Pascale Farm Utilization Plan

a

Conceptual Presentation

for

The Tewksbury Township Committee

prepared by

The Pascale Utilization Ad Hoc Committee

Beth Davidson
David Herbst
Sheldon Kay
David Peifer
Christopher Teasdale

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Public Land Use Decision Making Recommendations for the Pascale Tract

Introduction

Recent legislative and regulatory changes will condition decision making on public as well as private lands in new ways in all or portions of New Jersey. The provisions of the Highland Protection Act provide the first major series of anticipated changes discussed herein. This Act applies specifically to a defined area in the northern half of the State, including all of Tewksbury Township. The second series of changes discussed relates to the Stormwater Management Rule recently promulgated by the N.J. D.E.P. Although this rule applies statewide, special restrictions are applicable to much of Tewksbury Township in general and to the Pascale tract in particular. The Stormwater Rule governs many aspects of planning, permitting, and specific design features related to storm water run-off and ecological protection.

Decision makers responsible for policy development, use planning, management and project development on public open space should be aware of these legislative and regulatory changes. While the Highlands legislation addresses specific intents and policies of the State, the Stormwater Rule makes specific requirements for development, including public projects such as active recreation facilities. Because of these fundamental policy changes, it is quite possible that certain former planning or future planning desires, such as the development of active recreational facilities may become more difficult, costly or impossible to achieve.

Highlands Legislation

The Pascale tract is located in the Highlands physiographic province. Defined by landform and geology, this region has been selected for special planning and regulatory attention in the recently enacted Highlands legislation. This legislation established two different planning areas for the Highlands region: the Preservation Area and the Planning Area. The Pascale tract lies in the Preservation Area.

Protection of open spaces and natural functions are clear intents of the legislation as it applies to the Preservation Area. The legislation provides for the establishment of a Highlands Planning Commission that will prepare a regional master plan for the Highlands region. This plan is to be designed to effectuate the goals of the Act.

Although specific provisions are not yet available, it is the recommendation of the committee that planning for the use and management of the Pascale tract be made in conscious recognition of the goals of the Act. Guidance for local government in this area may be found in the legislation's defined goals for the master plan as it applies to the Preservation Area. These include:

(1) protect, restore, and enhance the quality and quantity of surface and ground waters therein;

(2) preserve extensive and, to the maximum extent possible, contiguous areas of land in its natural state, thereby ensuring the continuation of a Highlands environment which contains the unique and significant natural, scenic, and other resources representative of the Highlands Region;

(3) protect the natural, scenic, and other resources of the Highlands Region, including but not limited to contiguous forests, wetlands, vegetated stream corridors, steep slopes, and critical habitat for fauna and flora;

(4) preserve farmland and historic sites and other historic resources;

(5) promote compatible agricultural, horticultural, recreational, and cultural uses and opportunities within the framework of protecting the Highlands environment; and

(6) prohibit or limit to the maximum extent possible construction or development which is incompatible with preservation of this unique area.

Clearly, it is the intent of the Highlands legislation to cause as much as possible of the Preservation Area to remain in a substantially natural condition. The implications for municipal decision makers are such that development of large-scale active recreational facilities within the Preservation Area should be carefully evaluated for consistency with these goals, and in some cases, might be eliminated entirely. This is not to say that recreation, per se, cannot take place within the Highlands Preservation Area, but rather the scale, type, location and character of the recreational uses and development should harmonize with the goals of the legislation.

Stormwater Rule

Several provisions of the Stormwater Rule have the potential to impact use options on the Pascale tract. Perhaps the most important is the requirement for 300' buffer zones extending on either side of a "Category 1" stream. These areas are to provide protection for the stream and the near-stream ecosystem by providing soil stabilization, temperature control, and pollution attenuation. All surface waters on the Pascale tract that are tributaries of Hollow Brook are classified by the N.J. D.E.P. as Freshwater 2, Trout Production, Category 1 waters. Thus, all surface waters will require total buffer widths of 600', centered on the stream or water body. Due to the fingering pattern of surface waters and the existence of several ponds, these buffers will have the effect of dividing the contiguous nature of the property and may well isolate substantial areas of the tract due to limitations on vehicular access facilities in the buffer zones.

Additionally, these waters are considered by the Department to be trout production waters. Trout production waters are those that support the breeding of trout and support a breeding population on a year round basis. Trout are sensitive species that, in addition to being valuable sport fish, are indicators of high water quality. Trout populations are highly sensitive to temperature increases and will exhibit high rates of mortality if water temperatures are allowed to rise above 70 degrees F. In addition, spawning will not be triggered if the water temperature rises above 54 degrees F. during the spawning period. Temperature increases can easily be caused by the removal of streamside vegetation, allowing sunlight to penetrate the stream.

Trout, and their food source of aquatic organisms, are also highly sensitive to other forms of pollution, including sedimentation and nutrients often released during construction or from the routine maintenance of turf areas commonly associated with active recreational facilities. The particular species of trout present are Brown trout and Native Brook Trout. Of the two, the Brook trout is considered a threatened species in New Jersey.

The surface waters on the tract are considered to be "first order tributaries". That is, they are the immediate source of larger downstream streams and rivers. Headwaters are highly sensitive to disturbance and can easily be seriously compromised by seemingly small disturbances in their watersheds. Protection of these waters is recognized as a goal in the Tewksbury Master Plan.

The Stormwater Rules also establish design and performance standards for all proposed development that will disturb more than one acre or increase site imperviousness by more than one-quarter acre. While specific responses are difficult to predict, it is certain that any development of active recreational facilities that involve the construction of even a single ball field would easily exceed the one-acre threshold; and the installation of parking, roads or roof area greater than 10,890 square feet (about 100'x100') would also trigger the full force of the Rule.

Use Choices

Lands acquired by municipalities for open space may be used for a variety of purposes, depending on the constraints imposed by the funding agencies. Typically, these areas are acquired using Green Acres funding. Properties acquired with funding from this source are usually restricted to recreational and conservation uses. Green Acres does not distinguish between so called "active" recreational and "passive" recreational uses. Generally, the municipality specifies the uses anticipated at the time of acquisition. In the case of the Pascale tract, both active and passive recreation were specified in the original application.

1. Active Recreation

Active recreational facilities, often supported by organized community constituencies, include uses such as golf courses, playing fields, swimming pools, and tennis courts. These uses occupy the "high end" of the cost continuum. They generally require high amounts of initial capital, high annual operation and maintenance costs, and, unless wisely located and carefully constructed, may create unintended environmental problems or lead to regulatory difficulties. Compliance with environmental regulations can be an important part of first costs and operational requirements designed to mitigate environmental problems may be important on-going cost generators.

In particular, site disturbance with consequent soil erosion and downstream sedimentation, water quality impacts, loss of groundwater recharge and the clearing of existing vegetation are almost unavoidable since these projects closely resemble large scale private development.

Additionally, public agencies are extremely sensitive to cost issues and may not always utilize the best available design features with higher initial capital requirements, ignoring the vastly greater financial and environmental consequences of inappropriate design. Often the "self policing" nature of such projects causes more environmental problems

than do similar projects governed by the somewhat adversarial regulation applied to private construction.

2. Passive Recreation

In contrast, passive recreation offers lower initial cost and generally very low operation expense. Passive activities traditionally include walking, cross country skiing, hiking, bird watching and other forms of nature observance. In some communities equestrian trail riding, fishing, and hunting (desirable for deer population control) are considered to fall into this category. Certain types of passive activities such as self guided and narrated nature trails have been linked to educational functions where they are conveniently accessible to schools.

In contrast to active recreational facilities and because of their design and operation, passive recreation requires little in the way of infrastructure development, and passive activities are far less likely to create undesirable environmental impacts. Site selection, although still a consideration, is far less critical unless there are very sensitive resources present, such as endangered species or fragile ecosystems. Passive facilities can be developed virtually anywhere and at far lower cost than their active counterparts. In the case of the Pascale tract some elements of passive recreational facilities are already in place, including trails and a "tree walk" area.

3. Natural Resources Protection

As natural resources have been diminished by human action and our knowledge concerning the interactions between our species and the natural infrastructure has increased, the role of open space preservation has also begun to change in important ways.

The concept of natural reserves, as havens to insure the continued functioning of natural systems, has begun to be viewed as a valid public purpose to preserve land. Perhaps the oldest and most common use of this approach is the setting aside of lands surrounding sources of drinking water that remain largely closed to human use (although we do not believe Pascale fits into this most severe category.) These lands are of immense public benefit, despite the fact that they provide no recreational opportunities. Where environmental quality is high, as it is in Tewksbury in general and on the Pascale tract in particular, such an approach should receive high consideration.

4. Ecological Restoration

In recent decades a growing body of scientific literature has evolved dealing with the subject of landscape restoration. Altered landscapes are all too common in the northeast in general and in New Jersey in particular. For example, virtually nothing remains of the original hardwood forests that covered the northern half of the state. Typically, municipal decision makers are dealing with a specific property, but decisions to engage in restoration activities should always be based on an analysis of the surrounding ecological matrix.

With the removal of forests, in places several times over, damages have cascaded through the entire ecosystem. Run-off has increased. Groundwater recharge has decreased. The structure and chemical composition of soil systems has been altered by the loss of humus, compaction, liming, fertilization and the application of persistent toxic chemicals. Entire

plant and animal communities, not just individual species, have been rendered extinct, extirpated from major portions of their former range or weakened so as to be unsustainable. In addition, entirely alien, exotic and invasive species have been deliberately introduced or have escaped into the wider ecosystem from poorly controlled areas such as private gardens. Often, conditions favorable to the rapid reproduction of these species have been created, generally for other purposes. Agriculture is perhaps the largest example of this type of alteration.

Because of the extent of these damaged landscapes and our understanding of the critical need to keep whole systems intact, the discipline of restoration ecology is evolving rapidly. Restoration of degraded areas is possible, albeit with greater or lesser difficulty, depending on the nature of the disturbance.

Typically, the restoration process is a long one, requiring years, decades, or possibly centuries. Of fundamental importance to the process is secure land tenure. Such security is a prerequisite for successful restoration. Many experts in the field of ecological restoration recognize that specifically controlled public ownership is one of the better ways to provide this security.

Conclusions

Although the original Green Acres application included active recreational activities among the stated purposes of the acquisition, subsequent regulatory and legislative developments mitigate against the practical development of the tract for such purposes. In addition, since gaining a greater understanding of the environmental features of the tract, attempted active recreational development may be expected to cause both on-site and off-site problems and entail greater, prohibitive, or undesirable compliance costs.

Based on the forgoing, the committee strongly recommends that the Township Committee formally designate the open space portion of the Pascale tract as a permanently restricted natural area. Two steps need to be taken in order to achieve this. First, the Township Committee needs to change, via a relatively simple process, the Green Acres designation on its ROSI to conservation and passive recreation. Second, the Township Committee needs to submit a formal request and justification to Green Acres to allow it to permanently preserve the property as a natural area via a suitable legal instrument. This subject is addressed in more detail later in this report.

Finally, although the tract contains critical environmental features and a functioning natural ecosystem, there has been some degree of degradation on the parcel due to previous human activity as well as invasion by a host of exotic species. Restoration of the full functioning of the natural systems could be accomplished given secure tenure. Restoration activities would be a natural accompaniment to passive uses. In addition, due to the proximity of the new school, such restoration could well be used to enhance and compliment educational programs.

The immediate and successful implementation of this plan could well serve as a model for the stewardship of all of Tewksbury's open spaces.

Resources

Many local, state, and federal programs and organizations can provide guidance for this long-term project. A list of potential partners and resources includes the following:

- Tewksbury Township Environmental Commission (has statutory authority to raise funds and obtain OES grants)
- Upper Raritan Watershed Association (provides expertise, grant writing, volunteers, and education)
- NJ Conservation Foundation
- NJ Natural Lands Trust
- Tewksbury Township Board of Education
- Audubon Society
- US Fish and Wildlife Service
- Natural Heritage Program
- Natural Areas System
- Tewksbury Township Parks Committee
- Tewksbury Township Equestrian Committee
- Tewksbury Trail Association
- Wildlife Habitat Incentive Program (WHIP) (current priorities include early succession habitat, riparian habitat, school site habitat development, and Invasive Exotic Species control, all of which apply to the Pascale tract)
- USDA Natural Resources Conservation Service (provides technical advice covering a broad range of land management issues)

It is our opinion that many 50% matching grants are available and that if the Tewksbury Township Committee will commit to approximately 5,000 to 10,000 dollars per year, virtually all of the short-term goals for Pascale can be covered financially and many of the longer-term considerations as well.

Pascale Tract
First Three Year Plan
Baseline Study Recommendations

Purposes: The idea of a "baseline study" is to assess the conditions and processes acting on a tract of land and its surroundings and to provide a basis for evaluating the effects of management activities on the property. Knowledge of these factors is essential prior to developing and implementing a restoration and passive recreation plan. Baseline studies typically describe the conditions on a site as they exist, describe the natural processes at work on a tract of land, and may define conservation needs or objectives. They may also specify short term goals needed to stabilize or remedy existing problems. A budget of between $5,000 and $10,000 is assumed, with available grants effectively doubling the available funds.

Typically, such studies include mapping, aerial photography, narrative text, and photography obtained directly from the site or from reliable, pre-existing data. Special studies may be required at specific times of year, for example breeding bird surveys, or surveys of reptiles and amphibians.

YEAR ONE:

Stewardship Committee: Upon acceptance of the ad hoc committee's proposal, the Ad Hoc committee should disband and the Township Committee should designate a permanent committee to oversee the implementation of this first three-year plan and future multi-year plans as well. It is the recommendation of the ad hoc committee that the Tewksbury Environmental Committee be charged with this task. In the alternative, a committee consisting of three Environmental Committee members, two Parks Committee members and one Township Committee member would be a possibility.

Green Acres Paperwork: See attached memo from D. Peifer.

Initial Field Reconnaissance Report:

A thorough walk over should be performed to familiarize all involved with the general conditions of the tract. Topography, water resources, plant communities, cultural features, and overall setting should be noted. Any obvious problems such as active erosion, storm water discharges, dumps, dead or stressed vegetation etc., as well as relationships with adjoining properties should also be noted. For example, are there trails entering the site with evidence of active use? Sensitive neighboring land uses should be identified. The results of this activity should be submitted as a written report. It should be determined whether or not it would be desirable to maintain the existing agricultural use on the property in the short term. It is not inconceivable that some long-term agricultural use may also be appropriate, but this decision should come in conjunction with this three-year plan.

Desk Top Mapping:
Traditionally, this phase involves the preparation of a series of overlay maps, done to the same scale, that depict the known present (or as recent as possible) site conditions and the setting of the site in its surroundings. When prepared using a G.I.S. system, these maps can be combined and analyzed with rapidity to produce new information. Tabular presentations can also be made: for example the location of land cover types may be depicted, compared to soil conditions, and measured as to area. Excellent natural-resources based G.I.S. data is available from the NJ DEP at little or no direct cost. It is strongly recommended that these data be used prior to developing any site-specific data.

Readily available information includes:
• Black and White Aerial Photography
• False color Infra-Red Photography
• Geologic Mapping
• Soils Mapping
• Water and Wetlands (may require site specific delineation, which is preferred if available)
• Topography (relatively coarse contour data may require 2' contour mapping)
• Land Use / Land Cover (can be used to evaluate general condition of forests, open lands etc.)
• Landscape Project Data: Evaluates wildlife habitat suitability
• Known contaminated sites
• Dams (for downstream context)

In addition to maps, map analysis, and tabular data production, other available data should be compiled. For example, known or suspected threatened species occurrence should be checked with the Natural Heritage Data Base (NJ DEP). Historic aerial photographs should be compiled if available. These are of great utility in determining the landscape history of the site and its surroundings. Climate, rainfall, and solar orientation should also be discussed. OES grants are readily available for the above.

At the end of the first year, a presentation, including recommendations should be made to the Township Committee.

YEAR TWO
(Budgeting and grants required)
Additional Field Work
Additional field-work may be necessary if the desk top analyses reveal new or additional issues. For example:

Wetland Delineation and Open Waters Mapping: DEP wetlands and stream data may not accurately depict the entire extent of wetlands on the tract or the exact location of streams and other open waters. Unless these boundaries are known, it will be difficult to determine whether proposed activities are within regulated areas. If wetlands have been previously delineated and verified through the LOI process, these data can be used. Otherwise, the wetlands will need to be field delineated by a qualified wetland delineator and open waters accurately mapped. If an LOI is not present, a surveyor will be necessary to delineate these areas on a map.

Topographical Mapping: More detailed topographic surveys may be necessary, defining 2' contours. These may be used to calculate a more accurate picture of slope conditions on the tract. A professional surveyor will be required, unless these data were developed as part of the school construction.

Soils Testing: Direct soil sampling may be deemed necessary to assess existing conditions that may govern restoration or management techniques. Nutrient measurements and soil pH are typical concerns. If there is reason to believe that the property may have been used intensively for open field or specialized agricultural operations (orchards), pesticide testing may be necessary. When properties are proposed for active recreation, Green Acres typically requests soil testing for lead and arsenic, residual contaminants from orchard operations. This may have been done on the tract. If so, these data should be collected and incorporated.

Water Quality Testing: If surface water is present, the chemical and physical characteristics of the water should be defined. This can be done with several rounds of chemical sampling (supplemented by field measurements of temperature and dissolved oxygen.) Where water flows are permanent, macroinvertebrate sampling can also be used. However, this is not recommended if streams are intermittent.

Educational Component: Begin direct use of the site for educational purposes in conjunction with the local Board of Education.

YEAR THREE

Flora Survey: While the DEP data can provide some information on the condition of the vegetation, a ground level survey is required to identify the types and conditions of the vegetation present on the tract. Of particular concern is an evaluation of invasive exotic plant species that are common in the region. Typically these include multiflora rose, oriental bittersweet, privet, ailanthus, Japanese barberry, stilt grass, Norway maple, Japanese knotweed and others. Control of these species will likely be an important management component and will require long-term persistence. If substantial forest areas are present on-site, an

evaluation of the forest communities and quality should be performed. Since this parcel is a potential forest patch connector, the conditions and composition of the adjoining forests should also be evaluated.

Faunal Studies (other than birds): Animal populations should be evaluated; particularly the number of deer present. Excessive deer populations exert substantial strain on the native ecosystems, and are considered a "keystone species", influencing a broad array of factors. Other animals, if present, may also constrain or influence management goals: groundhog and beaver for example.

***Bird Studies*:** Avian populations are generally reliable indicators of environmental quality and may be used to diagnose environmental health. An overall evaluation of resident populations should be made. However, special attention should be given to threatened and endangered species, predators, grassland birds, and forest dependent species, as well as the tract's role in migratory behavior.

Breeding Bird Surveys: These must be done during the breeding season, and are useful in determining current reproductive values of the tract.

Herpetological Surveys: Reptiles and amphibians are also useful indicators of overall environmental quality. Several threatened and endangered species are known to be present in the area (bog turtle, wood turtle). These studies cannot be performed during winter dormancy.

End of Three-Year Plan: At the end of the third year, a final Study Report should be issued. This would include recommendations for additional study, findings, and conclusions relating to both short-term and long-term issues, as well as a proposal for the next three year plan.

Legalities

Within the NJ DEP, there is a relatively simple process for changing the Green Acres classification of a ROSI property. The process for permanently restricting property to solely passive recreation and natural resource protection through the municipal program requires Green Acres' permission, since such a restriction would theoretically impact the value of the properties in which Green Acres has invested public monies. There does, however, exist at a relatively senior level, an administrative procedure for doing this, and it includes the submission of reports justifying the need for such restrictions. (No such easy procedure exists for removing or easing deed restrictions or conservation easments.)

URWA has verified the mechanism and stands ready to assist the Township Committee in the preparation and execution of this procedure for Pascale. The key elements of this action are described in the memo from D. Peifer that is attached.

Accordingly, we believe it is appropriate for the Township Committee to immediately adopt the following resolution:

"Whereas after careful review, and in planning for the long-term interest and benefit of the public good, and to increase the protection of valuable environmental resources: it is the determination of the Tewksbury Township Committee to change the designation of the Pascale property (block__ lot__) to conservation and passive recreation. Furthermore, the Township Committee will seek permission from Green Acres to permanently restrict said property by way of deed restriction, easement, or other suitable instrument. The Township Administrator, with advice of counsel as may be appropriate, shall prepare and submit to the proper State agency any and all documentation necessary to implement this change. The Township Committee also accepts the report of the Pascale Utilization Ad Hoc Committee and directs that its plans be implemented."

To: Pascale Committee
From: D. Peifer
Date: Nov. 8, 2004

Re: Toward a Permanent Restriction with Green Acres

I spoke again today with Leilani Hershey of the Legal Services and Stewardship Bureau of the Green Acres Staff. She indicated that she had conveyed her information to two other individuals associated with the municipality, at length. She did not remember, however, who they were.

In sum, there can be a decision to allow a further restriction made at the staff level. To engage this process, Tewksbury would need to submit a proposal to justify the actions desired, citing specific facts about the property. Maps were also strongly encouraged as part of the submission. There is no need at this time to consider any actions beyond this since, if the restriction cannot be obtained at the staff level, going further might prove problematic from a political perspective.

I would suggest that we include preparation of the report to Green Acres as a "year one" item. Issues to be covered include:

1. Potable water supply headwaters
2. Water supply land preservation criteria of the N3 Water Supply Authority
3. Category 1 waters
4. Trout Production Waters
5. Wildlife habitat value (per Landscape Project)
6. Threatened and Endangered Species presence
7. Presence in Highlands Preservation Area
8. Conformance with Stormwater Rule
9. Presence in State Plan Planning Area 4B
10. Conformance with Tewksbury Master Plan
11. Conformance with R-12 Zoning objectives
12. Proximity to historic district (cultural landscape) and scenic quality

If these are developed and mapped, to the extent possible, I believe we will have a very strong case. The year one work plan should give us all we need in this regard. Even if the effort is unsuccessful (which I doubt), this information is still essential to good stewardship.