rock cut twice a year or sooner if the need arises.

During construction, airborne dust and particulate matter which could become airborne will be contained by periodic (daily) watering of the site with a water truck. The installation of the galleries and the complete drainage system will occur after rock excavation operations are substantially complete and slopes stabilized. After drainage installation and prior to paving, catch basins will be protected by haybales for initial collection of sediment on site.

Of the three detention gallery areas only G.1 is situtated in an area where significant excavation is proposed (approximately 17 feet). However G.1 is located in an area of deeper overburden where rock excavation will be less and may be ripped instead of blasted. If bedrock seams are apparent these can be grouted to prevent migration of gallery water into the aquifer.

Gallery systems G.2 and G.3 are situated in ares where no blasting is anticipated as G.2 will be installed in soil and G.3 in a fill area.

Also gallery system G.1 has an oil sediment seperator tank preceeding the gallery which would minimize the chances for contamination from galleries.

5) Comment noted.

6) A detail for the storm water outlet on the east side of Route 10 has been added to the detail sheet.

7) A cross section for the swales at the top of the cut slope has been added to the plan. Riprap at the end of these swales has been added for the minimal amount of flow in these swales as these swales occur at the top of the rock cut close to the drainage divide for the watershed(s).

8) Note 1a has been revised to indicate a 6 inch trench.

9) No response.

Regarding the Erosion and Sediment Control plan Worksheet accompanying the above referenced letter, we offer the following comments on items which were not covered in the above letter or included on plans:

a) The party responsible for maintenance of permanent measures after project completion including stormwater outlet swales and detention galleries is Axelshop Associates.

b) Test pit data is contained within the Geotechnical Engineering Report.

c) Wetlands deliniations were performed by Soil Science and Environmental Services, Kenneth Stevens Soil Scientist, Dean Gustafson Soils Scientist and Field Investigator.

d) Approximate rock outcrop areas have been added to the Erosion and Sedimentation Control Plan.

e) Aquifer lines have been added to the Erosion and Sediment Control Plan.

f) Public water supply watershed boundaries are situated beyond the project limits.

g) A stockpile area for topsoil, subsoil, and rock has been added to the Erosion and Sedimentation Control Plan.

h) Areas to be vegetatively stabilized are indicated on the landscaping plan and include disturbed areas with the exception of the excavated rock face.

i) If disturbed areas exist when time of year prohibits establishment of permanent vegetative cover, annual rye at 40 lbs/acre will be installed.

It is anticipated rock faces will not be stablized as the areas will not be subjected to significant erosion.

j) Topsoil will be spread, shaped, and raked to remove stones, roots, foreign material, and debris to the finished grade. Depth of topsoil will be 4 inches, after settlement. Topsoil will contain 3 to 20 percent organic matter and consist of Sandy Loam or Silt Loam.

k) Hay mulch will be applied at 70-90 pounds per 1000 square feet of disturbed area and anchored with mulch netting (jute wood fiber or plastic nettings stapled to soil surface per manufacturers recommendations) in disturbed areas to receive seeding.

l) Sheet SP.5 indicates drainage areas used in the design of the storm water system for predevelopment and post development areas.

Hopefully the above comments, along with plans, details, and referenced reports prepared for the Westwoods Center Project provide the necessary data to adequately answer any outstanding concerns.

Please contact me if you need any additional information or have further questions. Thank you for your attention in this matter.

Very Truly Yours,

Barakos-Landino, Inc.

Stanley C. Novak P.E.

C: W. Hoyt
C. Porto
J. Matthews
P. Leavenworth
R. Benedict
Regional Water Authority

United States Department of Agriculture

Soil Conservation Service

322 North Main Street
Wallingford, CT 06492
March 10, 1990

Ms. Shirley Gonzales, Town Planner
Town Hall
2372 Whitney Avenue
Hamden, CT 06518

RE: Westwoods Center Proposal

Dear Ms. Gonzales:

I have reviewed the February 14, 1990 responses by Mr. Stanley C. Novak of Barakos-Landino, Inc. to my January 31, 1990 review comments on the above proposal. Mr. Novak has addressed most of my concerns in this report, however, there were a few questions which I presented to him via phone conversation:

1. Specify whether or not the 210 working days needed for excavation are consecutive days.

2. Provide the name of the person responsible for ongoing inspection of galleries and sediment tanks.

While I received a copy of the response letter, I did not receive a copy of the revised plans. The letter alone is detailed enough to describe plan changes, however, if you feel that it is necessary for me to inspect the plans in addition to the comments, please forward a copy.

Sincerely,

Patricia S. Leavenworth

Patricia S. Leavenworth
District Conservationist
Assisting the New Haven County Soil and Water Conservation District

Copy to: Stanley C. Novak, P.E., Barakos-Landino, Inc,
215 Sherman Ave, Hamden, CT 06518

Appendix C: Suitable Planting Materials for Wildlife Food and Cover

SUITABLE PLANTING MATERIALS FOR WILDLIFE FOOD AND COVER

Herbaceous/Vines	Shrubs	Small Trees
Panicgrass	Sumac	Hawthorn
Timothy	Dogwood	Cherry
Trumpet creeper	Elderberry	Serviceberry
Grape	Winterberry	Cedar
Birdsfoot trefoil	Autumn olive	Crabapple
Virginia creeper	Blackberry	
Switchgrass	Raspberry	
Lespedeza	Honeysuckle	
Bittersweet	Cranberrybush	
Boston ivy		

Appendix D: Title 22a: Control of Noise

REGULATIONS OF

CONNECTICUT STATE AGENCIES

TITLE 22a

ENVIRONMENTAL PROTECTION

SECTION 22a-69-1 TO 22a-69-7.4

CONTROL OF NOISE

TABLE OF CONTENTS

Control of Noise

Control of Noise

Sec. 22a-69-1. Definitions

Sec. 22a-69-1.1. General

(a) **adaptive reuse** means remodeling and conversion of an obsolete or unused building or other structure for alternate uses. For example, older industrial buildings, warehouses, offices, hotels, garages, etc., could be improved and converted for reuse in terms of industrial processes, commercial activities, educational purposes, residential use as apartments, or other purposes.

(b) **aircraft** means any engine-powered device that is used or intended to be used for flight in the air and capable of carrying humans. Aircraft shall include civil, military, general aviation and VTOL/STOL aircraft.

(i) **aircraft, STOL** means any aircraft designed for, and capable of, short take-off and landing operations.

(ii) **aircraft, VTOL** means any aircraft designed for, and capable of, vertical take-off and landing operations such as, but not limited to, helicopters.

(c) **airport** means an area of land or water that is used, or intended to be used, for the landing and takeoff of aircraft and is licensed by the State of Connecticut Bureau of Aeronautics for such use. "Airport" shall include all buildings and facilities if any. "Airport" shall include any facility used, or intended for use, as a landing and take-off area for VTOL/STOL aircraft, including, but not limited to, heliports.

(d) **ANSI** means the American National Standards Institute or its successor body.

(e) **best practical noise control measures** means noise control devices, technology and procedures which are determined by the Commissioner to be the best practical, taking into consideration the age of the equipment and facilities involved, the process employed, capital expenditures, maintenance cost, technical feasibility, and the engineering aspects of the applicable noise control techniques in relation to the control achieved and the non-noise control environmental impact.

(f) **commissioner** means the Commissioner of the Department of Environmental Protection or his/her designated representative.

(g) **construction** means any, and all, physical activity at a site necessary or incidental to the erection, placement, demolition, assembling, altering, blasting, cleaning, repairing, installing, or equipping of buildings or other structures, public or private highways, roads, premises, parks, utility lines, or other property, and shall include, but not be limited to, land clearing, grading, excavating, filling and paving.

(h) **daytime** means 7:00 a.m. to 10:00 p.m. local time.

(i) **director** means the Director of the Office of Noise Control in the Department of Environmental Protection.

(j) **emergency** means any occurrence involving actual or imminent danger to persons or damage to property which demands immediate action.

(k) **intrusion alarm** means a device with an audible signal which, when activated, indicates intrusion by an unauthorized person. Such alarm may be attached to, or within, any building, structure, property or vehicle.

(l) **ISO** means the International Organization for Standardization, or its successor body.

(m) **lawn care and maintenance equipment** means all engine or motor-powered garden or maintenance tools intended for repetitive use in residential areas, typically capable of being used by a homeowner, and including, but not limited to, lawn mowers, riding tractors, snowblowers, and including equipment intended for infrequent service work in inhabited areas, typically requiring skilled operators, including, but not limited to, chain saws, log chippers or paving rollers.

(n) **nighttime** means 10:00 p.m. to 7:00 a.m. local time.

(o) **noise zone** means an individual unit of land or a group of contiguous parcels under the same ownership as indicated by public land records and, as relates to noise emitters, includes contiguous publicly dedicated street and highway rights-of-way, railroad rights-of-way and waters of the State.

(p) **office of noise control** means the office within the Department of Environmental Protection designated by the Commissioner to develop, administer and enforce the provisions of Chapter 442 of the Connecticut General Statutes.

(q) **OSHA** means the Occupational Safety and Health Act and any amendments thereto or successor regulations administered by the U.S. and Connecticut Departments of Labor, or successor bodies.

(r) **person** means any individual, firm, partnership, association, syndicate, company, trust, corporation, municipality, agency, or political or administrative subdivision of the State or other legal entity of any kind.

(s) **public emergency sound signal** means an audible electronic or mechanical siren or signal device attached to an authorized emergency vehicle or within or attached to a building for the purpose of sounding an alarm relating to fire or civil preparedness. Such signal may also be attached to a pole or other structure.

(t) **SAE** means the Society of Automotive Engineers, Inc., or its successor body.

(u) **safety and protective devices** means devices that are designed to be used, and are actually used, for the prevention of the exposure of any person or property to imminent danger, including, but not limited to, unregulated safety relief valves, circuit breakers, protective

fuses, back-up alarms required by OSHA or other state or federal safety regulations, horns, whistles or other warning devices associated with pressure buildup.

(v) site means the area bounded by the property line on or in which a source of noise exists.

(Effective June 15, 1978)

Sec. 22a-69-1.2. Acoustic terminology and definitions

(a) All acoustical terminology used in these Regulations shall be in conformance with the American National Standards Institute (ANSI), "Acoustical Terminology," contained in publication S1.1 as now exists and as may be hereafter modified. The definitions below shall apply if the particular term is not defined in the aforesaid ANSI publication.

(b) audible range of frequency means the frequency range 20 Hz to 20,000 Hz which is generally considered to be the normal range of human hearing.

(c) background noise means noise which exists at a point as a result of the combination of many distant sources, individually indistinguishable. In statistical terms, it is the level which is exceeded 90% of the time (L_{90}) in which the measurement is taken.

(d) continuous noise means ongoing noise, the intensity of which remains at a measurable level (which may vary) without interruption over an indefinite period or a specified period of time.

(e) decibel (dB) means a unit of measurement of the sound level.

(f) excessive noise means emitter Noise Zone levels from stationary noise sources exceeding the Standards set forth in Section 3 of these Regulations beyond the boundary of adjacent Noise Zones.

(g) existing noise source means any noise source(s) within a given Noise Zone, the construction of which commenced prior to the effective date of these Regulations.

(h) fluctuating noise means a continuous noise whose level varies with time by more than 5 dB.

(i) frequency means the number of vibrations or alterations of sound pressure per second and is expressed in Hertz.

(j) hertz (Hz) means a unit of measurement of frequency formerly stated as, and numerically equal to, cycles per second.

(k) impulse noise means noise of short duration (generally less than one second), especially of high intensity, abrupt onset and rapid decay, and often rapidly changing spectral composition.

(l) infrasonic sound means sound pressure variations having frequencies below the audible range for humans, generally below 20 Hz; subaudible.

(m) L_{10} means the A-weighted sound level exceeded 10% of the time period during which measurement was made.

(n) L_{50} means the A-weighted sound level exceeded 50% of the time period during which measurement was made.

(o) L_{90} means the A-weighted sound level exceeded 90% of the time period during which measurement was made.

(p) **octave band sound pressure level** means the sound pressure level for the sound contained within the specified preferred octave band, stated in dB, as described in ANSI S1.6-1967: Preferred Frequencies and Band Numbers for Acoustical Measurements.

(q) **peak sound pressure level** means the absolute maximum value of the instantaneous sound pressure level occurring in a specified period of time.

(r) **prominent discrete tone** means the presence of acoustic energy concentrated in a narrow frequency range, including, but not limited to, an audible tone, which produces a one-third octave sound pressure level greater than that of either adjacent one-third octave and which exceeds the arithmetic average of the two adjacent one-third octave band levels by an amount greater than shown below opposite the center of frequency for the one-third octave band containing the concentration of acoustical energy.

1/3 Octave Band Center Frequency (Hz)	*dB*
100	16
125	14
160	12
200	11
250	9
315	8
400	7
500	6
630	6
800	5
1000	4
1250	4
1600	4
2000	3
2500	3
3150	3
4000	3
5000	4
6300	4
8000	5
10000	6

(s) **reference pressure** is 0.00002 Newtons per square meter (N/M^2), or 20 microPascals, for the purposes of these Regulations.

(t) **sound** means a transmission of energy through solid, liquid, or gaseous media in the form of vibrations which constitute alterations in pressure or position of

the particles in the medium and which, in air, evoke physiological sensations, including, but not limited to, an auditory response when impinging on the ear.

(u) **sound analyzer** means a device, generally used in conjunction with a sound level meter, for measuring the sound pressure level of a noise as a function of frequency in octave bands, one-third octave bands or other standard ranges. The sound analyzer shall conform to Type E, Class II, as specified in ANSI S1.11-1971 or latest revision.

(v) **sound level** means a frequency weighted sound pressure level. obtained by the use of metering characteristics and the weighting A, B, or C as specified in ANSI, "Specifications for Sound Level Meters," S1.4-1971 or latest revision. The unit of measurement is the decibel. The weighting employed must always be stated as dBA, dBB, or dBC.

(w) **sound level meter** means an instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement of sound levels. The sound level meter shall conform to ANSI Specifications for Sound Level Meters S1.4-1971.

(x) **sound pressure level (SPL)** means twenty times the logarithm to the base ten of the ratio of the sound pressure in question to the standard reference pressure of 0.00002 N/M^2. It is expressed in decible units.

(y) **ultrasonic sound** means sound pressure variations having frequencies above the audible sound spectrum for humans, generally higher than 20,000 Hz; superaudible.

(z) **vibration** means an ascillatory motion of solid bodies of deterministic or random nature described by displacement, velocity, or acceleration with respect to a given reference point.

(Effective June 15, 1978)

Sec. 22a-69-1.3. Coordination with other laws

(a) Nothing in these Regulations shall authorize the construction or operation of a stationary noise source in violation of the requirements of any other applicable State law or regulation.

(b) Nothing in these Regulations shall authorize the sale, use or operation of a noise source in violation of the laws and regulations of the Connecticut Department of Motor Vehicles, the Federal Aviation Administration, the U.S. Environmental Protection Agency, or any amendments thereto.

(Effective June 15, 1978)

Sec. 22a-69-1.4. Incorporation by reference

(a) The specifications, standards and codes of agencies of the U.S. Government and organizations which are not agencies of the U.S. Government, to the extent that they are legally incorporated by reference in these Regulations, have the same force and effect as other standards in these Regulations.

(b) These specifications, standards and codes may be examined at the Office of Noise Control, Department of Environmental Protection, State of Connecticut.

(c) Any changes in the specifications, standards and codes incorporated in these Regulations are available at the Office listed in (b) above. All questions as to the applicability of such changes should also be referred to this Office.

(Effective June 15, 1978)

Sec. 22a-69-1.5. Compliance with regulations no defense to nuisance claim

Nothing in any portion of these Regulations shall in any manner be construed as authorizing or legalizing the creation or maintenance of a nuisance, and compliance of a source with these Regulations is not a bar to a claim of nuisance by any person. A violation of any portion of these Regulations shall not be deemed to create a nuisance per se.

(Effective June 15, 1978)

Sec. 22a-69-1.6. Severability

If any provision of these Regulations or the application thereof to any person or circumstances is held to be invalid, such invalidity shall not affect other provisions or applications of any other part of these Regulations which can be given effect without the invalid provisions or application; and to this end, the provisions of these Regulations and the various applications thereof are declared to be severable.

(Effective June 15, 1978)

Sec. 22a-69-1.7. Exclusions

These Regulations shall not apply to:

(a) Sound generated by natural phenomena, including, but not limited to, wind, storms, insects, amphibious creatures, birds, and water flowing in its natural course.

(b) The unamplified sounding of the human voice.

(c) The unamplified sound made by any wild or domestic animal.

(d) Sound created by bells, carillons, or chimes associated with specific religious observances.

(e) Sound created by a public emergency sound signal attached to an authorized emergency vehicle in the immediate act of responding to an emergency, as authorized by subsection (d) of Section 14.80 and Section 14-1a of Chapter 246 of the General Statutes and all amendments thereto, or located within or attached to a building, pole or other structure for the purpose of sounding an alarm relating to fire or civil preparedness.

(f) Sound created by safety and protective devices.

(g) Farming equipment or farming activity.

(h) Back-up alarms required by OSHA or other State or Federal safety regulations.

(i) Sound created by any mobile source of noise. Mobile sources of noise shall include, but are not limited to, such sources as aircraft, automobiles, trucks, and boats. This exclusion shall cease to apply when a mobile source of noise has maneuvered into position at the loading dock, or similar facility, has turned off its engine and ancillary equipment, and has begun the physical process of removing the contents of the vehicle.
(Effective June 15, 1978)

Sec. 22a-69-1.8. Exemptions

Exempted from these Regulations are:

(a) Conditions caused by natural phenomena, strike, riot, catastrophe, or other condition over which the apparent violator has no control.

(b) Noise generated by engine-powered or motor-driven lawn care or maintenance equipment shall be exempted between the hours of 7:00 a.m. and 9:00 p.m. provided that noise discharged from exhausts is adequately muffled to prevent loud and/or explosive noises therefrom.

(c) Noises created by snow removal equipment at any time shall be exempted provided that such equipment shall be maintained in good repair so as to minimize noise, and noise discharged from exhausts shall be adequately muffled to prevent loud and/or explosive noises therefrom.

(d) Noise that originates at airports that is directly caused by aircraft flight operations specifically preempted by the Federal Aviation Administration.

(e) Noise created by the use of property for purposes of conducting speed or endurance events involving motor vehicles shall be exempted but such exemption is effective only during the specific period(s) of time within which such use is authorized by the political subdivision or governmental entity having lawful jurisdiction to sanction such use.

(f) Noise created as a result of, or relating to, an emergency.

(g) Construction noise.

(h) Noise created by blasting other than that conducted in connection with construction activities shall be exempted provided that the blasting is conducted between 8:00 a.m. and 5:00 p.m. local time at specified hours previously announced to the local public, or provided that a permit for such blasting has been obtained from local authorities.

(i) Noise created by on-site recreational or sporting activity which is sanctioned by the state or local government provided that noise discharged from exhausts is adequately muffled to prevent loud and/or explosive noises therefrom.

(j) Patriotic or public celebrations not extending longer than one calendar day.

(k) Noise created by aircraft, or aircraft propulsion components designed for or utilized in the development of aircraft, under test conditions.

(l) Noise created by products undergoing test, where one of the primary purposes of the test is evaluation of product noise characteristics and where practical noise control measures have been taken.

(m) Noise generated by transmission facilities, distribution facilities and substations of public utilities providing electrical powers, telephone, cable television or other similar services and located on property which is not owned by the public utility and which may or may not be within utility easements.

(Effective June 15, 1978)

Sec. 22a-69-1.9. Burden of persuasion regarding exclusions and exemptions

In any proceeding pursuant to these Regulations, the burden of persuasion shall rest with the party attempting to enforce the Regulations. Notwithstanding the foregoing, if an exclusion or exemption stated in these Regulations would limit an obligation, limit a liability, or eliminate either an obligation or a liability, the person who would benefit from the application of the exclusion or exemption shall have the burden of persuasion that the exclusion or exemption applies and that the terms of the exclusion or exemption have been met. The Department shall cooperate with and assist persons in determining the application of the provisions of these Regulations.

(Effective June 15, 1978)

Sec. 22a-69-2. Classification of land according to use

Sec. 22a-69-2.1. Basis

Noisy Zone classifications shall be based on the actual use of any parcel or tract under single ownership as detailed by the Standard Land Use Classification Manual of Connecticut (SLUCONN).

(Effective June 15, 1978)

Sec. 22a-69-2.2. Multiple uses

Where multiple uses exist within a given Noise Zone, the least restrictive land use category for the Emitter and Receptor shall apply regarding the noise standards specified in Section 3 of these Regulations.

(Effective June 15, 1978)

Sec. 22a-69-2.3. Class A noise zone

Lands designated Class A shall generally be residential areas where human beings sleep or areas where serenity and tranquility are essential to the intended use of the land.

Class A Land Use Category. The land uses in this category shall include, but not be limited to, single and multiple family homes, hotels, prisons, hospitals, religious facilities, cultural activities, forest preserves, and land intended for residential or special uses requiring such protection.

The specific SLUCONN categories in Class A shall include:

1. Residential
11 Household Units*
12 Group Quarters
13 Mobile Home Parks and Courts
19 Other Residential
5. Trade
583 Residential Hotels
584 Hotels, Tourist Courts and Motels
585 Transient Lodgings
6. Services
651 Medical and Other Health Services; Hospitals
674 Correctional Institutions
691 Religious Activities
7. Cultural, Entertainment and Recreational
711 Cultural Activities
712 Nature Exhibitions
713 Historic and Monument Sites

*Mobile homes are included if on foundations

9. Undeveloped, Unused and Reserved Lands and Water Areas
92 Reserved Lands
941 Vacant Floor Area—Residential

(Effective June 15, 1978)

Sec. 22a-69-2.4. Class B noise zone

Lands designated Class B shall generally be commercial in nature, areas where human beings converse and such conversation is essential to the intended use of the land.

Class B Land Use Category. The land uses in this category shall include, but not be limited to, retail trade, personal, business and legal services, educational institutions, government services, amusements, agricultural activities, and lands intended for such commercial or institutional uses.

The specific SLUCONN categories in Class B shall include:

4. Transportation, Communication and Utilities
46 Automobile Parking
47 Communication
5. Trade
51 Wholesale Trade
52 Retail Trade – Building Materials
53 Retail Trade – General Merchandise
54 Retail Trade – Food

55 Retail Trade – Automotive Dealers and Gasoline Service Stations
56 Retail Trade – Apparel and Accessories
57 Retail Trade – Furniture, Home Furnishings and Equipment
58 Retail Trade – Eating, Drinking and Lodging—Except 583, 584, and 585
59 Retail Trade – N.E.C.*
6. Services
61 Finance, Insurance and Real Estate Services
62 Personal Services
63 Business Services—Except 637
64 Repair Services
65 Professional Services—Except 651
67 Government Services—Except 672, 674, and 675
68 Educational Services
69 Miscellaneous Services—Except 691
7. Cultural, Entertainment and Recreational
71 Cultural Activities and Nature Exhibitions—Except 711, 712, and 713
72 Public Assembly
73 Amusements
74 Recreational Activities
75 Resorts and Group Camps
76 Parks
79 Other, N.E.C.*
*Not Elsewhere Classified
8. Agriculture
81 Agriculture
82 Agricultural Related Activities
9. Undeveloped, Unused, and Reserved Lands and Water Area
91 Undeveloped and Unused Land Area
93 Water Areas
94 Vacant Floor Area—Except 941
99 Other Undeveloped Land and Water Areas, N.E.C.*
*Not Elsewhere Classified
(Effective June 15, 1978)

Sec. 22a-69-2.5. Class C noise zone

Lands designated Class C shall generally be industrial where protection against damage to hearing is essential, and the necessity for conversation is limited.

Class C Land Use Category. The land uses in this category shall include, but not be limited to, manufacturing activities, transportation facilities, warehousing, military bases, mining, and other lands intended for such uses.

The specific SLUCONN categories in Class C shall include:
2. Manufacturing – Secondary Raw Materials
3. Manufacturing – Primary Raw Materials

4. Transportation, Communications and Utilities—Except 46 and 47
6. Services
637 Warehousing and Storage Services
66 Contract Construction Services
672 Protective Functions and Related Activities
675 Military Bases and Reservations
8. Agriculture
83 Forestry Activities and Related Services
84 Commercial Fishing Activities and Related Services
85 Mining Activities and Related Services
89 Other Resource Production and Extraction, N.E.C.*

*Not Elsewhere Classified

(Effective June 15, 1978)

Sec. 22a-69-3. Allowable noise levels

Sec. 22a-69-3.1. General prohibition

No person shall cause or allow the emission of excessive noise beyond the boundaries of his/her Noise Zone so as to violate any provisions of these Regulations.

(Effective June 15, 1978)

Sec. 22a-69-3.2. Impulse noise

(a) No person shall cause or allow the emission of impulse noise in excess of 80 dB' peak sound pressure level during the nighttime to any Class A Noise Zone.

(b) No person shall cause or allow the emission of impulse noise in excess of 100 dB peak sound pressure at any time to any Noise Zone.

(Effective June 15, 1978)

Sec. 22a-69-3.3. Prominent discrete tones

Continuous noise measured beyond the boundary of the Noise Zone of the noise emitter in any other Noise Zone which possesses one or more audible discrete tones shall be considered excessive noise when a level of 5 dBA below the levels specified in Section 3 of these Regulations is exceeded.

(Effective June 15, 1978)

Sec. 22a-69-3.4. Infrasonic and ultrasonic

No person shall emit beyond his/her property infrasonic or ultrasonic sound in excess of 100 dB at any time.

(Effective June 15, 1978)

Sec. 22a-69-3.5. Noise zone standards

(a) No person in a Class C Noise Zone shall emit noise exceeding the levels stated herein and applicable to adjacent Noise Zones:

	Receptor			
	C	*B*	*A/Day*	*A/Night*
Class C Emitter to	70 dBA	66 dBA	61 dBA	51 dBA

Levels emitted in excess of the values listed above shall be considered excessive noise.

(b) No person in a Class B Noise Zone shall emit noise exceeding the levels stated herein and applicable to adjacent Noise Zones:

	Receptor			
	C	*B*	*A/Day*	*A/Night*
Class B Emitter to	62 dBA	62 dBA	55 dBA	45 dBA

Levels emitted in excess of the values listed above shall be considered excessive noise.

(c) No person in a Class A Noise Zone shall emit noise exceeding the levels stated herein and applicable to adjacent Noise Zones:

	Receptor			
	C	*B*	*A/Day*	*A/Night*
Class A Emitter to	62 dBA	55 dBA	55 dBA	45 dBA

Levels emitted in excess of the values listed above shall be considered excessive noise.

(Effective June 15, 1978)

Sec. 22a-69-3.6. High background noise areas

In those individual cases where the background noise levels caused by sources not subject to these Regulations exceed the standards contained herein, a source shall be considered to cause excessive noise if the noise emitted by such source exceeds the background noise level by 5 dBA, provided that no source subject to the provisions of Section 3 shall emit noise in excess of 80 dBA at any time, and provided that this Section does not decrease the permissible levels of the other Sections of this Regulation.

(Effective June 15, 1978)

Sec. 22a-69-3.7. Existing noise sources

Existing noise sources constructed between the effective date of these Regulations and January 1, 1960 shall be provided a permanent five (5) dBA maximum noise level allowance over levels otherwise herein required regardless of subsequent changes in ownership or facility utilization processes at the location of the existing noise source. Existing noise sources constructed prior to 1960 shall be provided a permanent ten (10) dBA maximum noise level allowance over levels otherwise herein required regardless of subsequent changes in ownership or facility utilization processes at the location of the existing noise source. Additionally, all existing noise sources shall be provided twenty-four (24) months in order to achieve compliance with these Regulations if a notice of violation has been, or may be, issued to the source. This time period begins with the effective date of these Regulations, not with the date of the notice of violation.

(Effective June 15, 1978)

Sec. 22a-69-3.8. Adaptive reuse of existing buildings

Buildings and other structures that exist as of the effective date of these Regulations which have been remodeled or converted for adaptive reuse or which may be remodeled or converted at a future date shall be provided a permanent five (5) dBA maximum noise level allowance above the Emitter Class of the new use of the building over levels otherwise herein required.

(Effective June 15, 1978)

Sec. 22a-69-4. Measurement procedures

Acoustic measurements to ascertain compliance with these Regulations shall be in substantial conformity with standards and Recommended Practices established by professional organizations such as ANSI and SAE.

(a) Personnel conducting sound measurements shall be trained and experienced in the current techniques and principles of sound measuring equipment and instrumentation. The Commissioner shall establish sufficiently detailed measurement procedure guidelines specifying, but not necessarily being limited to, the following: The appropriate utilization of fast or slow sound level meter dampening when making sound level measurements, the rise time specified in microseconds for measuring impulse noise, the need for a whole circuit in such measurements, and the proper weighting to be used in measuring impulse noise.

(b) Instruments shall conform to the following standards of their latest revisions:

(i) ANSI S1.4-1971, "Specifications for Sound Level Meters," Type 1 or 2.

(ii) ANSI S1.11-1966, "Specifications for Octave, One-Half Octave and One-Third Octave Band Filter Sets," Type E, Class II.

(iii) If a magnetic tape recorder or a graphic level recorder or other indicating device is used, the system shall meet the applicable requirements of SAE Recommended Practice J184, "Qualifying a Sound Data Acquisition System."

(c) Instruments shall be set up to conform to ANSI S1.13-1971, "Methods for the Measurement of Sound Pressure Levels."

(d) Instrument manufacturer's instructions for use of the instruments shall be followed, including acoustical calibration of equipment used.

(e) The determination of L_{90} to ascertain background levels requires a statistical analysis. A graphic level recording and visual interpretation of the chart recording to determine the levels is an acceptable method. Instruments designed to determine the cumulative distribution of noise levels are also acceptable used either in the field or in the labortaory to analyze a tape recording. Dynamic visual estimations from a sound level meter

are not an acceptable method for determining such levels. Sound level sampling techniques are acceptable and will often be the most practical to employ. Such a technique using Connecticut Noise Survey Data Form #101 with accompanying instructions is acceptable.

(f) In measuring compliance with Noise Zone Standards, the following short-term noise level excursions over the noise level standards established by these Regulations shall be allowed, and measurements within these ranges of established standards shall constitute compliance therewith:

Allowable levels above standards (dBA)	*Time period of such levels (minutes/hour)*
3	15
6	7½
8	5

(g) Measurements taken to determine compliance with Section 3 shall be taken at about one foot beyond the boundary of the Emitter Noise Zone within the receptor's Noise Zone. The Emitter's Noise Zone includes his/her individual unit of land or group of contiguous parcels under the same ownership as indicated by public land records. The Emitter's Noise Zone also includes contiguous publicly dedicated street and highway rights-of-way, railroads rights-of-way and waters of the State.

(Effective June 15, 1978)

Sec. 22a-69-5. Other provisions

Sec. 22a-69-5.1. Intrusion alarms

No person shall cause, suffer, allow or permit the operation of any intrusion alarm which, from time of activation of audible signal, emits noise for a period of time exceeding ten minutes when attached to any vehicle or thirty minutes when attached to any building or structure.

The repetition of activation of the audible signal of an intrusion alarm due to malfunction, lack of proper maintenance, or lack of reasonable care shall be considered excessive noise.

(Effective June 15, 1978)

Sec. 22a-69-6. Airport facilities

Sec. 22a-69-6.1. Extent of regulation

Airport facilities are subject to Section 3 to the extent not preempted by state or federal law or regulation.

(Effective June 15, 1978)

Sec. 22a-69-6.2. Reserved

(This subsection is reserved for possible future regulations regarding the assessment of, and long-range plans

for, the reduction of airport facility noise impacts to the extent not preempted by state or federal law or regulation.)

(Effective June 15, 1978)

Sec. 22a-69-7. Variances and enforcement procedures

Sec. 22a-69-7.1. Variances

(a) Any person who owns or operates any stationary noise source may apply to the Commissioner for a variance or a partial variance from one or more of the provisions of these Regulations. Applications for a variance shall be submitted on forms furnished by the Commissioner and shall supply such information as he/she requires, including, but not limited to:

(i) Information on the nature and location of the facility or process for which such application is made.

(ii) The reason for which the variance is required, including the economic and technical justifications.

(iii) The nature and intensity of noise that will occur during the period of the variance.

(iv) A description of interim noise control measures to be taken by the applicant to minimize noise and the impacts occurring therefrom.

(v) A specific schedule of the best practical noise control measures, if any, which might be taken to bring the source into compliance with those Regulations from which a variance is sought, or a statement of the length of time during which it is estimated that it will be necessary for the variance to continue.

(vi) Any other relevant information the Commissioner may require in order to make a determination regarding the application.

(b) Failure to supply the information required by the form furnished by the Commissioner shall be cause for rejection of the application unless the applicant supplies the needed information within thirty (30) days of the written request by the Commissioner for such information.

(c) No variance shall be approved unless the applicant presents adequate proof to the Commissioner's satisfaction that:

(i) Noise levels occurring during the period of the variance will not constitute a danger to the public health; and

(ii) Compliance with the Regulations would impose an arbitrary or unreasonable hardship upon the applicant without equal or greater benefits to the public.

(d) In making a determination on granting a variance, the Commissioner shall consider:

(i) The character and degree of injury to, or interference with, the health and welfare or the reasonable use of property which is caused or threatened to be caused.

(ii) The social and economic value of the activity for which the variance is sought.

(iii) The ability of the applicant to apply best practical noise control measures, as defined in these Regulations.

(e) Following receipt and review of an application for a variance, the Commissioner shall fix a date, time and location for a hearing on such application.

(f) The Commissioner shall cause the applicant to publish at his/her own expense all notices of hearings and other notices required by law, including, but not limited to, notification of all abutters of record.

(g) Within sixty (60) days of the receipt of the record of the hearings on a variance application, the Commissioner shall issue his/her determination regarding such application. All such decisions shall briefly set forth the reasons for the decision.

(h) The Commissioner may, at his/her discretion, limit the duration of any variance granted under these Regulations. Any person holding a variance and needing an extension of time may apply for a new variance under the provisions of these Regulations. Any such application shall include a certification of compliance with any condition imposed under the previous variance.

(i) The Commissioner may attach to any variance any reasonable conditions he/she deems necessary and desirable, including, but not limited to:

(i) Requirements for the best practical noise control measures to be taken by the owner or operator of the source to minimize noise during the period of the variance.

(ii) Requirements for periodic reports submitted by the applicant relating to noise, to compliance with any other conditions under which the variance was granted or to any other information the Commissioner deems necessary.

(j) The filing of an application for a variance shall operate as a stay of prosecution, except that such stay may be terminated by the Commissioner upon application of any party if the Commissioner finds that protection of the public health so requires.

(k) In any case where a person seeking a variance contends that compliance with any provision of these Regulations is not practical or possible because of the cost involved either in installing noise control equipment or changing or curtailing the operation in any manner, he/she shall make available to the Commissioner such financial records as the Commissioner may require.

(l) A variance may include a compliance schedule and requirements for periodic reporting of increments of achievement of compliance.

(Effective June 15, 1978)

Sec. 22a-69-7.2. Transference

No person who owns, operates or maintains a stationary noise source shall transfer a variance from one site to another site.

(Effective June 15, 1978)

Sec. 22a-69-7.3. Responsibility to comply with applicable regulations

Approval of a variance shall not relieve any person of the responsibility to comply with any other applicable Regulations or other provisions of federal, state or local laws, ordinances or regulations.

(Effective June 15, 1978)

Sec. 22a-69-7.4. Violations and enforcement

(a) No person shall violate or cause the violation of any of these Regulations.

(b) Each day on which a violation occurs or continues after the time for correction of the violation given in the order has elapsed or after thirty (30) days from the date of service of the order, whichever is later, shall be considered a separate violation of these Regulations.

(c) Qualified personnel of the Office of Noise Control shall, with or without complaints, conduct investigations and ascertain whether these Regulations have been complied with. Whenever such personnel determines that any of these Regulations have been violated or there has been a failure to comply therewith, they shall make and serve upon the person(s) responsible for the violation a written order specifying the nature of the violation or failure and affording a reasonable time for its correction or remedy. Prior to the issuance of such order, such personnel shall make a reasonable effort in light of the circumstances to correct a violation or achieve compliance by means of conference, conciliation and persuasion as required by statute. Unless the person(s) against whom an order has been served files a written answer thereto with the Commissioner within thirty (30) days after the date of service of the order and requests a hearing thereon, such order shall become final and effective in accordance with the Connecticut Administrative Procedures Act and the rules, practices, and procedures of the Department of Environmental Protection.

(Effective June 15, 1978)

NOTES

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, 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 and/or developers 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 and/or developers in the review of sites proposed for major land use activities. 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 recreational/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 land owner/ developer allowing the Team to enter the property for purposes of review and a statement identifying the specific areas of concern the Team should investigate. When this request is approved by the local Soil and Water Conservation District and King's Mark RC&D Executive Committee, the Team will undertake the review. At present, the ERT can undertake approximately two (2) reviews per month.

For additional information regarding the Environmental Review Team, please contact your local Soil and Water Conservation District or Nancy Ferlow, ERT Coordinator, King's Mark Environmental Review Team, King's Mark RC&D Area, 322 North Main Street, Wallingford, Connecticut 06492. King's Mark ERT phone number is 265-6695.