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Statement to Allegheny County Council
RE: Support for An Ordinance Proposing a Two-Year Moratorium on Further Hydraulic Fracturing in Allegheny County Parks

Chairman DeFazio, Members of Allegheny County Council:

Thank you for this opportunity to address the issue of hydraulic fracturing in Allegheny County Parks, once again. We have been holding hearings and public meetings on this issue for years now. What have we learned in the space of this time that may enlighten our way forward?

First, the Constitutional provision of the Commonwealth of Pennsylvania, Article 1, Section 27, The Environmental Rights Amendment, "That the people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. ..." has been upheld in the Pennsylvania Supreme Court as a justification for declaring unconstitutional the provisions of Act 13 that limited municipalities, counties, boroughs and townships from placing zoning constraints on oil and gas extraction by hydraulic fracturing. Some key observations from the 162 page Supreme Court decision are relevant here:

- "The protection of environmental and esthetic interests is an essential aspect of Pennsylvanians' quality of life and **a key part of local government's role.**"
- "[w]e need not wait until an ecological emergency arises in order to find that the interest of the municipality and county faced with such disaster is immediate."
- "The Commonwealth's obligations as trustee to conserve and maintain the public natural resources for the benefit of the people, including generations yet to come, create a right in the people to seek to enforce the obligations."
- "**By any responsible account, the exploitation of the Marcellus Shale Formation will produce a detrimental effect on the environment, on the people, their children, and future generations, and potentially on the public purse, perhaps rivaling the environmental effects of coal extraction.**"
- "When coal was "King," there was no Environmental Rights Amendment to constrain exploitation of the resource, to protect the people and the environment, or to impose the sort of specific duty as trustee upon the Commonwealth as is found in the Amendment. Pennsylvania's very real and

mixed past is visible today to anyone travelling across Pennsylvania's spectacular, rolling, varied terrain. The forests may not be primordial, but they have returned and are beautiful nonetheless; the mountains and valleys remain; the river ways remain, too, not as pure as when William Penn first laid eyes upon his colonial charter, but cleaner and better than they were in a relatively recent past, when the citizenry was less attuned to the environmental effects of the exploitation of subsurface natural resources. But, **the landscape bears visible scars, too, as reminders of the past efforts of man to exploit Pennsylvania's natural assets. Pennsylvania's past is the necessary prologue here: the reserved rights, and the concomitant duties and constraints, embraced by the Environmental Rights Amendment, are a product of our unique history.**" P. 118
<http://www.pacourts.us/assets/opinions/Supreme/out/J-127A-D-2012oajc.pdf?cb=1>

In rendering this ruling, the Pennsylvania Supreme Court re-asserts the obligation of local governments to act to protect the natural environment for the sake of current and future citizens.

Second, peer reviewed data continue to accumulate indicating the public health hazards from toxic air emissions, potential and actual water contamination, and despoliation of ground from hydraulic fracturing activities. The public health protection standard is that even the threat of harm is sufficient to call for cautionary limits.

- Michelle Bamberger and Robert Oswald. (2012) **"Impacts of Gas Drilling on Human and Animal Health,"** *New Solutions: A Journal of Environmental and Occupational Health Policy*. Vol. 22(1) 51-77.
Animals, especially livestock, are sensitive to the contaminants released into the environment by drilling and by its cumulative impacts. Documentation of cases in six states strongly implicates exposure to gas drilling operations in serious health effects on humans, companion animals, livestock, horses, and wildlife. Although the lack of complete testing of water, air, soil and animal tissues hampers thorough analysis of the connection between gas drilling and health, policy changes could assist in the collection of more complete data sets and also partially mitigate the risk to humans and animals. **Without complete studies, given the many apparent adverse impacts on human and animal health, a ban on shale gas drilling is essential for the protection of public health.** In states that nevertheless allow this process, the use of commonsense measures to reduce the impact on human and animals must be required in addition to full disclosure and testing of air, water, soil, animals, and humans.
- David J. Lampe and John F. Stolz. **Current Perspectives on Unconventional Shale Gas Extraction in the Appalachian Basin.** Journal of Environmental Science and Health. Part A – Toxic/Hazardous Substances & Environmental Engineering. Volume 50, Number 5 , 2015.

The development of shale gas plays such as the Marcellus and Utica has significantly changed the energy picture in the United States in the last decade. The extraction of unconventional natural gas, however, is a heavy industrial activity involving large tracts of land, heavy equipment and vehicles, and an extensive array of pipelines, compressor stations, and processing facilities. We have presented here a brief overview of what is involved in unconventional shale gas extraction and some of the environmental impacts of these activities. Given the likelihood that Pennsylvania alone may see up to 15,000 well pads and upwards of 100,000 wells constructed over the next 20 years, it is critical that this activity be closely regulated if we are to avoid repeating past failures (e.g., orphaned wells, abandoned mine drainage). Ideally, **enactment of effective policies for well siting, construction, operation, and reporting should be based on sound data. Consideration must be given to the protection of watersheds for large populations, habitat for rare and endangered species, human health and safety concerns, as well as quality of life issues.** Mandating and enforcing industry best practices (e.g., green completions, improved efficiency) and minimizing the environmental impacts are essential for the preservation of our natural resources now and for future generations.

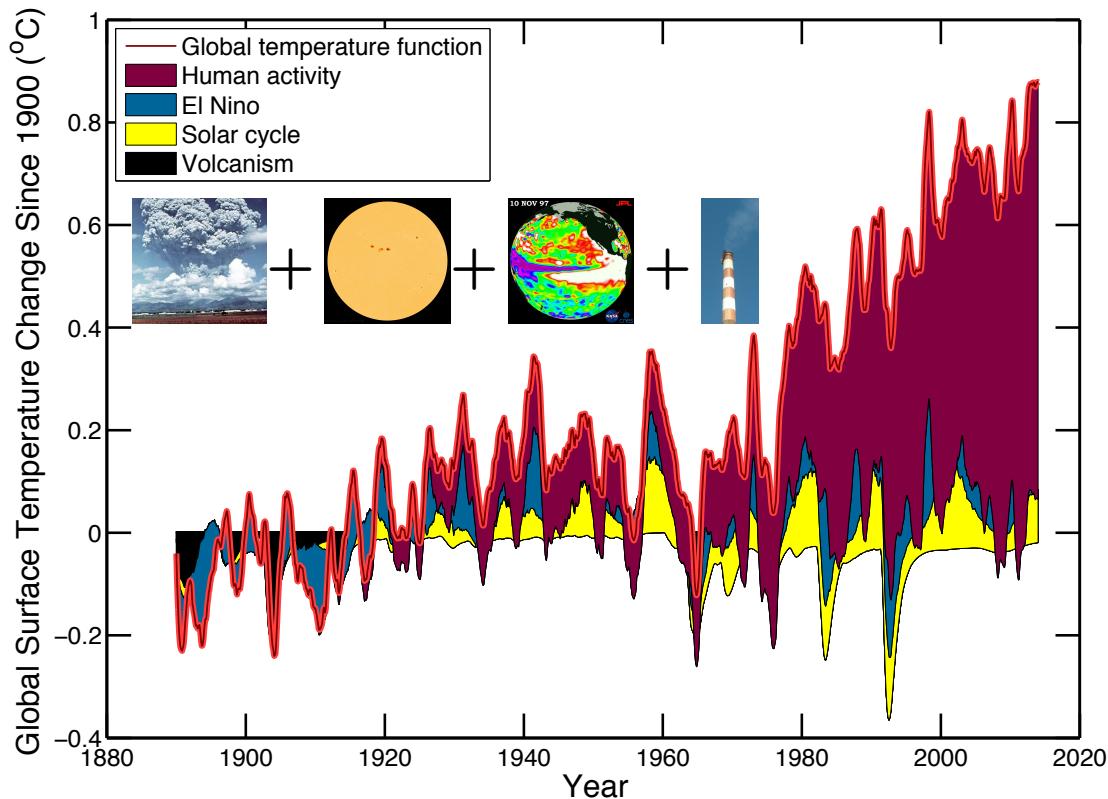
- Anthony R. Ingraffea, Martin T. Wells, Renee L. Santoro, and Seth B.C. Shonkof. **Assessment and risk analysis of casing and cement impairment in oil and gas wells in Pennsylvania, 2000–2012.** PNAS. 111(30):10955-10960. June 30, 2014. Casing and cement impairment in oil and gas wells can lead to methane migration into the atmosphere and/or into underground sources of drinking water. **An analysis of 75,505 compliance reports for 41,381 conventional and unconventional oil and gas wells in Pennsylvania drilled from January 1, 2000–December 31, 2012, was performed with the objective of determining complete and accurate statistics of casing and cement impairment. Statewide data show a six-fold higher incidence of cement and/or casing issues for shale gas wells relative to conventional wells.** The Cox proportional hazards model was used to estimate risk of impairment based on existing data. The model identified both temporal and geographic differences in risk. For post-2009 drilled wells, risk of a cement/casing impairment is 1.57-fold [95% confidence interval (CI) (1.45, 1.67); $P < 0.0001$] higher in an unconventional gas well relative to a conventional well drilled within the same time period. Temporal differences between well types were also observed and may reflect more thorough inspections and greater emphasis on finding well leaks, more detailed note taking in the available inspection reports, or real changes in rates of structural integrity loss due to rushed development or other unknown factors. Unconventional gas wells in northeastern (NE) Pennsylvania are at a 2.7-fold higher risk relative to the conventional wells in the same area. The predicted cumulative risk for all wells (unconventional and conventional) in the NE region is 8.5-fold [95% CI (7.16, 10.18); $P < 0.0001$] greater than that of wells drilled in the rest of the state.

- John L. Adgate, Bernard Goldstein, Lisa MacKenzie. **Potential Public Health Hazards, Exposures and Health Effects from Unconventional Natural Gas Development.** *Environ. Sci. Technol.*, 2014, 48 (15), pp 8307–8320. The rapid increase in unconventional natural gas (UNG) development in the United States during the past decade has brought wells and related infrastructure closer to population centers. This review evaluates risks to public health from chemical and nonchemical stressors associated with UNG, describes likely exposure pathways and potential health effects, and identifies major uncertainties to address with future research. **The most important occupational stressors include mortality, exposure to hazardous materials and increased risk of industrial accidents. For communities near development and production sites the major stressors are air pollutants, ground and surface water contamination, truck traffic and noise pollution, accidents and malfunctions, and psychosocial stress associated with community change.** Despite broad public concern, no comprehensive population-based studies of the public health effects of UNG operations exist.

It is appropriate for the County Council to take precautionary limits on Marcellus Shale development to protect the health and wellbeing of people in sensitive areas such as parks, residential neighborhoods, commercial business districts, places of worship or historical and cultural significance. People in these places should expect to be protected from industrial air emissions, water contamination, heavy truck activity, noise and wastes associated with Marcellus Shale development.

Third, the most recent findings of the Intergovernmental Policy Committee on Climate Change has issued the most urgent warnings to date of the need to shift away from burning fossil fuels.

- IPCC Climate Change 2014. Synthesis Report for Policymakers. http://www.ipcc.ch/pdf/assessmentreport/ar5/syr/SYR_AR5_SPMcorr1.pdf
- Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems.
- Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and oceans have warmed, the amounts of snow and ice have diminished, and sea level has risen.
- **Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems.** Limiting climate change would require substantial and sustained reductions in greenhouse gas emissions which, together with adaptation, can limit climate change risks.



J. Lean and D. Rind, "The Sun and Climate," *Consequences* 2, no. 1 (1996): 27-36, cited in Seinfeld and Pandis, *Atmospheric Chemistry and Physics*, 1085.

The correlation between human activity and the increase in global warming cannot be denied. The actions of people, mostly from burning fossil fuels, swamp the normal temperature cycles of the planet, and reverse in decades the processes that formed the free oxygen in the air that supports life as we know it. We ignore such findings at our peril.

It is appropriate for the Allegheny County Council to exercise leadership in exploring the maximum possible use of renewable and sustainable energy systems to preserve the economic viability of our community. Using fossil natural gas as a bridge fuel will require innovations that involve non-combustion uses of gas, such as in methane powered fuel cells as a bridge to biological methane, for example, from anaerobic digestion of wastes, and eventually to hydrogen as a fuel. Communities that seize the challenge to move smoothly from a fossil based economy to one sustained by renewable and regenerating fuels will survive and thrive. If we wait until conditions are so severe that compliance is forced for the sake of survival, we will have fewer options, and less time in which to make adaptations to infrastructure and customs.

The proposed Ordinance asking for a two-year moratorium on further drilling on, under or near Allegheny County Parks should be adopted. It is an appropriate

response to the serious concerns that citizens have raised at numerous hearings over the last several years.

This is an opportunity for the County Council to take action and to show leadership in building a community with a resilient and robust future. Three actions can take place during this time:

1. Develop Baseline Documentation.

The County should monitor and document local and regional effects of Marcellus Shale development on ambient air, water quality and worker health and safety. Residents cannot afford before and after testing or baseline condition documentation for water quality. It is a complex matter here to make such determinations because of the legacy of pollution sources abandoned from prior industrial activity. Expertise for appropriate metrics should be obtained from the proceeds of current leases, for the benefit of protecting public health.

2. Pursue Maximum Use of Renewable Resources.

The County Council should endorse and support initiatives to accelerate and expand the use of renewable energy resources in Allegheny County. For example, Solarize Allegheny is a unique and exciting community-based outreach and marketing campaign that inspires residents and small businesses to go solar. The goal of the campaign is to double the amount of solar energy used in Allegheny County over two years through a series of Solarize campaigns. The project of Pittsburgh Green Innovators is made possible by the generous support of the Heinz Endowments and with assistance from the partner organizations – Congress of Neighboring Communities (CONNECT), Conservation Consultants, Inc., GTECH Strategies, and the Solar Unified Network of Western Pennsylvania. Allegheny County should be pursuing such efforts on a county-wide basis to amplify and support such citizen initiated efforts. (See www.pghgreeninnovators.org for details)

3. Enact Zoning Guidance

The County Council should pursue a defined plan for zoning guidelines governing the development of Marcellus Shale resources in the county. Such guidance should include watershed protection, air emission requirements, setback and abatement requirements for industrial activity, and the conditions required for leases in areas zoned as residential, light commercial or agricultural uses. Citizens deserve to know that their quality of life is protected from unconstrained development.

The Pennsylvania Supreme Court has ruled that you have the power to impose reasonable limits on an unfettered industry. Some cry out that they have the freedom to develop resources as they see fit, and are entitled to make the most profit possible from fossil resource holdings. I ask you to hold up the corollary of responsibility and accountability to all of the citizens, and to future generations. One of Pittsburgh's heroes, whose centenary we celebrated this year, Dr. Jonas Salk, often said that we should seek to be good ancestors to our children. How will our time be reflected in their eyes?

For those who will be affected by our decisions but who are not here to speak - the unborn, and the millions of living things whose fate you hold - I ask that you take precautions. I ask that you think of the value of exercising limits on gas extraction on behalf of the public interest, because **freedom without responsibility leads to chaos**. We must seek to live in harmony with the natural systems of the world. The laws of biology are not negotiable. Mother Nature ALWAYS wins! We must preserve the right of all people to clean air and pure water, and preserve the natural, scenic, historic and esthetic values of the environment, if we are to survive the 21st century.

Respectfully submitted,

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These remarks are the opinion of the author alone, and have no reflection on any officer, trustee or faculty member of any educational institution.

The author is a Member of:
The Sierra Club, Allegheny Chapter
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Protect Our Parks
SUNWPA
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