



TENAFLY NATURE CENTER EDUCATION AND DISCOVERY CENTER

Tenaflly, New Jersey

NEPA ENVIRONMENTAL ASSESSMENT REPORT

16 JULY 2014

Submitted by the Tenaflly Nature Center Association
on behalf of the Borough of Tenaflly, Owner of the Land
313 Hudson Ave
Tenaflly, NJ 07670



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as commissioned by Tenaflly Nature Center

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CHAPTER 1

PURPOSE, NEED, AND BACKGROUND

The Tenaflly Nature Center Association, a non-profit, independent, member-supported organization, protects a preserve of nearly 400¹ wooded acres atop the Palisades. Tenaflly Nature Center (TNC) is the largest privately-run nature center in Bergen County, New Jersey, which is the most populous county in the nation's most densely populated state. TNC's preserve is the largest undeveloped, open space in Tenaflly comprising 10% of the town's land. TNC's mission is to protect nearly 400 acres of woodlands and wetlands, and all of its inhabitants, and to teach future generations to do the same. Since 1961, TNC has nurtured an appreciation of nature, been a leader in open-space preservation and environmental education for our community and beyond.

TNC maintains a 4.4 acre pond and seven miles of trails through wetlands and native hardwood forest for public use and recreation. Open 365 days a year, TNC is a destination not only for Tenaflly residents but for communities in all of Bergen County, as well as the New York metropolitan area, drawing visitors from throughout New Jersey and from New York City, Westchester, and Rockland counties in New York. The majority of program participants come from Tenaflly and other municipalities in Bergen County (designated a Highly Populated County by the NJ Department of Consumer Affairs), followed by Hudson and Essex Counties (designated as Densely Populated Counties by the NJ DCA). TNC's Visitor Center is used intensively for daytime, evening and weekend programs and is staffed seven days week.

DEFINING THE NEED

TNC's Growth: Acreage, Programs, Audience, & Staff

As open spaces become more rare, the community looks increasingly to organizations like TNC to provide opportunities to make connections with the natural world. In the period of more than 50 years since it was first established TNC has outgrown the original 3,200 sf. Visitor Center, which no longer meets program needs nor current standards for accessibility and safety. Over that time TNC's leased land has grown from the original 55 acres at its founding in 1961 to 307 acres. More importantly, TNC's programs have increased at an accelerating rate.

In the last eight years, TNC has doubled environmental program offerings and staff to meet a sharp increase in demand from the community. Today, TNC teaches the largest environmental education audience in Bergen County, delivering more than 1,000 programs to nearly 22,000 participants through on-site and outreach classes each year. TNC offers programs seven days a week and evenings to all ages: from children as young as two years old to seniors, to school and scout groups, adults, families and groups with special needs.

In addition to program attendees, each season attracts countless outdoor enthusiasts who come to observe seasonal changes, bird watch, hike, photograph, paint, snowshoe, run and geocache. Hundreds of school-age and adult volunteers participate throughout the year. Volunteers make up a vital segment TNC's audience, working under staff supervision to maintain trails, control invasive species, care for exhibit animals, and assist with facilities upkeep, after school programs and summer day camp.

Space Constraints & Income Stream

Lack of teaching space affects not only the number and quality of programs TNC presents; it has a negative impact on visitor experience. The indoor classroom serves simultaneously as reception area, library, museum and live animal display; this inevitably affects the visitor experience. For example, visitors hesitate to even enter the building to view indoor exhibits or speak to a naturalist when a class is in session in the single indoor classroom or on the deck (site of the building's one public access). Lack of sufficient numbers of restrooms adds time to class trips and overtaxes TNC's outdated plumbing system.

TNC has had to curtail program growth for the past five years due to these space limitations. Each season TNC must turn away many program requests (and potential income necessary to sustain a not-for-profit institution) from schools and other groups. Many groups, particularly pre-school and elementary classes, cancel at the last moment in bad weather because TNC cannot guarantee indoor classroom space. Booked months ahead, many programs cannot be re-scheduled, resulting in significant environmental education shortfalls, income loss to TNC, and disruption of teachers' lesson plans.

Accessibility & Traffic Capacity

The steep grade surrounding the Visitor Center challenges visitors, particularly the very old, the very young and others with mobility limitations. The parking lot grade does not meet standards for universal access (maximum grade 5%) and the existing 17 parking spaces do not accommodate daily use by staff and visitors. Overflow parking spills daily on to the steep residential street leading to the Center. TNC does not have a bus drop off / turnaround area on site; buses use the steep cul-de-sac (*Fig's. 1-3, page 3*) at the top of Hudson Avenue for this purpose, regularly blocking the driveway for cars waiting to enter and leave the parking lot.

Energy Efficiency

The Visitor Center's outdated mechanical and electrical systems, most of which are original to the 1960s with limited updates in the 1980s, do not use energy efficiently. Most of these systems are near the end of their life spans.

DEFINING THE OBJECTIVES

Planning Goals

TNC's trustees and staff researched and analyzed space requirements for num-

bers of classes and programs requested, researching best practices and comparing space and use data from other nature centers that reach similar audiences. Through careful analysis, TNC developed the following list of goals for a new facility to best support TNC's mission to preserve open space for recreation and to promote environmental education:

- » *Accommodate increasing demand for environmental education programs, expand opportunities for volunteer participation and enhance visitor experience*
- » *Cause minimal disruption to the environment*
- » *Incorporate and model sustainable site and building design and maximize energy efficiency*
- » *Make the entire facility universally accessible: parking, building and outdoor areas that support programs and exhibits*
- » *Add adequate parking spaces and improve traffic access and safety for visitors and for groups arriving in school buses.*

Building Program

When TNC determined that increasing access, modernizing and expanding facilities were necessary to support its programs and mission, they consulted design and engineering professionals to confirm the square footage requirements and site elements to achieve these goals. Revisited several times over an eight-year period, they confirmed and re-confirmed a program that meets accessibility goals, program, education and exhibit needs.

- » *7,950 sf sustainably designed building with 4,500 sf of sheltered outdoor teaching deck.*



Figure 1



Figure 2



Figure 3

- » Triples indoor classroom/multipurpose and storage space without adding administrative square footage
- » Doubles outdoor sheltered teaching space
- » Appropriately scaled to the surrounding residential area.
- » Universal access ($\leq 5\%$ grade) throughout the site including parking lot, walkways to the building, and an ADA trail
- » On-site school bus drop off/pick up, automobile drop-off/ pick-up plus waiting and turnaround
- » On-site parking for 50 cars, with overflow parking for an additional 25 cars

Site Analysis for Expansion

Site Selection Criteria

Once the decision to expand was made, TNC conducted a thorough site review, beginning with aerial mapping of the nearly 400 acres to identify wet areas (estimated to cover 50% of the preserve), followed by field investigation to examine the site characteristics (topography, water flow, soil, vegetation, wildlife habitat) of areas that appear to be dry enough for building and development. Guided by this analysis and factoring in other limiting factors (access, legal restrictions, protected habitats), TNC developed criteria consistent with its mission to determine a preferred site for a new facility.

- » Direct access to an existing, paved, public road, preferably not a residential street
- » Achieve universal access (grade of 5% or less)
- » Limit environmental impact to minimize required rock/soil removal, to preserve the tree canopy, and to maintain protected wetlands areas buffers
- » Site and access unencumbered by deed restrictions or covenants

The overall Boundary Analysis for access to sites is as follows:

Northern Boundary has no public access road. TNC shares this boundary with the privately-owned Montammy Golf Club in Alpine and Montammy Drive is an ingress/egress easement which is not adjacent to the boundary.

Eastern Boundary: A 200' buffer along Route 9W, deeded to the town by John Rockefeller in 1950 and excluded from TNC's lease, prohibits any building and severely restricts road access, eliminating entry from most of this border. The easternmost, unimproved portion of Hudson Avenue intersects 9W, but is surrounded by extensive wetlands.

Western Boundary has limited access. With the exception of the single point entry at the eastern end of improved Hudson Avenue, the TNC's western edge borders on residential back yards or residential streets (unimproved Trafalgar Road, improved Tekening Drive, Stanton Road, and Stony Brook Road).

Southern Boundary: E. Clinton Avenue, a primary County route running along the preserve's boundary which already supports other significant public facilities (Kaplan JCC on the Palisades, St. John's Greek Orthodox Cathedral and St. Thomas Armenian Church) was identified as the best option for access to an alternate site.

Two potential sites were identified after TNC applied these criteria to the entire acreage under TNC's leasehold: the area around the existing facility at the top of Hudson Avenue, and the preferred alternative off of East Clinton Avenue opposite Kent Road.

TNC has considered four options for the Environmental Assessment application.

BACKGROUND INFORMATION ON ALL FOUR OPTIONS

1. No Action

Impact on TNC's Organization & Mission

TNC has concluded that taking no action to update and expand facilities – classrooms, parking, energy efficiency, accessibility and programs – will force further reductions in on-site programming, and will negatively impact membership, visitor experience and associated income. Loss of income will make it ever more challenging to repair aging infrastructure and mechanical systems, and to upgrade our facilities for universal access.

2. Proposed Action - East Clinton Avenue

There are five objectives which are met with the proposed site on East Clinton Avenue:

1. Public Safety: Access by a Bergen County road (East Clinton Avenue) which does not pass through a residential area. Existing easement accommodates acceleration/ deceleration lanes.
2. Stormwater and Flooding: Over 80% of all water leaving the site flows into the Hudson River Watershed and away from Tenaflly (both the proposed Nature Center building and parking lot are in the Hudson River Watershed). Flood risk to residential areas is thereby reduced and stormwater quality enhanced.
3. Universal Access: 3% grade across all of the proposed site after arrival at the bus/ car turnaround.
4. Minimal Blasting/ Balanced Cut + Fill: Rock crushed on site for re-use of rock – balanced cut and fill achieved.
5. Minimal Ongoing Impact to Neighbors and Visitor Experience. A true 'deep' forest surround is possible since the nearest neighbor is over 600' away.

3. Hudson Avenue Alternatives

*Alternative 1 – Hudson Avenue Two-Story &
Alternative 2 – Hudson Avenue One-Story*

TNC has examined two schemes for expansion which were proposed and favored by a group of Tenaflly residents, near the current Center at the top of Hudson Avenue (see attached plan for expansion "Proposed Alternate Sites for a New Tenaflly Nature Center Building at the Existing Center Location" submitted by Roland Scharfspitz, Architect & Melvin Esrig, PE, page 16). As one of two areas identified that are dry enough to protect wetlands boundaries, this site met enough of TNC's planning goals (see page 3) to merit further investigation. TNC's team of professionals, (architects, civil engineers, surveyors and environmental consul-

tants) developed the two sites to meet the established criteria assuring equality in functionality, as well as building and site area to the Proposed Action (the team's analysis and investigation of environmental disturbance for all four actions is documented and explained in Chapter 3 of this Environmental Assessment Report.)

In addition to the environmental disturbance necessary to build either of the two Hudson schemes, construction on Hudson would prevent or disrupt programs, operations and visitor access for up to two years during site preparation and building construction. Neither scheme would allow preservation of the existing Visitor Center and surrounding outdoor classroom and support areas since each scheme requires a significant topographic modification for the new facility and parking footprint which will undercut the existing building, parking lot and drive into the site. Continuing programs and operations, if even feasible during construction, would require additional environmental disruption to clear areas for trailers to house administrative offices and classrooms, for staff and visitor parking, for school bus drop off and pick up and rerouting trails around a construction site. The combined construction traffic and TNC operational traffic on Hudson Avenue would be particularly difficult to manage in a safe manner. This work would, at a minimum, disrupt the Nature Center's ability to operate until the new facility is completed.

Impact on Programs, Operations, Neighbors, Visitors, and Mission of Hudson Avenue Alternatives 1 & 2

1. Suspending programs and operations for the duration of construction (which is seen as the most likely consequence of construction on the Hudson Avenue Alternative 1 & 2 sites) would prevent TNC from fulfilling its mandate to the Borough of Tenaflly: "management and development of /said/ trails and conservation program" and "educational programs concerned with various aspects of the environment, such as those presently conducted by the Tenaflly Nature Center," as outlined in the "Green Acres Rules and Regulations" an appendix to Ordinance 881 adopted by the town on the purchase of the Lost Brook Preserve in 1977. Moreover, TNC is convinced that the limitation of operations and consequent interruption of TNC's income stream for up to two years would threaten the independent, non-profit organization's survival.

2. The unlikely event of continuing full operations during construction would pose significant logistical challenges and would have to be met as follows. Clearing and leveling of approximately an additional acre to accommodate visitor and staff safety, parking, school bus drop off and pick up, temporary trailers for administrative staff, reception, museum, library, animal display and classrooms, outdoor aviary, apiary, garden and new trails to reach existing facilities and site features such as Pfister's Pond, the Pavilion, outdoor composting toilet and storage shed. Construction noise, vibration, and dust would negatively affect outdoor classes at the Salamander Pond and in the outdoor Pavilion, adjacent to the construction site. Setting up an alternate, temporary entrance, facility and trails at the existing site and ensuring visitor and staff safety during construction, poses a substantial logistical challenge, as entry and exit are restricted to the improved eastern end of Hudson Avenue for both construction and operations, including access for public safety – fire, police, ambulance. It would also be necessary to cut down additional trees to clear areas for on-site storage and staging of construction material, equipment and debris during construction.

3. A final alternative would require scaling back operations and programs which would still require clearing and leveling a new area to accommodate a smaller area for programs, staff parking and safe access for visitors and school buses adja-

cent to an active construction zone. With entry and exit restricted to the improved eastern end of Hudson Avenue for visitors, staff, construction vehicles and materials, ensuring safe passage for staff, visitors and school buses bringing students to outdoor programs would still be challenging.

Cutting programs would trigger associated declines in membership and donations. In addition, if TNC is forced to cancel contracts with Tenaflly public schools and other local schools and scout groups, important relationships – cultivated for decades and future income would be placed at risk.

4. TNC's Residential Neighbors would be directly impacted during construction and after the new Center is built. Neighbors' back yards would be as close as 65' from the new Center, with views of the Center's Deck, (in use during the day and evenings as an outdoor classroom) as well as the parking lot. Adjacent neighbors on Hudson Avenue and Stanton Road would be most exposed to construction noise and vibration: rock blasting and excavation of over 20,000 cu. yds. of rock and future soil, dust, tree cutting, dump truck loading and materials delivery. During site development, in excess of 1,500 dump truck loads of excavated rock and soil would need to be trucked off the site on Hudson Avenue, a residential street.

5. Visitor Experience After Construction: In both Hudson Avenue schemes, the new Center and/or parking straddles the main trail, requiring visitors to cross a parking lot to access any trail or to visit any site feature such as Pfister's Pond and DeFilippi Shelter. Teaching deck areas would view Hudson Avenue, a parking lot or neighbors' backyards instead of orienting visitors and program participants to views of the forest and site. Both schemes would require significant interruption of the tree canopy, since extensive blasting to level the site would prevent preserving any trees in or bordering the parking lot.

CHAPTER 2

DESCRIPTION OF OPTIONS: BASELINE ACHIEVED BY ALL OPTIONS:

- » **No Action**
- » **Proposed Action - East Clinton Avenue**
- » **Alternative 1 – Hudson Avenue Two-Story**
- » **Alternative 2 – Hudson Avenue One-Story**

2.01 ALTERNATIVES ANALYZED AND DISCUSSED

Foundational Program and Values

All three build alternatives share advancements in functionality, accessibility and public safety that are defined in the underlying Building Program and Scope of Work. This Building Program was first developed by the leadership and staff of the Tenaflly Nature Center in the time frame of 2005/2006 and has been refined and re-validated over the past eight years. It is a consensus document and it represents the physical expression of the Mission of the Tenaflly Nature *Center* and how it may be best realized in service to the residents and surrounding community of Tenaflly, New Jersey.

The TNC Education and Discovery Center is to be an exemplar of environmental/ sustainable development. For this reason, minimizing the stormwater impact, the amount of environmental disturbance, tree removal and, importantly, minimizing drilling and blasting of the basalt and diabase rock which forms the New Jersey Palisades, are not just issues of compliance, they are mission objectives.

Program & Scope

No Action

Impact on TNC's Organization & Mission

For the past five years, TNC has been forced to turn away many requests from schools, scouts and other groups due to limited indoor and covered classroom space. Without updating and expanding facilities, TNC will not be able to serve growing numbers of residents in Tenaflly (where the public school population has grown substantially in the past decade) and in the surrounding densely populated communities who look to TNC to introduce them to the natural world. TNC's programs are designed to help visitors and volunteers understand the value of the nearly 400 acre site as an environmental resource for the community by offering hands-on experiences in nature.

Impact on Community

Reducing numbers of environmental education programs will have an impact on the entire community, but it will affect most directly the largest and youngest demographic that TNC's reaches – school and scout groups. Children make up 75 percent of TNC's program audience. Continuing to operate out of an aging building that does not meet today's accessibility, safety and energy efficiency standards will also have a negative impact on TNC visitors, its mission, organization, fundraising and donor base, and on its well established leadership role in the local environmental community.

Common Criteria for all three build options:

- » **Proposed Action - East Clinton Avenue,**
- » **Alternative 1 – Hudson Avenue Two-Story, and**
- » **Alternative 2 – Hudson Avenue One-Story**

All three site plans achieve the following public safety objectives and programmatic requirements:

- A. Fully compliant arrival and turning radius for school buses allowing for multiple buses arriving, unloading, waiting and departing with on-going drop-offs of visitors arriving by individual cars.
- B. Parking for up to 50 cars with overflow for 25 additional cars.
- C. Universal access for seniors, strollers, and those with disabilities by maintaining no greater than a 5% grade on site.
- D. An Education and Discovery Center Building of 7,950 sq. ft. and an exterior adjoining deck area of 4,500 sq. ft. with overhead protection for inclement weather.
- E. Approximately 3,500 cu. yds. of rock fill which will be crushed on-site for reuse in the leveling of hiking trails, creating universal/ADA accessibility in the immediate vicinity of all three Nature Center schemes.

2.02 ALTERNATIVES FURTHER EVALUATED

(Refer to following pages 10-17)

Proposed Action – East Clinton Avenue

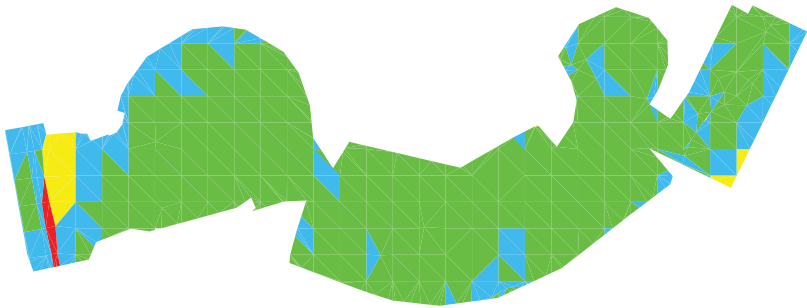


Site Plan & Basic Metrics of Proposed Action – East Clinton

- » Project Footprint = 76,948 sf (1.8 acres)
- » Overall Grade on Site = 3% grade
- » Cut/ Fill: 5,850 cu. yds. (including 3,500 cu. yds. of rock fill which is crushed on site for reuse on universally accessible trail segments)
- » Net Cut/Fill = Balanced: No rock or soil leaves site
- » # of Truckloads to Remove/ Add Soil = 0
- » # of Trees Removed = 90
- » # of Trees Saved in Paved Areas = 49
- » Stormwater Storage on Site = 34,164 gal.
- » Existing Slope < 5% = 78%
- » Existing Grade Cut in Excess of 9 feet = 0%
- » Retaining Wall = Not Required
- » Area of Disturbance During Construction = 102,710 sf (2.4 Acres)
- » Distance to Nearest Residential Property Line = 610'

Note: The acceleration and deceleration lanes at the entry to the proposed East Clinton site fall within the County's pre-existing 15'-0" road widening area. We estimate the removal of an additional 46 trees in the road widening area.

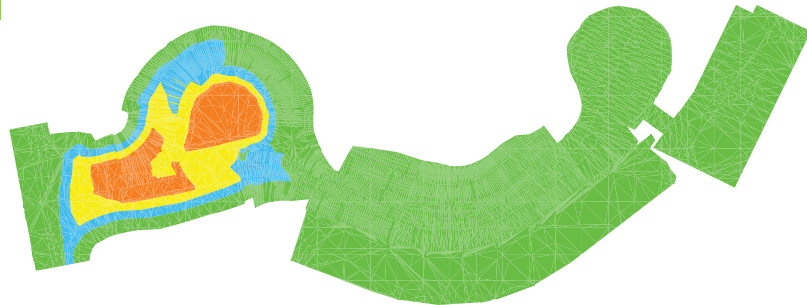
SLOPES TABLE			
MIN. SLOPE	MAX. SLOPE	ACRES	COLOR
0.01%	5.00%	1.88 ac	■
5.01%	15.00%	0.43 ac	■
15.01%	25.00%	0.06 ac	■
25.01%	49.26%	0.01 ac	■



EXISTING SLOPE ANALYSIS OF EAST CLINTON AVENUE

100,591			
MIN	-9	54	0%
-9	-7	5,987	6%
-7	-5	6,530	7%
-5	-3	9,221	9%
-3	MAX	78,799	78%

← 0% of Grade Cut
in Excess of 9'



ANALYSIS OF PROPOSED CUTS TO EAST CLINTON AVENUE



Entry Point at East Clinton Avenue – Site of Proposed Cuts to Grade.

Alternative 1 – Hudson Avenue Two-Story



Site Plan & Basic Metrics of Alternative 1 – Hudson Avenue Two-Story

- » Project Footprint = 71,256 sf (1.6 acres)
- » Overall Grade on Site = 5% grade
- » Cut/ Fill: 25,238 cu. yds. (including 3,500 cu. yds. of rock fill which is crushed on site for reuse on universally accessible trail segments)
- » Net Cut/Fill = -21,558 cu yds
- » # of Truckloads to Remove/ Add Soil = 1,509
- » # of Trees Removed = 97
- » # of Trees Saved in Paved Areas = 0
- » Stormwater Storage on Site = 36,295 gal.
- » Existing Slope < 5% = 12%
- » Existing Grade Cut in Excess of 9 feet = 36%
- » Retaining Wall = Yes (475' length/ 0'-16' high)
- » Area of Disturbance During Construction = 104,110 sf (2.4 Acres)
- » Distance to Nearest Residential Property Line = 106'

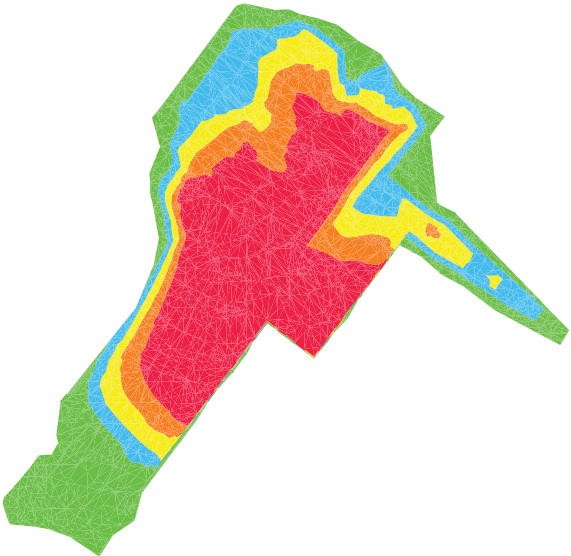
SLOPES TABLE			
MIN. SLOPE	MAX. SLOPE	ACRES	COLOR
0.00%	5.00%	0.37 ac	■
5.01%	15.00%	1.50 ac	■
15.01%	25.00%	0.41 ac	■
25.01%	137.94%	0.07 ac	■

99,433			
MIN	-9	36,249	36%
-9	-7	12,073	12%
-7	-5	12,836	13%
-5	-3	14,633	15%
-3	MAX	23,642	24%

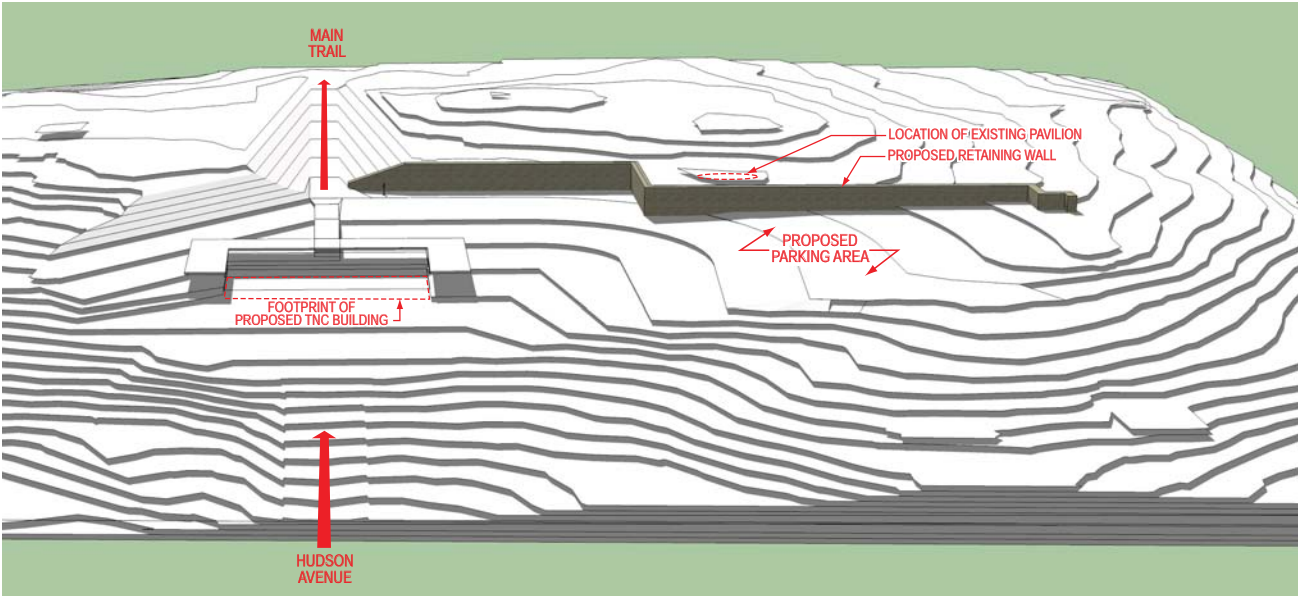
36% of Grade Cut in Excess of 9'



EXISTING SLOPE ANALYSIS OF TWO-STORY HUDSON ALTERNATIVE



ANALYSIS OF PROPOSED CUTS TO TWO-STORY HUDSON ALTERNATIVE



View of Cuts to Grade at Alternate 1 - Hudson Avenue Two-Story

Alternative 2 – Hudson Avenue One-Story



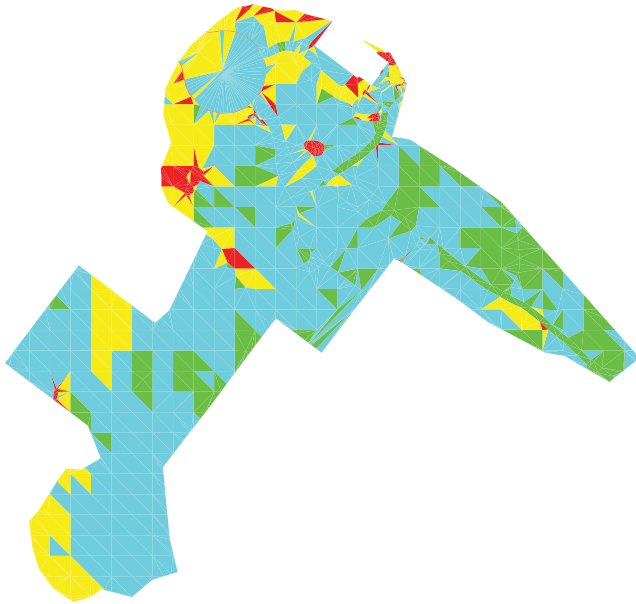
Site Plan & Basic Metrics of Alternative 2 – Hudson Avenue One-Story

- » Project Footprint = 75,627 sf (1.7 acres)
- » Overall Grade on Site = 5% grade
- » Cut/ Fill: 27,282 cu. yds. (including 3,500 cu. yds. of rock fill which is crushed on site for reuse on universally accessible trail segments)
- » Net Cut/Fill = -22,508 cu yds
- » # of Truckloads to Remove/ Add Soil = 1,575
- » # of Trees Removed = 109
- » # of Trees Saved in Paved Areas = 0
- » Stormwater Storage on Site = 33,767 gal.
- » Existing Slope < 5% = 17%
- » Existing Grade Cut in Excess of 9 feet = 34%
- » Retaining Wall = Yes (475' length/ 0'-16' high)
- » Area of Disturbance During Construction = 121,298 sf (2.8 Acres)
- » Distance to Nearest Residential Property Line = 65'

SLOPES TABLE			
MIN. SLOPE	MAX. SLOPE	ACRES	COLOR
0.00%	5.00%	0.48 ac	■
5.01%	15.00%	1.83 ac	■
15.01%	25.00%	0.46 ac	■
25.01%	137.94%	0.07 ac	■

118,535			
MIN			
-9	-7	40,522	34%
-9	-7	12,512	11%
-7	-5	11,738	10%
-5	-3	14,059	12%
-3	MAX	39,704	33%

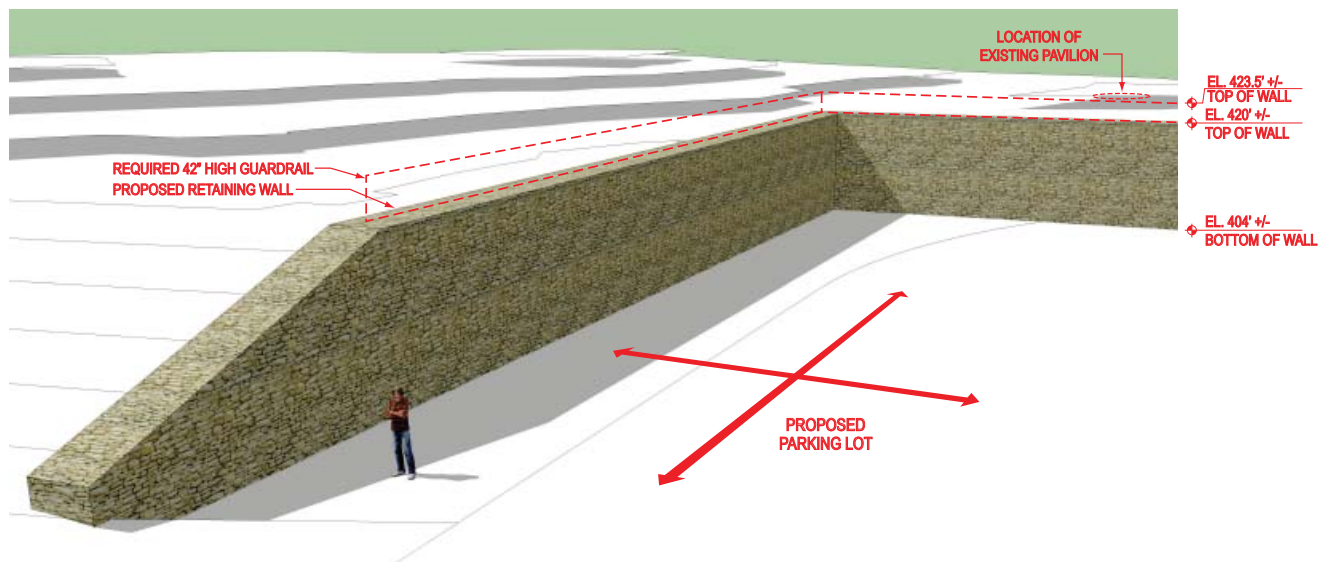
← 34% of Grade Cut in Excess of 9'



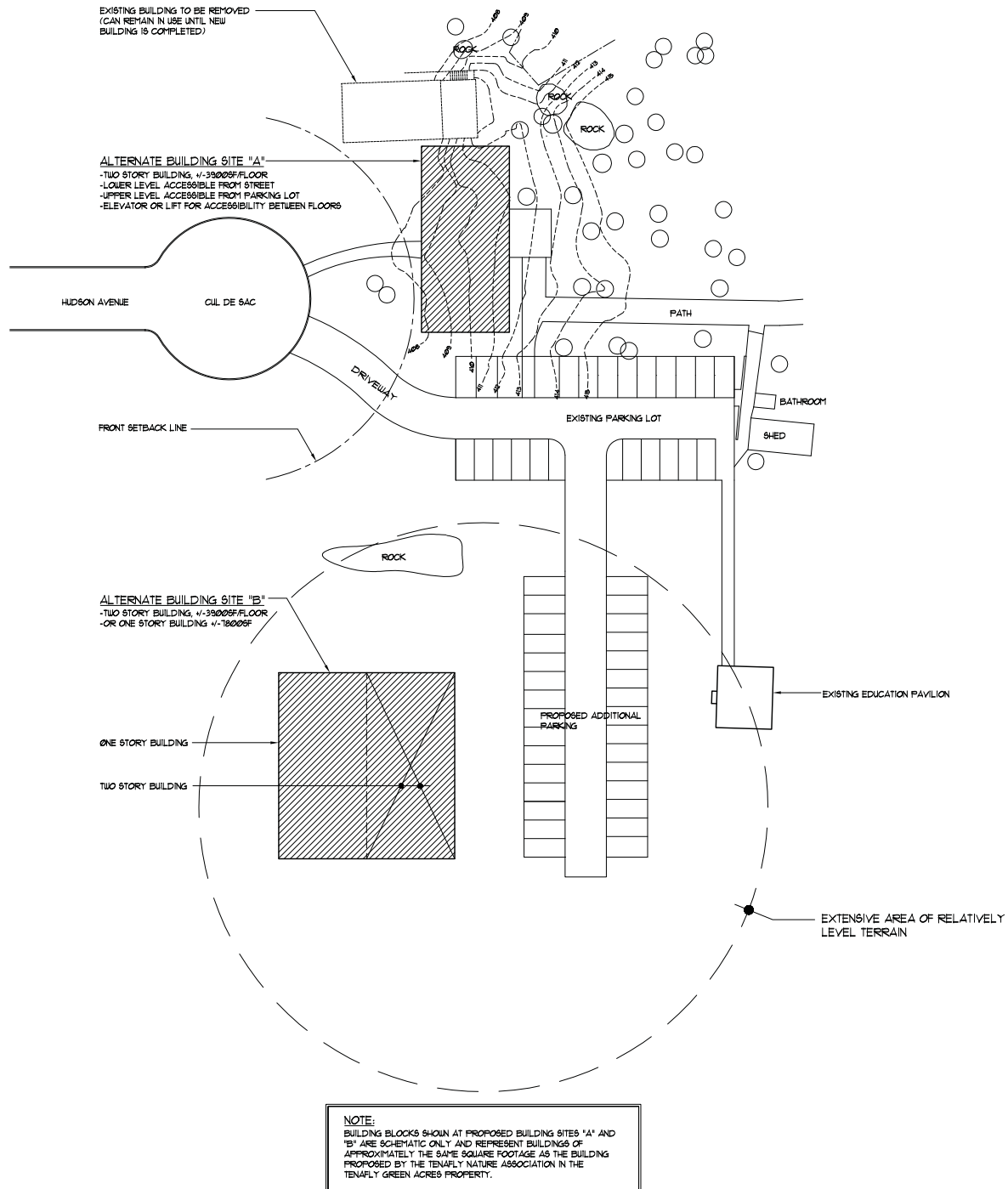
**EXISTING SLOPE ANALYSIS OF
ONE-STORY HUDSON ALTERNATIVE**



**ANALYSIS OF PROPOSED CUTS TO
ONE-STORY HUDSON ALTERNATIVE**



Height of Proposed Retaining Wall required for Alternate 1 – Hudson Avenue Two-Story and Alternate 2 – Hudson Avenue One-Story



PROPOSED ALTERNATE SITES FOR A NEW TENAFLY NATURE CENTER BUILDING AT THE EXISTING NATURE CENTER LOCATION

NOTE: LOCATION OF EXISTING STRUCTURES AND TOPOGRAPHIC FEATURES ARE APPROXIMATE.



ROLAND SCHARFSPIZ, ARCHITECT
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TEL.: 201 569 1245

MELVIN ESIG, PROFESSIONAL ENGINEER
43 ROYDEN ROAD, TENAFLY, NJ 07670
TEL.: 201 569 8561

SCALE: 1"=30'-0"
DATE: OCTOBER 28, 2013

Table 1: Comparison Metrics

	Proposed Site East Clinton Avenue	Alternate 1 Hudson Avenue Two-Story	Alternate 2 Hudson Avenue One-Story
Project Footprint (sf/acres)	76,948 / 1.8	71,256 / 1.6	75,627 / 1.7
Overall Grade on Site	3%	5%	5%
Cut / Fill (cu yd)	5,850 / 5,850 ¹	25,238 / 3,680 ¹	27,282 / 4,774 ¹
Net Cut / Fill (cu yd)	Balanced (no rock or soil leaves site)	- 21,558	- 22,508
# of Truckloads to Remove / Add Soil	0	1,509	1,575
# of Trees Removed	90 ²	97	109
# of Trees Saved in Paved Areas	49	0	0
Stormwater Storage On-Site (gal)	34,164	36,295	33,767
Existing Slope < 5%	78%	12%	17%
Proposed Grade Cut > 9 Ft	0%	36%	34%
Retaining Wall	N/A	Yes (475' length / 16' max. ht)	Yes (475' length / 16' max. ht)
Area of Disturbance During Construction (sf / acres)	102,710 / 2.4	104,110 / 2.4 ³	121,298 / 2.8 ³
Distance to Nearest Residential Property	610'	106'	65'

Notes:

- (1) Includes 3,500 cu yd of rock fill which is crushed on-site and used to create a universally accessible trail.
- (2) Does not include the off-site removals in Bergen County road-widening area along East Clinton Avenue.
- (3) Assumes the closing of the existing Nature Center building. Keeping the existing Nature Center open would require clearing land for temporary facilities which would add approximately 1 additional acre.

CHAPTER 3

AFFECTED ENVIRONMENTS AND POTENTIAL IMPACTS OF THE ALTERNATIVES CONSIDERED

3.1 GEOLOGICAL RESOURCES

3.1.1 Geology

Geology Existing Conditions

The subject sites for the Proposed Action at the East Clinton Avenue location and for the No Action and Alternatives 1 and 2 at the Hudson Avenue location are contained within the Piedmont (Newark Basin) Physiographic Province of New Jersey. The bedrock geological formation underlying these properties is listed as Jurassic Diabase and the surficial geology is listed as Rahway Till of a late Pleistocene, late Wisconsinan age. In addition, the subject sites have been listed as containing Scattered Bedrock Outcrops.

Impacts to Geology

No Action

No impacts to bedrock geology, surficial geology or bedrock outcrops would be anticipated as a result of the No Action Alternative.

Proposed Action – East Clinton Avenue

Implementation of the Proposed Action at the East Clinton Avenue site would result in impacts to surficial and bedrock geology, and bedrock outcrops. As calculated, a gross amount of approximately 5,850 cubic yards of material consisting of surficial geologic deposits, bedrock and bedrock outcrop, and associated soil materials would be cut for project construction; the cut for these materials would range from 0 up to approximately 6 feet in depth. Removal of the bedrock materials would be accomplished with selective blasting or drilling. It is anticipated that all cut materials would be reused on the site and that none of the cut materials would need to be removed from the site.

The cutting required for implementation of the Proposed Action is anticipated to represent an impact to geological resources on the East Clinton Avenue site. As proposed, up to approximately 6 feet of surficial geologic deposits and bedrock would be removed in the western portion of the site to construct the site access road and vehicle turnaround loop. The remainder of the disturbance area would only require minor cutting and filling to obtain suitable grades across the site. Long-term impact relates to the relatively minor change to geologic resources resulting from the cutting and re-grading of the site. Short-term impacts relate to the removal of bedrock via blasting or drilling and the associated vibrations and dust generated by removal of the geologic materials.

Alternative 1 – Hudson Avenue Two Story

Implementation of the Two Story Nature Center building on the Hudson Avenue site would result in impacts to surficial and bedrock geology, and bedrock outcrops. As calculated, a gross amount of approximately 25,238 cubic yards of material consisting of surficial geologic deposits, bedrock and bedrock outcrop, and associated soil materials would be cut for project construction; the cut for these materials would range from 0 up to approximately 16 feet in depth. Removal of the bedrock materials would be accomplished primarily with selective blasting. Although a small amount of the cut materials (3,500 cu yds) may be reused on-site

for project construction, the majority of the cut materials (21,558 cu yds) would need to be removed from the site and deposited at an off-site location.

It is anticipated that implementation of Alternative 1 would represent a significant long-term impact to geological resources on the site due to the removal of surficial geologic deposits, bedrock and bedrock outcrop and the need to cut up to 16 feet of these materials from the site. Short-term impacts relate to the removal of bedrock via blasting and the associated vibrations and dust generated by removal of the geologic materials.

Alternative 2 – Hudson Avenue One Story

Implementation of the One Story Nature Center building on the Hudson Avenue site would result in impacts to surficial and bedrock geology, and bedrock outcrops. As calculated, a gross amount of approximately 27,282 cubic yards of material consisting of surficial geologic deposits, bedrock and bedrock outcrop, and associated soil materials would be cut for project construction; the cut for these materials would range from 0 up to approximately 16 feet in depth. Removal of the bedrock materials would be accomplished primarily with selective blasting. Although a small amount of the cut materials (3,500 cu yds) may be reused on-site for project construction, the majority of the cut materials (22,508 cu yds) would need to be removed from the site and deposited at an off-site location.

It is anticipated that implementation of Alternative 2 would represent a significant long-term impact to geological resources on the site due to the removal of surficial geologic deposits, bedrock and bedrock outcrop and the need to cut up to 16 feet of these materials from the site. Short-term impacts relate to the removal of bedrock via blasting and the associated vibrations and dust generated by removal of the geologic materials.

Geology Conclusions

The Proposed Action and Alternatives 1 and 2 would result in impacts to geological resources as a result of the need to cut surficial geologic deposits, bedrock and bedrock outcrop to achieve proper grades on each of the sites. For the Proposed Action at the East Clinton Avenue location, a cut of approximately 6 feet in depth would be required in the western portion of the site to construct the site access road and vehicle turnaround loop. The long-term impact to geological resources is anticipated to be minor as a result of cutting and re-grading of the site. Alternatives 1 and 2 would be anticipated to have more significant long-term impact to geological resources as a result of cutting up to 16 feet of geologic materials for implementation of those alternatives. Short-term impacts for the Proposed Action and Alternatives 1 and 2 relate to the removal of bedrock via blasting and the associated vibrations and dust generated by removal of the geologic materials. The impacts generated by Alternatives 1 & 2 would be long-lasting and significant; in contrast, the impacts of the Proposed Action at East Clinton Avenue should be minor and temporary in nature.

3.1.2 Soils

Soils Existing Conditions

Within the areas of proposed impact on the Proposed Action – East Clinton Avenue site the Soil Survey Geographic Database (SSURGO) maps the presence of five soil types. These include Boonton-Urban Land Complex, 8-15% slopes (BouC); Boonton Moderately Well Drained-Rock Outcrop Complex, 8-15% slopes (BorC); Haledon Gravelly Loam, 0-8% Slopes, Very Stony (HamBb); Hasbrouck Loam, 0-3% Slopes, Very Stony (HcsAb); and Udorthents, Wet Substratum-Urban

Land Complex (UdwuB).

Within the area of the No Action alternative and the areas of proposed impact for Alternatives 1 and 2 at the Hudson Avenue location, SSURGO maps the presence of three soil types. These include Boonton-Urban Land Complex, 15-25% slopes (BouD); Boonton Moderately Well Drained-Rock Outcrop Complex, 8-15% slopes (BorC); and Boonton Moderately Well Drained-Rock Outcrop Complex, 15-25% slopes (BorD).

Impacts to Soils

No Action

No impacts to soils would be anticipated as a result of the No Action Alternative.

Proposed Action – East Clinton Avenue

Implementation of the Proposed Action at the East Clinton Avenue site would result in impacts to soils. As calculated, approximately 1.8 acres of land/soil disturbance would result from project construction. Soil loss would occur directly from construction disturbances or indirectly from wind or water erosion. Best Management Practices would be developed and would include implementation of an approved Soil Erosion and Sediment Control (SESC) Plan. The SESC Plan would include the use of silt fencing and/or hay bales, timely re-vegetation of disturbed soil areas, and maintaining any soil stockpiles during construction, to prevent soils from eroding from the site and their deposition onto adjacent, off-site lands.

Alternative 1 – Hudson Avenue Two Story

Implementation of the Two Story Nature Center building on the Hudson Avenue site would result in impacts to soils. As calculated, approximately 1.6 acres of land/soil disturbance would result from project construction. Soil loss would occur directly from construction disturbances or indirectly from wind or water erosion. Implementation of Best Management Practices including an approved SESC Plan would mitigate impacts to soils as a result of this alternative.

Alternative 2 – Hudson Avenue One Story

Implementation of the One Story Nature Center building on the Hudson Avenue site would result in impacts to soils. As calculated, approximately 1.7 acres of land/soil disturbance would result from project construction. Soil loss would occur directly from construction disturbances or indirectly from wind or water erosion. Implementation of Best Management Practices including an approved SESC Plan would mitigate impacts to soils as a result of this alternative.

Soils Conclusions

The Proposed Action and Alternatives 1 and 2 would result in impacts to soils and would occur either directly from construction disturbances or indirectly from wind or water erosion. The Proposed Action at the East Clinton Avenue location would disturb approximately 1.8 acres of land; Alternative 1 at the Hudson Avenue site would disturb approximately 1.6 acres of land; and Alternative 2 at the Hudson Avenue location would disturb approximately 1.7 acres of land. Utilization of Best Management Practices and implementation of an approved Soil Erosion and Sediment Control (SESC) Plan would help mitigate any impacts related to soil disturbances for the alternatives.

An SESC Plan would include the use of silt fencing and/or hay bales, timely re-vegetation of disturbed soil areas, and maintaining any soil stockpiles during construction, to prevent soils from eroding from the site and their deposition onto adjacent, off-site lands.

3.1.3 Topography and Slopes

Topography/Slopes Existing Conditions

Slopes across the Proposed Action – East Clinton Avenue site range from a low of 0.11% slope up to a high of 49.26% slope; refer to the following table for a breakdown of slopes and the amount of land contained under those slopes at the East Clinton Avenue location.

Table 2: Slope Table Proposed Action - East Clinton Avenue	
Slope Range	Area (acres)
0.11% - 5.0%	1.88
5.0% - 15%	0.43
15% - 25%	0.06
25% - 49.26%	0.01

Slopes across the Alternative 1 – Hudson Avenue Two-Story site range from a low of 0% slope up to a high of 137.94% slope; refer to the following table for a breakdown of slopes and the amount of land contained under those slopes at the Alternative 1 location.

Table 3: Slope Table Alternative 1 – Hudson Avenue Two-Story	
Slope Range	Area (acres)
0.11% - 5.0%	0.37
5.1% - 15%	1.50
15.1% - 25%	0.41
25.1% - 137.94%	0.07

Slopes across the Alternative 2 – Hudson Avenue One Story site also range from a low of 0% slope up to a high of 137.94% slope; refer to the following table for a breakdown of slopes and the amount of land contained under those slopes at the Alternative 2 location.

Table 4: Slope Table Alternative 2 – Hudson Avenue One-Story	
Slope Range	Area (acres)
0.11% - 5.0%	0.98
5.1% - 15%	1.83
15.1% - 25%	0.46
25.1% - 137.94%	0.07

Impacts to Topography/Slopes

No Action

No impacts to topography or slopes would be anticipated as a result of the No Action Alternative.

Proposed Action – East Clinton Avenue

Impacts to slopes and topography as a result of the Proposed Action on the East Clinton Avenue site are anticipated to be minor in nature. Of the approximately 2.4 acre disturbance area for this alternative, 1.88 acres (approximately 78%) of this area is at a slope of 5% or less. 0.43 acres (18%) of the disturbance area contains slope of between 5 and 15%, and only 0.07 acres (3%) of the disturbance area contains slopes of greater than 15%. Long-term impact to topography and slopes would result from implementation of the Proposed Action on the East Clinton Avenue site. Following construction of this alternative, proposed slopes across the site would range from 0 to 3% slope. Since approximately 78% of the site currently contains slopes of 5% or less, the overall impact to slopes and topography is expected to be minor for this alternative.

Alternative 1 – Hudson Avenue Two-Story

Impacts to slopes and topography as a result of the Hudson Avenue Two Story Alternative would be expected to be significant in nature. Of the approximately 2.4 acre disturbance area for this alternative, 1.50 acres (approximately 63%) of this area is at slopes of between 5 and 15%. An additional 0.48 acres (approximately 20%) of the disturbance area for Alternative 1 contains slopes of greater than 15%. Long-term impact to topography and slopes would result from implementation of Alternative 1 on the Hudson Avenue site. Following construction of this alternative, proposed slopes across the site would range from 0 to 5% slope. Approximately 63% of the site currently contains slopes of between 5 and 15%, and 20% of the site contains slopes of greater than 15%. As indicated under Geology above, large cuts would be required for implementation of this alternative. Further, this alternative would require a retaining wall along the eastern edge of proposed parking area to accommodate universal access grades; this wall is anticipated to range up to 16 feet in height plus safety fence. The overall impact to slopes and topography would be significant for this alternative.

Alternative 2 – Hudson Avenue One-Story

Impacts to slopes and topography as a result of the Hudson Avenue One Story Alternative would also be significant. Of the approximately 2.8 acre disturbance area for this alternative, 1.83 acres (approximately 65%) of this area has slopes between 5 and 15%. Again, the additional 0.53 acres (approximately 19%) of the disturbance area for Alternative 2 contains slopes greater than 15%.

Long-term impact to topography and slopes would result from implementation of Alternative 2 on the Hudson Avenue site. Proposed slopes across the site for Alternative 2 would range from 0 to 5% slope. Approximately 65% of the site currently contains slopes of between 5 and 15%, and 19% of the site contains slopes of greater than 15%. As with Alternative 1, this alternative would require a retaining wall along the eastern edge of proposed parking area to accommodate universal access at grade; this wall is anticipated to range up to 16 feet in height plus safety fence. The overall impact slopes and topography would be significant for this alternative.

Topography/Slopes Conclusion

It is expected that implementation of either Alternative 1 or Alternative 2 would result in significant impacts to topography and slopes at the Hudson Avenue location. In addition to requiring the modification of slopes from a maximum of 137.94% (rock formations) down to slopes of 0 to 5% to obtain grades for universal access, each of these alternatives would require substantial rock cuts and would also require installation of a retaining wall reaching 16 feet in height along the eastern edge of the proposed parking areas for these alternatives. Impacts

to slopes and topography as a result of the Proposed Action on the East Clinton Avenue site are anticipated to be minor in nature since approximately 78% of the site is at a slope of 5% or less and target slopes on the site range from 0 to 3%. Long-term impact to topography and slopes would result from implementation of the Proposed Action on the East Clinton Avenue site; however, it is anticipated that the overall impact slopes and topography on the site would be minor for this alternative.

3.2 AIR QUALITY

Air Quality Existing Conditions

The Clean Air Act requires EPA to set National Ambient Air Quality Standards for pollutants considered harmful to public health and the environment. The Clean Air Act identifies two types of national ambient air quality standards (NAAQS). Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

EPA has set National Ambient Air Quality Standards for six principal pollutants, which are called "criteria" pollutants¹:

- » Nitrogen Dioxide (NO_2)
- » Sulfur Dioxide (SO_2)
- » Ozone (O_3)
- » Carbon Monoxide (CO)
- » Particulate Matter (PM)
- » Lead (Pb)

Air Quality Existing Conditions

Bergen County is in NAAQS attainment for the following pollutants:

- » NO_2
- » SO_2 (2010 standard)
- » PM10
- » PM2.5 (2006 standard)
- » Pb (2008 standard)

Bergen county is in NAAQS non-attainment / maintenance for the following pollutants:

- » O_3 , 8-hour (2008 standard)
- » CO

Impacts to Air Quality

No Action

No impacts to air quality would be anticipated as a result of the No Action Alternative.

Proposed Action: East Clinton Avenue

There would be impacts to air quality as a result of constructing and occupying the proposed Nature Center on East Clinton Avenue.

The new program of use would generate a number of cars and buses that need to enter and leave the site. The associated emissions/exhaust particulates on their approach/departure would occur on a County Road, rather than residential, and by placing the bus/car turnaround approximately 400 feet away from the Nature Center the impact on visitors and staff is greatly reduced.

¹ Source: EPA website - The Green Book Nonattainment Areas for Criteria Pollutants

Further, by keeping parking area grades close to natural grade, a large number (49) trees are retained within the paving area. These trees and the surrounding forest, 40-60 feet in height, produce a natural filtration effect due to their large surface areas of trunk, limbs and (in season) leaves – these contribute to fixing particulates from the atmosphere which would then be washed by rain back to the surface at grade.

The horizontal distance of approximately 600 feet from the residential properties to the Nature Center building and its operations results in greatly reduced air quality impacts for neighbors.

The high efficiency/sustainable design for the new Nature Center would reduce commercial levels of energy consumption and emission by over 50%.

Alternate One: Hudson Avenue Two Story

There would be impacts to air quality as a result of constructing and occupying the proposed Nature Center on Hudson Avenue.

The new program of use would generate an increased number of cars and buses that need to enter and leave the site. They would pass first through a residential area leading up to the bus/car turnaround which is located directly in front of the Nature Center building. This close adjacency to the Nature Center as well as the residence to the north (158 feet to the property line) would have an impact on visitors, staff and neighbors in terms of vehicular exhaust/particulates. The parking areas, in order to achieve universal access across the site are cut significantly below natural grade so there are no existing trees retained in the parking area to aid in filtration of particulates in the air.

The parking area is located 190 feet from adjoining residential property lines but occurs 18 feet higher so there is a degree of visual separation.

The high efficiency/sustainable design for the new Nature Center would reduce commercial levels of energy consumption and emission by over 50%.

Alternate Two: Hudson Avenue One Story

There would be impacts to air quality as a result of constructing and occupying the proposed Nature Center on Hudson Avenue.

The new program of use would generate an increased number of cars and buses which would pass first through a residential area leading up to the bus/car turnaround which is located 250 feet away from the Nature Center building so that the impact on visitors and staff is reduced. The parking areas, in order to achieve universal access across the site are cut significantly below natural grade so there are no existing trees retained in the parking area to aid in filtration of particulates in the air.

The parking area is located 190 feet from adjoining residential property lines but occurs 18 feet higher so there is some degree of visual separation.

The high efficiency/sustainable design for the new Nature Center would reduce commercial levels of energy consumption and emission by over 50%.

Air Quality Conclusion

The East Clinton Avenue Alternate preserves the existing natural grade to the greatest degree and the greatest number of trees in and around the parking lot.

This greater retention of the forest canopy over the emissions sources (cars and buses) reduces the emissions impact. Both Hudson Alternates 1 & 2 require deep cuts below natural grade and therefore cannot achieve the emissions mitigation effect.

3.3 NOISE

Noise Existing Conditions

There is a major difference in noise sensitivity between the three build options. In terms of distance to neighbors, the Hudson Avenue Alternates 1 & 2 have very close adjacency to neighbors ranging from approximately 65' to 158' away and an adjacency to Pfister's Pond which attracts a wide range of wildlife including migratory birds.

The Proposed Action at East Clinton Avenue is in a secluded area of the forest adjoining East Clinton Avenue with a fairly level and low background noise from passing traffic. The closest neighboring property is over 600' away.

Impacts to Noise

No Action

No impacts to noise in the environment would be anticipated as a result of the No Action Alternative.

Proposed Action – East Clinton Avenue

Implementation of the Nature Center on the East Clinton Site would result in noise sources associated with the construction activities on the site and the operation of the Nature Center.

Currently East Clinton Avenue traffic generates a fairly uniform but minimally intrusive noise level from vehicles passing along the roadway. This masking effect combined with the horizontal separation of over 600 feet from the neighbors results in a significantly reduced if noticeable noise impact from the daily operations of Nature Center.

East Clinton requires 5,850 cu yds of cut into rock which is balanced by its use as fill for stabilization of the trails for ADA acceptance. Drilling/Blasting associated with this cut would be the main source of noise/vibration and would have a minimal impact in the short term.

The total of 5,850 cu. yds. of rock cut on site for construction is to be crushed and used on site, and would not be trucked out (associated noise avoided).

Alternate One – Hudson Avenue Two-Story

Implementation of the Two Story Nature Center on Hudson Avenue would result in significant noise sources associated with the construction activities on the site and the operation of the Nature Center.

The noise associated with the operation of the Nature Center would increase proportionately with the new program of use and related parking. Residential properties are located nearby within 106 feet and would be impacted by this increase in operational noise.

Implementation of the Two-Story Nature Center on Hudson Avenue would result in over 25,000 cu yds. of rock and soil which would be blasted from the site creating associated noise and vibration to adjoining residential properties in the short

term. Over 1,500 truckloads of rock and soil would be transported from the site creating noise and vibration impacting both the adjacent residential properties and the extended residential frontages along Hudson Avenue. The noise from this and all other traffic would be increased by the very steep slope of Hudson Avenue (10-12% slope).

Alternate Two – Hudson Avenue One-Story

Implementation of the One Story Nature Center on Hudson Avenue would result in noise sources associated with the construction activities on the site and the operation of the Nature Center.

The noise associated with the operation of the Nature Center would increase proportionately with the new program of use and related parking. Residential properties located within 65 feet would be impacted by this increase in operational noise.

Implementation of the One-Story Nature Center on Hudson Avenue would result in over 27,000 cu yds. of rock and soil which would be blasted from the site creating associated noise and vibration to adjoining residential properties in the short term. Over 1,500 truckloads of rock and soil would be transported from the site creating noise and vibration impacting both adjacent residential property and the extended residential frontages along Hudson Avenue. The noise from this and all other traffic would be increased by the very steep slope of Hudson Avenue (10-12% slope).

Noise Conclusion

All three build options would have short term negative from blasting and vibrations associated with the construction phase although East Clinton Avenue would have a much lesser impact due to no rock or soil being taken off site and having a greater distance to neighbors. Long term operational noise impacts would be minimal at the Proposed East Clinton Avenue site but more impactful to the neighbors at the Alternates 1 & 2 Hudson Avenue sites.

3.4 WATER QUALITY AND WATER QUANTITY

3.4.1 Water Resources

Water Resources Existing Conditions

The property in TNC's lease falls into separate watersheds. The eastern portion of the property drains to the Hudson River while the western portion drains through the Borough to the Hackensack River. The watershed through which the eastern portion drains generally consists of forest and wetlands characteristic of the Preserve and a series of streams and groundwater flows generally convey the runoff from this area to the Hudson River. The watershed through which the western portion drains generally consists of the developed areas of the Borough. There are storm sewers and drainage channels throughout this area which ultimately convey the runoff to the Hackensack River. Numerous flooding problems exist within the Borough due to the inadequacy of the stormwater conveyance system within the Hackensack River watershed.

Impacts to Water Resources

No Action

No impacts to water resources are anticipated as a result of the No Action Alternative.

Proposed Action – East Clinton Avenue

Of the alternatives under consideration, the East Clinton Avenue site is the only one which would have drainage into both of the aforementioned watersheds. Under the proposed development plan, the majority of the stormwater runoff (approximately 80%) would be directed to the Hudson River watershed and therefore would not exacerbate the borough's flooding problems. A smaller portion (approximately 20%) of the stormwater leaving the western end of the site would be tributary to the Hackensack River watershed. The quantity of runoff from this smaller western area would be controlled by means of a surface detention basin which would discharge to the wetlands adjacent to the East Clinton Avenue acceleration lane. The quantity of runoff to the Hudson River watershed would similarly be attenuated; however, this would be achieved through the use of porous paving materials underlain by underground gravel beds. These gravel beds would act both to recharge the runoff to any underlying soils and delay its ultimate transmission to the network of wetlands and streams leading to the Hudson River. There are no long-term detrimental impacts from a water resources perspective. The long-term impacts are, in fact, positive from the construction of the stormwater management systems which would reduce the runoff from the site either through detention or recharge. There would be short-term impacts related to the construction which could include noise, vibration, soil erosion and dust generation. However, these impacts would be minimized through the use of appropriate construction techniques and would last only for the period of construction.

Alternative 1 – Hudson Avenue Two-Story & Alternative 2 – Hudson Avenue One-Story

Both of these alternatives lie within the Hackensack River watershed. Due to the steep slopes and large cuts to implement these alternatives, neither of the stormwater management measures proposed for the East Clinton Avenue site are viable in this location. As a result, stormwater management for either of these alternatives would be implemented underground within the area of the turn-around at the end of Hudson Avenue. In order to minimize the additional rock cut which would be required, it is envisioned that the underground system would consist of large concrete box culverts. Implementation of this system is prohibitively more expensive than that proposed for the East Clinton Avenue site. There are no long-term detrimental impacts from a water resources perspective. The long-term impacts are, in fact, positive from the construction of the stormwater management systems which would reduce the runoff from the site through detention. There would be short-term impacts related to the construction which could include noise, vibration, soil erosion and dust generation. However, these impacts would be minimized through the use of appropriate construction techniques and would last only for the period of construction.

Water Resources Conclusions

Although all of the build alternatives proposed positive long-term impacts with minimal negative short-term impacts, the East Clinton Avenue site is the most desirable since it is primarily located in the Hudson River watershed and away from the Borough's problem watershed, the Hackensack River watershed. Additionally, the East Clinton Avenue site utilizes both innovative and lower cost stormwater management systems as compared to buried box culverts for the Hudson Avenue alternatives. The East Clinton Avenue site also presents teaching opportunities from its presence in two watersheds, the innovative porous pavement design and the visual nature of the surface detention basin.

3.4.2 Water Quality

Water Quality Existing Conditions

No water quality measures are currently implemented on any of the sites under consideration. The only water quality improvement afforded by the current conditions is the filtering which may occur to the runoff while traveling across any vegetated areas.

Impacts to Water Quality

No Action

No water quality measures exist for the current development nor are any proposed under the No Action alternative. Therefore, no alleviation of existing water quality problems in the Hackensack River watershed would occur under this alternative. The long and short-term negative impacts of this alternative would be the continuation of existing water quality problems within the Borough.

Proposed Action – East Clinton Avenue

As designed, the Proposed Action at the East Clinton Avenue location would implement water quality measures in two separate approaches. The Hudson River watershed water quality measures would consist of groundwater recharge utilizing the area below the parking area porous pavement. The Hackensack River watershed water quality measures would consist of extended detention in the basin within the lower vegetated swale at the entry area turn-around. There would be a positive long-term impact resulting from the utilization of groundwater recharge and extended detention for both watersheds. There would be short-term impacts related to the construction which could include soil erosion and dust generation. However, these impacts would be minimized through the use of appropriate construction techniques and would last only for the period of construction.

Alternative 1 – Hudson Avenue Two-Story & Alternative 2 – Hudson Avenue One-Story

Both of these alternatives lie within the Hackensack River watershed. Due to the steep slopes and large cuts to implement these alternatives, neither of the water quality measures proposed for the East Clinton Avenue site are viable in this location. As a result, water quality measures for either of these alternatives would be implemented underground by means of manufactured stormwater quality devices within the area of the turn-around at the end of Hudson Avenue. Implementation of these stormwater quality devices is prohibitively more expensive than that proposed for the East Clinton Avenue site. There are no long-term detrimental impacts from water quality perspective. The long-term impacts from the construction of the stormwater quality measures are, in fact, positive as these alternatives would reduce the pollutant loading from the runoff from the site. There would be short-term impacts related to the construction which could include soil erosion and dust generation. However, these impacts would be minimized through the use of appropriate construction techniques and would last only for the period of construction.

Water Quality Conclusions

Although all of the build alternatives proposed provide positive long-term impacts with minimal negative short-term impacts, the East Clinton Avenue site is preferred since it is generally located in the Hudson River watershed and away from the Borough's problem watershed, the Hackensack River watershed. Additionally, the East Clinton Avenue site utilizes both innovative and lower cost stormwater quality measures as compared to manufactured stormwater quality devices for the Hudson Avenue alternatives. The East Clinton Avenue site also presents teaching

opportunities from the innovative porous pavement design and the visual nature of the surface detention basin.

3.5 STREAMS AND FLOODPLAINS

Streams and Floodplains Existing Conditions

The area proposed for construction of the Proposed Action on the East Clinton Avenue site is contained within two separate watersheds with the eastern portion of the impact area draining to the Hudson River and the western portion of the impact area draining to the Hackensack River watershed. No streams, ponds, or other water bodies have been identified on or immediately adjacent to the proposed area of impact on the East Clinton Avenue site. Additionally, no floodplain areas have been identified on or immediately adjacent to this site.

The area of the No Action alternative and the areas of proposed impact for Alternatives 1 and 2 at the Hudson Avenue location are contained within the Hackensack River watershed. No streams, ponds, or other water bodies have been identified on or immediately adjacent to the proposed area of impact for Alternatives 1 and 2. Additionally, no floodplain areas have been identified on or immediately adjacent the impact area of these alternatives. A water body known as Pfister's Pond is located to the east of the activities proposed under Alternatives 1 and 2 and is well outside of the impact area proposed for these alternatives.

Impacts to Streams and Floodplains/Conclusions

Since none of the sites for any of the considered alternatives contain any streams, ponds, other water bodies, or floodplains, no impacts to any water resources or floodplains would result from implementation of any of the four considered alternatives.

3.6 WETLANDS AND WETLAND TRANSITION AREAS

Wetlands and Wetland Transition Areas Existing Conditions

Forested wetlands and wetland transition areas have been identified at the Proposed Action location on East Clinton Avenue. The wetlands at this location were delineated by Amy S. Greene Environmental Consultants, Inc. and were verified by the New Jersey Department of Environmental Protection (NJDEP) with a Letter of Interpretation: Line Verification-Portion of a Site (LOI), dated June 26, 2012. The LOI also established the width of the standard wetland transition area to be 50 feet.

No wetlands or wetland transition areas have been identified on or within the immediate vicinity of the area of the No Action alternative and the areas of proposed impact for Alternatives 1 and 2 at the Hudson Avenue location. Wetlands were identified immediately adjacent to Pfister's Pond located east of the impact areas for Alternatives 1 and 2; however, given that these wetlands are located more than 100 feet from the area of impact for Alternatives 1 and 2, and assuming that these wetlands would also be subject to a 50-foot transition area, the impact areas for Alternatives 1 and 2 do not contain any wetlands or wetland transition areas.

Impacts to Wetlands and Wetland Transition Areas

No Action

No wetlands or wetland transition areas have been identified on or in the immediate vicinity of the existing Tenaflly Nature site; no impacts to wetlands or wetland transition areas would result from the No Action Alternative.

Proposed Action – East Clinton Avenue

Forested wetlands with associated wetland transition areas have been identified at the Proposed Action location on East Clinton Avenue. As designed, the proposed Nature Center building, parking areas and internal roadways would be constructed outside of wetlands and transition areas on the site. A small area of wetland and wetland transition area impact would occur off-site in the Bergen County road-widening easement. This impact to wetlands and wetland transition areas is anticipated to be minor and falls under an NJDEP Freshwater Wetlands General Permit #10 for minor road crossings.

Alternative 1 – Hudson Avenue Two-Story & Alternative 2 – Hudson Avenue One-Story

No wetlands or wetland transition areas have been identified on or in the immediate vicinity of the impact areas for Alternative 1 and 2; therefore, no impacts to wetlands or wetland transition areas would result from either of these alternatives.

Wetland and Wetland Transition Area Conclusions

Forested wetlands with associated wetland transition areas at the Proposed Action location on East Clinton Avenue would have no impacts on site. A minor road crossing permit under NJDEP Freshwater Wetlands General Permit #10 would be required for the Bergen County easement area off-site. No wetlands or wetland transition areas have been identified on or within the immediate vicinity of the impact areas for Alternatives 1 and 2 at the Hudson Avenue location; therefore, no impact to these resources would result for these alternatives.

3.7 LAND USE AND ZONING

Land Use and Zoning Existing Conditions

The entire site, including the Proposed Action and Alternatives 1 and 2 is a nature preserve.

The site is shown in the "O" Open Zone on the 2007 Zoning Map. However, it appears that Ordinance 13 – 20, adopted October 22, 2013, changed the Zone designation to "P" Public Zone. The content of the Zoning Ordinance, other than the aforementioned designation, has not changed. There are three basic types of Principal Permitted Uses allowed in this Zone contained in Schedule A. The first is public buildings and uses which is further defined by Footnote 3 to be, "Limited to the following: a) public parks and other public facilities and b) public or private natural conservation areas." The Tenaflly Nature Center falls into this category of use. The second type of use is private, nonprofit recreational, social or cultural facilities. The third and final use is public and private academic schools. The Tenaflly Nature Center also has characteristics that could allow it to fall under the latter categories. Additionally, Conditional Uses in this Zone include cemeteries and dwelling for watchmen/caretaker and family. The latter appears to be directly related to the housing provided for the Nature Center's Director on the unimproved eastern portion of Hudson Avenue. This dwelling use is the only item further defined in the Zoning Ordinance with respect to parking, as it relates to the P Zone.

There are four Accessory Uses permitted in the P Zone. These include off-street parking inclusive of garages, fences and walls, signs and garbage, trash, recycling containers and enclosures. All of these Accessory Uses are likely to be included in any of the development schemes under consideration.

Schedule B of the Zoning Ordinance defines the Area and Bulk Regulations for the

P Zone. These requirements are broken into two categories. The first category is for Public Uses & Conservation Areas. The second is for Private, Non-profit Uses. The Tenaflly Nature Center's development proposals would fall into the first category, which contains only yard requirements. All of the development schemes would provide for the required yard setbacks.

With respect to Schedule C of the Zoning Ordinance which covers Off-Street Parking Space Requirements, the development proposals would fall under Note 3 of the Schedule for all uses not specifically delineated. Note 3 requires the Zoning Officer to estimate the requisite minimum number of spaces, and said estimate is then subject to the jurisdiction of the Planning Board.

Land use for the entire site is Open Space.

Land Use and Zoning Conclusions

The uses proposed in all three build alternates (Proposed Action - East Clinton Avenue, Alternate 1 - Hudson Avenue Two-Story, and Alternate 2 - Hudson Avenue One-Story) are compliant and consistent with applicable Land Use and Zoning Regulations.

3.8 CIRCULATION AND TRANSPORTATION

Circulation and Transportation Existing Conditions

Under existing visitor conditions, school buses use the cul-de-sac at the top of Hudson Avenue for dropping-off and picking-up. The steep grade and small radius of the cul-de-sac cause difficulty maneuvering for buses. The waiting buses at this location regularly block the driveway that leads to the parking lot and potentially could obstruct emergency vehicles from accessing the TNC building.

The existing parking lot has only 17 parking spaces. This does not accommodate the daily parking needs of the Center. Overflow parking spills daily onto the neighboring residential streets around the Center. The steep grade leading to the center challenge the visitors, especially the elderly, the young, people with mobility limitations, and strollers.

Impacts to Circulation and Transportation

No Action

As need for environmental education grows in the surrounding communities, the increasing number of visitors to the Center would put more pressure on the existing parking and circulation conditions. Visitors who travel to the Center via passenger cars are anticipated to experience longer search times to find parking spaces and longer walking distances to reach the Center. More cars dropping-off and picking-up at the cul-de-sac would also cause more traffic congestion. The existing inefficient 'loading' of the trails from a single point of entry would become even more problematic with the expanded program of use. Because close to 100% of visitors entering and leaving the Preserve walk down the Main Trail, this section has already been degraded.

Proposed Action – East Clinton Avenue

Implementation of the Proposed Action at the East Clinton Avenue site would impact the circulation and transportation conditions. East Clinton Avenue is a principal arterial, which is the preferred situation in the Board's criteria of "direct access to an existing, paved, public road, preferably not a residential street."

The East Clinton Avenue site would have a dedicated circular driveway for buses

to drop off, wait for and pick up passengers. A second circular driveway at the end of the proposed parking lot would accommodate passenger car drop-offs and pick-ups, and provide unobstructed access for emergency vehicles. In this proposed scenario, school bus traffic would be segregated from passenger cars in the parking area and the chances of vehicle/space conflicts and waiting time would be reduced.

Additionally, 50 parking spaces with overflow for 25 additional spaces would be provided on the site, which would meet the TNC's requirement for parking.

Since the East Clinton Avenue site is at a different location from the existing TNC building, there would not be any interference on the operation of the Center during construction. TNC also proposes retaining 17 parking spaces for access at the existing Hudson Avenue location which would create two access points to alleviate traffic and improved circulation throughout the Preserve.

Alternative 1 – Hudson Avenue Two-Story &

Alternative 2 – Hudson Avenue One-Story

Implementation of either of Hudson Avenue Site Alternatives would impact circulation and transportation. Both alternatives would provide on-site bus drop-off, pick-up and turnaround areas at the enlarged entry turnaround circular driveway. However in both cases, buses stopping at the circular driveway could block the entrance to the parking lot and cause delays for the other cars. In both alternatives, emergency vehicles would have access to the building. In the one-story alternative, a enlarged entry turnaround would be provided at the end of the parking lot. For the two-story alternative, emergency vehicles would have direct access to the building from the enlarged entry turnaround circular driveway. However, in both scenarios, buses and cars stopping at the circular driveway could potentially block the access of emergency vehicles.

Since Hudson Avenue is a local residential access road, as the new expanded TNC attracts more visitors, the increased traffic would pose a heavier toll on the neighboring residents. The quality of life would be affected by the increasing noise, vibration, air pollution and occurrence of accidents. The noise of the traffic is especially aggravated because of the steep grade near the site.

In both alternatives, 75 parking spaces would be provided on the site, which meets the TNC's requirement for parking.

In both alternatives, the proposed facility and parking footprint overlays the existing site. If the Center is to remain operational during construction, the construction traffic, especially the over 1,500 truckloads of cut materials, would severely interfere with visitor's parking and circulation activities. Temporary parking and bus drop off/pick up would need to be provided during construction.

Circulation and Transportation Conclusion

The Proposed Action and Alternatives 1 and 2 would result in impacts to circulation and transportation.

In the long term, all three scenarios would provide improved circulation for the site. The Proposed Action at East Clinton Avenue site would also offer a segregated area for buses, thus further reducing conflicts and waiting time. In the short term, it would have no impact on the circulation of existing Center during construction. In contrast, the construction of the Alternatives 1 and 2 would have a severe impact on the circulation of the existing site. Significant staging and co-

ordination would be needed as well as clearing additional land (see footnote #3, page 17) to keep the Center operational during construction.

East Clinton Avenue is a principal arterial, making it the preferred choice for a direct access road. In the long term, it is anticipated that this access road would better accommodate the growing traffic demand of the Center. The Hudson Avenue site Alternative 1 and 2 use Hudson Avenue, which is a local residential dead end road. In the long term, the increasing traffic volume would have a significant impact on the quality of life for the neighboring residents. In the short term, the construction of the site would also pose an impact on the accessibility of the Center.

All three scenarios would meet the requirement for the parking spaces and provide access for emergency vehicles.

3.9 VEGETATION

Vegetation Existing Conditions

Forested wetland and forested upland vegetation communities have been identified at the Proposed Action location on East Clinton Avenue. Vegetation identified within the forested wetland areas included black gum (*Nyssa sylvatica*), sweet gum (*Liquidambar styraciflua*), and red maple (*Acer rubrum*) in the canopy and sapling layers. Shrubs in the forested wetlands generally included high-bush blueberry (*Vaccinium corymbosum*) and sweet pepperbush (*Clethra alnifolia*). Ground cover in the wetland areas was generally sparse with some silvery spleenwort (*Athyrium thelypteroides*) appearing as an herbaceous species. Forested uplands are characterized as a mixed oak forest generally containing black oak (*Quercus velutina*), northern red oak (*Quercus rubra*), white oak (*Quercus alba*), tulip poplar (*Liriodendron tulipifera*), and black birch (*Betula lenta*) in the canopy and sapling layers. The shrub layer in the uplands also contained highbush blueberry and sweet pepperbush as well as some witch hazel (*Hamamelis virginiana*). Groundcover in the upland areas was also sparse but included Virginia creeper (*Parthenocissus quinquefolia*), Canada mayflower (*Maianthemum canadense*), and seedlings of some of the previously identified tree and shrub species.

Forested upland characterized as a mixed oak forest vegetation community was also identified within the area of the No Action alternative and the areas of proposed impact for Alternatives 1 and 2 at the Hudson Avenue location. In addition to the forested uplands, the Hudson Avenue location also includes non-vegetated areas that are currently developed with the existing Tenaflly Nature Center, ancillary buildings and structures, a parking area, and associated access roads. Forested uplands identified at this location contained black oak, chestnut oak (*Quercus prinus*), northern red oak, white oak, black cherry (*Prunus serotina*), Norway maple (*Acer platanoides*), pignut hickory (*Carya glabra*), sassafras (*Sassafras albidum*), and tulip poplar in the canopy and sapling layers. Shrubs included multiflora rose (*Rosa multiflora*), winged euonymus (*Euonymus alatus*), tartarian honeysuckle (*Lonicera tatarica*), black raspberry (*Rubus occidentalis*), and wineberry (*Rubus phoenicolasius*). Woody vines including wild grape (*Vitis* sp.) and oriental bitter-sweet (*Celastrus orbiculatus*) were also identified in the forested areas. Ground cover in the forested areas was sparse, but included garlic mustard (*Alliaria petiolata*), Japanese honeysuckle (*Lonicera japonica*), mayapple (*Podophyllum peltatum*), and trout lily (*Erythronium americanum*).

Impacts to Vegetation

No Action

No activities that would impact any vegetation community are proposed under

the No Action Alternative; therefore, no impacts to vegetation communities would result from the No Action Alternative.

Proposed Action – East Clinton Avenue

As designed, the Proposed Action at the East Clinton Avenue location would disturb approximately 2.4 acres of forest, including mixed oak upland forest and a small area of forested wetland. Implementation of this alternative would require the removal of 90 significant trees with a diameter breast height (dbh) caliper of 10 inches or greater. As proposed, careful implementation of this alternative would allow for the preservation of 49 significant trees in areas immediately adjacent to the proposed access road and parking lots, and within portions of the parking lots themselves.

Alternative 1 – Hudson Avenue Two-Story

The proposed impact area for Alternative 1 at the Hudson Avenue location contains a mixed oak upland forest community as well as approximately 0.37 acres of non-vegetated areas that are currently developed with the existing Tenaflly Nature Center, ancillary buildings and structures, a parking area, and access road. As designed, the Alternative 1 at the Hudson Avenue location would result in the removal of approximately 2.0 acres of an upland forest community. Implementation of this alternative would require the removal of 97 significant trees including temporary construction disturbance. Additionally, this alternative allows for the preservation of 18 near-activity (located in unpaved areas along the perimeter of the disturbed area), significant trees, 12 of which would be lost by implementation of Alternative 2 discussed below. No significant trees can be saved at the parking area.

Alternative 2 – Hudson Avenue One-Story

The proposed impact area for Alternative 2 at the Hudson Avenue location contains a mixed oak upland forest community as well as approximately 0.37 acres of non-vegetated areas that are currently developed with the existing Tenaflly Nature Center, ancillary buildings and structures, a parking area, and access road. As designed, the Alternative 2 at the Hudson Avenue location would result in the removal of approximately 2.4 acres of an upland forest community. Implementation of this alternative would require the removal of 109 significant trees. Additionally, this alternative allows for the preservation of 6 near-activity (located in unpaved areas along the perimeter of the disturbed area), significant trees, which is 12 less than would be retained by implementation of Alternative 1 as discussed above. No significant trees can be saved at the parking area.

Vegetation Conclusions

Implementation of the Proposed Action or Alternatives 1 or 2 would result in unavoidable impacts to vegetation communities. Activities related to constructing any of the alternatives would first require the removal of vegetation contained within the disturbance limits for each alternative. Removal of the forested vegetation would represent a long-term impact for each of the alternatives. Loss of forested vegetation would be an unavoidable impact resulting from implementation of any of the three considered alternatives. It is noted that implementation of either Alternative 1 or 2 at the Hudson Avenue location would require the removal of all vegetation within the limits of disturbance for these alternatives. Careful implementation of Alternative 1 would allow for the retention of 18 near-activity, significant trees, 12 of which would be lost by implementation of Alternative 2. Careful implementation of Alternative 2 would allow for the preservation of 6 near-activity, significant trees, which is 12 less than would be retained by implementation of Alternative 1.

At the East Clinton Avenue site, the overall nature of the existing site, the need for less cut and fill activity, and the careful implementation of the project would allow for the preservation of 49 significant trees, which would also be integrated into the site design given that approximately 24 of these trees would be retained within the interior of the site in the proposed parking areas and in the turn-around loop near the proposed Nature Center facility. It is anticipated that integration of these 24 significant trees into site design would lessen the overall impact to the forested vegetation community on the East Clinton Avenue site. In addition, implementation of a landscaping plan on the East Clinton Avenue site and at the Hudson Avenue location for Alternatives 1 and 2 would help mitigate for the unavoidable impacts to vegetation communities as a result of project construction and maximize continuity of the forest canopy.

3.10 WILDLIFE

Wildlife Existing Conditions

The subject sites for the Proposed Action at the East Clinton Avenue location and for the No Action and Alternatives 1 and 2 at the Hudson Avenue location are each located along the edge of a large, contiguous patch of relatively undisturbed, non-fragmented deciduous forest. The East Clinton Avenue site is located along the southwestern portion of this forest patch and the Hudson Avenue site is located along the northwestern portion of the forest patch. It is anticipated that wildlife diversity on the subject sites would be generally high due to the relatively undisturbed nature of the surrounding forest. It is, however, anticipated that wildlife utilization of the Hudson Avenue site may be somewhat lower due to the existing development in this area which includes the Tenaflly Nature Center and its attendant features, and the proximity of adjacent residential properties.

Mammals that are anticipated to inhabit East Clinton Avenue and Hudson Avenue locations would be expected to include eastern chipmunk (*Tamias striatus*), eastern gray squirrel (*Sciurus carolinensis*), grey fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*) and white-tailed deer (*Odocoileus virginianus*); coyote (*Canis latrans*) has also been identified as a transient resident on and around the Tenaflly Nature Center lands. Numerous bird species including passerines, non-passerines, raptors and owls would be expected to inhabit the East Clinton Avenue and Hudson Avenue locations. Common passerine species expected to be found would include American robin (*Turdus migratorius*), blue jay (*Cyanocitta cristata*), American crow (*Corvus brachyrhynchos*), black-capped chickadee (*Parus atricapillus*), tufted titmouse (*Baeolophus bicolor*), gray catbird (*Dumetella carolinensis*), northern mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), song sparrow (*Melospiza melodia*), house wren (*Troglodytes aedon*), northern cardinal (*Cardinalis cardinalis*), red-winged blackbird (*Agelaius phoeniceus*), common grackle (*Quiscalus quiscula*), American goldfinch (*Spinus tristis*), and purple finch (*Haemorhous purpureus*). Non-passerines would be expected to include ring-necked pheasant (*Phasianus colchicus*), wild turkey (*Meleagris gallopavo*), red-headed woodpecker (*Melanerpes erythrocephalus*), red-bellied woodpecker (*Melanerpes carolinus*), downy woodpecker (*Picoides pubescens*), and pileated woodpecker (*Dryocopus pileatus*). Common raptors and owls would be expected to include Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), eastern screech owl (*Megascops asio*), and great horned owl (*Bubo virginianus*).

Additionally, summer roosting habitat for the Federally endangered Indiana bat

(*Myotis sodalis*) and Federally proposed endangered long-eared bat (*Myotis septentrionalis*) has been identified for the East Clinton Avenue and Hudson Avenue locations. These two species are discussed further under the Threatened or Endangered Species Section as follows below.

Impacts to Wildlife

No Action

No activities that would impact any wildlife habitat are proposed under the No Action Alternative; therefore, no impacts to wildlife habitat would result from the No Action Alternative.

Proposed Action – East Clinton Avenue

As designed, the Proposed Action at the East Clinton Avenue location would disturb approximately 2.4 acres of forested upland habitat and result in the removal of 90 significant trees. Implementation of this alternative would result in an unavoidable, long-term minimal impact to wildlife as a direct result of the loss of forested habitat. It is also expected that there would be short-term impacts to wildlife habitat immediately adjacent to the proposed impact area as a direct result of construction activities. It is anticipated that following construction activities these adjacent areas would once again function as suitable wildlife habitat with the exception of for those species highly sensitive to human presence and/or activities related to the day-to-day operation of the Nature Center such as vehicular traffic entering and exiting the site or outside activities associated with the facility.

Alternative 1 – Hudson Avenue Two Story

As designed, the Alternative 1 at the Hudson Avenue location would disturb approximately 2.0 acres of forested upland habitat and result in the removal of 97 significant trees. Implementation of this alternative would result in an unavoidable, long-term minimal impact to wildlife as a direct result of the loss of forested habitat. It is also expected that there would be short-term impacts to wildlife habitat immediately adjacent to the proposed impact area as a direct result of construction activities. It is anticipated that following construction activities these adjacent areas would once again function as suitable wildlife habitat with the exception of for those species highly sensitive to human presence and/or activities related to the day-to-day operation of the Nature Center such as vehicular traffic entering and exiting the site or outside activities associated with the facility. However, given the existing Tenaflly Nature Center, along with its associated access road, parking and appurtenant structures and activities, currently operate within and adjacent to portions of the proposed Alternative 1 location, it is expected that these areas would not be occupied by wildlife species with a high sensitivity to the presence of human activity.

Alternative 2 – Hudson Avenue One Story

As designed, the Alternative 2 at the Hudson Avenue location would disturb approximately 2.4 acres of forested upland habitat and the removal of 109 significant trees. Implementation of this alternative would result in an unavoidable, long-term minimal impact to wildlife as a direct result of the loss of forested habitat. It is also expected that there would be short-term impacts to wildlife habitat immediately adjacent to the proposed impact area as a direct result of construction activities. It is anticipated that following construction activities these adjacent areas would once again function as suitable wildlife habitat with the exception of for those species highly sensitive to human presence and/or activities related to the day-to-day operation of the Nature Center such as vehicular traffic entering and exiting the site or outside activities associated with the facility. Also, and as indicated under Alternative 1 Impacts above, it is expected that wildlife species with a high

sensitivity to the presence of human activity would not occupy the area within or immediately adjacent to the proposed Alternative 2 location.

Wildlife Conclusions

Implementation of the Proposed Action or Alternatives 1 or 2 would result in unavoidable, long-term minimal impacts to wildlife as a result of the loss of forested habitat. As discussed above, implementation of either Alternative 1 or 2 at the Hudson Avenue location would require the removal of all vegetated wildlife habitat within the limits of disturbance for these alternatives. Retention of some near-activity trees at these locations is possible, but within the proposed disturbance limits for these alternatives all vegetated wildlife habitat would be removed. For the Proposed Action on the East Clinton Avenue site, limited grading would allow for the overall preservation of 49 significant trees, which would also be integrated into the site design given that approximately 24 of these trees would be retained within the interior of the site in the proposed parking areas and in the turn-around loop near the proposed Nature Center facility. It is anticipated that integration of these 24 significant trees into site design would lessen the overall impact to wildlife habitat, specifically for tree-utilizing species such as birds, squirrels, bats, etc., on the East Clinton Avenue site. With the opening of the Proposed Action - East Clinton Avenue, the existing Hudson Avenue site would retain the parking, composting toilet, and pavilion, however the overall site would be returned to a natural state much more conducive to wildlife.

3.11 THREATENED OR ENDANGERED SPECIES

Threatened or Endangered Species Existing Conditions

The New Jersey Landscape Project (NJLP) combines documented wildlife locations with NJDEP aerial photo-based 2007 Land Use/Land Cover to delineate species of special concern and threatened and endangered species habitat within New Jersey. According to the NJLP Species-Based Habitat mapping for the Piedmont Plains available at the NJ GeoWeb website, the subject sites for the Proposed Action at the East Clinton Avenue and for the No Action and Alternatives 1 and 2 at the Hudson Avenue location are part of a single, contiguous species-based habitat patch. This habitat has been identified as Deciduous Forest and mapped as containing habitat for a number of species of special concern including northern copperhead (*Agkistrodon contortrix mokasen*), Cooper's hawk, and red-shouldered hawk (non-breeding habitat). The NJLP mapping does not indicate the presence of any threatened or endangered species within the habitat patch indicated for either the East Clinton Avenue or Hudson Avenue locations.

An Information, Planning and Conservation (IPaC) report was generated for the proposed action area utilizing the US Fish and Wildlife Service (USFWS) website. The results of this report indicate the presence of summer roosting habitat for Indiana bat and long-eared bat on both the East Clinton Avenue and Hudson Avenue locations. Indiana bats roost under loose tree bark by day, and forage for flying insects in and around the tree canopy at night; long-eared bats roost underneath bark, in cavities, or in crevices of both live and dead trees. Given the forested nature of the habitat at both the East Clinton Avenue and Hudson Avenue locations, it is anticipated that Indiana bat and long-eared bat would be potential summer residents at each of the subject locations.

Impacts to Threatened or Endangered Species/Conclusions

Since the East Clinton Avenue and Hudson Avenue locations are not mapped by the NJLP as containing any known State-listed threatened or endangered species habitat, no impacts to any State-listed threatened or endangered species or their

habitat is anticipated to result from implementation of any of the four considered alternatives.

The East Clinton Avenue and Hudson Avenue locations have been mapped by the USFWS IPac report as having suitable habitat for Indiana bat and northern long-eared bat and implementation of the East Clinton Avenue alternative or Alternatives 1 or 2 at the Hudson Avenue location would impact suitable forested habitat for these species. Following acceptance of the alternative to be implemented for the project, further consultation with the US Fish and Wildlife Service would be required to assess impacts to these species and to explore potential measures to mitigate impacts to these species. It is anticipated that the USFWS would require site specific surveys for Indiana bat and northern long-eared bat, and that seasonal timing restrictions for the cutting and/or removal of trees would be required for implementation of the project based upon the presence of suitable habitat for these species.

USFWS Consultation for Indiana and Long-eared Bats

As per an Information, Planning and Conservation (IPaC) report generated utilizing the US Fish and Wildlife Service (USFWS) website, the presence of potential summer roosting habitat for Indiana bat and long-eared bat on both the East Clinton Avenue and Hudson Avenue locations has been identified. Given the forested nature of the habitat at both the East Clinton Avenue and Hudson Avenue locations, it is anticipated that Indiana bat and long-eared bat could be summer residents at each of the subject locations. Following acceptance of the alternative to be implemented for the project, further consultation with the USFWS would be required to assess impacts to these species and to explore potential measures to mitigate impacts to these species. It is anticipated that the USFWS would require site specific surveys for Indiana bat and northern long-eared bat, and that seasonal timing restrictions for the cutting and/or removal of trees would be required for implementation of the project based upon the presence of suitable habitat for these species.

3.12 RECREATIONAL RESOURCES

Recreational Resources Existing Conditions

The existing Tenaflly Nature Center Preserve has all vehicular access and staffed facilities located at the Hudson Avenue site. This places the largest originating population of visitors on the Main Trail and flow into the Preserve is primarily by way of Pfister's Pond.

The Tenaflly Nature Centers expanded program and outreach anticipates an increase in the accessibility and utilization of the Preserve and each of the alternatives under consideration have very different impacts on the quality and effectiveness of that mission.

Impacts to Recreational Resources

No Action

The existing failures of facilities to meet mission would continue and the single point loading of the trail system would continue.

Proposed Action – East Clinton Avenue

The new facility would meet full mission programmatic objectives and create a new point of access. The existing demands on the Main Trail would decrease as that site is returned to a more natural setting while retaining parking and access to trails from the Hudson Avenue existing parking lot.

Alternative 1 – Hudson Avenue Two Story, and Alternative 2 – Hudson Avenue One Story

The new facility would meet full programmatic building objectives. 100% of all additional access and participation would now be loaded on the Hudson Avenue access road way and all visitors would access the nearly 400 acres preserve by way of the Main trail.

Recreational Resources Conclusion

The creation of a distributed loading of the preserve, one access point at East Clinton Avenue/Haring Rock and the other at Hudson Avenue/Pfister's Pond would much more effectively utilize and protect the resources of the Preserve. The reduction of intense utilization at Hudson Avenue while keeping the existing camp fire ring, pavilion, composting toilet, and parking to facilitate access would allow this area to return to a more natural setting of vegetation, less disruption, greater qualities for wildlife resettlement.

3.13 ACCESSIBILITY

Accessibility Existing Conditions

The steep grade surrounding the Visitor Center challenges visitors, particularly the very old, the very young, others with mobility limitations, and strollers. The parking lot grade does not meet standards for universal access (maximum grade 5%) and the existing 17 parking spaces do not accommodate daily use by staff and visitors. Overflow parking spills on to the steep residential street leading to the Center. TNC does not have a bus drop off / turnaround area on site; school buses use the steep cul-de-sac at the top of Hudson Avenue for this purpose, regularly blocking the driveway for cars waiting to enter and leave the parking lot.

Impacts to Accessibility

No Action

The existing parking lot grade and majority of natural grade (including access to the existing camp fire ring, pavilion, composting toilet) does not meet standards for universal access.

Proposed Action – East Clinton Avenue

The design for the proposed action would include full ADA compliance including but not limited to: parking lot grade, handicapped parking spaces, accessibility to the building (ramps), accessible restrooms, and accessible heights of exhibit displays. The overall grade is 3%.

Alternative 1 – Hudson Avenue Two Story & Alternative 2 – Hudson Avenue One Story

Meet all the criteria for East Clinton Avenue except the grade is maximum for universal access equals 5%.

Accessibility Conclusions

All three build alternates (Proposed Action - East Clinton Avenue, Alternate 1 - Hudson Avenue Two-Story, and Alternate 2 - Hudson Avenue One-Story) meet the requirements of universal access. However, the East Clinton Avenue proposed action achieves a more easily navigated grade of 3% versus 5% on the Hudson Avenue Alternates 1 & 2.

3.14 AESTHETICS AND SPECIAL CHARACTERISTICS

Aesthetics and Special Characteristics Existing Conditions

The TNC's Education and Discovery Center is to be an exemplar of environmental/sustainable development. For this reason, minimizing the stormwater impact, the amount of disturbance, tree removals and, importantly, minimizing drilling and blasting of the basalt and diabase rock which forms the New Jersey Palisades, are all more than just issues of compliance, they are issues of principle. Also considered is the project's integration into the surrounding environment, existing trail network, and how their new facility's presence would coexist and contribute to the surrounding community.

Impacts to Aesthetics and Special Characteristics

No Action

In the existing Center, the current building envelope and building systems are at the end of their useful life and the existing spaces and building interiors are approaching a state of critical maintenance failure. The head of the Main Trail suffers from overuse.

Proposed Action – East Clinton Avenue

The organization of all functional areas on a single level with open views to the forest and aids approaching visitors in wayfinding and facilitates monitoring of school age children arriving and departing. The uniquely sloped roof, a 'leaf in the forest' collects all the rainwater and deposits it via a small visible waterfall into a cistern for reuse for building functions. Strategically located on the watershed line separating the Hackensack and Hudson watersheds, a great 'teaching moment' is achieved. The major porch overlook (and classroom outlook) is to a natural graded land fall of 26 vertical feet into the forest, completely unobstructed by parking lots, traffic, neighbors or vehicular turnarounds.

Alternative 1 – Hudson Avenue Two Story

The building is on two levels, and therefore has a smaller footprint on the site (i.e. takes up less land). The east-facing upper level deck has a dramatic view and connection to the Main trail. The separation of functions on two levels would be addressed by having TV monitors and camera system throughout to assure staff are fully aware of student groups on site. The roof would also be of signature design and serve as a rainwater collector. The lower level would have little natural light because of the overhanging deck and limited view of the parking lot.

Alternative 2 – Hudson Avenue One Story

Less obtrusive than the Alternate 2 building location and located away from the viewshed of the Main Trail and ridgeline, this scheme would have all the basic features of the rainwater collector roof, watershed and cistern, and would have a direct ADA accessible trail that leads to the existing pavilion and camp fire ring.

Aesthetics and Special Characteristics Conclusions

There are distinct differences between the three build alternates. The Proposed Action (East Clinton Avenue) is a 'deep woods' experience with a 26' high overlook to the unobstructed forest. It has a built-in teaching moments such as being located on the watershed line of the Hackensack and Hudson. Both Alternate 1 (Hudson Avenue Two-Story) and Alternate 2 (Hudson Avenue One-Story) have obstructed views to parking, vehicular turnaround, residential neighbors, and/or traffic.

3.15 HISTORIC PROPERTIES, CULTURAL RESOURCES, AND ARCHEOLOGICAL RESOURCES

Executive Summary of Findings

Richard Grubb & Associates completed a Phase I archaeological survey in the Area of Potential Effects (APE) for the proposed new education and discovery center at the Tenaflly Nature Center, on a portion of Block 2702, Lot 1, and also for improvements to approximately 1,400 linear feet of East Clinton Avenue proximate to the new education and discovery center all located in the Borough of Tenaflly, Bergen County, New Jersey.

Purchase of the Tenaflly Nature Center lands, including Block 2702, Lot 1, was funded in part by a grant issued by the United States Forest Service, Land & Water Conservation Fund (LWCF). In accordance with the LWCF Act of 1965 (16 USC 460), the project is considered a "Significant Change of Use." Since Federal funds were used to acquire the property, the project constitutes a federal undertaking and must comply with Section 106 of the National Historic Preservation Act (36 CFR Part 800: Protection of Historic Properties). Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties.

Background research indicated that no prehistoric archaeological sites are located within one mile of the APE. Due to the undisturbed upland setting proximate to an unnamed tributary of Green Brook, the APE was considered to have high sensitivity for prehistoric archaeological resources. The APE was undeveloped historically, and therefore, was considered to have low sensitivity for the potential to contain historic archaeological resources.

Archaeological fieldwork consisted of a visual inspection, photo documentation, and the excavation of 86 shovel test pits within the APE. No archaeological resources were identified in the APE. No further archaeological survey is recommended.

Refer to Appendix A for the full Archeology Report, and Appendix B for the confirmation letter from NJ HPO that no further approval is necessary and no further action is required.

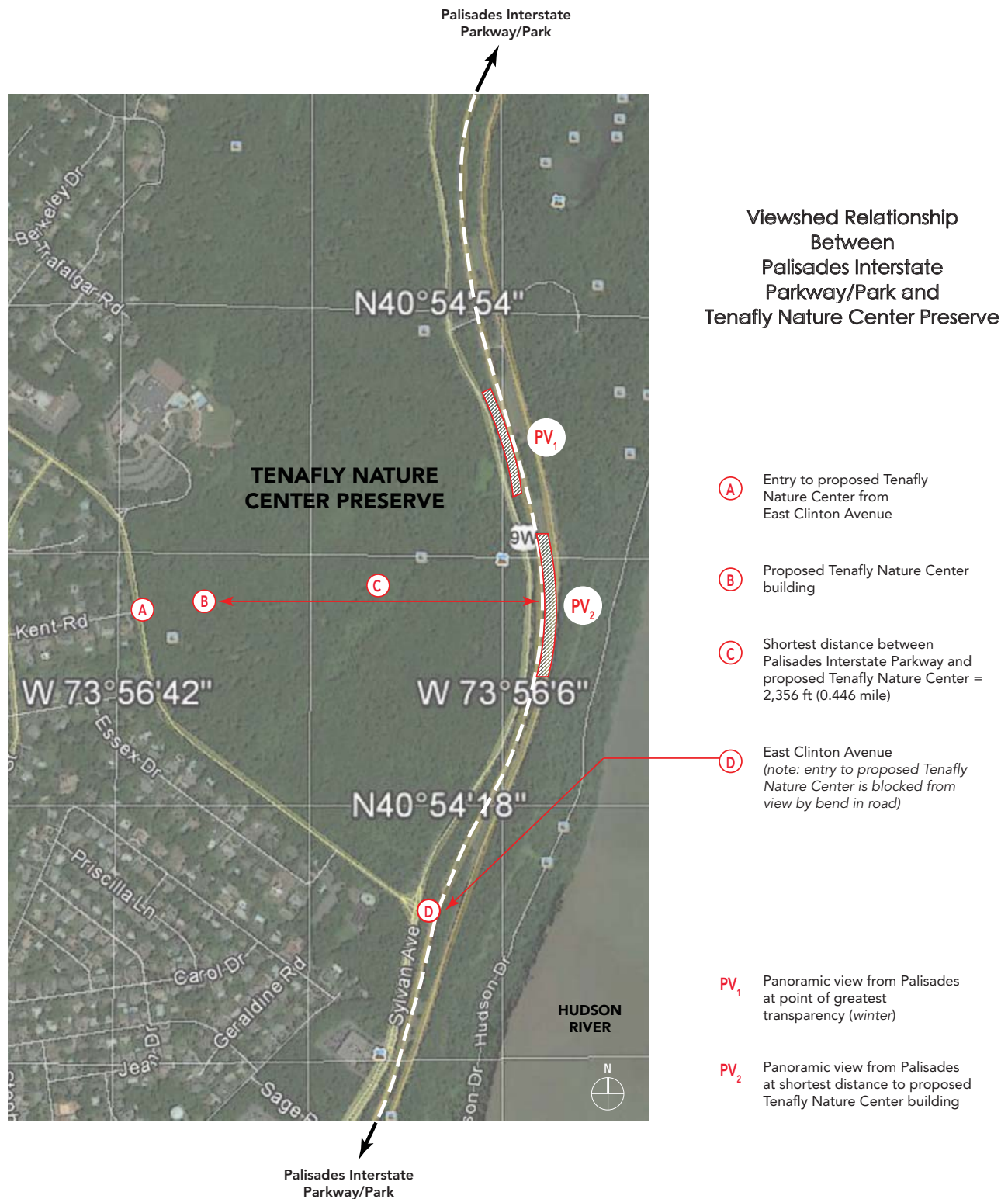
Viewshed

The viewshed of the Palisades Interstate Park in relation to the lands of the Tenaflly Nature Center and, specifically, the proposed Tenaflly Nature Center does not rise to the requirements of a full GIS computer analysis as might be required for the introduction of a taller object such as a radio tower or a one story structure with open visual corridors (such as roadways or breaks in forest cover).

The entire length of the viewshed from the Palisade Interstate Park, which is bounded on the west by the Parkway and 9W roadways, occurs opposite the continuous forested edge of the Tenaflly Nature Center lands. (See page 42)

The average height of the Forest is in excess of 40'-0" and the maximum height of the Tenaflly Nature Center is 17'-0", but more importantly, the horizontal distance at the shortest point from the proposed building to the Palisades Interstate Parkway viewshed is 2,356 feet (.446 mile). There is no point of view in which the building is visible from the viewshed even when looking directly up East Clinton Avenue because of the road geometry (the bend that occurs south of the TNC entry).

continued on page 44



Viewshed Relationship Between Palisades Interstate Parkway/Park and Tenafly Nature Center Preserve



Fig. 2

PV_1 : Panoramic view from Palisades at point of greatest transparency (winter)



Fig. 3

View from 200 feet deep into TNC lands at PV1 demonstrating view to 9W/Parkway at that depth.
At 1,200 feet deep even in winter condition, no view.



Fig. 4

PV_2 : Panoramic view from Palisades at shortest distance to proposed Tenafly Nature Center building

continued from page 41

Further confirmation is provided on page 45 in Figures 2, 3 and 4 as follows:

Fig. 2 Panoramic View 1 (PV₁) at location of greatest transparency in winter condition of Tenaflly Nature Center interface with viewshed.

Fig. 3 Panoramic View from 200 feet deep into Tenaflly Nature Center lands at PV₁ demonstrating view to 9W/Parkway at that depth. At 1,200 feet deep even in winter condition, no view is possible.

Fig. 4 Panoramic View 2 (PV₂) at location closest to Tenaflly Nature Center building: 2,356 feet.

3.16 SOCIOECONOMIC ISSUES

Existing Socioeconomic Issues

The Borough of Tenaflly is an ethnically and racially diverse suburban community located 8 miles from New York City in Bergen County, NJ. The median household income is \$119,399 and the median value of owner-occupied house units is \$732,600¹. Median household income and house value among adjacent towns varies from Englewood (\$69,557¹, income, house value \$ 410,100¹) and Bergenfield (income \$81,141¹, house value \$359,500¹) Teaneck (income \$93,349², house value \$429,500²) to Cresskill (income \$105,125¹, house value \$546,000¹) to Alpine, (income \$159,167¹, house value \$1,000,001¹) .

Poverty rates in adjacent Hudson (35.9) and Essex (35.7) counties are nearly twice that of Bergen County (18.4) according to 2011 annual survey by Legal Services of New Jersey. Since its founding over 50 years ago, TNC has served both residents of Tenaflly and the larger community. Residents and non-residents can visit the Center and use facilities including seven miles of trails 365 days a year, free of charge. TNC's trails and Visitor Center are open seven days a week, and the Visitor Center is used intensively for daytime, evening and weekend programs.

Based on data available from the US Census Bureau (www.census.gov), the Borough of Tenaflly had a 2010 population of 14,488. The demographics for Tenaflly are 69.3% White, 0.9% Black or African American, 26.2% Asian, 5.4% Hispanic or Latino, and 2.3% Two or More Races.

TNC is a destination not only for Tenaflly residents but for communities in the New York metropolitan area, drawing visitors from 16 of New Jersey's 19 counties and from New York City, Westchester, and Rockland counties in New York. The majority TNC's members and program participants come from Tenaflly and other municipalities in Bergen County (75.5% White, 6.7% Black or African American, 15.5% Asian, 17.3% Hispanic or Latino, and 1.8% Two or More Races), followed by Hudson County (66.4% White, 15.0% Black or African American, 4.8% Asian, 42.6% Hispanic or Latino, and 2.4% Two or More Races) and Essex Counties (50.0% White, 42.1% Black or African American, 5.0% Asian, 21.3% Hispanic or Latino, and 2.1% Two or More Races).

¹ All figures are based on 2008-2012 census bureau data

² All figures are based on 2005-2009 census bureau data

Impacts to Socioeconomic Issues

No Action

A No Action alternative, continuing operations without additional, dedicated classroom space, updated facility, and improvements to access and safety would negatively impact TNC's mission, capacity and growth, leading to associated declines in membership, program attendance, donations and grant potential.

Proposed Action – East Clinton Avenue

By providing a new facility with universal access, accommodating all parking and school bus functions on-site, locating entry and exit from an arterial county road, the Center would make access easier for visitors with disabilities and strollers, increase safety by separating car and bus traffic, and make the Center easier to find. East Clinton Avenue, a larger and busier street than Hudson Avenue would accommodate the Center's off-peak traffic flow without inconveniencing residents, whose side or back yards rather than front yards face East Clinton Avenue. Increased visibility may benefit the organization and its mission, supporting a potential increase in membership, donations, grants, visitors, and programs.

Developing a new facility that demonstrates sustainable site and building design and incorporates energy efficient mechanical systems would exemplify TNC's core mission of environmental responsibility and stewardship. Meeting the need for expansion, access and safety by implementing an exemplar plan to minimize environmental disruption and destruction would enhance the organization's reputation as a leader in the environmental community and support its commitment to environmental education and open space preservation.

Alternative 1- Hudson Avenue Two Story & Alternative 2--Hudson Avenue One Story

These alternatives would have a negative short term impact on adjacent neighbors on Hudson Avenue and Stanton Road, who would be exposed to the noise, vibration and dust of construction within 65-100 ft. of their back yards. All Hudson Avenue residents, whose front yards face the mile-long narrow street, would be negatively affected during construction, as the narrow residential street is the only access to the site for heavy construction equipment and for the excess of 1,500 truckloads of rock and soil to be carted off-site.

Both schemes would improve access for visitors by providing on-site parking and a universally accessible site, but the longer term impact of increased traffic to an expanded center on the narrow residential street, may negatively impact real estate values for residents on Hudson Avenue. Real estate values and privacy for neighbors immediately adjacent, with back yard boundaries located 65 to 101 ft. from active program space and parking for a new facility, may be negatively impacted.

The environmental disruption: including rock blasting, tree removal and excavation required to regrade the steep Hudson site to develop universal access would compromise TNC's core mission of environmental responsibility and stewardship and would undermine the organization's ability to enroll new members, attract program participants, maintain its donor base, and secure grant funding. Pursuing either Hudson Avenue alternative would damage TNC's reputation as an environmental education provider (its primary income source) and as a leader in the environmental community.

Socioeconomic Issues Conclusions

The higher level of accessibility, public safety and wayfinding to the proposed East

Clinton Avenue alternative would be an inherent facilitation to members of underserved communities seeking environmental education opportunities. The existing Hudson Avenue site for Alternates 1 & 2 diverts traffic through a residential area and would become a wayfinding and public safety challenge.

3.17 MINORITY AND LOW-INCOME POPULATIONS

Minority and Low-Income Populations Existing Conditions

The entire TNC site is open and available, free to the public 365 days of the year, without discrimination of any kind. Since its founding more than 50 years ago, TNC has always attracted and served a diverse community drawn from Bergen County and surrounding counties in Northern New Jersey, Rockland, Westchester and New York City in New York. For decades, TNC has conducted programs for school and scout groups from the many ethnically diverse and low income communities nearby. All visitors may hike the trails and enjoy nature any day from dawn to dusk. TNC's membership and program participants have always reflected this diversity found in the larger community.

As a member-supported, not-for profit institution, TNC depends on program fees, membership dues, donations and grants to support general operations. While TNC does offer limited subsidies and scholarships to minority and low-income populations, from time to time organizations, including the Community Chest, provide grants to permit TNC to increase numbers of scholarships and reduced fees to low income students or other groups for educational programs.

Impacts to Minority and Low-Income Populations

No Action

In the No Action Alternative, growth in programs, membership, donations and grant funding (income sources) are expected to decline without a universally accessible site, upgrades to facilities, and a solution for the ongoing problems of vehicular congestion and overuse of the Main Trail. Because TNC already operates education programs at full capacity, it would not be able to significantly expand scholarships or subsidies, whether for minority and low-income populations or others.

Proposed Action – East Clinton Avenue, Alternative 1– Hudson Avenue Two-Story, and Alternative 2 – Hudson Avenue One-Story

Each of the alternatives expands the capacity of TNC to provide additional educational programs. On-site parking and adequate area for school bus turnaround, an accessible site, and upgrades to facilities would allow TNC to build membership, increase program delivery and qualify for additional grant funding. Depending on the availability of grant funding, any of the proposed actions or Alternatives would permit TNC to expand educational programming to low-income visitors.

Minority and Low-Income Populations Conclusions

The higher level of accessibility, public safety and wayfinding to the proposed East Clinton Avenue alternative would be an inherent facilitation to members of underserved communities seeking environmental education opportunities. The existing Hudson Avenue site for Alternates 1 & 2 diverts traffic through a residential area and would become a wayfinding and public safety challenge.

3.18 PUBLIC SERVICE AND UTILITIES

Public Service and Utilities Existing Conditions

The current Center receives electricity and telephone service from the top of Hudson Avenue, which continues east of the building, running along the Main Trail to

two residences located in the preserve. Gas, water and town sewer service do not extend beyond the cul-de-sac.

Impacts to Public Service and Utilities

No Action

Delivery of utilities would not be affected.

Proposed Action – East Clinton Avenue

Sewer, gas (if necessary), electricity and phone lines would be extended from the South Side of East Clinton Avenue. Water lines would be extended from the North side of East Clinton Avenue.

Alternative 1– Hudson Avenue Two-Story, and Alternative 2 – Hudson Avenue One-Story

Gas (if necessary), water and town sewer lines would be extended from the cul-de-sac to Alternative 1 & Alternative 2. Electricity and telephone service would not need extension.

Public Service and Utilities Conclusions

The Hudson Avenue Alternates 1 & 2 would create the least requirement for utility upgrade or extension. The Proposed East Clinton Avenue site would require extension of services to the building site.

3.19 PUBLIC HEALTH AND SAFETY

Public Health and Safety Existing Conditions

More than half a century ago, when TNC was founded, Hudson Avenue's cul-de-sac provided the only vehicular access to the original 52 acre preserve. In the decades following, though the preserve grew to the nearly 400 acres that TNC stewards today, the top of Hudson Avenue remains the only entry for vehicles. The steep cul-de-sac, is now often congested, as it serves several purposes: as a site for school bus loading, unloading and turnaround and a path to the Center and trails for visitors who cannot find on-site parking. Hudson Avenue has no sidewalks.

Impacts to Public Health and Safety

No Action

In the No Action alternative, vehicular traffic would continue to congest the cul-de-sac as school busses would use it for loading, unloading and to turn around. Visitors who must park on residential streets and school children arriving by bus would continue to walk through traffic in the cul-de-sac to reach the Center and site, as nearby residential streets do not have sidewalks and on-site parking does not accommodate all visitors. The site's steep grade would continue to challenge visitors with disabilities and strollers who park in the existing parking lot or who park off site on the even steeper residential streets and must walk long distances to the Center. Program expansion would be severely limited as current access is at or near capacity.

Proposed Action – East Clinton Avenue

The Proposed Action would solve all of the problems of access, traffic congestion and safety posed by the existing site on Hudson Avenue. Entry to the site would be accessed from East Clinton Avenue, an arterial county route that already serves several community facilities (Kaplan JCC, St. John the Theologian Greek Orthodox Cathedral and St. Thomas Armenian Church, The Heights townhouses.) All bus activity – loading, unloading and turnaround would take place on site and

all parking (50 spaces plus 25 overflow) would be accommodated on-site with a separate loop for car drop-off and pickup.

Alternative 1- Hudson Avenue Two Story &

Alternative 2--Hudson Avenue One Story

For both of these alternatives, the cul-de-sac would be enlarged to permit safer loading, unloading and turnaround space for busses and to accommodate increased traffic. Both schemes would accommodate 50 parking spaces plus 25 overflow spaces, and would meet universal access standards (5% grade). Access to on-site parking through the single entry and exit would require all drivers to the Center and site to cross the cul-de-sac, where school busses drop off and pick up and could impede access.

Public Health and Safety Conclusion

While on-site issues of public safety in accessing the Nature Center are greatly improved by Alternates 1 & 2 on Hudson Avenue and fully addressed on the Proposed East Clinton Avenue site, the fact remains that all future expanded car and bus access would impact a dense residential street for the Hudson Alternatives while the location of the preferred East Clinton Avenue alternative is a non-residential county road with appropriate acceleration/deceleration lanes that would more safely and appropriately accommodate the East Clinton Access requirements.

3.20 HAZARDOUS MATERIALS

Hazardous Materials Existing Conditions

There are no existing hazardous conditions on the existing site based on the environmental database search in compliance with ASTM E 1527-13. Refer to Appendices C & D for the Radius Map Summary Reports.

Impacts to Hazardous Materials

Proposed Action – East Clinton Avenue

There are no hazardous conditions on the existing site based on the environmental database search in compliance with ASTM E 1527-13. Refer to Appendix C for the Radius Map Summary Report.

Alternative 1 – Hudson Avenue Two Story &

Alternative 2 – Hudson Avenue One Story

There are no hazardous materials on the existing site based on the environmental database search in compliance with ASTM E 1527-13. Refer to Appendix D for the Radius Map Summary Report.

Hazardous Materials Conclusion

None of the three alternatives would face large scale issues of hazardous waste. The smaller scale issues of lead paint and asbestos would have to be addressed during the disassembling of the existing Nature Center if either Hudson Avenue Alternate 1 or 2 is implemented.

CHAPTER 4 COORDINATION AND CONSULTATION

4.1 AGENCY COORDINATION AND PERMITS

Wetlands and Transition Areas

Coordination with the New Jersey Department of Environmental Protection (NJDEP) with regard to the presence of forested wetlands and wetland transition areas was performed for the Proposed Action location on East Clinton Avenue. Wetlands were delineated at this location by Amy S. Greene Environmental Consultants, Inc. and were verified by the NJDEP with a Letter of Interpretation: Line Verification-Portion of a Site (LOI), dated June 26, 2012. As proposed for project implementation at this location, forested wetlands with associated wetland transition areas would be impacted by construction of a vehicle acceleration lane on the eastern side of East Clinton Avenue, just north of the site access driveway. This impact to wetlands and wetland transition areas is anticipated to be minor and would require authorization from the NJDEP under a Freshwater Wetlands General Permit #10 for minor road crossings.

No wetlands or wetland transition areas have been identified on or within the immediate vicinity of the area of the No Action alternative and the areas of proposed impact for Alternatives 1 and 2 at the Hudson Avenue location. Therefore, no coordination with the NJDEP with regard to wetlands, wetland transition areas, or the need for any permits or waivers in this regard would be anticipated for the No Action alternative or Alternatives 1 or 2 as currently proposed.

USFWS Consultation for Indiana and Long-eared Bats

As per an Information, Planning and Conservation (IPaC) report generated utilizing the US Fish and Wildlife Service (USFWS) website, the presence of potential summer roosting habitat for Indiana bat and long-eared bat on both the East Clinton Avenue and Hudson Avenue locations has been identified. Given the forested nature of the habitat at both the East Clinton Avenue and Hudson Avenue locations, it is anticipated that Indiana bat and long-eared bat could be summer residents at each of the subject locations. Following acceptance of the alternative to be implemented for the project, further consultation with the USFWS would be required to assess impacts to these species and to explore potential measures to mitigate impacts to these species.

4.2 PUBLIC INVOLVEMENT

TNC has solicited and incorporated public comment throughout the planning and development of the Preferred Action. TNC has received and responded to dozens of verbal and written comments made before, during and after the public comment period following the Green Acres Hearing on Change of Use in April of 2013. For a period of more than six months before the hearing, TNC met with every relevant Borough governmental entity as well as dozens of other civic and neighborhood groups to explain and discuss the preferred scheme. TNC made its proposal public and solicited public review and comment as soon as conceptual and schematic plans were completed before the public hearing, and made copies of the proposal available to the public at the Borough Hall, Public Library and at TNC, and on TNC's website: <http://www.tenaflynaturecenter.org/our-future>. The proposal has been the subject of public comment in the news media, at public information sessions in the community and in the Borough, mentioned in the min-

utes in the vast majority of Borough Council meetings where public comments were allowed from September 2012 to the present. The Preferred Action has been a topic of discussion in the media for nearly two years, the subject of over 100 articles and letters to the editor in local papers. During this time, TNC has granted many interviews and invited reporters and all members of the public on tours of the proposed site.

TNC and the Borough of Tenaflly met or exceeded the regulations and deadlines for the public hearing and public notice required by NJ Green Acres Program, N.J.S.A. 7:36-25.6. Mr. Neus, TNC's President in 2013, Mr. Croxton, the architect, and other TNC representatives made extensive presentations at the April, 2013, public hearing. The transcript and a taped video broadcast of the four-hour hearing were posted the following week on TNC's website and are still available.

After the hearing, TNC and the Borough of Tenaflly invited the public to submit comments and questions regarding the proposed change in use for the Preferred Action. Comments received and TNC's responses were submitted to the Green Acres Program on July 23, 2013, and have been available for public review at Borough Hall, the Tenaflly Public Library, TNC, and are still available to the public on TNC's website. TNC has continued to update residents and the community about the progress regarding plans and approvals via flyers distributed at public events, by participating in and fielding questions at town-wide events, in TNC and Borough newsletters and through TNC's website.

4.3 LIST OF PREPARERS

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