



Background guide for
Breakout Session 4:
Most Livable City? Wrestling
with the Challenges of
Environmental and Public
Health

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Background Session 4:
Most Livable City? Wrestling with the Challenges of Environmental and Public Health
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Authors' Note and Disclaimer

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This report was prepared at the request of the Heinz Endowments to provide additional perspectives to participants attending the p4 Conference, in Pittsburgh, October 18-19, 2016. Opinions or points of view expressed herein represent a consensus of the authors and are presented for informational purposes to expand the space for conversations around equity, justice, and inclusion in the Pittsburgh region. Opinions and recommendations do not necessarily represent or constitute approval, adoption or endorsement by the Heinz Endowments or the facilitators of the respective sessions.

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Most Livable City? Wrestling with the Challenges of Environmental and Public Health

In a 2014 interview with *Pittsburgh City Paper*, Allegheny County Health Department Director Dr. Karen Hacker was asked about which health disparities most concerned her. She replied, “The two that have just jumped out—you don’t need to be brilliant—are race and geography. Almost every single negative consequence that we have right now—by and large—blacks are more at risk than whites. But the other thing is we have a lot of disparities in our geography. We have communities that look dramatically different from other communities.” She added that such communities were largely drawn on socioeconomic lines, recognizing that low-income white/European American residents are not faring well either.¹

For over 100 years, wealthy residents of Pittsburgh have been able to locate themselves in neighborhoods with relatively healthier environments. The wealth (and environmental health) disparity has cut along ethnic and racial lines. Wealthy white/European Americans moved upwind of factories (e.g. Allegheny West) or on hilltops (e.g. Shadyside and the East End), leaving the southern Europeans with the heavier pollution in valleys near the mills (e.g. Lawrenceville, South Side Flats). The advent of the trolley system and, later, highway system enabled wealthy white/European Americans to escape to the less crowded, “safer,” and “healthier” first- and then second-ring suburbs, taking their wealth with them. Left behind in many parts of the city were lower income residents, including black/African Americans, many recently arrived in during

the Great Migration. They, due to various manifestations of structural racism (e.g. underfunded and segregated schools and red-lining), were limited in opportunities to advance economically and in their ability to choose where to live. The situation that the city and county face today is the legacy of this history of income- and race-based spatial segregation and the more recent history of continued income and race disparities.²

Recognizing this context, the region faces many environmental and public health challenges – too many to address here. This guide focuses on four main areas: air, water, food, and health. Though this guide only scratches the surface of those topics, each section provides an overview of some of the main issues and problems the region faces and highlights cross-cutting questions around economics, poverty, race, and climate change. Because of this focus, some important relevant topics, such as lead paint, indoor air pollution, and domestic and gender-based violence, are only mentioned in passing. By pointing out the many intersections between each of the key topics and the other p4 workshops, we identify areas to stimulate the complex discussion necessary to achieve a “Just Pittsburgh.”

Key Topic Areas

Air

Despite some small improvements in air quality over the last 15 years, the City and region’s air remains heavily polluted and still fails to meet federal air quality

standards for fine particulate matter.³ Allegheny County reached attainment levels in 8-hour ozone for the first time in 2015.⁴ The sources of this pollution are a combination of point (stationary) sources, particularly coal-fired power plants and industrial facilities, and mobile sources, such as trucks, busses, and automobiles.⁵ Although conditions may be worse in certain areas, such as near the point sources, in valleys, or along roads, the air quality is poor across the region.⁶ Many have argued that the air quality problem is due to pollutants drifting in from other states; however, half to two-thirds of the fine particulate matter may be attributable to sources within the region.⁷

This poor air quality negatively affects the health of the region's residents. Different pollutants pose different risks to humans. Fine particulates and ozone are both associated with premature death, heart disease, asthma, and adverse reproductive effects such as low birth weight and preterm birth. Some groups disproportionately suffer the effects of some of these diseases. In Pennsylvania, children, poor, African-American, and Latino residents are more likely to develop asthma.⁸ Anecdotal evidence suggests that Children's Hospital of Pittsburgh experiences asthma-related emergency room visits and hospitalizations at 3-4 times and 2-3 times the national average, respectively.⁹ Climate change is expected to enhance the production of ground-level ozone.¹⁰ Other air toxins (HAPS), such as formaldehyde and benzene, are associated with high rates of cancer. Residents in West Elizabeth Borough and the City of Clairton, next to US Steel's Clairton Coke Works, face cancer rates 20 times greater than areas outside of Allegheny County. Allegheny County residents themselves face rates two times greater than the

counties around it.¹¹ Furthermore, while the moving of the zinc smelter in Monaca to North Carolina will reduce the concentration of some HAPS, the ethane cracker plant being built on the same site will likely increase the concentration of other carcinogenic HAPS and ozone.¹²

Air quality will remain poor for the foreseeable future. A 2011 report estimates that clean air that protects citizens from harm is "at least a decade away, and more likely beyond."¹³ To combat the problem, several bodies have undertaken measures over the last few years. The Port Authority is converting its entire bus fleet to run on natural gas instead of diesel by 2019. The Green Building Alliance is working with companies and building owners to improve indoor air pollution and to construct "green buildings." The Heinz Endowments established the Breathe Project to promote clean air and improve awareness of the problem. The City of Pittsburgh and Bike Pittsburgh have advocated and enabled alternative modes of transportation. Allegheny County Controller Chelsea Wagner audited the Allegheny County Health Department (ACHD) in May for its reliance on settlements and weak monetary punishments of polluters, which environmental groups celebrated.¹⁴ Since then, ACHD has proposed a revision of the operating permit for the Cheswick Power Plant that would require the plant to greatly reduce its nitrogen oxides levels, a move that the Sierra Club has lauded.¹⁵ Despite these efforts to improve air quality sooner rather than later, it is not clear how this series of measures and others like them will be enough to solve the problems of a fossil-fuel based economic system.

Water

Two major water issues currently threaten residents' health and safety and

pose enormous financial challenges for homeowners and municipal governments: lead-contaminated water and combined sewer overflow. Lead exposure is unsafe at any level and children are most susceptible to its effects. High levels of lead are also found in old paint and contaminated soil.¹⁶ Over the last decade, the number of houses that have tested positive for lead-contaminated water has slowly risen to the point that it now surpasses federal limits.¹⁷ The suddenness of this increase may be attributable to: (i) aging pipes (older homes are more at risk); (ii) poor sampling at the Pittsburgh Water and Sewer Authority (PWSA), where the number of samples was below federal requirements, employees tested their own houses rather than random households (this is legal), and some areas of the city were oversampled (Highland Park – 22% of samples) while some neighborhoods were not sampled at all (South Side Flats and Slopes);¹⁸ and (iii) the sudden, illegal change in the chemicals used to control the corrosion of metals when Veolia North America began managing the city's water supply in 2012. This company, which left Pittsburgh in April 2016, is the same company involved in the Flint lead crisis.¹⁹ PWSA has begun replacing main service lines; however, homeowners are responsible for replacing the lines on their own property. The large cost of replacing the lines falls on the PWSA (and their customers) and on homeowners, placing a large financial burden on those already struggling.

In 2008, the EPA served Allegheny County Sanitation Authority (ALCOSAN) with a consent order that requires the department to achieve compliance with the federal Clean Water Act in times of wet weather.²⁰ This decree stems from ALCOSAN's combined sewer infrastructure and the prevalence of impervious surfaces

(particularly parking lots and roads) across the landscape. Due to the storm water and sewage pipes being combined in many parts of the ALCOSAN region, 1/10 of an inch of rain will cause the pipes to overflow into the rivers and streams, creating a toxic mix of sewage and other roadway chemicals.²¹ ALCOSAN's solution, rejected as insufficient by a federal judge, involved the \$2 billion construction of tunnels and underground storage tanks. Much of the cost would be passed on to ratepayers. Various public officials and environmental groups complained that this solution did not include any "green infrastructure."²² In March, the EPA gave ALCOSAN an extension for compliance, but the water management plan in consent decree must be approved soon.²³ Importantly, with no public money available for this project, the large cost will be passed on to ratepayers.²⁴

Contributing to combined sewer overflow is runoff from impervious surfaces. A flash flood in 2011 during an extreme weather event in the eastern portion of the city led to the death of four individuals on Washington Boulevard near the Allegheny River. The installation of flood gates was meant to solve this problem, but their recent failure in another extreme weather event that led to flooding revealed unclear management issues between the City and PennDOT and the need for improved runoff controls. Newly proposed solutions involve major green infrastructure projects in the valley and the raising of the road.²⁵

Food

Many in the Pittsburgh region suffer from food insecurity despite the attempts to increase access to fresh food and despite the prevalence of farmland in the 10-county area. In Allegheny County in 2012, approximately 171,000 individuals were

food insecure, including around 43,000 children. These numbers were both increases over 2011. Meanwhile, countywide, approximately 160,000 participate in the Supplemental Nutrition Assistance Program, 16,300 participate in the Women, Infants, and Children food assistance program, 44,000 children receive free breakfasts each school day, and 21,000 receive free lunch. Food insecurity is not only a problem for the individuals facing hunger and poor nutrition: it has implications that reach across our society. Without sufficient food, children are three times more likely to be suspended and two times more likely to need to repeat a grade. Adults are three times more likely to face poor health and two times more likely to develop diabetes. Women are three times more likely to be obese and challenged with associated life outcomes and costs.²⁶

Over the last several years, some have argued that the problems of hunger and poor nutrition are associated with neighborhoods without stores that sell fresh produce. According to a US Department of the Treasury report, among similarly sized cities, Pittsburgh, at 47%, has the largest percent of individuals with low supermarket access. 71% of these individuals are low income. In Allegheny County, 18% have low supermarket access, of which 57% are low income. Many neighborhoods in and around the City can be labeled as “food deserts.”²⁷ To alleviate this problem, many have called for and sometimes introduced farmers’ markets, mobile markets, healthy corner stores, or new grocery stores.²⁸ An ongoing RAND project is currently studying the effects of changes in the built and social environments on health in the Hill District and Homewood. Preliminary findings show statistically significant *improvements* in

several areas of health and a statistically significant *decrease* in the amount of whole grains, fruits, and vegetables consumed by Hill District residents between 2011 and 2014. During this time, a new Shop’n’Save opened on Center Avenue. The researchers warn that this is only an association between the new grocery and the changes and that there may be other variables involved.²⁹

Contrary to this food-desert-as-problem approach, others argue that the main cause of hunger and health disparities is poverty. People are hungry because they cannot afford sufficient amounts of food. Viewing the problem this way requires a much different set of solutions.³⁰

At the same time, the wider 10-county region contains a large, but shrinking and shifting, farming industry. While the economic impact of the farm products from this region increased from 2007-2012, the overall number of farms has decreased. The average farm size in acres has decreased as well. During this time period, the number of acres used for vegetable and fruit production decreased 24%, even as local restaurants and others have used this produce for their value-added products.³¹ During this time period, Greene and Fayette Counties saw large percentage decreases in number of farms and in farm acreage,³² possibly due to the increase in natural gas operations in those counties.

The Southwest Pennsylvania Commission report on the local farm industry is somewhat narrow in its thinking. A recent Southwest Pennsylvania Commission report, estimating 260 thousand new households in the region by 2040 and continually increasing average incomes, recommends developing the local food economy, promoting beef production, and selling local products globally (among

other things). Two of its recommendations, the export of goods and beef production are two leading contributors of greenhouse gas emissions. Furthermore, the report does not mention climate change and subsequently does not consider its implications, such as warmer average temperatures, longer growing seasons, increased likelihood of drought and other extreme weather events, increased precipitation, or new invasive species

Health Disparities

Given the socioenvironmental problems highlighted above, it is not surprising that health disparities are common in the Pittsburgh area. According to a 2012 Allegheny County Health Survey report, survey data from 2009-10 show “significant health disparities for many indicators by education, household income, and race, including: general health, disability, emotional and mental health, health care access, physical activity, diabetes, cholesterol awareness, hypertension, and cigarette smoking. African-American residents, as well as those with lower household incomes or less education fared worse on these indicators.”³³ This report also noted that the proportion of adults told they had diabetes and the proportion of adults told they had asthma increased significantly (statistically) over the previous survey in 2002. Black/African American adults showed a particularly large increase in asthma rate. Data in the 2009-10 survey also show that 27% of adults worried about their ability to pay their rent or mortgage, that 19% worried about their ability to purchase nutritious food, and that obesity rates were greater among black/African American adults.³⁴

Statistics for birth and death also reflect disparities. Even though there has been a

steady decrease in teenage birthrates across all races and teenage age groups since 1990, in 2015, the black/African American infant mortality rate was two times the white/European American infant mortality rate, and the black/African American neonatal mortality rate three times the white/European American neonatal mortality rate. Furthermore, the percent of black/African American babies with low birth weights was over two times greater than the percent for white/European American babies.³⁵ Heart disease and cancer were the top two causes of death for black/African American and white/European American women and men in 2012; Homicide was the third leading cause of death for black/African American men and diabetes the fourth for black/African American women.³⁶ Of the 47 homicides in the City of Pittsburgh in 2013, 80% of the victims were black/African American, 70% occurred in only 15 neighborhoods, and 89% were the result of gunshots.³⁷

2015 saw 422 deaths as the result of opioid overdose, with deaths clustered in western and southern neighborhoods of Pittsburgh. Of the 422 who died, in the previous year, 16% had been in jail at some point and 36% had received publicly funded mental health treatment. According to the county health department, opioid use has reached epidemic levels.³⁸

Many public, private, and non-profit organizations throughout the city are undertaking measures to improve the health of all residents and to decrease disparities in health conditions and access. Allegheny County Health Department, for one, has put together a comprehensive plan that seeks to develop objectives, metrics, and actionable strategies in the areas of access, chronic disease risk behaviors,

environment, maternal and child health, and mental health and substance abuse disorders. Its goal is to improve health outcomes and equity in the next three to five years.³⁹ These metrics, however, fail to address the main problems of health disparities—the actual inequalities in race, income, and education level—that lead to the inequities in health outcomes. Such metrics and strategies treat symptoms, not causes.

Intersections

As is clear from the foregoing descriptions, environmental quality and public health are intimately related. On the surface, poor environmental quality is associated with poor health outcomes. Other factors, such as race, income, age, sex, and gender affect or may affect one's exposure to environmental health hazards or one's access to prevention or treatment.

Today, all residents of the region are exposed to environmental threats, particularly air pollution. Because of where they live, some residents are more at risk than others. Those living in urban areas and next to industrial sites remain more exposed. The lack of affordable housing accessible to public transportation prevents many residents from moving out of the city, if they want to leave their neighborhoods and communities. Because of the gentrifying pressures of development, many residents are being forced to move. Some may have to move away from grocery stores, health facilities, and green spaces just to find somewhere they can afford to live. Apart from the implications of the move on physical health, such disruptions of the neighborhood, the community, and the way of life have *traumatic* outcomes for individuals and their community.⁴⁰ For

those that can stay in their homes for now, they are faced with having to pay for new water lines to avoid lead and higher sewage rates to pay for gigantic wastewater tunnels, and with continuing to inhale fine particulates and ozone outside their homes and lead dust from paint inside.

Concerns about public and environmental health are made worse by the persistent reliance on fossil-fuel infrastructure and growth. Continued construction and expansion of roads and highways promote urban sprawl, the use of automobiles, and diesel-truck transportation. While the p4 metrics aim to secure improved air quality and reduced energy consumption inside newly constructed buildings, they do not help to reduce the pollution caused by the fossil-fuel based energy used in the production of materials, their transport, or the building construction. The region is still home to several coal-fired power plants and continues to operate as a center of natural gas extraction. Both are sources of air pollution.⁴¹ Prominent banks maintain investments in fossil-fuel industries and their expansion here and elsewhere, such as PNC Bank's \$270 million investment in the companies building the Dakota Access Pipeline,⁴² further securing a more dramatic climate future and greater environmental threats to poor communities here and across the world.

Conclusions

While residents throughout the Pittsburgh region are exposed to environmental hazards, particularly air pollution, the effects are not felt evenly across geography, race, income, age, sex, or education level. Low-income residents are at greatest risk and are least likely to have

access to healthy food and environments. Many of these problems are directly linked with a fossil-fuel-based economy.

Governments, non-profits, and community organizations are working to combat these problems and their uneven outcomes. They have achieved many important interventions; however, there is likely a mismatch between the scope of the solutions and scope of the problem. Bike lanes or urban gardens may be environmentally beneficial, but their small scales pale in comparison to the problems of regional geographies of housing, transportation, and work, of the regional food system, and of wider economic flows and processes that undergird and shape local outcomes.⁴³ More ambitious solutions may be necessary in order to solve the problems at hand.

As the region moves forward, how it will reconcile economic growth with environmental limits and environmental justice in a time of climate change remains unclear. Many may call for “sustainable development,” but what they want to sustain is unclear. Is it economic growth, the current state of the environment, or something else? Each requires a different set of policies to achieve.

Key Questions

- How can environmental justice be reconciled with economic growth?
- Is it possible to improve the region’s air quality without shifting away from coal, natural gas, and oil? What steps can the region shift away from its reliance on fossil fuels? Does the

region have the will to make the large-scale changes necessary to clean the air and mitigate a more dangerous climate future?

- What do calls for “sustainable development” seek to sustain?
- What types of projects and plans should be implemented to tackle regional (or larger) environmental and public health problems?
- What are the best strategies for ensuring that all residents have access to healthy, safe environments?
- Are there ways to combat poverty, racism, and sexism that better achieve healthy, safe environments for all residents?
- What types of projects and plans could help low-income residents deal with lead pipes, upcoming sewage rate increases, lead paint, and other environmental problems in their homes?
- In what ways can multiple environmental and public health threats be addressed simultaneously? Is it possible, for example, to decrease storm water runoff and reduce greenhouse gas emissions through one mechanism?
- In what ways would it be possible to restructure the regional food system to ensure production of healthy, affordable food, just incomes for farmers, the protection of farms from sprawl and other economic development, and accessible food for residents of all income levels?

Suggested further reading

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