

DRAFT
REPORT ON PROPOSED MEMORANDUM OF AGREEMENT BETWEEN
STAFFORD TOWNSHIP, OCEAN COUNTY AND THE PINELANDS COMMISSION
REGARDING LANDFILL CLOSURE AND BUSINESS PARK REDEVELOPMENT
June 28, 2006

I. THE PROPOSAL

A. Background

Stafford Township proposes to close its 55 acre licensed landfill and three areas containing debris (old landfill) totaling 25 acres through a redevelopment agreement with a developer, Walters Homes, Inc. The agreement provides that the developer will properly close the licensed landfill and remediate the old landfill at its expense in return for the opportunity to redevelop the Township's business park (also located on the site) as a mixed use, residential, office and commercial development.

Several Ocean County facilities located in the business park and within the footprint of the old landfill will need to be demolished in order to close the landfill. Ocean County proposes to rebuild these facilities in the north-westerly portion of the site.

1. Existing Site Conditions. The landfills and the business park are situated on an approximate 363 acre site in Stafford Township located just south of Route 72, adjacent to the Garden State Parkway. The site is located within a Pinelands Regional Growth Area, bordered by the Stafford Forge Wildlife Management Area on its southerly and westerly sides.

The site contains the 55 acre licensed landfill which the Township operated until 1983. The three areas where solid waste was deposited (old landfill) are generally located within the partially developed business park and are assumed to have been informal waste disposal sites dating back to the 1950's. No waste has been discarded in these three areas since the 1970's.

The site also contains the Township's business park, which the Commission approved for development in 1990. As a result of 5 subsequent public development approvals for additional resubdivision of the business park, the business park currently consists of approximately 67 lots, 12 of which have been developed to date. The facilities presently located within the business park include the State of New Jersey motor vehicle inspection station, the Stafford Township maintenance garage, Stafford Township's 1,000,000 gallon elevated potable water tank, the Ocean County animal shelter, the Ocean County garage, the Ocean County recycling center and leaf

compost site, the Ocean County social services building, the Township recycling drop off center, an Ocean County Resource Center (an office building), and a communications tower.

2. Existing Land Cover. Approximately 184 acres (51%) of the 363 acre site are disturbed. This includes the 55 acre licensed landfill, 34 acres of developed land associated with the business park, 17 acres of the old landfill located outside the developed area,¹ and 78 acres within previously mined/excavated areas. The landfill and surrounding excavated areas are used extensively (and illegally) by all terrain vehicles. About 179 acres of the site (49%) are forested.

3. Wetlands. A significant wetlands system, the Mill Creek, is located to the north of the site between it and Route 72, but less than one half of an acre of that wetland system extends onto this site. In addition, two small, isolated wetlands (1.1 and 1.7 acres) are surrounded by roads and ramps leading to the Garden State Parkway.

4. Plant and Animal Habitat. Surveys of the property have confirmed the presence of two species of plants (Knieskern's Beaked Rush and Little Ladies Tresses) and two species of animals (Northern Pine Snake and Southern Gray Treefrog) that are considered threatened or endangered in the Pinelands. As such, they are afforded special protection. In addition, the Pine Barrens Treefrog, another protected animal specie, may inhabit wetlands proximate to the site along the Mill Creek.

The local populations of both protected plant species are located within the footprints of the landfills.

One or more local populations of the Southern Gray Treefrog are centered around two existing stormwater basins on the site, one of which is a lined stormwater pond that overlies part of the old landfill.

Northern Pine Snakes inhabit the site as evidenced by the fact that twelve individuals were captured during a 2004 on-site survey.² Based upon observations of a gravid female snake, at least one nest is likely located within the south-westerly portion of the licensed landfill. Pine Snake winter dens were identified, one of which (known as the eastern den) is located in partially buried debris within one of the small, isolated pockets of waste.³ One other den (known as the western den) is located on an eroding slope adjacent to the licensed landfill.⁴ Survey results suggest that extensive foraging habitat is also located on the site. Since Pine Snakes have been extensively documented within the Stafford Forge Wildlife Management Area which adjoins this site on its southerly and westerly

¹ 8 acres of the old landfill are subsumed within the 34 developed acres of the business park.

² During an intensive 2006 survey program, which is still underway, 24 Pine Snakes have been confirmed.

³ Two Pine Snakes emerged from this den in this past Spring.

⁴ No Pine Snakes emerged from this den this Spring.

borders, it is unknown whether the individuals discovered on this site are a distinct population or are part of a larger population.

B. Landfill Closure Proposal

1. 1994 Proposal.⁵ In 1994, the Pinelands Commission approved a Stafford Township plan to cap the licensed 55 acre municipal landfill. Since the old landfills had not been fully studied at that time, the plan only addressed the mining of buried debris under Hay and Recovery Roads and on one of the business park lots. Although approved, the closure plan was not implemented. The Township has now updated and revised its closure plans to fully address both the licensed and old landfills.

2. Old Landfill. Approximately 430,000 cubic yards of buried debris will be “mined” from the Old Landfill and relocated to the licensed landfill. It is estimated that mining will occur at varying depths, the maximum depth of which will be 28 feet. In order to mine the Old Landfill, portions of Hay and Recovery Roads and several existing facilities located within the landfill area will be demolished. Most of these facilities will then be reconstructed near the existing communications tower in the northerly portion of the site. The developer will contribute \$2 million⁶ toward Ocean County’s \$20 million facility relocation plan.

Any hazardous material which is not suitable for relocation to the licensed landfill will be properly disposed of in accordance with a specific plan that has been prepared for Department of Environmental Protection and Pinelands Commission approval. The mined area will then be reclaimed with approximately 516,000 cubic yards⁷ of soil material obtained elsewhere on the site.

3. Licensed landfill. The 55 acre licensed landfill requires significant re-grading to assure proper post-closure drainage. Although the material mined from the old landfill will be used to help properly contour the landfill, approximately 493,000 cubic yards of natural soil material will still be needed for daily and final landfill cover.⁸ This will be obtained elsewhere on the site.

As required by the CMP, an impermeable (geomembrane) cap will be installed to prevent precipitation from leaching through the landfill and releasing contaminants into the groundwater. The final cover system will include a vegetative cover to stabilize soils and provide open grassland

⁵ The 1994 approval superceded a less comprehensive 1988 closure plan.

⁶ The construction of a new \$750,000 Animal Shelter for the County not related to the landfill closure.

⁷ Because of void space in the soils, the volume of natural soil material decreases when it is compacted.

⁸ To obtain soil needed for landfill closure, approximately 104 acres of the site will be excavated, about 68 acres of which is currently forested.

habitat⁹. A substantial stormwater recharge facility will be constructed to handle stormwater runoff. In addition, a passive system will be constructed to collect and vent landfill gases. The system will allow for additional landfill gas emission control should that become necessary.

4. Timing. The landfill closure schedule must be coordinated with the County in order to assure that the closure work, once started, can proceed uninterrupted. Relocation of the Ocean County facilities is estimated to take 12 to 15 months and must be completed before the existing facilities located over the unlicensed landfills can be demolished. However, landfill mining and closure work can begin in other areas concurrently. Closure should be completed within 12 to 18 months.

5. Post closure. Post closure requirements must be guaranteed. These include monitoring and maintenance for a 30 year period and a financial guarantee assuring the long term effectiveness and integrity of the closure plan. As part of these post closure guarantees, the Department of Environmental Protection may require groundwater treatment if water quality monitoring results are not satisfactory.

6. Estimated cost. The direct costs of the landfill closure plan are estimated to be \$31 million. Adding engineering, facility relocation, financing and management expenses, the total costs may approach \$45 to \$60 million.

C. Redevelopment Proposal

1. 1990 Development Plan. Stafford Township proposed, and in 1990 the Pinelands Commission approved, a business park development plan. This plan, along with several other business park development approvals, called for the creation of approximately 67 lots to be developed for a variety of business and industrial uses. Over the years, 12 of the lots have been developed, most of which are located in the eastern part of the site, some within the footprint of or in close proximity to the old landfill.

2. New Plan. The Township now proposes to abandon that business park development plan in favor of a mixed residential, commercial and office redevelopment plan approved under New Jersey's redevelopment statutes. The elements of this plan are outlined below.

3. Housing. Up to 565 market rate housing units will be built, consisting of single family detached dwellings and townhomes. The development of 30% of the market rate housing, or about 170 units, will require the use of Pinelands Development Credits. In addition, up to 112 multi-family, affordable housing units will be constructed.

4. Community facilities. A swimming pool, clubhouse and passive recreation areas encompassing 20 acres will be developed. A separate 70,000 square foot private ice rink is proposed on Hay Road.

⁹ As part of the re-development proposal, up to 20 acres of the capped landfill will be used by Ocean County for leaf composting

5. Commercial space. A total of 650,000 square feet of commercial space will be constructed. This will consist of approximately 100,000 square feet of neighborhood-scale retail and office space with the balance devoted to major retail uses.

6. Office space. An additional 25,000 square feet of office space is proposed on Hay Road to replace existing offices.

7. Transportation improvements. From Route 72, Recovery Road provides access to the site. It also affords southbound access to the Garden State Parkway and east and westbound access from the Parkway to Route 72. Recovery Road and the Parkway entrance will be completely reconstructed. To provide additional traffic capacity, the developer proposes to construct an English intersection¹⁰ with dual signals on Route 72 and a signal on Recovery Road at the Parkway ramp.

8. Relocating existing facilities. In addition to the facilities which must be relocated to close the landfills, several other facilities are to be relocated to facilitate the redevelopment project. The County maintenance garage and animal shelter will be relocated to Hay Road where new facilities will be built. The Andwin office building which houses the County Social Services office will also be relocated to Hay Road. The Stafford Township elevated water storage tank will be replaced on site near the licensed landfill. The concept plan also envisions relocating the motor vehicle inspection station to a site on Hay Road east of the new County facilities. The State of New Jersey owns this 5 acre parcel and has not yet committed to this relocation.

9. Fire break. In order to satisfy Pinelands requirements for fire breaks around large developments, a 200 foot wide perimeter fire break will be maintained along the southern property line. Fire breaks to the east, north and west are satisfied by the Garden State Parkway, the Mill Creek wetlands system and the licensed landfill, respectively.¹¹

10. Land Clearing. The redevelopment plan itself will involve the clearing of approximately 95 acres of forested land. The balance of the redevelopment area is located within the existing developed areas and the areas to be cleared as part of landfill closure.

11. Timing. Construction of the mixed use development could begin immediately after the landfill work is completed. Sales of homes could begin in the third year of construction and may continue for approximately 8 years. New office and commercial space will be constructed as market

¹⁰ An English intersection uses a two phase traffic signal (which allows simultaneous left hand turns to and from a site) and additional traffic lanes approaching the intersection to increase the intersection's capacity.

¹¹ The redeveloper initially proposed to finance a Department of Environmental Protection plan to develop a 236 acre (900 to 1,500 foot wide) fire break adjacent to this site, within the Stafford Forge Wildlife Management Area. Since that plan has neither been officially proposed by the Department nor endorsed by the Pinelands Commission, the required fire break will be developed on-site.

conditions dictate but not before the Old Landfill is excavated.

D. Relationship of Proposal to the Pinelands Comprehensive Management Plan

1. CMP Consistency. As proposed, the landfill closure/redevelopment project is not consistent with the Pinelands Comprehensive Management Plan. Specifically, it is inconsistent with the wetlands buffer standards of N.J.A.C. 7:50-6.14 (because the required transportation improvements to the Garden State Parkway interchange will infringe on the buffers to two small and isolated wetlands), the rare plant standards of N.J.A.C. 7:50-6.27 (because populations of two rare plants will be destroyed), and the rare animal habitat protection standard of N.J.A.C. 7:50-6.33 (because critical habitat for two rare animal species will be destroyed). These impacts are more fully described in Section III of this report.

2. Intergovernmental Agreement. N.J.A.C. 7:50-4.52(c)2 authorizes “intergovernmental memoranda of agreement with any agency of the Federal, State or local government which authorize such agency to carry out specified development activities that may not be fully consistent” with the provisions of the CMP if the agreement includes “measures that will, at a minimum, afford an equivalent level of protection of the resources of the Pinelands.” It is through this vehicle that the Commission has the discretion to approve this landfill closure and redevelopment project.

II. COMMISSION STAFF AND COMMITTEE REVIEW

Stafford Township’s proposal was first brought to the Executive Director’s attention in June 2004. Following a preliminary review, the Executive Director briefed then-Department of Environmental Protection Commissioner Bradley Campbell in March 2005 and requested that he designate key Departmental representatives to cooperatively review the proposal with the Pinelands Commission. Following a meeting between the Executive Director and then-Assistant Commissioners Watson and Seebode, a technical review team composed of DEP Endangered and Non-Game Species Program and Division of Solid & Hazardous Waste representatives and Pinelands Commission Planning, Science and Regulatory Programs staff was formed to review the proposal. This technical group has met individually and collectively throughout the past year to review a variety of landfill closure and threatened and endangered species issues.

On April 4, 2005, the Executive Director briefed the Commission’s Public and Government Programs Committee. Since then, the Committee has reviewed this proposal at seven meetings. As a result of the Committee’s review, the staff pursued several additional areas of inquiry. Most notably, detailed examinations of the proposal’s financial projections were conducted. These examinations, conducted initially by Camden County Improvement Authority Finance Director Jim Blanda and then by Dr. James Nicholas, an economist who has consulted for the Commission on other real estate and land development matters, were done to determine whether

the redeveloper's financial projections were reasonable.¹² Dr. Nicholas' examination also provided a methodology that allowed the Commission's staff economist to evaluate the financial implications of a variety of alternative development concepts. Throughout the Committee's and staff's preliminary review, six landfill closure options and eight different redevelopment configurations were examined.

On January 3, 2006, the Executive Director submitted a memorandum to the Public and Government Programs Committee wherein he analyzed a number of questions and issues regarding the proposal. A draft Memorandum of Agreement and a preliminary set of findings was then prepared for the Committee's review. The draft Memorandum of Agreement proposed a series of environmental measures which are further described in Section III.C. of this report. After three Committee meetings at which the draft Memorandum of Agreement was refined, the Executive Director submitted the proposed Memorandum of Agreement for formal public review.¹³

III. PRELIMINARY FINDINGS

The following preliminary findings were based upon the available information and the Executive Director's analysis conducted prior to the formal public review process.

A. Landfill Closure

1. The landfills are currently polluting ground and surface water.¹⁴ Historic water quality data disclosed that groundwater pollution had occurred in the past and more recent data through 2005 for the licensed landfill confirms that a number of constituents (arsenic, cadmium, iron, lead and sodium) continue to exceed groundwater quality standards and that others (ammonia, chlorine, chromium, chloroform, manganese, pH, silver, total dissolved solids and zinc) exceed naturally occurring background levels in the Pinelands. Recent test pits and wells also confirm similar

¹² In his April 11, 2006 memorandum, Dr. Nicholas projected a pre-tax return of 13.4% for the project, taking into account the costs of closing the landfills. This is less than the 15% or higher return that Dr. Nicholas suggested would normally be expected for a project with this level of risk.

¹³ Although a great deal of public input was received at the Public and Government Programs Committee's meetings, the formal public review process, which includes a public hearing, affords an opportunity for many interested parties to officially comment on the pros and cons of the proposal and for the Executive Director to formally evaluate those comments.

¹⁴ Although precise calculations of leachate from the landfills is not possible, the H2M Group (under contract to the Department of Environmental Protection) estimated in 2003 that the licensed and unlicensed landfills generate almost 5.5 million cubic feet (41 million gallons) of leachate each year.

impacts (ammonia, aluminum, arsenic, calcium, chromium, iron, lead, manganese, sodium and benzene) from the old landfill. The Mill Creek, located just to the north of the site, is being affected by elevated levels of ammonia, fecal coliform, methylene chloride and alpha chlordane. Although development in and around the Ocean Acres area likely contributes to these elevated surface water contaminant levels, there is little doubt that the landfill itself is exacerbating the problem.

2. Excavating the old landfills and closing the licensed landfill with an impermeable cap will, over time, significantly reduce leachate emanating from the landfills. This will have positive water quality impacts. Positive water quality results are further ensured through post closure guarantees whereby the Department of Environmental Protection may require groundwater treatment if water quality monitoring results are not satisfactory.

3. A small finger of the licensed landfill (approximately two acres) extends into the Mill Creek wetlands complex. If landfill contouring and grading in this area will further infringe on the wetland, the waste in this small area should be excavated and moved.

4. The work associated with landfill mining and closure will destroy local populations of two protected species of plants. This is contrary to the requirements of N.J.A.C. 7:50-6.27. If the landfills are to be closed, there is no feasible way to avoid these impacts because these plant populations are located on the landfills themselves.

5. The excavation of the waste materials in the old landfill will destroy one stormwater basin located within the landfill's footprint that supports Southern Gray Treefrogs, a protected animal specie in the Pinelands. These Treefrogs likely represent a local population whose loss would not be consistent with the habitat protection standards of N.J.A.C. 7:50-6.33.¹⁵ There is no feasible way to avoid these impacts because this stormwater basin is located on top of the Old Landfill.

6. The landfill excavation and closure work will have an adverse impact on Northern Pine Snake habitat, a protected animal in the Pinelands. These impacts are the result of (1) excavation of an area of debris in which a Pine Snake winter den (known as the eastern den) has been verified, (2) the excavation of soil for landfill closure in an area in which a second winter den (known as the western den) has been confirmed and in which a nest is likely to exist and (3) the destruction of foraging habitat that extends throughout a significant portion of the site.

Although it may be argued that this does not violate the habitat protection standards of N.J.A.C. 7:50-6.33 because there are thousands of acres of habitat surrounding this site and the Pine Snakes inhabiting this site may be part of a much larger population known to exist in the area, there is no way to document the size and extent of that population. Absent that, it must be assumed that these Pine Snakes may constitute a separate population and that the destruction of denning, nesting and foraging habitat is contrary to the CMP's habitat protection standards.

¹⁵ Although Southern Gray Treefrogs inhabit a second stormwater basin that will not be destroyed, it is likely that they represent a separate population.

7. There is a feasible way to avoid some of the impact on Pine Snake habitat. This can be accomplished by spending an additional \$14 million to import more than 1 million cubic yards of soil material needed for landfill closure, thereby avoiding the need to excavate approximately 104 acres of land on the site, much of which represents foraging habitat. However, this will not avoid the destruction of the eastern den, which is located in the isolated debris pocket, nor is it likely that the western den can be protected since it is located near the toe of a steep slope that is eroding and which may need to be graded for erosion control and safety purposes. If soil is imported for landfill closure, it must also be accompanied by a significant redesign of the redevelopment project (further discussed in Sections III.C.8. and 9.) to achieve any meaningful habitat benefits.

8. Stormwater runoff from the capped landfill can be managed in accordance with CMP stormwater management standards.

9. The direct cost of closing the landfills is estimated to be \$31 million if undertaken by the redeveloper. This estimate does not include engineering, permitting, management, administration, facility relocation, road reconstruction and financing costs which could increase the costs to \$45 to \$60 million. These estimates also do not include the \$14 million cost of importing soil, as discussed above.

10. It is unlikely that the closure of the landfills can be accomplished within the foreseeable future unless it is financed through the redevelopment of the site. This finding is based upon the following:

- the Township has made good faith efforts to close the landfills for more than 12 years but was unable to find a workable plan until the responsibility for landfill closure was made a condition for redevelopment of the business park;
- if the Township were to pursue landfill closure on its own, the costs are likely to exceed Stafford Township's debt limit;¹⁶
- low interest loans through the State's Environmental Infrastructure Trust would still count toward the Township's debt limit;
- other potential state funding programs are based on tax revenues generated from a site's redevelopment and are reimbursed after redevelopment is completed; and
- litigation seeking cost recovery from third parties who used the landfills is probably not feasible because by law the litigation must be targeted to entities who discharged hazardous waste. Moreover, such litigation is lengthy and costly, and recovery is speculative at best, even in cases where responsible parties are identified.

¹⁶ Because of public bidding and prevailing wage rate requirements, the Township reports that direct cost of landfill closure would increase from \$31 to \$45 million if it assumed responsibility to contract for the work. The Township reports that its remaining debt capacity was \$43,847,334 and that this debt limit must satisfy all of its capital needs, not just landfill closure.

B. Redevelopment

1. A mixed use development as proposed here is consistent with Pinelands land use policies because the site is located within a Pinelands Regional Growth Area. Stafford Township will, however, need to obtain Pinelands Commission approval of its redevelopment plan and zoning ordinance to expressly authorize this use and to meet Pinelands Development Credit zoning requirements, which in this case will require the redemption of 170 rights.
2. The financial analyses conducted by Mr. Blanda and Dr. Nicholas suggest that the redeveloper has presented a somewhat optimistic assessment of the financial return from this landfill closure and redevelopment project. Dr. Nicholas reported in his April 11, 2006 memorandum that the net pre-tax return for low risk, proven projects is expected to be 8% and that higher risk, unproven projects (such as this one) would be expected to return 15% or higher. Dr. Nicholas' proforma on this project (which accepted the optimistic assumptions of the redeveloper) concluded that it would generate a pre-tax return of 13.4%.
3. Although one may argue that the redevelopment project affords other benefits, the single environmental benefit is that it will finance the closure of the landfills.
4. Stormwater can be managed in accordance with CMP standards.
5. The proposed transportation improvements are designed to reduce congestion on area roadways. As such, they should also meet the CMP's requirements at N.J.A.C. 7:50-6.94 that carbon monoxide standards not be exceeded at places of maximum concentration and at sensitive receptors. To ensure that final designs meet CMP standards, the staff should continue to coordinate its review of the transportation and air quality plans with the Departments of Transportation and Environmental Protection, respectively.
6. The transportation improvements involving access to and from the Garden State Parkway will have an affect on two isolated pockets of wetlands. These wetland pockets are presently encircled by existing roadways but the proposed road improvements will place impervious surfaces closer to the wetlands than is the case now. Although a detailed examination of the wetlands and the road alignments may conclude that the action is consistent with N.J.A.C. 7:50-6.14, it is more likely that the proposed work will be found to be inconsistent with those wetland buffer standards. Appropriate wetland buffers will be maintained for all other wetlands.
7. The redevelopment project will have an adverse affect on habitat for the Northern Pine Snake. Development of the site will foreclose the possibility of Pine Snakes re-populating the areas disturbed during the landfill closure process. In addition, up to 95 acres of forested foraging habitat, which will not be disturbed during landfill closure, will be lost.

One might argue that these impacts do not contravene the CMP's habitat protection standard because the landfill closure work itself, not the redevelopment project, is destroying "critical"

habitat. Whether or not one agrees with this premise, it is clear that the redevelopment project will adversely impact Pine Snake habitat.

8. A relatively modest redesign of the redevelopment project which reduces its footprint by 75 acres would have a positive impact on Pine Snake habitat. However, such a scaled back redevelopment plan can not be implemented because financial analyses clearly demonstrate that it would generate a loss.¹⁷

9. A very modest scaling back of the redevelopment project, which reduces its footprint by only 22 acres can result in the protection of the westernmost Pine Snake den. Even this type of plan is very unlikely to be pursued because the net return is so low.¹⁸

10. As with all development projects, there will be other environmental consequences which, while consistent with the CMP's development standards, nonetheless represent a change in current conditions. For example, increased impervious coverage, traffic and landscaped areas will increase non-point source pollution.

C. Environmental Measures

If the Commission were to authorize this proposal pursuant to the intergovernmental agreement provisions of N.J.A.C. 7:50-4.52(c)2., it would need to find that the proposed variations from the standards of the CMP are "accompanied by measures that will, at a minimum, afford an equivalent level of protection of the resources of the Pinelands." As a result of our preliminary review, the following measures were incorporated into the proposed Memorandum of Agreement that was submitted for public review. It should be noted that these measures are over and above other recommended conditions of the proposed Memorandum of Agreement, including, for example, the purchase of up to 170 Pinelands Development Credit rights.

1. Open Space. Stafford Township will purchase and protect 570 acres of land to supplement its regular open space acquisition program. This represents three times the amount of forested lands to be disturbed by the project.

2. Green Building Design. Stafford Township will require its designated redeveloper to incorporate Leadership in Energy and Environmental Design features into both the residential

¹⁷ The proforma discloses that such a project would generate a loss of \$15.6 million. This does not reflect certain additional expenses that were unknown when the proforma was completed.

¹⁸ The proforma shows that such a project might yield a 6.8% gross return, before accounting for a number of additional expenses that could not be factored into the financial analysis. Dr. Nicholas has concluded that a high risk project such as this would likely need to yield a 15% or higher return to attract a developer and the support of lending institutions.

and commercial components of the redevelopment project. The purpose of these green building principles is to significantly reduce structural stormwater facilities, consumptive energy use, consumptive water use and non-point source pollution.

3. Route 72 Pollution. Stafford Township will require its designated redeveloper to design and implement improved stormwater management measures to reduce the amount of non-point source pollution entering Mill Creek where Route 72 crosses the Creek. Since Route 72 is a state highway, this will need to be coordinated with and approved by the New Jersey Department of Transportation.

4. Landfill Re-use. Stafford Township shall limit the amount of acreage on the licensed landfill, once capped, that can be used for leaf composting to no more than 20 acres.

5. On-site Conservation. Stafford Township shall record a perpetual conservation easement to permanently protect opens space on the redeveloped Business Park site.

6. Species Management. Stafford Township will require its designated redeveloper to prepare and implement a species management plan to protect the four rare plant and animal species from harm during construction, reestablish the rare plants and Pine Barrens Treefrogs on the site and to reestablish the Pine Snakes proximate to the site.

IV. PUBLIC HEARING

Pursuant to N.J.A.C. 7:50-4.52(c)3, a public hearing to receive testimony concerning the proposed Memorandum of Agreement (MOA) between the New Jersey Pinelands Commission and Stafford Township was duly advertised, noticed and held on May 22, 2006 at the Ocean Acres Community Center, 489 Nautilus Drive, Manahawkin, New Jersey at 7:00 p.m. Approximately 150 people attended the hearing.

Commission staff present included John Stokes, Larry Liggett, Ken Carter, John Bunnell, Stacey Roth, Nadine Young, Paul Leakan and April Fijalkowski. Commissioners present included Betty Wilson and Edward Lloyd.

At the outset of the public hearing, Executive Director Stokes introduced the Commission staff and Commissioners present at the hearing and indicated that the earliest time that the full Commission could consider this MOA would be at its June 9, 2006 meeting. However, it was conceivable that the project might be reviewed at a subsequent meeting.

Stacey Roth provided a summary of the proposed MOA. She indicated that the Commission had the authority under the Pinelands Comprehensive Management Plan (CMP) to enter into intergovernmental memoranda of agreement with any governmental agencies to authorize development that may not be consistent with the standards of the CMP, provided it was demonstrated that the proposed development would afford an equivalent or better level of

protection to the resources of the Pinelands. The MOA was intended to authorize Stafford Township to proceed with the proposed closure of the landfill and remediation of the other unlicensed landfills onsite. Additionally, the MOA would authorize the relocation of certain existing Township, State and County facilities and allow redevelopment of the site pursuant to the redevelopment plan adopted by Stafford Township. The MOA would also authorize a modified Pinelands application process, eliminating the requirement for individual development applications to be submitted to the Commission. Using a map, Stacey Roth oriented the public with the location of the concerned 363 acre site. She indicated that on November 1, 2005, the Township adopted a redevelopment plan for the Stafford Business Park site. That redevelopment plan called for the closure of the landfills, the relocation of State, Township and County facilities onsite, relocation of various roads and an existing office building, and residential and commercial development onsite. Stacey Roth explained that Commission staff had determined that the proposed development was consistent with most of the standards of the CMP, except threatened and endangered species protection standards and wetlands buffer standards. She indicated that the proposed development would have irreversible adverse impacts on the following threatened and endangered plant and animal species: Little Ladies Tresses (*Spiranthes tuberosa*), Knieskern's Beaked Rush (*Rhynchospora knieshernii*), Southern Gray Treefrog (*Hyla chrysocelis*) and Northern Pine Snake (*Pituophis m. melanoleucus*). As part of the MOA, Stacey Roth indicated that Stafford Township was proposing a number of measures, which in its opinion, would afford at least an equivalent level of protection to the resources of the Pinelands. These measures included the purchase of 570 acres of land for conservation purposes; deed restricting open space onsite; requiring the developer to incorporate low-impact site and green building design measures, including Leadership in Energy and Environmental Design (LEED) certification of the commercial component; requiring the developer to investigate and implement improved stormwater management measures to the portion of Route 72 that crosses Mill Creek and requiring the developer to submit a Species Management Plan to address the threatened and endangered species issues associated with the development. Stacey Roth indicated that proper closure of the landfill was required by law and necessary to protect the surface and groundwater of the Pinelands.

Mayor Carl Block of Stafford Township provided a brief history of the landfill and the proposed project. He indicated that the Township closed the landfill (stopped accepting waste) in 1983, as directed by DEP. In October 1987, the Township submitted applications to the DEP and the Commission for the formal closure and capping of the landfill. In 1990, the Commission approved an application for the development of the Stafford Township Business Park. Between 1991-1993, the Commission approved several individual applications for development in the Business Park. Mayor Block indicated that in 1994, DEP issued a major landfill disruption permit authorizing the Township to remove and consolidate buried debris within the Business Park to the existing landfill area. In 1994, the Commission also issued an amended approval permitting the Township to remove 25,000 cubic yards of buried debris under Hay Road and Recovery Road and 78,000 cubic yards of buried debris from Block 25, Lot 61 and disposed of at the landfill site. In June 1999, the Commission issued an approval allowing the consolidation of buried debris and the construction of a temporary permeable cap, with the condition that an impermeable cap be installed once funding became available. In 2001, DEP notified the

Township that it must sign a Memorandum of Understanding (MOU) by January 1, 2002 to commit to the closure and capping of the landfill. In 2004, the Stafford Township Business Park Commission designated Walters Group as the redeveloper of the Stafford Business Park. The proposal included the assumption of all landfill closure costs by Walters Group. Mayor Block indicated that the proposal before the Commission represented the best option to fund the closure of the landfill in accordance with DEP and Commission regulations.

Joe DelDuca, a representative of Walters Group, the Township's designated redeveloper, gave a presentation regarding "green building" design. He indicated that Walters Group had already invested thousands of dollars and staff time designing the current proposal. Mr. DelDuca briefly explained some of the aspects of the LEED Program, including water conservation, water quality (stormwater) and energy saving measures that would be included in the project.

John Stokes conducted the hearing at which the following testimony was received:

Dr. Fred Seeber, Councilman for Stafford Township, indicated that he had served as liaison to the Business Park Commission for 15-16 years. He indicated that the Business Park Commission had reviewed various proposals through the years to develop the Business Park, however very few proposals included closure of the landfill. He expressed concern over the effects of not closing the landfill properly and indicated that the current proposal was an excellent opportunity for the Township to obtain the funding to close the landfill. He urged the Commission to approve the MOA.

John Spodofora, Councilman for Stafford Township, indicated that he also served as chairman of the Stafford Township Environmental Commission. He indicated that the Environmental Commission had spent a lot of time reviewing the project and recognized the negative impacts to threatened and endangered species. However, the Environmental Commission also recognized the negative impacts to groundwater that would result from not closing the landfill. He indicated that when the results of the Mill Creek testing that was done as part of the Manahawkin Lake project were compared with current groundwater testing results, it appeared that the amount of pollutants leaching into the groundwater was increasing. Therefore, the Environmental Commission supported the current proposal.

John Stokes questioned whether the Township could provide the results of the stream testing that resulted from the Manahawkin Lake project. John Spodofora indicated that it was a County project and that he would submit a copy of the results to the Commission for review.

Jean DiPaola, Councilwoman for Stafford Township, indicated that she formerly served as Executive Director of the Southern Ocean County Chamber of Commerce and as Chair of the Stafford Business Park Commission. She indicated that the businesspeople of Ocean County understood the relationship between a clean environment and its effects on tourism, one of the leading industries of the area. She indicated that she supported the capping of the landfill and believed the current proposal was the best means to fund the landfill closure. She urged the Commission to approve the MOA.

Sal Sorce, a Manahawkin resident, indicated that he was opposed to the proposal. He expressed concern over the limited opportunities available for residents to comment and express their opinions on the proposed project. He requested that the Township provide for a special ballot to vote on the proposed project.

Don DeCarrol, a Manahawkin resident, expressed concern over the adverse effect the landfill was having on surface and groundwater. He indicated that he had reviewed the water testing results from the H2M report and found that there were several contaminants of concern leaching from the landfill including arsenic, lead, benzene and methylene chloride. He indicated that in order to protect the people of the area, the Commission should approve the MOA.

Marian Knowles, a Stafford resident, indicated that she agreed with the comments of the Mayor, Township Councilmen and the Walters Group and supported the proposal. She indicated that the current proposal made smart environmental and business sense.

John Szymanski, a Stafford business owner and an Eagleswood resident, indicated that the benefits of the proposal far outweighed the negative impacts on threatened and endangered species. He indicated that he agreed with the Mayor's statements regarding the length of time the Township had spent on the problem. Mr. Szymanski commended the expertise of the developer and indicated that the proposal was an excellent opportunity to resolve the landfill closure problem.

Carleton Montgomery, Executive Director of the Pinelands Preservation Alliance (PPA), indicated that PPA opposed the project as proposed and asked the Commission to invite the Township, County and DEP to participate in a fact-based investigation of the appropriate way to resolve the matter consistent with applicable environmental regulations, instead of entering into an MOA. He indicated that the Township had falsely lead the public to believe that a choice between water quality protection or maintaining consistency with CMP regulations must be made. Mr. Montgomery indicated that the proposal would set a precedent for the future, indicating that the DEP and Commission will waive their environmental rules to approve major developments to finance impermeable caps on municipal landfills. He indicated that the current proposal undermined the CMP and sacrificed important Pinelands resources. He questioned whether an impermeable cap was necessary to close the landfill, indicating that no analysis had been completed demonstrating that an impermeable cap was necessary to close the landfill and that the installation of an impermeable cap would improve water quality. Mr. Montgomery suggested that the Commission review whether a less expensive permeable cap could be used to close the landfill, which would preserve natural habitat and avoid the necessity for a massive new development. He indicated DEP recently approved the installation of a permeable cap to close a landfill in Galloway Township, costing the Township less than \$500,000. Mr. Montgomery indicated that review of the water quality data indicated that the landfill was at or near the end of its leaching life and that the leachate did not exceed federal or state clean water drinking standards, except for Iron. He suggested that Commissioners focus on the current groundwater quality data, rather than past data, since the landfill changes over time. He indicated that although the landfill was a temporary source of pollution to the groundwater, the

proposed new development would be a source of pollution forever. Mr. Montgomery indicated that the same chemicals found in the leachate from the landfill are also found in stormwater runoff. He indicated that the County owned one quarter of the old landfill and therefore was partially responsible for landfill cleanup. He indicated that the proposal used the landfill closure as an excuse for major development. He indicated that there was no rational basis to conclude that the proposed landfill capping would resolve the groundwater contamination problem. He indicated that the proposed MOA would change the Commission's environmental policy by doing two things the Commission had never permitted before: 1.) authorizing the relocation of Northern Pine Snakes and 2.) authorizing private development through an MOA.

Eric Stiles, Vice President of NJ Audubon Society, indicated that he was a former zoologist for the Endangered and Non-game Species Program. He indicated that to date, 11 Northern pine snakes had been captured onsite. This data indicated that there was a hyper-density of pine snakes inhabiting the site. Mr. Stiles indicated that the landfill provided a unique habitat for the snakes and therefore he opposed the proposal, due to its effects on Northern pine snake critical habitat. He indicated that the CMP required protection for threatened and endangered species critical habitat and that the MOA did not afford protection for threatened and endangered species. Mr. Stiles indicated that he had reviewed the water quality data and that the current data indicated that landfill was not causing surface or groundwater contamination. He suggested that the Township and the Commission consider using a less-expensive permeable to close the landfill. He indicated that Dr. Larry Niles of the Endangered and Non-game Species Program indicated in a memorandum that he would not support relocation of Northern Pine Snakes. He indicated that this memo would be submitted to the Commission. Mr. Stiles indicated that he did not support the current proposal or the proposed MOA.

Dr. Emile DeVito, a representative of the NJ Conservation Foundation, indicated that he agreed with the comments of the PPA and the NJ Audubon Society and opposed the proposal. He indicated that he was on the Endangered and Non-game Species Advisory Committee which did not support the relocation of pine snakes. He indicated that the relocation of pine snakes was a taking of habitat, a taking of species and constituted a violation of the NJ Endangered and Non-game Species Protection Act. Dr. DeVito indicated that the project needed to be scaled back since the project, as proposed, would impact critical habitat for threatened and endangered species and the quality of the Stafford Forge Wildlife Refuge. He expressed concern over the amount of excavation necessary to cap the landfill, indicating that such excavation could be much deeper and avoid critical habitat for threatened and endangered species, therefore not effecting as much acreage as currently proposed. Dr. DeVito indicated that the current water quality showed only minor contamination leaching from the landfill. He suggested that the Commission review the use of a less-expensive permeable cap to close the landfill, therefore eliminating the necessity of the current scale of redevelopment to fund closure costs.

Dr. Walter Bien, indicated that he was a NJ property owner and snake biologist who had done snake research in the Pinelands for years. He suggested, since snakes are density dependent, that the surrounding area also be studied to determine the quantity of snakes present and the impacts relocation would have on them. He expressed opposition to the current proposal, indicating that

the experimental design of the proposal was flawed and that additional information must be acquired to adequately design such a proposal.

Marie Elena O'Connor, a 35 year resident of Stafford Township, indicated that she supported the project and that many residents in Stafford Township had expressed support for the project to her.

Helen Henderson, a representative of Save Barnegat Bay, indicated that she agreed with the comments of PPA, NJ Audubon Society and NJ Conservation Foundation and opposed the project. She indicated that there were other less costly alternatives available to close the landfill that would not require the proposed redevelopment to fund landfill closure. She indicated that Save Barnegat Bay would be submitting written comments which would include a copy of the Environmental Security Technology Certification Program, which would detail the alternative capping solutions available for landfill closure.

Bob Gajewski, a resident of Cedar Run, indicated that he formerly served on the Board of Health and Industrial Commerce Commission and was familiar with the landfill. He indicated that initially he was opposed to the proposed project, but after reviewing the details, he indicated that he thought the project would work. He indicated that people were more important than threatened and endangered species.

Margaret Meissner-Jackson, a representative of the Ocean County Sierra Club, expressed opposition to the proposal. She expressed concern about the accuracy of the economic report presented to the Commission by the redeveloper for the proposed project. Ms. Meissner-Jackson indicated that she agreed with previous comments recommending that the Commission explore less costly alternatives to close the landfill, including the use of a permeable cap.

Treva Houser indicated that he owned Land Resource Solutions which specialized in Brownfield redevelopment, particularly landfills. He indicated that he supported the redevelopment of the site. However, he expressed concern about the misconceptions regarding the appropriate closure methods for landfills and the impacts that landfills had on groundwater. He indicated that the most updated information indicated that closing landfills with an impermeable cap was not good waste management. Impermeable caps isolated waste and did not treat the waste in any meaningful way. Mr. Houser cautioned the Commission on making any decision without fully understanding the implications of such a decision on the resources the Commission was responsible for protecting. He expressed concern that no one had analyzed exactly what effects the proposed landfill closure and redevelopment would have on groundwater. He indicated that capping the landfill may not improve the groundwater quality based on current data and research. Mr. Houser indicated that until the Commission had data indicating the effects of the proposed closure of the landfill on the resources of the Pinelands, the Commission should not make a determination regarding such a proposal. He urged the Commission to explore less costly, scientifically based alternatives for landfill closure.

John Stokes asked Mr. Houser if a landfill was clearly polluting the groundwater, what the

alternative closure plan would be that addresses groundwater pollution without installing a liner. Mr. Houser indicated that groundwater treatment was the only way to abate groundwater contamination. Capping a landfill would only contain the contamination and change the geochemical conditions within the landfill and the equilibrium that it had reached with its environment and may also result in detrimental impacts to the groundwater due to the change in geochemistry.

Jeff Jaekel, a Stafford resident, expressed support for the proposed project. He indicated that addressing the groundwater contamination resulting from the landfill outweighed threatened and endangered species issues.

Michael Murphy, a Stafford resident, indicated that the proposed project was an excellent opportunity to fund the closure of the landfill.

Lee Snyder, a resident of the Pinelands and a member of the Sierra Club, expressed opposition to the proposed project. He indicated that the proposed project was not consistent with CMP standards and urged the Commission to adhere to CMP standards.

John VanWaalwijk, a Manahawkin resident, indicated the proposed project was a great opportunity for the Township to resolve the landfill issue.

Vince Caldarella expressed concern over the amount of time it had taken to find a means to resolve the landfill issue and indicated that the proposed project was a great way to obtain the funding to close the landfill.

John Wright expressed concern over the credibility of Stafford Township officials and Walters Group representatives. He questioned why swimming was not banned in Mill Creek and Manahawkin Lake if such leaching from the landfill was occurring. He indicated that he was opposed to the current proposal.

Steven Rossi expressed support for the proposed project, indicating that it appeared there was no other option available to resolve the issue.

Paul Krier, an Ocean Acres resident, indicated that he was uncertain as to whether he supported or opposed the project. He questioned the accuracy of the projected costs for the project, indicating that he had seen various different costs for the project. He indicated that he hoped the Commission used its expertise to make a logical decision. Mr. Krier also indicated that it was hard to believe that the proposed redevelopment would have little to no environmental impacts.

Frank Kowalczyk, a Stafford resident, expressed support for the project. He indicated that the health of the citizens of Stafford was more important than the mortality of a few dozen snakes.

Esther Sodeikes, a 37 year Stafford resident, expressed support for the project.

Angela Ominski, President of the Southern Ocean County Chamber of Commerce, indicated that the Chamber of Commerce supported the project and that it was a sound economic and environmental project.

Wesley Bell, former Stafford government official, questioned the redeveloper's experience and expressed opposition to the proposed project.

Penny Miller, an 11 year Manahawkin resident, Chair of the Business Park Commission, President for State Business and Professional Women and a Sovereign Bank employee, indicated that the Commission had reviewed the proposal and determined that the current proposal made the most economic sense.

William DeCamp, Jr., President of Save Barnegat Bay, expressed opposition to the proposal indicating that the proposal would set a precedent for many environmental issues in the Pinelands, including the relocation of Northern pine snakes. He expressed concern that, although John Stokes attended a public information session held by several environmental groups regarding the proposal, he did not speak at the session. He questioned why the MOA did not specify that the proposed dwelling units would be age-restricted. He indicated that the Township officials were overwhelming the public with words and urged the Commission not to approve the MOA.

Scott Dechen indicated that although he was concerned about threatened and endangered species, he was also concerned about the effects of the unclosed landfill on the health of humans and expressed concern over the amount of time the landfill had been left improperly closed. He expressed support for the proposed project.

Patricia Jones, a resident of Ocean Acres, expressed opposition to the project and suggested that the residents of Stafford vote on the proposal. She expressed concern that although the proposed residential dwellings were age-restricted, the 112 proposed apartments were not proposed to be age-restricted. She questioned whether the proposal would resolve the groundwater quality issues, since the contaminants had already leached into the groundwater.

Keith Marcoon, a resident of Ocean Acres, expressed concern over the projected cost of the project and questioned whether the project would be in taxpayers' favor. It appeared that there were additional alternatives that the developer and the Township could research and investigate. He indicated that once excavation of the unlicensed landfills commenced, the concerned material may extend deeper than predicted and increase the costs of cleanup.

Carol Lieber, a resident of Manahawkin and Vice President of Business and Professional Women of Southern Ocean County, indicated that she supported the project and commended the work of the Township and developer.

John Smith, a resident of Stafford, expressed opposition to the project and its potential effects on environmental resources.

Mike Sebexen, an Ocean Acres resident, expressed support for the project.

Glen Courter, a Stafford resident, expressed support for the project.

James Smith, a 25 year Stafford resident, questioned the validity of the data presented to the Commission by the Township and the developer and expressed opposition to the project.

Anne Marie Woods, a Stafford resident, indicated that she agreed with the comments of Carleton Montgomery, Dr. Emile DeVito, Eric Stiles and Dr. Walter Bien. She indicated that she was neither for nor against the proposed Business Park but urged for moderation of the development. Ms. Woods questioned the consistency of the proposed project with CMP MOA regulations, questioning how an MOA could benefit a private developer when CMP regulations only permitted the Commission to enter into MOAs with public agencies. She also expressed concern over the relocation of threatened and endangered species and how this MOA could set a precedent regarding threatened and endangered species relocation.

Jim Harrington, a Stafford resident, questioned whether Northern pine snakes were threatened or endangered, because it appeared that there was an overpopulation of them. Since these species were found in such disturbed conditions, it appeared that they were extremely adaptable and hearty. He questioned whether the leaching resulting from the landfill was a threat, since nothing had been done within the past 20 years. He also expressed concern over the extremely large amount of money associated with the project.

Bill Brant, a Stafford resident, expressed support for the project He indicated that the DEP had mandated the closure of the landfill and that regardless of whether the proposed redevelopment occurred, threatened and endangered species would be effected as a result of the landfill closure.

Joseph D'Adamo, a resident of Ocean Acres, expressed opposition to the project indicating that the threatened and endangered species were present prior to people. He also expressed concern over the increased development in the area.

Mayor Carl Block indicated that closing the landfill drove the project instead of the proposed redevelopment. He indicated that although there may be less-costly, new alternatives available than the proposed impermeable cap, the Township must close the landfill as required by DEP.

John McKinney, an attorney representing the Township, indicated that the project involved competing environmental concerns – threatened and endangered species issues versus the closure of the landfill in accordance with DEP regulations. He indicated that the proposed project addressed both issues. Mr. McKinney explained the difficulty of the Township taking financial responsibility for landfill closure and entering into litigation to resolve liability issues. He urged the Commission to approve the MOA.

There being no further testimony, the hearing concluded at 11:00 p.m.

Written comments on the proposed MOA were accepted through Noon on May 24, 2006 and were submitted by the following parties:

- 1) May 11, 2006 letter and video cassette tape from Sal Sorce, a Manahawkin resident, expressing concern over the elimination of public comments from the television broadcast of Stafford Township Council Meetings and suggested that all Stafford residents be included in the decision making process.
- 2) May 22, 2006 memorandum from Mayor Carl Block of Stafford Township detailing the information concerning the history of the project and expressing support for the project as he presented at the May 22, 2006 public hearing.
- 3) May 21, 2006 facsimile from Chris and Geoff Schmidt, Manahawkin residents, urging the Commission to refrain from reducing or waiving CMP standards for the proposed project.
- 4) Copy of a May 19, 2006 letter from Carleton Montgomery of the PPA to Commissioner Lisa Jackson of the DEP asking the DEP to consider whether the proposed impervious cover for the landfill was necessary and appropriate.
- 5) May 18, 2006 email from Eleanor George expressing opposition to the proposed project and expressing concern for the increasing development in the area.
- 6) May 24, 2006 letter from John E. Walsh from Schoor Depalma responding to the issues raised by PPA in its May 19, 2006 letter to DEP Commissioner Lisa Jackson.
- 7) May 22, 2006 letter from Kathleen Lardiere, a Stafford resident, expressing concern about the increased development in the area and its impact on the environment and expressing opposition to the proposed project.
- 8) May 23, 2006 email from Juliet D'Adamo, a Stafford resident, expressing opposition to the proposal.
- 9) May 23, 2006 email from Cathy Annunziata, a Stafford resident, indicating that the proposed residential development would have a negative effect on the environment and expressing opposition to the project.
- 10) May 22, 2006 email from Richard and Sandra Bungler, Stafford residents, expressing opposition to the proposal due to the negative effects the proposed development would have on the environment.
- 11) May 17, 2006 email from Anne and Bill Bungo, Stafford residents, indicating that they see no other alternative than the Walters Group's proposal to close the landfill.

- 12) May 16, 2006 email from Sue Smith, a Stafford resident, questioning the length of time it had taken to address the landfill issue and expressing opposition to the proposal.
- 13) May 13, 2006 email from Frank McDonnell, a Stafford resident, indicating that the proposal was an excellent way to fund the landfill closure.
- 14) May 13, 2006 email from Jane McDonnell, a Stafford resident, indicating that the taxpayers of the Township could not afford to close the landfill and expressing support for the proposal.
- 15) May 24, 2006 letter from Joseph DeDuca, a representative from Walters Group, responding to the issues raised by PPA in its May 19, 2006 letter to DEP Commissioner Lisa Jackson.
- 16) Copy of a May 24, 2006 letter to Joseph DeDuca of the Walters Group from Mark A. Swyka of Cornerstone Environmental Group, LLC responding to the issues raised by PPA in its May 19, 2006 letter to DEP Commissioner Lisa Jackson.
- 17) May 24, 2006 letter from John Sahradnik, an Ocean County official, addressing questions raised during the May 22, 2006 public hearing in regards to the County's obligation to contribute to the costs associated with the closure of the landfill.
- 18) May 24, 2006 email from Jean Vogrin expressing opposition to the project and questioning the effects the project would have on Hays Road.
- 19) May 25, 2006 letter from Trevan Houser of Land Resource Solutions, a company that redevelops Brownfield properties, indicating that although he was not directly opposed to the proposed redevelopment or the MOA, he was concerned about the misinformation surrounding the project and indicated that the MOA contained inaccurate information regarding landfill closure.
- 20) May 23, 2006 email from Lee Snyder containing a written copy of his testimony at the May 22, 2006 public hearing.
- 21) May 23, 2006 email from Tom Annunziata expressing opposition to the proposal and expressing concern about the pollution that would result from the proposed redevelopment.
- 22) May 23, 2006 letter from John McKinney, Jr., Counsel to Stafford Township, responding to several comments made at the May 22, 2006 public hearing regarding the allocation of remediation costs among multiple parties.
- 23) May 23, 2006 email from Sal Sorce, a Stafford resident, thanking the Commission for the opportunity to speak at the May 22, 2006 public hearing.

- 24) May 23, 2006 letter from Frederic Otten, a Surf City resident, suggesting that the Commission consider recommending that the site be incorporated in to the Ocean County Park System after closure of the landfill and requesting that the Commission carefully consider the long term effects of the proposal on the Pinelands.
- 25) May 23, 2006 letter from Vincent Caldarella, a Manahawkin resident, expressing support for the proposal.
- 26) May 19, 2006 letter from Joseph and Pamela Tomasella, Stafford residents, indicating that the landfill must be capped as soon as possible and expressing support for the proposal.
- 27) May 24, 2006 letter and supplemental information from Carleton Montgomery of the PPA detailing the reasoning for PPA's opposition of the proposal, including the negative precedent that the proposal would set for environmental policy in the Pinelands, the lack of evidence indicating that the landfill was negatively effecting water quality, the impacts the proposed development would have on threatened and endangered species habitats and that the proposed MOA did not provide an equivalent level of protection to the resources of the Pinelands.

V. EXECUTIVE DIRECTOR'S ANALYSIS OF THE COMMENTS

As is evident from the oral testimony offered at the hearing and the written comments we have received, people cited a variety of reasons for supporting or for opposing the proposed Memorandum of Agreement. Some of these (such as tax benefits/impacts; the amount, type and quality of development; traffic; and the Township's decision-making process; etc.) are within the purview of the Township and its governing body and, therefore, are not directly germane to the Pinelands Comprehensive Management Plan and the Commission's decision on the proposed Memorandum of Agreement.

However, a number of other points have been raised which do bear upon the Commission's decision in this matter. These generally relate to the financial aspects of the project, the landfill closure plan, water quality, threatened and endangered species, the proposed environmental measures included in the Memorandum of Agreement, the basis for the Memorandum of Agreement, the precedents this type of Memorandum of Agreement may set, and one miscellaneous matter. To more fully inform the Commission's decision-making process, the Executive Director has focused the following analysis on those points that raise key questions about the merits of the Township's current proposal.

A. Project Finances

1. Comments. Several different concerns were expressed about the financial aspects of the landfill closure and redevelopment project. Questions were raised about the reliability of the landfill closure estimates. It was also suggested that Stafford Township has enough bonding

capacity to finance landfill closure and that Ocean County (and possibly the New Jersey Motor Vehicle Commission) has a legal obligation to help pay for closure of the old landfill. Financial concerns were expressed about the redevelopment proposal on two counts: that the Pinelands Commission is not responsible to ensure that the redeveloper realizes a profit; and that a smaller development configuration that protects at least one pine snake den might be possible from a financial standpoint.

2. Background. The most recent estimate of direct costs to the developer for landfill closure is \$31 million. This estimate is based upon bids submitted in mid-2005 and reflects \$11.8 million to excavate the old landfills, \$14.2 million to close the licensed landfill¹⁹, \$3.5 million for post closure maintenance and monitoring and \$1.5 million for post closure guarantees. If one adds to that other related costs, such as engineering, project management, facilities relocation, road reconstruction, and loan cost and interests, the cost could approach \$60 million.

Regarding the project's overall financial picture, Dr. Nicholas' April 11, 2006 memorandum projects a pre-tax return of 13.4%, which does not account for certain additional expenses that were unknown at the time the proforma was completed. As reported in Sections III.B.8. and 9., analyses of scaled back development configurations ranged from negative returns to a high of 6.8%.

3. Reliability of Closure Estimates. Various parties have cited estimates of \$18 million to \$70 million and questioned their reliability. Although these questions are understandable, this disparity is due to the fact that some estimates were prepared many years ago and did not account for all of the expenses, including, for example, the cost of excavating the old landfills. As reported in Subsection A.2. above, the most recent and comprehensive estimate of \$31 million in direct closure costs was based upon actual bid information submitted approximately one year ago. Although this is a very reliable estimate, it is important to note that it is now a year old and doesn't reflect many of the "indirect" costs described in Subsection A.2, above.

4. Stafford Township's Bonding Capacity. If Stafford Township were to implement the closure plan itself, the direct costs of landfill closure would increase to at least \$45 million. This is due to the public bidding process and the requirement that Stafford Township abide by prevailing wage rates. The State of New Jersey places ceilings on the amount of debt local governments can carry at any point in time. In 2005, Stafford Township's debt ceiling was \$98,375,778, of which current debt totaled \$54,528,444. The balance would be insufficient to finance direct landfill closure costs. In 2006, the Township's total debt ceiling increased to \$120,804,696, leaving \$63,775,196 to finance new debt. This would be sufficient to cover direct landfill closure costs but would not be adequate to finance the remaining, indirect costs of landfill closure and other Township capital projects, such as roads, stormwater improvements, fire and emergency equipment, open space purchases, etc.

¹⁹ This equates to a direct cost of closing the licensed landfill of approximately \$258,000 per acre.

5. Other Responsible Parties. Although it has been suggested that Ocean County (and perhaps the Motor Vehicle Commission) might bear some responsibility for paying for the cost of landfill closure, Ocean County denies any liability (see written comment #17 appended to this report.) Moreover, the Department of Environmental Protection ordered the developer to include a small portion of the Motor Vehicle Commission property in the closure plan.

Without a voluntary admission of liability on the part of others, the Township's only recourse would be to seek cost recovery through the courts, a process which by all accounts is risky, costly and lengthy. In the meantime, the Township would be obligated to pay for the landfill closure, which, based on the analysis in A.4., above, it can not realistically handle.

6. Redeveloper's Profit. It is true that the Pinelands Commission does not base its regulatory decisions on the profits that a developer may or may not realize. In this case, however, the Township argued that this redevelopment proposal was essential to pay for the landfills' closure. To determine if the redevelopment project could be scaled back and still finance the landfills' closure, the Commission analyzed the proposal from a financial standpoint. The conclusion of Dr. James Nicholas, an independent financial expert whose services the Commission has utilized in the past, was that the pre-tax return of this proposal, in its entirety, is likely to be 13.4%, a relatively modest return for a project with this degree of risk.

7. Alternative Redevelopment Plans. In addition to an analysis of different landfill closure options, the Commission staff investigated eight alternative development configurations that would reduce the amount of Pine Snake habitat lost as a result of the proposal. Each of these options sought to preserve certain areas of the site by reducing the development "footprint" and involved a financial analysis to assess how a smaller redevelopment plan²⁰ would affect the financial viability of the overall project.

All but one of the smaller redevelopment configurations resulted in a negative return. As reported in Section III.B.9. of this report, a conceptual plan that would protect the westerly den (closest to the landfill to be capped) and 22 acres of surrounding land that would connect it to the Stafford Forge Wildlife Management Area was estimated to net a pre-tax return of 6.8%, not taking into account several added expenses. This return is significantly less²¹ than what would likely be required for a project such as this.

²⁰ In addition to "smaller" redevelopment plans, a plan with the same number of residential units but with a modified housing mix that included multi-family units was also investigated. The return was less than if the number of units is reduced without changing the housing mix.

²¹ Dr. Nicholas advised that lenders evaluate risk and return when determining whether to provide financing and that a return much below 15% be unlikely to attract a developer, let alone an institution to finance the project.

A March 29, 2006 memorandum from DEP staff member Bill Mates, which discusses the project's finances, was attached to written comment #27. It is unfortunate that the Commission's staff was neither previously aware of nor consulted about the DEP analysis because the memorandum contains errors and inappropriate assumptions which suggest a higher return than the other financial analyses.²² In spite of these mistakes, however, the first paragraph of that memorandum concludes that "the project cannot be downsized sufficiently to protect Den 1 (the western den) without jeopardizing the economics of the Stafford Township landfill closure." Although the memorandum goes on to state that a conclusion on Den 2 (the eastern den) cannot be reached with the information available, the author could have readily obtained that information by contacting our office. Nonetheless, since the protection of Den 2, according to the memorandum, involves more land than Den 1, a logical assumption would be that it too would jeopardize the landfill closure.

B. Landfill Closure Plan

1. Comments. Some comments argue that there are alternative landfill closure approaches that will be less expensive (and perhaps more appropriate) than the current proposal. If true, a smaller redevelopment project could be designed which would allow for a larger percentage of the site to be conserved, thereby protecting on-site pine snake habitat. The main points raised in these comments are that the use of impermeable caps are inappropriate for closing older landfills; that soil excavation can be concentrated so as to conserve more of the site; that less expensive, permeable landfill caps are being approved elsewhere; and that less expensive evapotranspiration (ET) caps, also referred to as biocaps, should be considered. A concern was also expressed that excavation of the old landfill could disperse airborne asbestos.

2. Background. The landfill closure plan as currently proposed calls for the old landfill to be excavated and that excavated material to be used to contour the licensed landfill. An impermeable geomembrane will then be installed on top of the 55 acre licensed landfill. Approximately 1 million cubic yards of soil will be excavated from the site to reclaim the old landfill and for daily and final cover for the licensed landfill.

3. Impermeable Caps. Pinelands Commission regulations require that landfills be capped with an impermeable material unless an alternative is available that addresses public health and

²² For example, the mistakes include inappropriate assumptions that consider some of the management fees and sales expenses as profit, incorrect (and lower) costs for the purchase of Pinelands Development Credits and reporting in the table on page 4 of the memorandum that a 19.1% return on cost would be realized for the project as currently proposed when the attached work sheets (using the author's incorrect assumptions) report the return to be 15.8%. Although no supporting documentation was provided for Cases 2 and 3 in that table, it is inconceivable that the estimated returns are accurate, particularly when considering that the return for Case 2 (which reduces the number of residential units by 45) is projected to yield a higher return than Mr. Mates' calculation for the project as currently proposed.

ecological risks and affords an equivalent level of protection. The Commission relies upon DEP regulations for technical design specifications. Those regulations require that impermeable caps have a permeability of 1×10^{-7} cm/sec. In this case, a 40mil LLDPE geomembrane which meets that requirement is proposed. The membrane will be underlain by gas venting/bedding soil and overlain by a total of 24 inches of drainage soil, cover soil and topsoil.

In addition to the fact that DEP regulations require them, impermeable caps have been and continue to be widely used throughout the country for closing landfills. The water quality implications of impermeable caps are discussed in Section V.C.4. of this report.

4. Soil Excavation. The landfill closure plan proposes to utilize approximately 1 million cubic yards of soil material to reclaim the old landfill after the waste is excavated and to provide for daily and final cover material for the licensed landfill. Although the importation of soil material from off-site sources was investigated and found to be financially infeasible due to an estimated \$14 million increase in costs, it is true that on-site soil mining could be concentrated in some areas of the site as a means to limit the total area of disturbance. This would necessitate deeper excavation in those areas to be mined, rendering those areas generally unsuitable for development.

The purpose of a concentrated soil excavation program would be to leave larger areas of the site undisturbed so as to better protect Pine Snake habitat. Whether or not such a program is workable is a function of whether it could be accomplished without jeopardizing the viability of the redevelopment project which is financing the landfill closure. As discussed in Sections III.B.8. and 9. and Section V.A.7., above, reconfiguring the development footprint renders the project infeasible.

5. Permeable Caps. It has also been suggested that a more “permeable” cap should be considered at this site so that the savings would allow the redevelopment project to be downsized, thereby protecting more pine snake habitat. Since DEP rules do allow for more permeable (1×10^{-5} cm/sec) caps under certain circumstances, the costs for such a cap were investigated last year and verified again recently to determine if the cost savings were significant enough for the staff to recommend that the Commission relax its landfill closure and water quality standards in this case to achieve significant habitat protection.

In order for the requisite permeability standard to be met, on-site soils need to be amended with imported, low permeability material, such as bentonite. Based on the actual costs (\$41.07 per cubic yard) for amended soil at another closure project, the in-place costs for the Stafford licensed landfill were estimated to be \$5.37 million.²³ This is \$2.6 million more than the cost of the geomembrane cap and the necessary cover soil. Therefore, this option has been ruled out.

²³ A minimum of 130,680 cubic yards of the amended soil is reported to be needed for this 55 acre licensed landfill.

It was also suggested that the DEP approved a natural cap for the closure of the Galloway Township landfill, the cost of which might be less than \$500,000. Based upon discussions with Mr. Bruce Witkowski of DEP (personal communications on May 23, 2006 and June 28, 2006) and information from DEP files, we understand that DEP approved a geomembrane cap in 1994 and, after further groundwater testing, approved a semi-permeable cap in 2003. Some people have questioned whether the 2003 DEP closure plan approval requires a 1×10^{-5} cm/sec cap but we are advised that it must meet that regulatory standard. Although original cost estimates were reportedly in excess of \$4 million, we have no reliable information on current cost estimates. The Galloway landfill has yet to be closed and we understand that the Township continues to explore alternative closure options. In a June 1, 2006 letter regarding those alternative closure options, DEP advised the Township that any change from the currently approved closure plan will require DEP approval. In accordance with DEP regulations, any such alternative must meet the 1×10^{-5} cm/sec permeability requirement.²⁴

6. Evapotranspiration Caps. Evapotranspiration (ET) caps have been suggested as a less expensive way for the landfills to be closed. If true, the savings can allow the redevelopment project to be downsized, thereby protecting more pine snake habitat.

ET caps are designed to take advantage of natural processes to prevent precipitation from leaching through landfills and other contaminated sites. A soil layer and vegetative cover are designed so that the soil layer collects and retains precipitation; natural evaporation from the soil and transpiration from the plants then utilize the water, thereby preventing it from leaching through the underlying waste site.

Since DEP regulations do not consider ET caps to be a proven technology, they are not authorized for use in closing landfills in New Jersey. However, the Department can authorize the use of “experimental” technologies as part of a research program and has informally expressed some willingness to consider an ET cap research project, provided it is small in scale and is installed over a section of a landfill with an impermeable liner. These conditions do not apply at the Stafford landfill.

Nonetheless, we did investigate the use of ET caps elsewhere in an effort to determine how well advanced and researched the technology is. Recognizing DEP’s regulations, our goal was to search for clear and convincing evidence that (1) an ET cap would prevent leaching at the Stafford landfill and (2) save enough money to significantly reduce the redevelopment project. If that evidence was found, the Executive Director intended to request that DEP consider broadening its experimental research criteria to allow an ET cap at the Stafford landfill.

We reviewed dozens of reports and articles on ET caps and found the following to be most relevant to our deliberations.

²⁴ We are continuing to research the particulars of the Galloway landfill closure plans.

- The US Air Force has investigated the use of ET caps as a less expensive alternative to traditional means of landfill closure. A 2001 paper²⁵ appended to written comment #27 and a more complete report by those authors²⁶ indicate that short-term field experiments demonstrate that ET caps can fulfill the requirement that landfill covers minimize infiltration of precipitation into waste. Unfortunately, these experiments were conducted in areas with precipitation rates between 6-29 inches per year, far less than the average of 45 inches in the Pinelands. The authors report that short growing seasons, unsuitable soils and high rates and amounts of precipitation may prevent the use of ET caps and conclude that “[c]limate is a primary determinant of ET cover performance at a given site and the evaporation-to-precipitation ratio is naturally the most favorable in arid and semi-arid areas.” Areas west of the Mississippi River were found to be most conducive while, in areas east of the Mississippi River, it was reported that an ET cover with a top layer of clay soil might be needed to prevent infiltration.
- A Department of Defense 2002 report²⁷ recommended that low-permeability (not ET) caps be used where the climate is characterized by abundant rainfall. The report further notes that ET caps may be appropriate if precipitation rates are such that infiltration can be controlled without the addition of a low permeability cap.
- A 2003 technical guidance document²⁸ again stresses the importance of precipitation and atmospheric parameters in the success of ET caps. The document further states that “[i]n cold climates where transpiration is essentially nonexistent during the winter, a cover should be capable of storing all or most of the precipitation that occurs during that period.”
- Another 2003 report²⁹ identifies 64 sites where ET covers have been proposed, tested or installed in the United States. The report notes that “ET covers are generally considered

²⁵ Hauser, V. L. et al. 2001. Natural Covers for Landfills and Buried Waste. pp. 768-775. *Journal of Environmental Engineering*, Volume 127, Number 9.

²⁶ Hauser, V. L. et al. 2001. *Alternative Landfill Covers*. Sponsored and Supported by The Air Force Center for Environmental Excellence.

²⁷ Environmental Security Technology Certification Program. 2002. *Impact of Landfill Closure Designs on Long Term Natural Attenuation of Chlorinated Hydrocarbons*. Department of Defense.

²⁸ The Interstate Technology & Regulatory Council, Alternative Landfill Technologies Team. 2003. *Technical and Regulatory Guidance for Design, Installation, and Monitoring of Alternative Final Landfill Covers*.

²⁹ Madalinski et al. 2003. *Evapotranspiration Covers: An Innovative Approach to Remediate and Close Contaminated Sites*. Wiley Interscience. DOI 10.002.10094.

applicable in areas that have arid or semi-arid climates” and that these types of covers may not be appropriate at landfills where gas emissions need to be controlled, a situation that exists at the Stafford landfill. The report also concludes that “limited data are available to describe performance of ET covers in terms of minimizing percolation, as well as the covers’ ability to minimize erosion, resist biointrusion, and remain effective for an extended period of time.”

- The Environmental Protection Agency is sponsoring an Alternative Cover Assessment Program involving ET caps at 12 sites throughout the Country. This program, which will compare “conventional” and ET caps at these sites, is now underway. An Alternative Landfill Cover database, which reports on these demonstration projects and other alternative landfill closure projects, is also maintained.³⁰ Several projects that might have applicability to the Pinelands were reviewed. The early results of a demonstration project in Albany, Georgia do show that a small-scale ET cap is performing better than a compacted clay cover at the same site. Results from a Cincinnati, Ohio project show a general reduction of pre-closure leachate with leachate production lower in summer but higher in the winter months, presumably because of fluctuating evapotranspiration rates. Performance data are not available for two other projects: a small scale demonstration project in College Park, Maryland which is just getting underway; and a project just completed but not evaluated in Honeybrook, Pennsylvania.

Another project in Woodlawn, Maryland³¹ involved a natural (not ET) cover over a landfill where water quality monitoring indicated that natural attenuation of the contaminated groundwater was occurring. Based upon the water quality information discussed in Section V.C. which follows, this is not the situation at the Stafford landfill.

Although we are by no means experts in this field, it appears that ET caps show promise as alternative landfill covers, particularly in areas with favorable evapotranspiration to precipitation ratios. Preliminary results from the Albany, Georgia project suggest that an ET cap may work in higher rainfall areas but in an area where other conditions (e.g., growing seasons) are not comparable to New Jersey. The Cincinnati, Ohio project shows a reduction in infiltration rates after the cap was installed but leachate continues to be produced. Most importantly, however, we have not found conclusive evidence that the technology is proven to work in climatic conditions comparable to New Jersey.

³⁰ 2003 May 20. Environmental Protection Agency, Technology Innovation Program, Alternative Landfill Cover Profiles.
<http://clu.in.org/products/altcovers/usersearch/lf_details.cfm> Accessed 2006 June 22 and June 28.

³¹ Wildlife Habitat Council. The Woodlawn Wildlife Area.
<<http://www.wildlifehc.org/brownfields/woodlawn.cfm>> Accessed 2006, June 28.

It is also unclear whether an ET cap would yield significant savings at the Stafford Landfill site. ET cap designs are necessarily very site-specific and the associated costs appear to be highly variable. Although several-year old cost estimates for Warren Air Force Base indicated that an ET cap could be constructed there for \$147,000 per acre³², more recent reports estimate the costs for a full scale ET cap at Albany, Georgia at more than \$600,000 per acre.³³

Based upon the absence of conclusive performance and cost information, it is uncertain whether an ET cap could be designed to eliminate infiltration at the Stafford landfill and at a significantly lower cost than the current proposal. Although the Executive Director intends to discuss the possibility of a research project elsewhere in the Pinelands with DEP, full scale use of an ET cap at the Stafford landfill is not a viable alternative.

7. Airborne Asbestos. Landfill testing conducted by several consulting firms has not disclosed the existence of asbestos in the waste material to be excavated from the old landfill. However, an operations and maintenance manual has been prepared as part of the overall landfill closure plan, one section of which specifically addresses dust control. The plan calls for water spraying to control dust during excavation and transport, and for cover to be placed over landfill areas being excavated at the end of each day.

C. Water Quality

1. Comments. While some comments posit that closure of the landfill will yield significant water quality benefits, others dispute that contention. The dispute centers on several arguments: that excessive levels of contaminants are not emanating from the landfill and do not pose a significant health risk; that groundwater quality is actually improving; that test results do not exceed background levels; that there is no evidence that an impermeable cap will improve water quality in this instance; and that non-point source pollution resulting from the subsequent redevelopment will offset any water quality benefits that might be realized from the landfill closure.

2. Background. In 2005, the Commission's staff analyzed groundwater monitoring data dating from 1986 through the middle of 2005. These data were collected during a 1986 Environmental Protection Agency analysis, quarterly monitoring of the licensed landfill pursuant to a New Jersey Pollution Discharge Elimination System permit and a 2003 investigation undertaken by H2M Associates, Inc. on behalf of the NJ Department of Environmental Protection. The H2M investigation was done because DEP had advised the Township that it would close the landfill if the Township didn't take action.

³² See Appendix A, Written Comment #27

³³ Environmental Protection Agency. May 2006. Technology News and Trends Newsletter.

The staff's initial conclusions were that a number of constituents (aluminum, ammonia, arsenic, benzene, cadmium, calcium, chlorine, chloroform, chromium, iron, lead, manganese, pH, silver, sodium, total dissolved solids and zinc) exceed groundwater standards that the DEP and the Pinelands Commission have established for the Pinelands. Moreover, some of the pollutants (such as aluminum, ammonia, arsenic, benzene chromium, iron, lead, manganese, and sodium) exceeded the much less protective groundwater standard (Class 2) that applies to some areas outside the Pinelands.

3. Contamination. Based upon the comments received, Commission staff again evaluated the available water quality information.

a. H2M Report. As late as 2003, H2M reported that quarterly groundwater monitoring results disclosed that "exceedances have been routinely detected in the ground water above permit levels (Class 2 standards) for lead, ammonia/nitrogen, mercury, total dissolved solids, barium, iron, cadmium, zinc, sodium and manganese."

H2M installed 10 new shallow ground water monitoring wells in 2002, four of which were at the old landfill, and four deep ground water monitoring wells, one of which was located at the old landfill.

Monitoring results from the new and six pre-existing shallow wells at the new landfill showed that calcium hardness, total dissolved solids, ammonia, aluminum, arsenic, chromium, iron, lead, manganese, mercury and thallium exceeded Class 2 standards. In addition to these parameters, benzene was also detected above the Class 2 standards in leachate samples collected from test pits.

Monitoring results from the shallow wells at the old landfill showed that total dissolved solids, ammonia, aluminum, arsenic, chromium, iron, lead, manganese, sodium and benzene exceeded Class 2 standards. The same type of exceedances were found in leachate samples taken from test pits.

The report also noted exceedances of several parameters in the deep monitoring wells.

It is important to again note that all of these results represent exceedances of a much less protective groundwater standard than both DEP and the Pinelands Commission have established for the Pinelands.

b. Trends. Commission staff analysis of the monitoring data do not support the notion that groundwater quality is improving. Although total dissolved solids does seem to show a decline since 2000, other parameters such as lead, arsenic, cadmium, zinc and manganese do not show declines. Periodic spikes in arsenic (5.7 times higher than Class 2 standards), cadmium (2½ times higher than Class 2 standards), lead (12 times higher than Class 2 standards), and iron (83 times higher than Class 2 standards) also exist. There are peaks and valleys in concentrations over the testing periods but, as would be

expected, they bear a strong correlation to rainfall events.

The staff also looked at longer term trends by comparing 1994-2000 data for arsenic, chromium and zinc to 2000-2005 data. Arsenic concentrations are slightly higher now than before, chromium has increased significantly and zinc concentrations are stable.

Several other points are worth noting about several specific points raised in written comment #27. First, the notion that virtually no tests exceeded applicable water quality standards is dispelled by the facts that there were 209 Class 2 ground water exceedances from 2000 to 2005 and 18 other parameters exceeded background levels 627 times. Second, as reported by H2M, iron is typically found in landfill leachate and the exceedances here were found at more than one well. Third, H2M also reports sodium as a typical leachate constituent. Fourth, the number of chloroform and manganese exceedances are recurring and are not limited to one year each. Fifth, cadmium exceedances have been reported for four years. Sixth, trichloroethylene exceedances have been reported for two years.

c. Background Ground and Surface Water. The suggestion that the monitoring results do not show meaningful ground or surface water contamination seems to ignore the fact that Pinelands water quality standards are being exceeded, mistakenly assumes that some of the ground and surface monitoring points at which contamination has been found are not affected by the landfill (and shows that pollution is emanating from other sources) and erroneously assumes that laboratory results that are lower than Practical Quantitation Levels are unreliable.

The Mill Creek stream sampling point is presumed to be affected by the landfill because of its proximity to the landfill and the fact that ground water moves in that direction and provides the vast majority of a stream's flow in the Pinelands. However, it is also logical to assume that Mill Creek water quality at that point is also affected by the Ocean Acres development. Similarly, attempting to compare "up-gradient" and "down-gradient" monitoring well data overlooks the fact that the groundwater wells are very close to the landfills and affected by its leachate.

Although ambient groundwater quality data are not available upgradient from this site, its quality can be inferred. The H2M report finds that groundwater generally flows to the east and towards the northeast as one gets closer to Mill Creek. Expansive forested areas are situated to the west of the landfill and, based upon research undertaken by the Commission's Science Office, and groundwater would be expected to exhibit characteristic Pinelands water quality.³⁴

³⁴ Lord, D. G., et al., 1990. Hydrogeochemical data from an acidic deposition study at McDonalds Branch basin in the New Jersey Pinelands, 1983-86. U. S. Geological Survey Water Resources Investigation Report 88-500; Rhodehamel, E. C. 1979. Hydrology of the New Jersey

Lastly, Practical Quantitation Levels (PQLs) represent regulatory standards for testing that can be reliably achieved among laboratories within specified limits of precision and accuracy during routine laboratory operating conditions.. They do not account for the fact that variable testing equipment and methods are used by different laboratories and some testing protocols can detect lower levels of certain parameters. Method Detection Limits, which may often be reported at lower levels than PQLs, define the minimum concentrations that a specific run of the testing equipment can measure. Although values lower than the PQL should be viewed with some caution, there is no reason to universally discard them.³⁵

d. Public Health. The concentrations of many parameters (such as arsenic, ammonia, iron, lead and a variety of organic compounds) found here are dangerous to human health. However, the actual public health risk is likely to decrease as these concentrations are diluted as ground and surface water flows away from the site. The H2M report identified six domestic water wells within a one mile radius of the landfill, the closest of which is located about 600 feet to the southeast.

Mill Creek flows into Manahawkin Lake, approximately one mile to the east of the landfills. Manahawkin Lake is a public swimming and recreation area. The Ocean County Health Department tests for fecal coliform but does not currently test the lake for the constituents found during the landfill monitoring program.

4. Water Quality Benefits of Impermeable Caps. Although we are no experts on the use of impermeable caps, we have attempted to gain a better understanding of the water quality benefits they provide. It is widely recognized that the purpose of an impermeable cap is to prevent rainfall from infiltrating through the waste material and leaching pollutants from the waste.

We are aware of reports that compacted clay and geosynthetic clay liners suffer from frost-related damage and desiccation; however, geomembrane liner results are less clear. Since there are several different types of geomembrane liners, including HDPE (high-density polyethylene), LLPDE (linear low-density polyethylene), PP (polypropylene) and PVC (polyvinyl chloride), one must be cautious about overgeneralizing. Although we are aware of various reports that conclude that HDPE geomembranes can suffer from punctures, tears and oxidation, Benson³⁶ reports that LLDPE geomembranes (the type proposed here) can undergo much greater stress levels than other types of geomembranes and are used in applications where additional puncture resistance is required. Benson also reports that geomembranes are almost never installed without

Pine Barrens. Pages 147 - 167 in R. T. T. Forman, editor. Pine Barrens: ecosystem and landscape. Academic Press, New York, New York, USA.

³⁵ In October 2005, PQLs were lowered for 14 of the constituents monitored.

³⁶ Benson, C. 2000. Liners and Covers for Waste Containment. Proc. Fourth Kansai International Geotechnical Forum, Japanese Geotechnical Society, Kyoto, Japan. 1-40.

punctures. EPA, on the other hand, reports³⁷ that, in its national assessment of 36 waste sites, two sites with geomembranes realized immediate water quality improvements.³⁸ EPA also reported that design and construction quality assurance/construction quality control, which has improved more for caps than for vertical barriers, also contribute to containment performance.

It seems clear from our review that clay caps can suffer from severe performance problems. Geomembrane caps may suffer from puncture problems but the LLPDE geomembrane proposed at the Stafford landfill is a newer polymer which is puncture resistant. Although the landfill closure plan proposed here is clearly not fail safe, DEP can require leachate treatment if it is necessary. Therefore, it is reasonable to expect that the estimated 41 million gallons of leachate emanating from these landfills each year will be significantly reduced over time.

5. Redevelopment Impacts. It is true that the redevelopment project carries with it impacts on water resources, primarily from non-point, stormwater runoff. While it is not possible to specifically quantify all of the “before” and “after” conditions, several factors are relevant to a general assessment.

- Stormwater may contain a broad range of pollutants including sediment, nutrients, trace metals, pesticides, petroleum hydrocarbons and pathogenic and non-pathogenic biologicals (bacteria, protozoa, and viruses). Many of these substances (such as metals and nutrients) are also leaching from the uncapped landfills based upon their detection during water quality testing of the site. The following table illustrates a few examples:

Constituent	Typical Stormwater Concentration ³⁹	Well #1a Concentration Ranges -Stafford Landfill
Cadmium	2 parts per billion	1 to 10 parts per billion
Copper	10 parts per billion	2 to 50 parts per billion
Lead	18 parts per billion	1 to 73 parts per billion
Zinc	140 parts per billion	5 to 300 parts per billion

One must view these comparisons with some caution. Although the stormwater data

³⁷ Office of Solid Waste and Emergency Response. 1998. Evaluation of Subsurface Engineered Barriers at Waste Sites. EPA 542-R-98-005.

³⁸ As mentioned previously, these results need to be viewed with caution because the designs for those landfills are different than the Stafford design.

³⁹ New Jersey Department of Environmental Protection. 2003. New Jersey Stormwater Best Management Practices Manual. Final Draft.

represent concentrations in the stormwater itself, the well data reports on groundwater concentrations after leachate from the landfill has been diluted to some degree.

- Capping and properly grading the landfills will mitigate the uncontrolled release of leachate. Leachate treatment provides an added measure of safety should the landfill cap not perform well.
- State-of-the-art stormwater management measures will be employed in the redevelopment of the Stafford Business Park site. These stormwater management measures aim to reduce, to the maximum extent feasible, non-point pollutants associated with stormwater runoff. New Pinelands and DEP stormwater management standards require the implementation of low impact development (LID) strategies to reduce adverse impacts from runoff through sound planning and through the use of techniques that preserve or closely mimic the site's natural hydrologic response to precipitation. These pollutant removal criteria require that total suspended solids be reduced by 80%.
- In addition to incorporating LID site design, the project proposes to utilize a treatment train approach in which structural stormwater management facilities will be arranged in series, exceeding the 80% TSS removal criteria required by DEP and the Pinelands Commission. Applying DEP's TSS removal calculation methodology, the project will achieve 96% removal of total suspended solids from all impervious surfaces, excluding rooftop runoff which will be segregated.
- Removal of 96% of the total suspended solids is expected to result in significant reductions in sediment, nutrients, pesticides, metals, petroleum hydrocarbons, and biologicals as each of these pollutants adsorb or absorb to solids suspended in stormwater runoff.
- The project proposes to incorporate "Leadership in Energy and Environmental Design" measures into the development, specifically obtaining 50% or more of the credits for water efficiency and turf management. This will reduce the amount of fertilizers and pesticides typically applied to managed turf and landscaped areas and will also reduce the potential for leaching into the groundwater.
- The project proposes to include stormwater improvements in the vicinity of the Route 72 and Recovery Road intersection where stormwater is now discharged directly into Mill Creek. The goal is to reduce total suspended solids that are now discharged directly into the creek by at least 50%.

Taken in their entirety, these measures offer significant water quality benefits. The project may also serve to highlight how higher intensity, mixed use projects can significantly reduce consumptive water use non-point source pollution.

D. Threatened and Endangered Species

1. Comments. Most of the aforementioned concerns regarding landfill closure, project finances and water quality were offered to suggest that the project can be redesigned to better protect pine snake habitat located on this site. In addition, several other related comments were offered in opposition to the proposed Memorandum of Agreement: that the site is a unique micro-habitat; that the DEP's Endangered and Non-Game Species program has rejected the relocation of pine snakes in this case; that snake density (and an area's carrying capacity) must be considered if pine snakes are to be relocated; and that any program to monitor pine snake relocation must be very carefully designed to account for a variety of factors. One other comment offered an opinion that the destruction of the Southern Gray Tree Frog pond does not violate the CMP's standard for the protection of habitat for threatened or endangered animal species.

2. Background. Twelve pine snakes were captured during a 2004 survey and 24 snakes have been captured so far in an intensive survey effort which began in April 2006. Moreover, we know of two pine snake winter dens (although one of them was not used this past winter) and, because of the 2006 survey also know that nests are located on the site.

This site can also be viewed in a larger context. The 17,000 acre Stafford Forge Wildlife Management Area adjoins this site to the south and west. The Wildlife Management Area is recognized as a prime habitation area for Pine Snakes and undoubtedly encompasses at least part of the home range of many of the Pine Snakes discovered on this site.

3. Importance of this Site. There can be no doubt whatsoever that the Stafford landfill/business park site is an important Northern Pine Snake site. The Executive Director is aware of no other proposed development site within the past five years (when snake surveys were begun on a much wider-scale) where as many pine snakes were found. Although it is true that much of the prime habitat on the site is the result of past landfilling and soil excavation activities, this site's location adjacent to the 17,000 acre Stafford Forge Wildlife Management Area (where pine snakes have been well documented) suggests that the site was inhabited by pine snakes before the man-made disturbances occurred.

4. Endangered and Non-Game Species Program. Commission staff has been consulting with DEP's Endangered and Non Game Species Program (ENSP) staff regarding this project for more than a year. Although the Executive Director never received any official letter from ENSP on this matter, it is because of concerns about pine snake habitat that so many alternatives to protect on-site habitat have been evaluated over the past year. Moreover, ENSP staff have been working with Commission staff during the past three months to formulate a rare species management plan in the event that the Commission authorizes the landfill closure/redevelopment project.

5. Species Management Plan. The proposed species management plan is being carefully developed to fully respond to the criteria specified in the proposed Memorandum of Agreement. If the landfill closure and redevelopment project is authorized, the rare plant and animal species impacted by the project will be moved out of harm's way and placed in appropriate environments identified by Commission and ENSP technical staff. The staffs recognize that two of the species (Little Ladies Tresses and the Northern Pine Snake) may well pose greater

challenges than the other species.

Relative to pine snakes, the effectiveness of artificial hibernacula has been evaluated to some extent. Zappalorti and Reinert⁴⁰ studied 25 artificial hibernacula in Ocean County and found that 73 Pine Snakes (and 66 other snakes, including corn snakes) were observed at the hibernacula over a three year period during their overwintering and active seasons. Ecdysis, courtship, mating and ovipositing for Pine Snakes were observed and six clutches of Pine Snake eggs were found. Based on their observations, Zappalorti and Reinert suggested that artificial hibernacula may be a useful habitat-improvement measure.

ENSP and Commission technical staff also take seriously the proposed Memorandum of Agreement's requirement to monitor whatever measures are taken. A comprehensive research design is under development.

6. Southern Gray Tree Frog. The Executive Director does not agree with the proposition that the elimination of a Southern Gray Tree Frog pond on this site does not violate the CMP's rare animal habitat protection standard. Commission biologists believe that the tree frog population in this pond is not part of a larger population: thus, the removal of the pond (although necessary to excavate the old landfill) will irreversibly and adversely affect this local tree frog population, contrary to CMP standards.

E. Environmental Measures

1. Comments. Several different types of comments were offered on some of the environmental measures proposed in the Memorandum of Agreement. One questioned why the Township should be obligated to purchase land and Pinelands Development Credits. Other comments questioned whether the purchase of 570 acres of land adequately compensates for the loss of habitat, largely because that land (if not purchased) is not subject to the same development impacts as this site. Finally, it was argued that the other environmental measures included in the Memorandum of Agreement have no demonstrable impact on Pinelands resources and do not equate to the loss of habitat.

2. Background. The environmental measures as currently proposed in this intergovernmental agreement are described in Section III.C. of this report.

3. PDCs and Open Space Purchase. Since this proposal is not consistent with the Pinelands' endangered species protection standards of N.J.A.C. 7:50-6.27 and N.J.A.C. 7:50-6.33 and the wetland buffer standards of N.J.A.C. 7:50-6.14, the Commission can only authorize it through a

⁴⁰ Zappalorti, R. T., and H. K. Reinert. 1994. Artificial refugia as a habitat-improvement strategy for snake conservation, p. 369-375. *In* J. B. Murphy, K. Adler, and J. T. Collins (eds.), *Captive Management and Conservation of Amphibians and Reptiles*. Society for the Study of Amphibians and Reptiles, Ithaca (New York). *Contributions to Herpetology*, volume 11.

special intergovernmental agreement. All such agreements must be accompanied by measures that afford at least an equivalent level of natural resource protection as would be achieved if the proposal were fully consistent with the CMP. Although the purchase and redemption of Pinelands Development Credits is a normal part of higher density residential development projects that are located in Regional Growth Areas (as this one is), the Township's purchase of 570 acres of land and the County's purchase of 75 acres of land do go beyond the normal requirements of the Pinelands protection program. More on this follows.

4. Compensating for Habitat Loss. The proposed agreement calls for the purchase of 570 acres of land by Stafford Township as one of several environmental measures that are collectively designed to afford at least an equivalent level of natural resource protection as would be achieved if the proposal were fully consistent with the CMP. Ocean County proposes to complement the Township's land acquisition by purchasing 75 acres of land.

In evaluating whether the environmental measures proposed in this agreement provide an appropriate level of protection of the resources of the Pinelands, one should not ignore the fact that water quality results will be better than those one would expect under the normal standards of the CMP. In addition, the 570 acres of land to be purchased and protected is three times the amount of undisturbed land on the Business Park site.⁴¹ An argument that the land to be acquired is already "protected" by CMP regulations (because it is located in a Pinelands Forest Area and constitutes pine snake habitat which is afforded protection by CMP regulations) overlooks the facts that the CMP does authorize some (albeit modest) development in Forest Areas and the CMP habitat standard protects only critical habitat located on the development site. The CMP's site-specific regulatory standard is much less effective in protecting watersheds and their wide-ranging habitat values than an approach that seeks to protect large, contiguous areas of representative Pinelands landscapes, a goal which will be furthered by the land purchases called for in this agreement.⁴²

F. Memorandum of Agreement

1. Comments. Two points were made that this Memorandum of Agreement should not be considered because the CMP's rules do not allow such an agreement to authorize private development and because the Commission has never before authorized the relocation of Pine Snakes.

2. Background. The Comprehensive Management Plan (N.J.A.C. 7:50-4.52(c)2.) authorizes

⁴¹ The ratio increases if the county's land purchase is added.

⁴² It has been reported that the NJDEP is now pursuing a similar approach when projects subject to the Coastal Area regulations must mitigate habitat impacts. For example, we are advised that habitat mitigation proposals have been proposed within the Coastal Area at a ratio of 2:1 and involve the purchase of land within Pinelands Forest Areas.

“intergovernmental memoranda of agreement with any agency of the Federal, State or local government which authorize such agency to carry out specified development activities that may not be fully consistent” with the provisions of the CMP. This provision was added to the CMP in 1994. A total of 14 so-called deviation agreements have been approved by the Commission to date.

3. Authority for this Intergovernmental Agreement. Of those 14 deviation agreements, six authorize development to be undertaken by private entities. Notably, one of those (an agreement with the New Jersey Highway Authority which authorized private telecommunications cables to be installed within the Garden State Parkway) was approved before the 1994 rule change and was a driving force behind that rule change to expressly authorize these types of agreements.

One can argue in hindsight that the regulatory language could have been more explicit in acknowledging that intergovernmental agreements can have a private component; however, there can be no doubt that the regulatory history of the rule and the Commission’s decisions since then authorize intergovernmental agreements with private components. The fact that the private component here is a redevelopment project, duly authorized as a public purpose by New Jersey redevelopment statutes, further supports the appropriateness of this agreement.

4. Relocation of Pine Snakes. The Commission is often faced with development proposals in areas known to be inhabited by pine snakes. When applying its site-specific habitat protection standard which calls for the protection of “critical” habitat, the Commission usually protects particularly important parts of a property (such as dens, nests and surrounding areas that connect to open space) and constricts development to less critical portions of the property. In these cases, the Commission has not generally imposed an explicit development condition requiring the collection of pine snakes that might be encountered during development of a property. Instead, it has relied upon the protections afforded under New Jersey’s statewide endangered species laws.

Because of the extensive natural resource inventory work done on this site, we know that pine snakes will be encountered as the development unfolds. This would be true even if additional areas of the site were to be conserved. With that knowledge, it was the Executive Director’s opinion that it would be prudent to take affirmative steps to protect the pine snakes from harm during construction.

The Executive Director is aware of one other case where the Commission authorized the relocation of Pine Snakes. That case also involved the relocation of Corn Snakes. A waiver of strict compliance was approved in 1984 for the development of what was then known as the Hovsons project in Berkeley Township. Because Pine Snakes and Corn Snakes would be imperiled by the development of this residential community, that approval required that the snakes be collected and relocated to the southernmost portion of the property, where the habitat was improved through the construction of artificial hibernacula (dens). That land was then donated to the New Jersey Audubon Society.

G. Precedents

1. Comments. Two arguments in opposition to the proposed Memorandum of Agreement postulate that it will set bad precedent. Specifically, the concerns are that intensive redevelopment proposals will be coupled with many landfill closure proposals throughout the Pinelands and that the relocation of Pine Snakes will make it difficult for the Commission to enforce its habitat protection standards when reviewing future development proposals. Another concern was that Commission representatives have not thoroughly considered the Stafford landfill issue because of contradictory and confusing statements about precedent in this case.

2. Other Landfill Closure Proposals. Based upon information that the Department of Environmental Protection maintains, there are a total of 60 landfills within the Pinelands, 41 of which are public landfills. Of those, three are federally owned, five are state owned, 1 is county owned and 32 are municipally owned. Nine of the landfills that have not yet been properly closed according to Pinelands and DEP requirements (including the Stafford landfill) are located in Regional Growth or Pinelands Town management areas, land use zones where redevelopment similar to that proposed at the Stafford site would be permitted. Approval of this intergovernmental agreement would signal the Commission's resolve to properly close Pinelands landfills and will set a precedent for closure of other Pinelands landfill sites that are comparable to the Stafford situation. It does not set a precedent for intensive redevelopment proposals in non-growth areas of the Pinelands

3. Enforcement of Habitat Protection Standard. It is certainly possible that some people may interpret this proposed agreement as a sign that the Commission is not intent on enforcing its standards to protect habitat for rare plants and animals. However, such a view ignores the competing environmental objectives that exist here and the substantial "offsetting" environmental measures that are proposed. Finally, it ignores the fact that extensive analyses conducted in this case have concluded that there are no practical ways to close the landfills and protect important habitat on-site.

4. Contradictory Precedents. It has also been suggested that the Commission and its staff have made contradictory statements about precedent, indicating on the one hand that this proposed agreement will set a precedent for other landfill closure projects but, on the other hand, stating that the Stafford agreement is unique and will not set a precedent. This is an oversimplification.

The proposed Stafford agreement is predicated on twelve conditions that distinguish it from many other potential landfill closure proposals in the Pinelands. These are that:

- **More than 50% of this 363 acre site has been disturbed as a result of landfilling, soil excavation, off-road vehicle use and industrial and office development.** The site includes the Township's 55 acre licensed landfill, the old landfill totaling 25 acres and the already developed 34 acres of the Township's business park, which partially overlies the old landfill. Unauthorized off road vehicle use occurs on the licensed landfill and previously excavated areas (about 78 acres) on the site.

- **The licensed and old landfills are polluting ground and surface waters.** Although the landfills have not accepted waste for more than 20 years, they are still polluting groundwater and the Mill Creek, a Pinelands stream located just to the north of the property. Monitoring data as recent as 2005 show unacceptable levels of arsenic, cadmium, lead, chromium, chloroform, silver and other constituents.
- **Although the landfills are required to be environmentally closed pursuant to State and Pinelands requirements, they have not yet been closed.** A Township plan to environmentally close the landfill was approved by the Pinelands Commission and subsequently amended in 1994; however, that plan has not been implemented. In 2001, the Department of Environmental Protection reiterated the Township's obligation to close the landfill and advised that, absent Township action, the Department itself would take steps to close the landfill at the Township's expense.
- **The Township pursued several means to pay for landfill closure but they were not successful.** Throughout the 1990's, the Township pursued several options to close the landfill, including public funding, landfill closure options involving the use of recycled materials that might reduce closure costs, and a golf course development project to help finance closure costs. None of these efforts were successful.

Although the Pinelands Commission approved a subdivision plan for 67 lots within the Business Park in 1990 (the sale of which may have helped to finance landfill closure), only 12 of the lots, most of which house public facilities, have been developed, in spite of marketing efforts by four realty firms.

- **The mixed use redevelopment project now proposed pursuant to New Jersey's redevelopment statutes will pay for the landfills' closure.** As an alternative means to pay for landfill closure, the Township sought to engage a redeveloper for the Business Park. These efforts began in 1997 and, after two attempts, resulted in the selection of Walters Development Company in 2004. The Township plan calls for the developer to close the landfills and redevelop the Business Park as a mixed-use, residential and commercial project.
- **Alternative funding options for landfill closure remain unlikely.** If the Township were to close the landfill itself, it and the related costs would total between \$45 and \$60 million, an amount that would effectively double the Township's current debt. At worst, such an increased debt load would not be permissible under New Jersey law which establishes debt "ceilings" for municipalities. At best, it would significantly diminish the Township's ability to bond for other necessary capital projects, such as roads, drainage, fire and emergency equipment, open space purchases, etc.

An analysis of state funding possibilities by Pinelands Commission staff failed to identify any meaningful opportunities. Lastly, a cost recovery lawsuit against parties who used the landfills offers virtually no chance for success because, among other things, there is

no evidence of a legally defined hazardous waste discharge, a key element in such a lawsuit.

- **The site is located within a Pinelands Regional Growth Area where intensive residential and commercial development is expected.** This site has direct access to two major highways (New Jersey State Route 72 and the Garden State Parkway) and is located just to the south of a several thousand home, pre-Pinelands subdivision known as Ocean Acres. Because of its location, the existence of the landfills, other disturbance on the site and the availability of public sewer and water, the Pinelands Plan anticipated that the site would ultimately be developed for residential and commercial uses.
- **The two rare plants found at the site are located within the footprint of the landfills and can not be protected in place.** It is not possible to properly close the landfills without directly impacting the locations of Knieskern's Beaked Rush and Little Ladies Tresses, two protected plant species in the Pinelands.
- **One of two stormwater basins that are now inhabited by Southern Gray Treefrogs is located within the footprint of the old landfill and can not be protected in place.** A lined stormwater basin was approved for construction some years ago because it overlies the old landfill. Southern Gray Treefrogs, a protected animal specie in the Pinelands, have since migrated to the basin which will be eliminated due to the excavation of the waste which underlies it.
- **Landfill closure and redevelopment scenarios which might protect some Northern Pine Snake dens, nests or foraging areas on the site are not achievable.** The Northern Pine Snake, another protected animal specie in the Pinelands, is known to inhabit this site. Two winter dens, nests and foraging habitat have been confirmed on the site. Alternative landfill closure options and redevelopment configurations have been analyzed in an effort to avoid landfill closure or redevelopment activities in various portions of the site that affect denning, nesting and/or foraging areas. These alternatives are not realistic because of a variety of technical and financial reasons.
- **Although the Business Park site clearly contains important habitat for the Northern Pine Snake, protected habitat land surrounds the site to the west and south.** Stafford Forge Wildlife Management Area, comprising approximately 17,000 acres, is known to contain important Pine Snake habitat and to support extensive Pine Snake populations.
- **Significant environmental measures will be undertaken as part of the project.** More than 570 acres of land close to this site will be purchased and conserved for ecological purposes. The redevelopment project will incorporate state-of-the-art "green building" designs to promote pedestrian-oriented development, reduce energy and water use, improve indoor air quality and reduce pollution from stormwater runoff. Finally, an existing stormwater discharge problem on Route 72 which affects the Mill Creek will be alleviated.

Steps will also be taken to protect the rare plants and animals found on the site. The rare plants will be relocated to a protected area on the site, a pond suitable for Tree Frogs will be developed and Northern Pine Snakes will be captured and located within other areas where the habitat is to be improved.

To the extent that these or comparable conditions exist elsewhere, the Stafford agreement will stand as a precedent.

H. Miscellaneous

1. Comment. One person expressed concern that Hay Road (a sand road that extends to the west from this site) will be converted to an emergency access route to serve this development.

2. Background. The CMP's fire management program (N.J.A.C. 7:50-6.124) generally requires that residential developments of 25 or more units provide two accessways that are sufficient to accommodate fire fighting equipment. The conceptual redevelopment plan proposed here calls for ingress and egress via an island boulevard to Recovery Road which, in turn, has direct access to the Garden State Parkway and Route 72, two major emergency and evacuation routes.

3. Hay Road. The improvement of Hay Road for emergency access has never been proposed. Hay Road would not be suitable as an emergency evacuation route in the event of a serious wildfire because it runs from this site to west, the direction from which wildfires would likely emanate. Moreover, Hay Road is located within the Stafford Forge Wildlife Management Area which is afforded legal protection from "conversion" to other than natural resource-related uses.

VI. CONCLUSION AND RECOMMENDATION

It is the Executive Director's conclusion that there is no practical way to properly close these landfills absent redevelopment of the site. However, landfill closure and redevelopment activities as proposed will impinge on normally required wetland buffers to two isolated wetlands and, most importantly, destroy important habitat for the Northern Pine Snake and three other rare plant and animal species. Unfortunately, our analysis of alternatives to lessen the habitat impacts has not borne fruit. Thus, the Commission is faced with a very difficult choice - whether to properly close the landfills or to protect rare plant and animal habitat.

In weighing these choices, the Executive Director is mindful that the Pinelands protection program is built on two pillars, protection of the region's water resources and an ecosystem-based approach to the protection of the Pinelands landscape. Approval of this agreement violates neither of those two tenets and, in fact, helps to reinforce the Commission's water quality and waste management policies which are constantly questioned by applicants and others because they require protective and remedial measures which go beyond normal New Jersey requirements. This two-pronged approach in no way trivializes the importance of protecting habitat for rare plants and animals; rather, it recognizes that a landscape-level/land-use based

approach, which protects large expanses of the Pinelands environment, is the most effective way to protect the Pinelands' indigenous plants and animals.

The special environmental measures outlined in Section III.C. of this report, coupled with the intergovernmental agreement changes described below, satisfy the requirements of N.J.A.C. 7:50-4.52(c)2.

Therefore, the Executive Director recommends that the Commission approve the accompanying intergovernmental agreement, dated June 28, 2006. This proposed agreement incorporates several editorial and substantive changes from that which was submitted for public review. The substantive changes include: revisions to Sections IV. and VI.A.15 to reflect more specific performance standards for the improved on-site stormwater management measures, specifically that structural stormwater management facilities shall be designed and arranged to remove at least 96% of the total suspended solids from the stormwater; revisions to Sections IV. and VI.A.15 to reflect more specific performance measures for the Route 72 stormwater improvement project, specifically that total suspended solids that are now directly discharged to Mill Creek shall be reduced by at least 50%; revisions to Sections VI.A.14 and VI.B.10 that require the Township and the County to complete the land purchases within three years; revisions to Section VI.A.17 to provide that the Township reimburse the Commission for expenses to monitor implementation of the agreement (in addition to reimbursement for expenses for developing the agreement); and revisions to Environmental Condition No. 4 (Attachment B to the agreement) that expressly recognize the need for temporary snake barriers and the potential need for permanent snake barriers.