

APPENDIX

I want to thank you for the chance to speak today. I'd like to comment on two subjects. First, on the supposition that nitrate data collected after 2004 should not be used to characterize groundwater quality in the New Jersey Highlands for the purpose of determine background quality. And second, in support of the research over the past few years done to estimate background nitrate values.

First, groundwater quality under a parcel of land in the Highlands Preservation Area may be expected to have changed since 2004 if the land use has changed. If the land use hasn't changed then I would expect little, if any, difference in water quality. A monitoring well that was in a stand of trees in a state park in 2004, and still is in that stand of trees, ~~will be affected by the same nitrate loads now as it was then~~ and will have the

same quality. A monitoring well surrounded by an unchanged land use, whether that be woods, agriculture, or homes on septic systems, will have no expected significant change in groundwater quality. It is scientifically valid to include newer data for such unchanged areas in any estimation of what groundwater quality was in 2004.

The Highlands Preservation is predominantly undeveloped and will remain that way. 78.9% of the Highlands Preservation Area is in the Protection subzone as delineated by the Highlands Council. 74% of the Preservation Area is forested, wetlands, or open water. For this three quarters of the Preservation Area current groundwater quality should be the same as it was in 2004. This zone has had little, if any, change since 2004.

Available land use data for 2007 and 2012 support this conclusion. Between 2007 and 2012 there was no change in the acres of pristine areas (forest, water and wetlands) in the Preservation Area. There was an increase of 1,685 acres of urban land (0.4% of the total Preservation area) with a corresponding decrease in agricultural and barren land. These three land uses can be grouped as non-pristine land uses. I would expect similar magnitude of land use changes between 2012 and today. Because this land change has been from one non-pristine land use to another non-pristine land use, and on a small percentage of the Preservation Area, I'd expect the regional impact on groundwater quality of these land use changes to be very small.

The conclusion that there has been only minor land changes is supported by the number of domestic well permits issued. All wells in New Jersey must get a permit before being drilled. In the Preservation Area 448 permits were issued in 2004. The number of permits dropped to 294 in 2005, after the Highlands Act passed. The number dropped to 224 in 2006, and 212 in 2007. After 2007 the number of new domestic well permits in the Preservation Area has varied between 44 and 88 permits a year. In the years 2008 through 2012, corresponding to the time period that showed an increase in urban land of 0.4%, there were a total 332 domestic well permits issued, each of which will have had a septic system. This is a small number when compared to the 414,897 acres which make up the Preservation Area.

This conclusion is also supported by a 2017 Highlands Council Report on Natural Resource Indicator which shows no significant change in core forest area signature in the Highlands.

My conclusion is that the vast majority of the Highlands Preservation Area has the same land use in 2017 that it did in 2004. Groundwater quality measurements after 2004, especially in areas with no land use changes, are suitable for use in characterizing water quality as it was in 2004.

Additionally, in 2004 DEP was able to find only 7 data points from wells totally surrounded by pristine areas, woods, water or wetlands. This is because in order to install an observation well a drill rig must drive to the site and set up. This requires a road and sufficient cleared space. Thus there are very few observation wells in the middle of totally pristine areas. I am unaware of any new observations wells in the Preservation Area totally surrounded by a pristine land use.

My second point deals with the research done over the past few years to better characterize groundwater quality in the Highlands Preservation Area. This research added recent data from observation wells, added data from the Private Well Testing Act, and then developed a model to estimate nitrate values by correlating observed concentrations to land use characteristics. The process involved overlying a grid consisting of 2,000 foot by 2,000 foot cells over the entire Highlands, determining median value in each cell which had any observed values, and then developing a model which correlated this median value to land use characteristics. This model was then applied to predict the median nitrate value in all cell grids without observations. This approach was done in a conservative fashion. Water samples which did not contain detectable levels of nitrate were assumed to have a value of 0.0

mg/L, not a higher concentration at or near the detection limit.

Also, the median of all values in a cell was used so in the modeling effort so that cells with a number of observations, such as might occur in a development where all homes were on wells and septics, would not bias the results. This approach was evaluated by the DEP's Science Advisory Board and determined to be a valid way to estimate nitrate values. This research was done by the United States Geological Survey and they have documented this work in a published report.

The resulting model correlates land use with nitrate. It could be applied to land use in 2004, or land use in 2017. This modeling effort does group all land use in each 92-acre cell. Those cells with a combination of land use will have an estimated nitrate value that reflects these land uses. This

approach allowed using many more observation wells in near pristine areas. Not allowing an approach based on integrating nearby land use in order to predict groundwater quality may result in no additional data points for estimating background nitrate in pristine areas. This may open up the analysis process to the same critical comments made in 2005 and 2006 about the sparse data set (7 data points) that the first analysis of groundwater quality in totally pristine areas was based on.

The developed model based on a much larger data set than available in 2004, has been peer reviewed and judged to be both an appropriate tool for this application. I encourage the continued use of this useful tool.

Thank you.

- PWT data from hours, expt. 4/20.
- doesn't apply to ~~the~~ new hours



NEW JERSEY HIGHLANDS COALITION

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Senator Bob Smith, Chair
Senate Environment and Energy Committee
Committee Room 10
3rd Floor, State House Annex
Trenton, NJ

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Re: Hearing on SCR163

November 20, 2017

Dear Senator Smith and Members of the Committee:

In 1988, a dedicated group of organizations and individuals saw the need to pool resources and focus their knowledge, expertise and convictions, and form the New Jersey Highlands Coalition to collectively advocate for the protection of the Highlands' water and other natural and cultural resources. Working with legislative champions and with the support of the Governor and many others, this coalition succeeded in having planning and regulatory frameworks legislated by enacting the 2004 Highlands Water Protection and Planning Act.

In 2007, when I was hired, the Coalition represented the interests of 37 member organizations. Today, we are a coalition of 100 member organizations, representing hundreds of thousands of people across the state and in every one of the seven Highlands counties and in every one of the 88 Highlands municipalities. We live in the Highlands; we are Highlands landowners; we are Highlands farmers; we also live outside of the Highlands and we drink Highlands water and we consume Highlands water in the manufacturing of our products. We are not special interests; we come from all walks of life and society. What we have in common is the insight and conviction to realize that the protection of the Highlands' water resources is in the best interest of everyone in New Jersey. And we recognize the necessity that the New Jersey Legislature exercises its Constitutional police power to regulate land use to secure the health, safety and security of its citizens in order to protect the vital water resources of the Highlands from being permanently degraded, diminished and destroyed for short term gain by special interests.

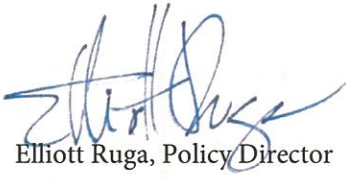
As land values in northern New Jersey continue to rise, the pressure to develop the Highlands will only increase. We celebrated in 2004 when the Highlands Act was passed. But as we see with the current attempt to weaken Highlands protections, we can't put our feet up and relax.



Senator Smith, we thank you for your continuing leadership in the Legislature in protecting the Highlands resources—a goose that continues to give us golden eggs by way of an abundant supply of clean water, accessible outdoor recreation, a great reserve of biodiversity, and a forest resource whose value in mitigating the impacts of a warming climate will only increase.

Thank you for sponsoring this resolution that with concurrence by the Assembly will invalidate the Department of Environmental Protection's scheme to rollback important regulations that protect New Jersey's clean and abundant water supply in the Highlands. We could not understand why any members of this Committee would vote against passing this resolution favorably out of Committee for a full Senate vote.

Sincerely,

A handwritten signature in blue ink, appearing to read "Elliott Ruga". The signature is stylized and cursive.

Elliott Ruga, Policy Director
New Jersey Highlands Coalition

Jerry Arena
P.O. Box 11
Normandy Beach, NJ 08739

November 3, 2017

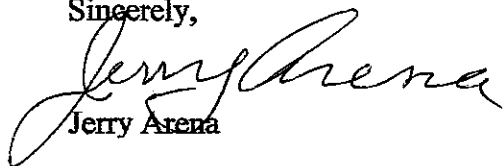
RE: Highlands Act

The Highlands Act was passed in 2004 by Trenton politicians who claimed to be friends of the environment. The regional plan was proposed as a way to protect water resources and agriculture, but has been built into an anti-development plan with a heavy emphasis on the preservation and no development at all due to the complicated regulations. The non-profit preservation organizations have effectively lobbied the legislators so that they are considered the voice of the people and anyone who owns land is portrayed as a self-interested developer.

Senator Bob Smith who sponsored the bill claimed that no one was being cheated because the state would reimburse property owners as part of the law. In reality, property values diminished as buyers disappeared due to regulations and the government was the only buyer left offering significantly lower prices for land. To make matters worse it's now 13 years later and the government has no money to buy out landowners. Not only did the land owners take huge losses due to government intervention, they were also deceived when no one bought them out. In addition the local towns have suffered huge revenue losses and the loss of jobs for local residents because of the regulations.

Geographically, Warren County is unique. All of the watersheds in Warren County flow into the Delaware River at the western border of New Jersey. In fact the watershed area of the Highlands Preservation Act area in the County of Warren only comprises about 1.5% or approximately 1/64th of the watershed of the upper and central Delaware River. There is no manmade infrastructure that transports the "protected" water. In fact a reservoir was proposed to built in Warren County and the "Friends of the Environment" stopped it from being built. The Sierra Club's approach has been to achieve their goal of preserving lands at the huge cost of private owners, essentially taking away individuals' constitutional rights. After 13 years shouldn't someone in Trenton be reviewing this act to see the real facts. The private land owners had their constitutional rights taken away but without the financial resources that the lobbyists have they have been left standing in the dust of their worthless land.

Sincerely,


Jerry Arena

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Jerry Arena
P.O. Box 11
Normandy Beach, NJ 08739


Highland's Act

November 3, 2017

Abuse of Power

- Myriad environmental regulatory provisions like demanding the preservation of open space severely limits what individuals can do with their land. With these strict limitations on private property their ownership in essence is being stolen.
- Rationale is that their plans are making it better for the greater good.
- Property rights are human rights giving individual choices of freedoms to create their own future not conform to the preconceptions of government planners.
- Planners know that their job is to declare whatever conditions follow the thoughts of the one who hires them.
- The sheer force of the anti-development sentiment form of the project has an overreach to the courts and resulted in defining fair market value as much less than what would be paid in a voluntary transaction.
- The creation of public use for land and the moral obligation to compensate them fairly is the Fifth Amendment right that no person shall be deprived of life, liberty or property without due process of law no property be taken without just compensation.
- Social engineering schemes that say that government is promoting the public good and interest.
- Reflection of what happens when property rights are repeatedly undermined and dismissed everyone has an equal claim to everyone's property.
- Governments have power but it should not be the power to take individual property rights away. The mere legality of the theft negates the moral implications of the action.
- The best way to make respectable laws is not to make them at the expense of the individual property owner.
- If other people's property rights aren't safe then their own property rights are in jeopardy as well.

Sincerely,


Jerry Arena



New Jersey Conservation

F O U N D A T I O N

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Far Hills, NJ 07930**

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www.njconservation.org

Statement of Amy Hansen, Policy Analyst, New Jersey Conservation Foundation

Re: SCR 163

Senate Environment and Energy Committee

November 20, 2017

Thank you for the opportunity to testify on SCR 163, which upholds protections for the Highlands region, one of the most important water resource areas in New Jersey. New Jersey Conservation Foundation (NJ Conservation) strongly supports SCR 163, which finds the New Jersey Department of Environmental Protection's (DEP) proposal to weaken Highlands protections inconsistent with legislative intent.

NJ Conservation is a private, non-profit conservation organization whose mission for nearly 60 years has been to preserve land and natural resources throughout New Jersey for the benefit of all, including water, farmland, forests, natural ecosystems, scenic and recreational resources.

The New Jersey Highlands Water Protection and Planning Act requires strict regulatory protections in the Preservation Area, the most critical and environmentally sensitive portion of the Highlands Region. The DEP's proposed amendments to allow higher density housing in the Highlands do not reflect this requirement and would instead significantly reduce existing regulatory protections for water and other natural resources in the Preservation area. The majority of the Highlands' undeveloped forested watersheds, which provide essential protections for both surface and groundwater quality and supply, are located here.

The existing DEP septic density standards were meant to "prevent degradation of water quality" and "protect ecological uses from individual, secondary and cumulative impacts," and are based on natural background nitrate levels documented by the DEP in Highlands Preservation Area forests.

Recent evidence concerning the critical importance of Highlands water to our state was provided in the NJDEP's Report 15-1 released last year, "Potable Water Supplied in 2011 by New Jersey's Highlands." The report documents that, although the Highlands region comprises only 17% of New Jersey, and the Preservation Area only half of that, the Highlands supplies water to more than two-thirds of the State's population.

In contrast, the proposed standards are based on "median nitrate concentrations" based on data collected from residential wells throughout the entire region (and beyond), which according to the USGS report itself, has a spatial bias "because many sampled wells are located in urban areas;

thus...over-representation of urban and possibly agricultural areas and under-representation of forested areas... result in higher median nitrate concentrations for all water samples..." (USGS Report)

Under the existing DEP rule, only parcels greater than 50 – 176 acres, depending on farm or forest land cover type, are able to be subdivided. Under the proposed rule, which reduces required acreages for septic systems, an additional 1,145 septic systems would be permitted, according to the DEP – 6.1 times as many as under the existing rule. As a result, the larger, undeveloped but as yet unpreserved parcels that were a principal focus for protection in the Preservation Area watersheds could again be subject to environmentally damaging subdivision development.

The Highlands Act suggests that permanent preservation of the essential forested watersheds is the ultimate goal for the unpreserved forest lands in the Preservation Area. Rather than weakening the current DEP standards and causing great harm to the public's long term interests, the DEP should aggressively implement acquisition of the critical forested tracts that serve as watersheds for over two-thirds of the State's population. The Highlands Council's Open Space Funding Partnership Program is now fully operational and can help implement such an effort. The federal Highlands Conservation Act and Forest Legacy Programs have provided funds to preserve forested lands in the Highlands Region, and the NJ Highlands Council is now the official state recipient of the funds from these programs. In addition, other Green Acres funding, as well as counties, municipalities and nonprofit organizations can match open space grants with the Council's Open Space Funding Partnership Program in order to preserve more land in the Preservation Area.

The proposed rule amendment would undercut the Highlands Regional Master Plan, the authority and decisions of the Highlands Water Protection and Planning Council and other fundamental processes of planning for the Highlands Region. We hope you will support and approve SCR 163.

Thank you.



16X



www.njba.org
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TO: MEMBERS OF THE SENATE ENVIRONMENT AND ENERGY COMMITTEE

**FROM: JOHN KIRKENIR
PRESIDENT, NEW JERSEY BUILDERS ASSOCIATION**

DATE: NOVEMBER 20, 2017

**RE: SCR163 (SMITH) - INVALIDATES HIGHLANDS SEPTIC DENSITY
RULE PROPOSAL**

The New Jersey Builders Association (NJBA) **opposes SCR163 (Smith)**, which invalidates certain DEP rules and regulations concerning septic system density standards in Highlands Water Protection and Planning Act Rules.

NJBA supports the Department's rule adoption as it is based upon more up-to-date information that was obtained through the implementation of the New Jersey Private Well Testing Act. NJBA believes that the Department's regulatory programs should always be grounded in up-to-date science and in keeping with the latest information and technological advancements. The prior Septic Density Standards inhibited economic growth, which in turn frustrate the "balance" that the Highlands Act was to strike with environmental protection. While the adopted revisions are limited to the Preservation Area of the Highlands Region, NJBA views this rule adoption as an incremental step towards addressing the more global issue of how to better spur economic development opportunities in the entire Highlands Region and believes that the underlying methodology and formula should also be re-examined for the Planning Area.

For your review and consideration, attached is a copy of our comment letter that supported DEP's 2016 rule proposal.

New Jersey Builders Association Officers

JOHN H. KIRKENIR *President* • CAROL ANN SHORT, ESQ. *Chief Executive Officer*

THOMAS F. TROY *Vice President* • COREY T. WESCOE *Treasurer* • MICHAEL CANUSO *Secretary* • JOSH M. MANN, ESQ. *Builder Vice President*

JOHN J. HEALEY *Associate Vice President* • MICHAEL T. KURPIEL *2nd Associate Vice President* • MICHAEL A. BORODINSKY *3rd Associate Vice President*

ROBERT M. WASHBURN, ESQ. *General Counsel* • MICHAEL J. GROSS, ESQ. *Environmental Counsel* • THOMAS F. CARROLL III, ESQ. *Land Use Counsel* • TED ZANGARI, ESQ. *MXD Counsel*



www.njba.org
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July 14, 2016

G. Colin Emerle, Esq.
ATTN: (DEP Docket No. 02-16-04)
NJ Department of Environmental Protection
Office of Legal Affairs
Mail Code 401-04L; PO Box 402
401 East State Street, 7th Floor
Trenton, NJ 08625-0402

RE: Proposed Highlands Septic System Density Standards

Dear Mr. Emerle:

On behalf of the State association and our local affiliates, the Metropolitan Builders and Remodelers (Metro), Builders and Remodelers Association of Northern New Jersey (BRANNJ), the New Jersey Builders Association (NJBA) submits the following comments regarding the Department of Environmental Protection's (Department) proposed amendments to the Highlands Septic System Density Standards. BRANNJ members represent the Highlands counties of Bergen, Passaic and Sussex, while Metro represents the Highlands counties of Hunterdon, Morris, Somerset and Warren. NJBA strongly supports the comments as presented by the New Jersey Farm Bureau at the June 1, 2016 public hearing.

NJBA applauds the Department for reviewing and subsequently proposing to *revise* the Septic Density Standards based upon larger dataset (specifically, 19,371 nitrate samples from private potable water supply wells) that was obtained through the implementation of the New Jersey Private Well Testing Act (N.J.S.A. 58:12A-26 et seq.). NJBA and other affected entities had questioned the development of the existing Standards, which were based upon a significantly smaller well water dataset. NJBA believes that the Department's regulatory programs should always be grounded in up-to-date science and in keeping with the latest information and technological advancements. However, while the Department's rulemaking is supported and should move forward to rule adoption, NJBA recommends that the underlying methodology and formula should still be re-examined, since we believe even this proposed Rule amendment is overly conservative and not fully supported by the data.

NJBA further notes that the proposed revisions and data collected are limited to the Preservation Area of the Highlands Region, which is under the purview of the Department. The rule proposal indicates that data has also been obtained for the Planning Area i.e. where the Highlands Council has jurisdiction. NJBA strongly urges and recommends that the Highlands Council also review the data to determine if any improvements may be made to allow for appropriate development in the Planning

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Area. Similar to the Department, the Highlands Council should also utilize the best available data in its decision making and regulatory programs. Without the Council also taking such a proactive step for the *Planning Area*, the NJBA views that this rule proposal is *only* an incremental step towards addressing global issues of how to facilitate appropriate economic development opportunities in the Highlands Region.

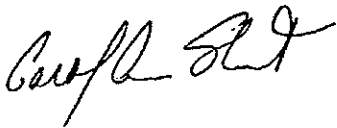
NJBA has also questioned the scientific basis underlying the current septic density standards and in particular the reliance on deep aquifer recharge for septic dilution. The current rules require very large lots (up to 88 acres) in order to develop on septic systems, whereas the proposed septic standards would be respectively 23, 12 and 11 in the Protection, Conservation and Existing Community Zones, which would yield 1145 new septic systems. NJBA recognizes the opportunities that such developments would yield, but reiterates that this re-evaluation should be extended to the Highlands Planning Area.

Given the need for such large lots with standard septic systems, the NJBA had previously supported and again encourages the Department to allow development on smaller lots utilizing alternate septic system designs. Following the successful model of the Pinelands Commission, the Council should allow alternative design septic systems that have proven effective at removing nitrates. These systems support clustering and low impact development on reasonably sized lots. Alternative septic systems are equivalent to mini-sewer treatment systems and provide much better environmental protection than would low density development.

The current Septic Density Standards not only inhibit economic growth, which in turn frustrated the “balance” that the Highlands Act was to strike with environmental protection, but also contributed significantly to sprawl patterns of land development. Therefore, NJBA strongly supports the Department’s proposed amendments and encourages that they be adopted without delay. NJBA further encourages the Department and the Highlands Council to review their respective regulations that negatively impact the economic prosperity of the Highlands Region without any environmental benefit.

Please contact NJBA if you have any questions regarding these comments.

Sincerely,



Carol Ann Short, Esq.
Chief Executive Officer

C: Stephen Shaw, Shaw Built Homes
Margaret Nordstrom, Executive Director, Highlands Council



Testimony on SCR 163
Submitted by Kelly Mooij, New Jersey Audubon
November 20, 2017

Thank you for the opportunity to provide testimony in support of SCR163. My name is Kelly Mooij and I'm the Vice President of Government Relations.

NJ Audubon was founded in 1897 and is one of the oldest and largest conservation membership organizations in the State. New Jersey Audubon fosters environmental awareness and a conservation ethic, protects New Jersey's birds, other animals, and plants, especially endangered and threatened species, and promotes preservation of New Jersey's valuable natural habitats.

New Jersey Audubon has worked extensively to protect and restore habitats throughout NJ.

Many of NJ's key pieces of regional environmental legislation are aimed at protecting valuable natural resources and with that, critical habitat for our hundreds of species of plants and animals. The Legislature has shown great foresight and recognition of the importance of these regions by passing landmark pieces of legislation include the Highlands Protection Act and the Pinelands Preservation Act.

The Highlands Act was intended to protect drinking water for a large portion of the state's citizens as well as the ecological integrity of the vast 88 municipality region. NJ Audubon's past President, Tom Gilmore was one of the environmental leaders working with our legislative champions to protect this critical area for its current and future ecological and natural resource values.

The proposed septic density provision of the Highlands Preservation Are rule would violate the legislative intent of the Highlands Act and cut directly at the heart of its intended protection. Increasing the density in the Protection area and the expected precipitous increase in development of septic would significantly impacts habitat, most notably through loss of habitat and fragmentation.

This proposed rule is based upon flawed science and analysis and clearly violates the intent of the Highlands Act which requires that "...a septic system density standard established at a level to prevent the degradation of water quality, or to require the restoration of water quality, and to protect ecological uses from individual, secondary, and cumulative impacts, in consideration of deep aquifer recharge available for dilution..." PL 2004 c.120 (C.13:20-32e). As a result of this violation of the intent, this rule should be invalidated.

Thank you for the opportunity to testify in support of this important resolution.

ADDITIONAL APPENDIX MATERIALS
SUBMITTED TO THE
SENATE ENVIRONMENT AND ENERGY COMMITTEE
for the
November 20, 2017 Meeting

Submitted by Jerry Arena, Private Citizen:

Jerry Arena, "Letter: Time to re-examine effects of the Highlands Act," *NorthJersey*,
November 14, 2017. © 2017 northjersey.com