Bronx Council for Environmental Quality

comments to the generic

Draft Environmental Impact Statement
Special Natural Area District - SNAD NA-2

Alderbrook (stream) overflow during and after heavy rain, September 29, 2011

Water flowing down West 247 Street and Alderbrook Road

In response to:
BRONX SPECIAL NATURAL AREA DISTRICT UPDATE
(FORMERLY STATEN ISLAND AND BRONX SPECIAL DISTRICT UPDATE)
CEQR No. 19DCP083Y
ULURP Nos.: C190403 ZMX, N190430 ZRY
and N190430 (A) ZRY

Date September 9, 2019

Introduction

Right here in the North Bronx, we have an amazing piece of nature – 900 acres in the big City -- where people have discovered a way to live in and protect their watershed by limiting landscape development to only 30% cover. This is quite a feat! Congratulations to the SNAD protectors in creating the urban rain forest. There are probably only a few other areas of the city that would fill this prescription -- Jamaica Bay comes to mind, as does our own Van Cortlandt Park with even less than a 7.5% impervious cover. Savor these areas – the lungs and the kidneys of the City, as they are just as important as our highways, subways, and stock market in keeping the heart of the City beating.

In the City of 9 million people, the development cover is at 72%. The Harlem River Watershed Plan in the Bronx, which covers CB 4, 5, 7 and most of 8, is 66% impervious. In understanding how unique and significant this is, we turn to science. Tom Schueler of *The Center for Watershed Protection*, classifies stream quality levels by percent impervious:

- 1% to 10% are stressed,
- 11% to 25% are impacted, and
- 26% to 100% are degraded.

In fact, research indicates that watersheds are demonstrably and irreversibly degraded when as little as 10% of their surface area is covered by imperviousness. This is impacts runoff volume quite dramatically that 1-inch of rain over 1 acre of

- open space will typically generate 218 cubic feet of runoff.
- a paved parking lot will produce 3,450 cubic feet of runoff -- nearly 16 times more

The SNAD NA2 of Riverdale – Spuyten Duyvil – Fieldston is already delineated and protected. While the city reaches 72% build-out, the SNAD managed to survive with only 30% impervious cover -- in spite of DCP's policy to allow applications 50% hard cover.[1] Let's look at the area as an urban Natural Area Watershed – an oasis, if you will, and begin a stakeholder managed watershed group with subgroups reflecting the landownership distinctions. Separate working groups of homeowners, multi-family residential, community facility institutions, and municipal agencies.

Instead of complicated zoning amendments, choose indicators of living creatures. Easily found in this fragile ecosystem is a large array of bugs, caterpillars, birds, trees, native plantings and rain gardens, natural integrated pest management processes, large rain gardens strategically placed to promote infiltration. All these indicators will be evident and can be demonstrated by examining the flow levels in local catch basins. A good plan will show lower flow levels as the land becomes more sponge-like and runoff is absorbed, temperatures are lowered, storms are not as severe than other parts of the City. It will also cost less to provide these ordinary city services because of the protections voluntarily accepted in this area. Of course, there will be a goal to this big experiment. Let's lower the 30% impervious cover by 1% each year for a 5-year study period.

This is an opportunity of a lifetime, a cutting edge for an urban environment. Time to take a stand and pull the EIS. Create a SNAD NA -2 Watershed Plan. Thank you.

[1] FSCOW, page 25: "…..DCP ~~has~~ established a guideline that lots should generally have no more than 50 percent coverage by ~~impervious~~ hard surface areas ~~surfaces~~."

SUMMARY

The Bronx Council for Environmental Quality (BCEQ) is a 48-year old 501c3 dedicated to a sound environmental policy for the Bronx. BCEQ is recognized as a vital environmental policy and research resource for advocates reviewing many city policies that impact water management, watershed protection, waterfront development, parkland, and the optimization of non-permeable space. We advocate for nature-based solutions to urban environmental problems, and evaluate both SNAD NA2 and the proposed SNRD for their contribution to these solutions.

Based on this evaluation, BCEQ finds that the Draft Environmental Impact Statement (DEIS) prepared in accordance with CEQR is fatally flawed and does not. BCEQ takes the position that CPC should adopt the NO ACTION alternative under this CEQR application. Abolishing Special Natural Areas District (SNAD) in the Bronx without a constructive environmental policy based on the measurement and function of natural resources is unacceptable. The DEIS contains no evidence that SNRD serves environmental goals. We urge CPC to call for a new DEIS or a supplement for the following reasons.

There is no scientific, quantitative calculation in the SNRD DEIS on the impact--past, present, or future--of the spread of impervious surfaces in the area. The Department of City Planning's (DCP) proposed change would allow property owners to increase impervious surfaces and lawns and other hard surfaces within sensitive buffers which will impair aquatic resources, alter existing wetland hydrology, and increasing thermal impacts. These actions were not examined in the proposed DEIS. If left unresolved, this mistake will hamper infiltration, increase storm water runoff velocity and, due to residential and/or commercial fertilizer use, dramatically increase nutrient loading to wetlands and waters. Because DCP did not recognize the scientific changes from the past decades, the critical nature of stormwater runoff's impact on the landscape, impervious surfaces were not examined, impacts were not identified, and no mitigation was proposed. This is a critical and fatal flaw. But it does not end there.

The DEIS fails to identify an environmental purpose for SNRD and does not document the need to change the current 1975 SNAD purpose, to "protect, maintain, and enhance their natural features" to the proposed SNRD goal, to "balance development and ecological goals;" No evidence has been provided for a change in SNAD; no reasonable and lower impact alternatives beyond the required No Action alternative are proposed. The DEIS restates policy instead of documenting the impact of SNAD through its many incarnations.

The DEIS reaches its no impact conclusion based on critical environmental policy mistakes and research gaps. It does not adopt the 30 % impervious surfaces in the Bronx SNAD, of such buildings and landscape areas, to ascertain the impact on the ecosystem; it does not define impervious surfaces, or its mitigation - green infrastructure; understand the engineering benefits of Green Roofs, which need deeper roots and therefore the minimum of 3 inches should be changed to a range of 8 to 12 inches; it does not establish a baseline of existing conditions, making it impossible to tell if the change from SNAD to SNRD will have an impact; it does not accurately list the community facilities and institutions in the SNAD, which effects the calculation of non-permeable surfaces, the number of lots and acres of the different categories of 10,000 sf, less than one acre, greater than one acre; it omits natural resources such as the Harlem and Hudson Rivers,

and Alderbrook stream from its Natural Resource map; it reverses the DCP's own 197a's recommended 2005 Zoning change for all SNADs from the 46,000 sf to 10,000 sf; it does not even mention the Long-Term Control Plans for Combined Sewer Overflows and MS4 or include letters from interested agencies as is customary, such as from the Departments of Environmental Protection, and Parks and Recreation, etc.; it does not explain why these changes are needed in SNAD NA-2 but no longer in Queens and Staten Island; and lastly, it remains categorized as a citywide DEIS for a citywide SNRD, contradicting the purpose of the updated ULURP and imposing policies designed for citywide natural resource management on a single district without adequately or accurately cataloguing its own natural resources.

This document begins with a list of "fatal flaws" in the DEIS that will make SNRD unable to serve as a natural resource management instrument. The document then evaluates the SNRD DEIS process meeting environmental policy (such as generic, impact assessment, comparative alternatives, etc.), and proposes the missing alternatives that are consistent with local community efforts and environmental research, that will improve the function of the natural resources in SNAD NA-2.

In the end, we support lowering impervious surfaces, and starting watershed protection with green infrastructure low impact development guidelines in support of natural preservation and restoration against sprawl.

We urge DCP to reconsider this flawed study of environmental impacts and to recognize SNRD as an equally flawed environmental policy. The purpose of the SNRD must be more rigorously defined, and a new or Supplemental DEIS must accompany it.

LIST OF COMMENTS OR FLAWS AND FAILURES OF THE SNRD DEIS

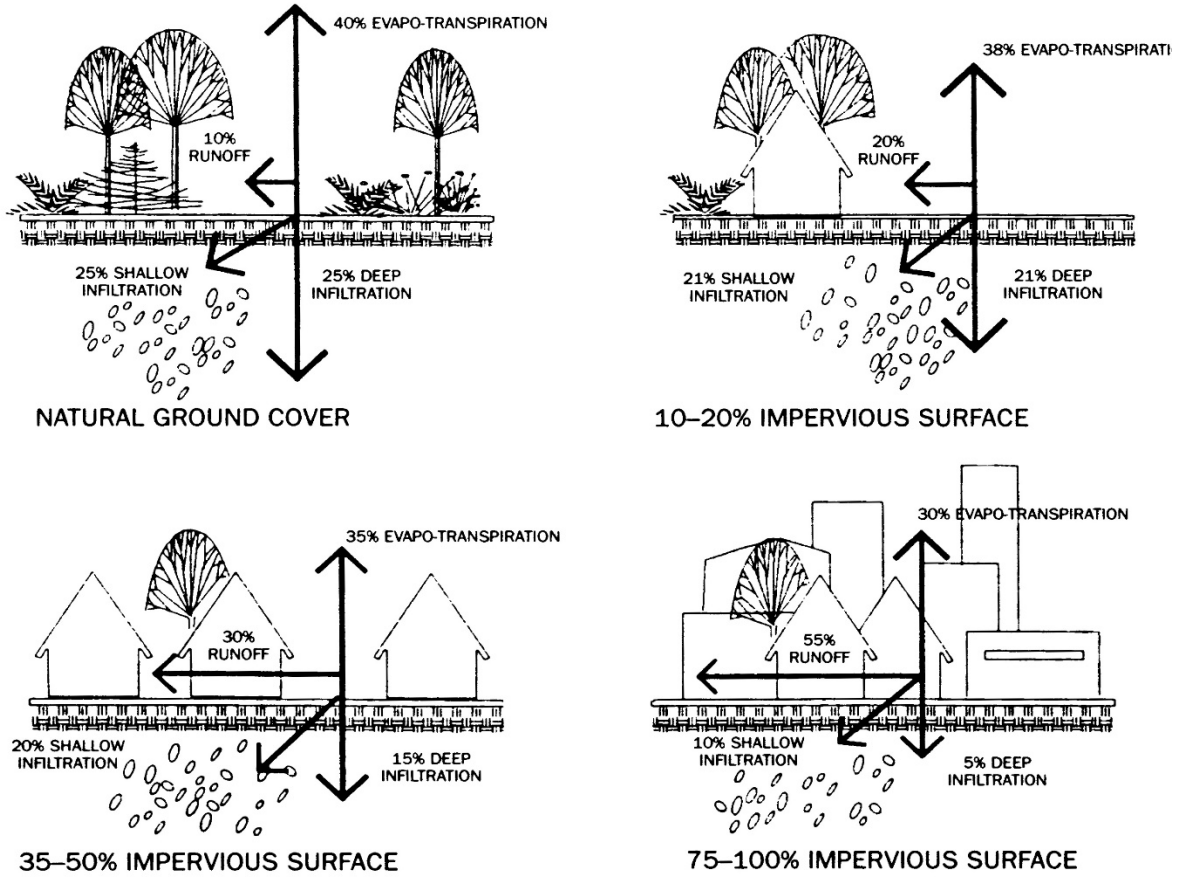
1. The DEIS neglects to explain the reason for a generic DEIS. It was commissioned as "citywide" but the SNRD is only for CD 8 in Bronx County. The DEIS draws conclusions from an application that no longer exists.
2. The DEIS fails to identify the reason for and explain the change from the 1975 SNAD purpose to "protect, maintain, and enhance their natural features" to the current one to "balance development and ecological goals." It claims the failure of SNAD, but fails to identify impacts and baseline characteristics to prove the reason for the change.
3. The DEIS fails to present a reasonable purpose and need. It states the purpose is to "provide a clear and consistent framework for natural resource preservation that balances neighborhood development and ecological goals." By all accounts, the previous framework was consistent absence an identified need. Reportedly, the workload will result in a 66% DCP reduction of applications, which the 5 applications in the Bronx last year, would reduce to 2. (see the difference in the *Zoning for Coastal Flood Resiliency Draft Scope of Work for an Environmental Impact Statement* in the Purpose and Need: "The city's flood risk will continue to increase with climate change, since sea level rise will increase the potential height of storm surges. For that reason, current building code standards that are tide to today's storm surge projections may not be sufficient to protect buildings from being damaged by future storms.")
4. The DEIS fails to consider reasonable and lower impact alternatives beyond the required No Action alternative. It fails to incorporate the universal request from the community to separate the Bronx SNAD from the other areas of the city which are more then four times the land acres, and involve many different zoning lots, uses, and sizes, into its "no impact" conclusion. It fails to consider the removal of the reversal of DCP's own 2005 zoning change to lower the threshold from 46,000 sf to 10,000 sf. It fails to consider any of the other recommendations that were presented in 2003 by the community board and community activists.
5. The DEIS fails to identify the 30 % impervious surfaces in the Bronx SNAD, of such buildings and landscape areas, to ascertain the impact on the ecosystem. It does not even define impervious surfaces, or its mitigating it with green infrastructure.
6. The DEIS fails to list community facilities in the SNAD, which caused us to create a quick list. (see Appendix for list of community facilities.) Without a complete list of community facilities, documentation of impervious surfaces is impossible.
7. The DEIS fails to establish baseline of existing conditions, making it difficult to tell if there is an impact under the present SNAD or under a future SNRD.
8. The DEIS fails to understand the engineering benefits of Green Roofs, which need deeper roots and therefore the minimum of 3 inches should be changed to a range of 8 to 12 inches.
9. The DEIS fails to present the New Zoning Resolution in a manner that the general public could understand, making it difficult to compare what was changed and what was inserted, as is customary. It does not reflect the updated SNRD A-Text; a "technical memorandum" is not sufficient to determine environmental impacts for a new zoning text. (see Appendix for examples of customary)

10. It fails to The DEIS neglected to identify the number of lots and acres of the different categories of 10,000 sf, less than one acre, greater than one acre, and community facility. It allows development on properties of less than one acre in affected areas to avoid City Planning review and the public participation which it entails, in favor of Buildings Department approval.
11. The DEIS omits natural resources such as the Harlem and Hudson Rivers, and Alderbrook. It was impossible to consider the extent to which their proposal would permit widespread development in areas previously determined ecologically sensitive and/or buffers alongside Alderbrook stream, the Harlem and Hudson Rivers.
12. The DEIS fails to examine the impact of reversing the DCP's own 197a's recommended 2005 Zoning change for all SNADs from the 46,000 sf to 10,000 sf.
13. The DEIS neglects to examine the impact or even mention the Long-Term Control Plans for Combined Sewer Overflows and MS4, or the indicators of those impacts – flooding problems which cause the increase use of salt during winter storms, thereby leading to the pollution of the parkland and adjacent waterbodies. Flooding, identified as a problem in Bronx CB8's 197a Plan, has never been solved.
14. The DEIS fails to include letters from interested agencies as is customary, such as from the Departments of Environmental Protection, and Parks and Recreation, etc. These letters will identify information that DCP may not be aware of.
15. The DEIS fails to explain why these changes are needed in the Bronx SNAD but the Queens and Staten Island SNADs are unchanged. It makes no mention of the environmental successes or failures in this locality and instead offers fact-free assertions of the need for SNRD.
16. The DEIS fails to explain why the one size fits all and relief from a burdensome cost of concern is needed for the Bronx SNAD or for Bronx residents.

MITIGATING THE IMPACT OF IMPERVIOUS SURFACES

BCEQ stands with environmental science in identifying the importance of infiltration and water balance to urban ecosystems. ***The most critical threat facing urban watersheds is the increase of impervious surfaces.*** The DEIS for SNRD must identify the extent and impact of impervious surfaces in the NA-2.

Water Cycle Changes Associated with Urbanization



Source: Environmental Protection Agency, *Guidance Specifying Management Measures for Sources of Nonpoint Source Pollution in Coastal Waters*, #840-B-92-002, 1993.

THE RUNOFF PROBLEM IN SNAD-NA2

The chart on the previous page illustrates the extent of the threat to the air, the soil, and the land -- flooding. Enforcement of unpermitted building practices remains the most serious problem. As the footprint of new buildings grow, runoff increases. In sections where development has flourished, flooding is more and more common from upland development causing flooding is on lowlands and by the waterbodies. This flooding increases pollutants going over the land and down drains leading to the Hudson River or the Harlem River. Stormwater flows across the roadway into a drain. When the rainfall is greater than the infrastructure can hold, rainwater collects.

Yet the SNRD DEIS fails to identify the fact that the SNAD has a 30 % impervious surface, lower than nearly any non-park district in the city. The SNRD in turn allows fifty percent impervious cover: too much for a natural area.

Alderbrook, 247th Street, Flooding Condition

Like other forms of pollution, good neighbors do not throw garbage on anothers' property. This is the basis for our long-standing legal system.

Comment from local homeowner in the Alderbrook area of the SNAD:

"When there is a heavy rain storm, local streets flood now because of run-off from Henry Hudson Parkway service roads and everything else that is paved and uphill from us."

Photo of flooded Alderbrook Road, south of 247th Street.

As stated in **Comment 5** at the end of this statement, the measurement of impervious surfaces through the history of the SNAD is missing from the DEIS. The impact of the increase of these surfaces, as measured by flooding and runoff, is also missing. Instead of using the environmental vocabulary, impervious, the DEIS refers to hard surfaces. This enables DCP to ignore the impact of runoff and impervious surface on the ecosystem. The document does not even define impervious surfaces, or the well-known policy of mitigating it with green infrastructure. While the city reaches 72% build-out, the SNAD managed to survive with only 30% impervious cover -- in spite of DCP's policy to allow applications 50% hard cover.[2] Fifty percent impervious cover is too much for a natural area.

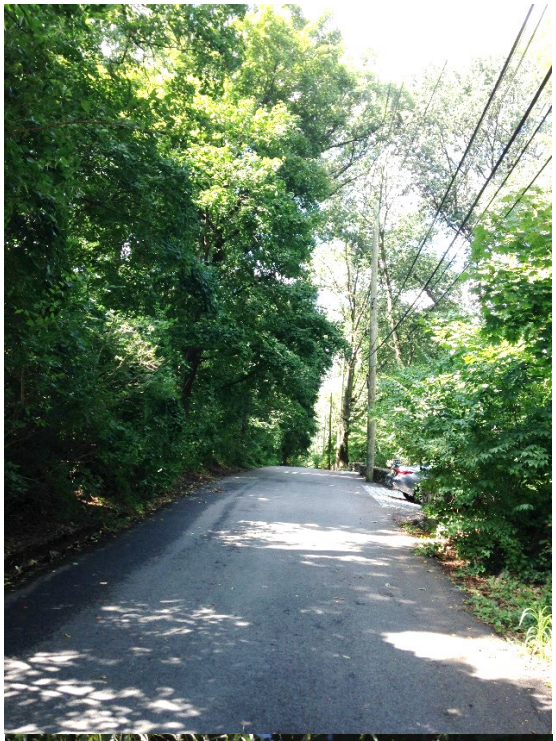
An email to BCEQ on 9/5/19 DCP, included in the Appendix, stated that "discretionary rules proposed for large sites to preserve and protect natural features are significantly stronger than today's rules. ….. the proposal will require preservation of up to 25-35% of large sites (1 acre or more) of habitat areas in perpetuity. Institutions will be required to preserve up to 50% of the site – up to 35% for existing habitat area and an additional 15% as open space. There is no such requirement under the current regulations. …. The proposal sets strict limits on hard surfaces on every site regardless of lot size or residential or institutional use (143-22). These limits do not exist under the current regulations." This is the opposite of what the agency stated in the Final Scope of Work.

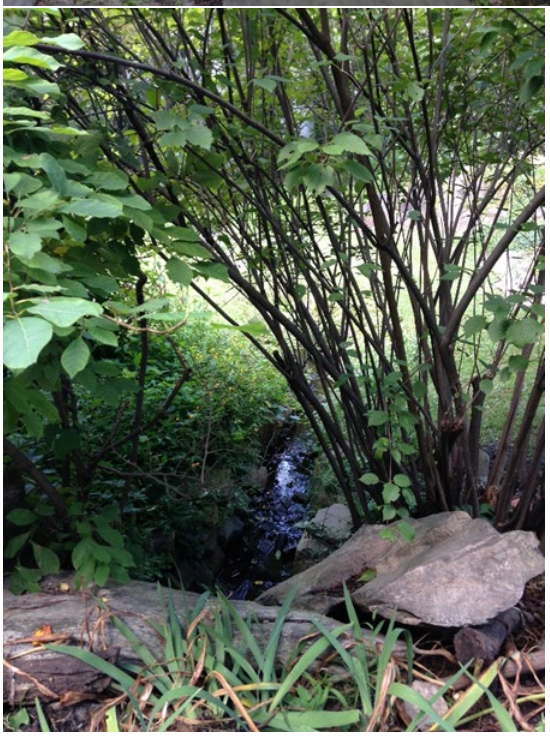
By omitting the Harlem and Hudson Rivers as Natural Resources, the DEIS does not reach or attempt conclusions about the impact of impervious surfaces and runoff on streets and waterways.

As stated in Comment 10 at the end of this report, the DEIS does not consider the Harlem and Hudson Rivers as potential natural resources impacted by SNRD, and omits the Alderbrook Stream. Because of this, it is impossible to consider the extent to which their proposal would permit widespread development in areas previously determined ecologically sensitive and/or buffers alongside Alderbrook stream, the Harlem and Hudson Rivers.

[2] FSCOW, page 25: "…..DCP ~~has~~ established a guideline that lots should generally have no more than 50 percent coverage by ~~impervious~~ hard surface areas ~~surfaces~~."

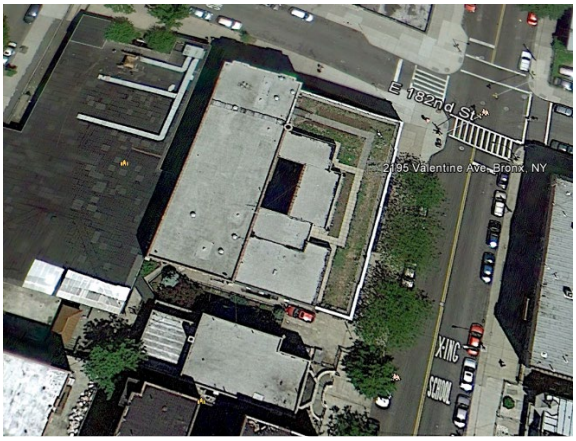
Photos from the area around the Alderbrook Stream. Homeowners limit grass areas and opt for natural porous edges along local streets and the stream's buffer. They use native plants and natural material for paths like slate which allows water to continue to percolate into the soil.





Without a measurement or record of the local runoff problems of SNAD NA-2, the DEIS cannot accurately propose or measure impacts of mitigation, such as green roofs.

As stated in **Comment 6**, the DEIS fails to understand the engineering benefits of Green Roofs, which need deeper roots and therefore the minimum of 3 inches should be changed to a range of 8 to 12 inches. The idea of a green roof is to capture rainfall. Plants have roots deeper than 3 inches.



Green Roof built in 2004 on top of St. Simon Stock School.

Children planting vegetables and flowers.

ENVIRONMENTAL SOLUTIONS FOR SNAD NA-2:

WATERSHED PROTECTION AND ECOLOGICAL SERVICES

Until the DEIS identifies the challenges created by past, present, and future development in SNAD NA-2 and the impact of impervious surfaces, ***the SNRD is a solution in search of a problem***. BCEQ urges the DCP to adopt a problem-solving approach for SNRD and the DEIS that is consistent with the local challenges facing SNAD NA-2. If the SNRD is to incorporate environmental science, it must first recognize the area as a watershed.

Indeed, the "Watershed Approach" gives us metrics and methods for measuring the impact of development on natural areas. It allows us to describe the stressors and geography, involve all stakeholders, and use adoptive measures to protect different Watershed Management Methods for the land, the landscape and the route water travels along the way. Low impact development and use of ecosystem services to keep the water *in situ* (where it falls) are two of the ways to do this. Ecosystem services are nature-based processes that mitigate imperviousness and stormwater by using Low Impact Development and Green Infrastructures.

The US EPA prepared a document[3] that what is nonpoint source pollution.

> "Many researchers have linked urbanization to degradation of urban waterways (e.g., Klein, 1985, Livingston and McCarron, 1992, Schueler, 1987). The major pollutants found in runoff from urban areas include sediment, nutrients, oxygen-demanding substances, road salts, heavy metals, petroleum hydrocarbons, pathogenic bacteria, and viruses. Livingston and McCarron (1992) concluded that urban runoff was the major source of pollutants in pollutant loadings to Florida's lakes and streams. Table 4-1 illustrates examples of pollutant loadings from urban areas. Table 4-2 describes potential sources of urban runoff pollutants."

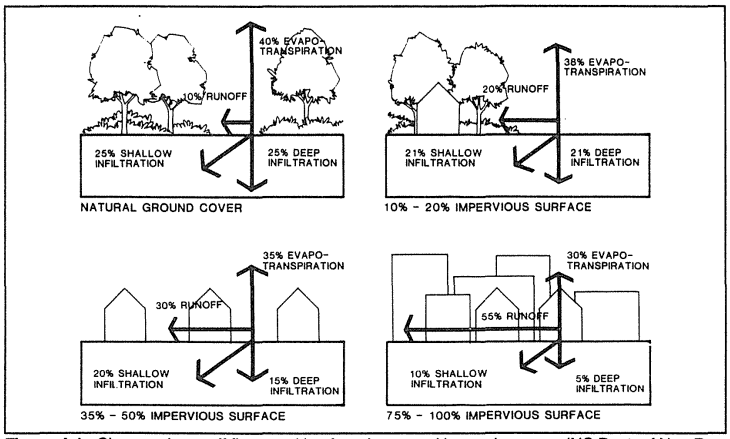


Figure 4-1. Changes in runoff flow resulting from increased impervious area (NC Dept. of Nat. Res. and Community Dev., in Livingston and McCarron, 1992).

[3] Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters EPA 840-B-92-002 January 1993, chapter 4 in Appendix, page 4-6

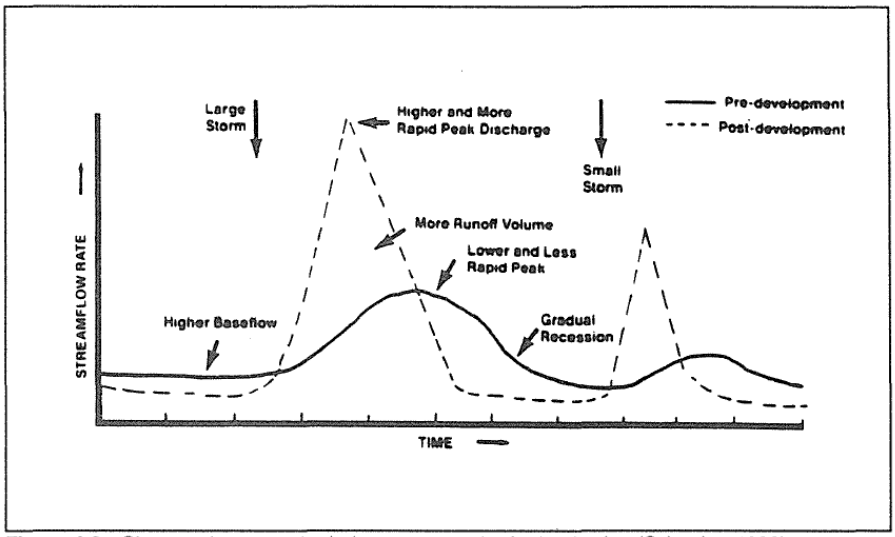


Figure 4-2. Changes in stream hydrology as a result of urbanization (Schueler, 1992).

Recently, there was an article describing The "Hidden Urbanization": Trends of Impervious Surface in Low-Density Housing Developments and Resulting Impacts on the Water Balance[4] in Front. Environ. Sci., 15 March 2019. It seems that impervious surfaces increase between planning and implementation.

> "Impervious surface is an important factor for the ecological performance of the built environment, in particular for the water balance. Therefore, the rainwater drainage infrastructure of new housing developments is planned according to the expected amount of impervious surface and the resulting surface runoff. Drainage infrastructure could be overwhelmed, however, due to small, dispersed, and often overlooked increases in impervious surface cover, a process we refer to as "hidden urbanization." There is some evidence that impervious surface cover in housing areas has increased significantly over decades, but is there also a gap between planning and implementation? In order to find out, we compared eight development plans (i.e., the legally binding documents that steer building in Germany) of low-density (single-family) housing with the actual status-quo extracted from 2016 orthophotos. All sites are located in Lower Saxony, Germany; four are close to major urban centers and four are in small municipalities. We then modeled the local water balance for the plans and status-quo and compared results. All sites but one showed a relative increase between 8 and 56% of impervious surface, comparing plans with status-quo. For all sites with an increase of impervious cover, infiltration rates decreased by 4–19%, evaporation rates increased by 0.2–1%and surface runoff increased by 4–18%. In general, the more impervious surface, the stronger the effect. Our results point to a gap between planning and implementation and they underline the environmental consequences, illustrated by effects on the water balance. In order to prevent "hidden urbanization," we suggest that more emphasis should be put on integrated design of housing areas and monitoring of impervious surface cover."

[4] https://www.frontiersin.org/articles/10.3389/fenvs.2019.00029/full (copy in Appendix)

In 2007, the EPA issued a memo entitled: "Using Green Infrastructure to Protect Water Quality in Stormwater, CSO, Nonpoint Source and other Water Programs" based on the NRDC report, Rooftops to Rivers.[5] The memo describes Green Infrastructure (GI) as listed below:

> "Green infrastructure approaches essentially infiltrate, evapotranspirate or reuse stormwater, with significant utilization of soils and vegetation rather than traditional hardscape collection, conveyance and storage structures. Common green infrastructure approaches include green roofs, trees and tree boxes, rain gardens, vegetated swales, pocket wetlands, infiltration planters, vegetated median strips, reforestation, and protection and enhancement of riparian buffers and floodplains. Green infrastructure can be used where soil and vegetation can be worked into the landscape. It is most effective when supplemented with other decentralized storage and infiltration approaches, such as the use of permeable pavement, and rain barrels and cisterns to capture and re-use rainfall for watering plants or flushing toilets. These approaches can be used to keep rainwater out of the sewer system to reduce sewer overflows and to reduce the amount of untreated stormwater discharging to surface waters. Green infrastructure facilitates or mimics natural processes that also recharge groundwater, preserve baseflows, moderate temperature impacts, and protect hydrologic and hydraulic stability."

In addition to the green roofs and those SNAD rain gardens, other GI solutions include porous asphalt. There is a permeable pavement parking lot Demonstration Site at the EPA Edison NJ Offices. Information on this and other GI solutions are in the Appendix. Rainbarrels are good to water your plants and control runoff and erosion. They can be connected to the down sprout, or just collect water.

[5] Rooftops to Rivers: Green strategies for controlling stormwater and combined sewer overflows (NRDC, June 2006) is available at: https://www.nrdc.org/sites/default/files/rooftops.pdf

PROMOTE ECOSYSTEM SERVICES

One way to address these threats is to take the Watershed Approach to describe the stressors and geography, involve all stakeholders, and use adoptive measures to protect different Watershed Management Methods for the land, the landscape and the route water travels along the way. Low impact development and use of ecosystem services to keep the water *in situ* (where it falls) are two of the ways to do this. Ecosystem services are nature-based processes that mitigate imperviousness and stormwater by using Low Impact Development and Green Infrastructures.

Dr. Paul Mankiewicz of the Gaia Institute described these ecosystem services in an article in the journal, Whole Earth:

> "*Soil is the key to clean water. Soil works as a physical strainer, a biochemical renovator, and a biological recycler of all wastewater passing through it. The story is as complex as a single cell or the biosphere itself. Besides a mix of grains of sand, silt, clay, and organic matter (humus), each teaspoon of rich soil contains a million to a billion bacteria, hundreds of thousands of protozoa, up to a hundred thousand or more algae, and up to millions of fungal strands…. The soil community eliminates pathogens, turbidity, and most color and taste problems in six ways: (1) it harbors creatures who out-compete the pathogens for food, as well as protozoa that prey on pathogens; (2) the soil, bacteria, and fungi produce antibiotics that poison pathogens (penicillin is produced by a soil mold); (3) the clay in the soil adsorbs viruses and other potential pollutants and the hydrophobic (water- repelling) surfaces adsorb uncharged particles that could degrade drinking water supplies; (4) the soil's texture and structure act as a physical strainer; (5) the soil environment is so different from the host which excreted the pathogen that the pathogens simply die from different moisture, temperature, acidity, and nutrient conditions; (6) the pathogens get trapped in the humus (the organic component of soil) where they eventually die from the extremes of wetness and dryness. Keep water in close contact with living soils as it flows from hill slopes to streams, and it is purified. …."*[6]

The National Oceanic and Atmospheric Administration (NOAA) described the impact of the stormwater pollutants:

> "*Salt marshes are one type of estuarine habitat that acts like an enormous filter, removing pollutants such as herbicides, pesticides, and heavy metals out of the water flowing through it (USEPA, 1993). In addition to pollutants, the same water often brings with it all of the nutrients from the surrounding watershed. A watershed, or drainage basin, is the entire land area that drains into a particular body of water, like a lake, river or estuary. The nutrients flowing into an estuarine habitat often provide for lush plant growth. For this reason, estuaries are some of the most fertile ecosystems on Earth. Yet, due to the pollutants they extract from waters running through them, they may also be some of the most polluted as well.*"[7]

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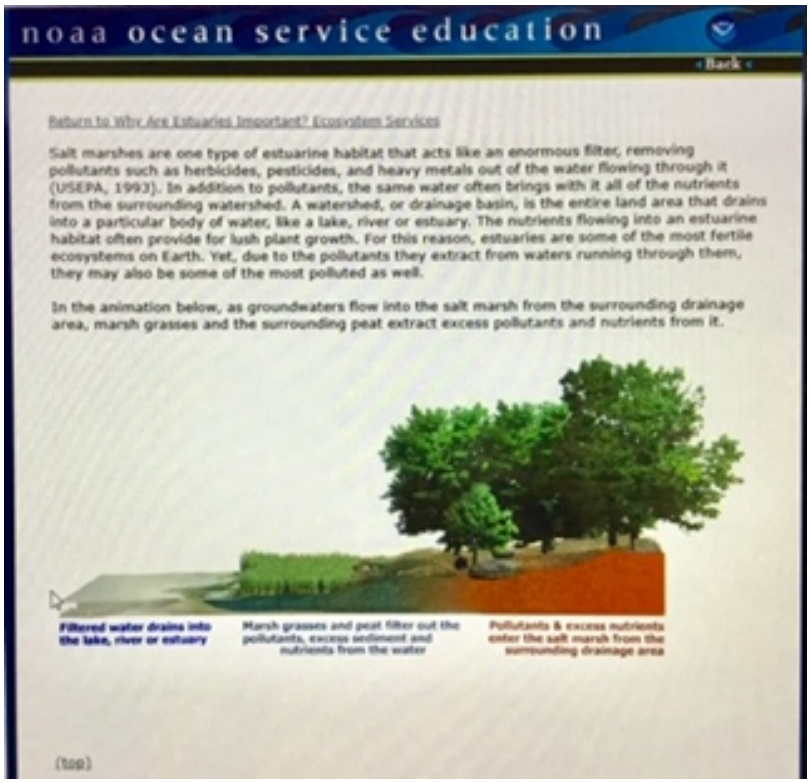
[6] "Can We Drink the Water We Live With?", Paul S. Mankiewicz, PhD., Whole Earth, Summer 1998 http://www.wholeearth.com/issue/2093/article/36/can.we.drink.the.water.we.live.with (see Appendix)

[7] NOAA report http://oceanservice.noaa.gov/education/kits/estuaries/media/supp_estuar03a_marsh.html (see appendix for photo)



In United Nations Secretary-General Kofi Annan's 2000 report to the UN General Assembly, We the Peoples: The Role of the United Nations in the 21st Century he urged for the Millennium Ecosystem Assessment. The objective was to assess the consequences of ecosystem change for human well-being and to establish the scientific basis for actions needed to enhance the conservation and sustainable use of ecosystems and their contributions to human well-being.

> "*The report presents a synthesis and integration of the findings … organized around the core questions originally posed to the assessment: How have ecosystems and their services changed? What has caused these changes? How have these changes affected human well-being? How might ecosystems change in the future and what are the implications for human well-being? And what options exist to enhance the conservation of ecosystems and their contribution to human well-being?*" [8]

The National Wildlife Federation web page has a section on Understanding Conservation and Ecosystem Services.[9] "*The value of nature to people has long been recognized, but in recent years, the concept of ecosystem services has been developed to describe these various benefits. An ecosystem service is any positive benefit that wildlife or ecosystems provide to people. The benefits can be direct or indirect—small or large*." Then they described the Types of Ecosystem Services from the Millennium Ecosystem Assessment (MA).

[8] (Ecosystems and Human Well-being Synthesis A Report of the Millennium Ecosystem Assessment, Forward, page ii; https://www.millenniumassessment.org/documents/document.356.aspx.pdf)
[9] (The National Wildlife Federation, https://www.nwf.org/Educational-Resources/Wildlife-Guide/Understanding-Conservation/Ecosystem-Services)

"Provisioning Services: …. Along with food, other types of provisioning services include drinking water, timber, wood fuel, natural gas, oils, plants that can be made into clothes and other materials, and medicinal benefits.

Regulating Services: Ecosystems provide many of the basic services that make life possible for people. Plants clean air and filter water, bacteria decompose wastes, bees pollinate flowers, and tree roots hold soil in place to prevent erosion. …. A regulating service is the benefit provided by ecosystem processes that moderate natural phenomena. Regulating services include pollination, decomposition, water purification, erosion and flood control, and carbon storage and climate regulation.

Cultural Services: As we interact and alter nature, the natural world has in turn altered us. It has guided our cultural, intellectual, and social development by being a constant force present in our lives. The importance of ecosystems to the human mind can be traced back to the beginning of mankind with ancient civilizations drawing pictures of animals, plants, and weather patterns on cave walls. ….

Supporting Services: The natural world provides so many services, sometimes we overlook the most fundamental. Ecosystems themselves couldn't be sustained without the consistency of underlying natural processes, such as photosynthesis, nutrient cycling, the creation of soils, and the water cycle. These processes allow the Earth to sustain basic life forms, let alone whole ecosystems and people. Without supporting services, provisional, regulating, and cultural services wouldn't exist.

In Focus: Wetlands

Wetlands are one of the most threatened ecosystems in the United States. We have lost more than 50 percent of wetlands in the contiguous United States. Just a quick overview of some of the services provided by wetlands shows how important they are to people and why we should work to protect and restore them.

Many of the fish we rely on for food spend at least part of their life cycle in wetland habitats. Wetlands retain and control flood waters. Wetland plants absorb nutrients and chemicals from the water, and they act as a natural filtration system. Wetland plants and soils store large amounts of carbon that, if released, would contribute to climate change. Wetlands are also a vital habitat for migratory birds, fish, and mammals, and their loss impacts recreation and biodiversity."

ADOPT A LOW IMPACT DEVELOPMENT GOAL AND METRIC FOR SNRD

This is the natural areas update to the **2006 BCEQ Doctrine of Low Impact Development**.[10]

A. Every development project surrounding area should make at least one environmental condition better and make none worse. In addition, new or re-development should prove:

1. Required and/or allowable parking incorporates the using the least number of spaces needed, not just as much as allowable.
2. No parking should be free, except for deliveries.
3. For redevelopment projects, no new parking spaces are allowed, unless developer meets the "Mitigation Trading Criteria."
4. Parking should be in a structure that is multi-level, enclosed with a natural green growth cover to capture rainfall, with scrubbers inside that will clean the air from the car exhaust.
5. Parking should not be sprawled over blacktop, or in an area that allows fumes to concentrate and impact the public.
6. Where there are large crowds, mass transit should be encouraged and, as an incentive, should be provided FREE to any and all who use the facility.

B. Brownfields should not be capped. Due to the Bronx soils, any hazardous clean up should be cleaned to the highest use, nothing less. Exception to this includes proposals with natural attenuation and scientifically documented biogeochemical processes with a proven record for cleaning and/or neutralizing the pollutant of concern.

C. Choose Stormwater Management practices at the highest success level but the lowest impact on nature. This means zero discharge of runoff from any property neighboring. This is also a simple good neighbor policy. It is not appropriate to just determine whether the sewer or drain has an adequate capacity, but it the storm drain should be an overflow, not a collector. The policy must be to capture and treat all rainfall prior to discharge onto another public or private property as it travels toward a waterbody in order to meet all Stormwater Regulations.

1. Stormwater Criteria should include methods to attenuate, convey, pre-treat, treat & polish stormwater runoff, paid for by the developer.
2. No untreated discharges to a waterbody outside the limits of the project site.
3. Multi-barrier watershed approach reduces pollutant loads from existing conditions.
4. Practices are arranged in "series" providing a "treatment train" prior to discharge from the project site.
5. Design provides oil spill/containment treatment.
6. Design includes both structural and nonstructural components compatible with the natural and constructed features of project site.
7. No net increase of impervious surfaces from the project within the watershed sub catchment basin.
8. Natural water capture through vegetated landscape; street cleaning is part of the treatment train.

[10] https://bceq.org/2006/06/10/bceq-doctrine-of-low-impact-development/

9. The Soil Erosion & Sediment Control Plan (SESCP) is limiting and confining the extent of disturbance to protect natural vegetation.
10. Annual stormwater facilities maintenance contract will be used to maintain the stormwater facilities, including green infrastructure.

D. Mitigated wetlands must be in the same sub-watershed basin. Mitigated wetland impacts will be monitored for 10 years.

E. Tree Mitigation Trading Criteria should be strictly enforced. Notice should be provided to town and the public. It should include:

1. Replacement should be by Tree Diameter – inch for inch. It does not matter if the tree is currently diseased or dead or even invasive, as long as the diameter is measured and included in the analysis.
2. It is not equivalent to replace older and larger trees with multiples of smaller ones. So, if the exact size is not available then the exchange should be "wood for wood" – that is the area of the new tree would be equal to the area of the old tree, or $\pi R2$ times the height.
3. Exception to the inch for inch tree replacement scenario would be an upgrade to a higher level of tree, that is, one that is: more efficient to clean air, drought and pollutant resistant, long living, or a multiple of five to one - using trees ¾ of the replacement diameter.

F. New housing development projects should be required to include street tree plantings as part of the builder's paving plan. If turf must be used (and particularly in sports areas), it should be replaced by credits toward green open space or roof top gardens within a 500-foot radius.
G. Establish rules to credit to businesses and homeowners who have rain barrels, rain gardens, and roof gardens, as they have to maintain the facility throughout the year.

H. ADOPT A WATERSHED FOR SNRD

It is hard to tell without establishing a baseline if any action is working. Therefore, we suggest the following baseline characteristics be developed - Imperviousness by lot, and total. Span information over time, Soil Type and combinations thereof, Population by Census tract in the SNAD, numbers of Small and Large Lots, and Institutions. A Community Advisory Committee should be established, which includes the community board, member of the SNAD community, local interested persons, community facilities stakeholders, elected officials, etc. Agency officials should be advisory and called in as needed. If the DCP recognized the importance of the Watershed Approach to protect and restore nature, they would have conducted the DEIS and its Scope better.

BCEQ COMMENTS ON THE DEIS FOR THE FEIS

COMMENT 1: The DEIS neglects to explain the reason for a generic DEIS. It was commissioned as "citywide" but the SNRD is only for Bronx County. The DEIS draws conclusions from an application that no longer exists.

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COMMENT 2: The DEIS fails to identify the reason for and explain the change from the 1975 SNAD purpose to "protect, maintain, and enhance their natural features" to the current one to "balance development and ecological goals." It claims the failure of SNAD, but fails to identify impacts and baseline characteristics to prove the reason for the change.

COMMENT 3: The DEIS fails to present a reasonable purpose and need. It states the purpose is to "provide a clear and consistent framework for natural resource preservation that balances neighborhood development and ecological goals." By all accounts, the previous framework was consistent absence an identified need. Reportedly, the workload will result in a 66% DCP reduction of applications, which the 5 applications in the Bronx last year, would reduce to 2. (see the difference in the *Zoning for Coastal Flood Resiliency Draft Scope of Work for an Environmental Impact Statement* in the Purpose and Need: "The city's flood risk will continue to increase with climate change, since sea level rise will increase the potential height of storm surges. For that reason, current building code standards that are tide to today's storm surge projections may not be sufficient to protect buildings from being damaged by future storms.")

COMMENT 4: The DEIS fails to consider reasonable and lower impact alternatives beyond the required No Action alternative. It fails to incorporate the universal request from the community to separate the Bronx SNAD from the other areas of the city which are more than four times the land acres, and involve many different zoning lots, uses, and sizes, into its "no impact" conclusion. It fails to consider the removal of the reversal of DCP's own 2005 zoning change to lower the threshold from 46,000 sf to 10,000 sf. It fails to consider any of the other recommendations that were presented in 2003 by the community board and community activists.

COMMENT 5: The DEIS fails to identify the 30 % impervious surfaces in the Bronx SNAD, of such buildings and landscape areas, to ascertain the impact on the ecosystem. It does not even define impervious surfaces, or its mitigating it with green infrastructure. Instead of using the wording, impervious, it is referred to as hard surfaces. This enables DCP to ignore the impact of runoff and impervious surface on the ecosystem. The document does not even define impervious surfaces, or the well-known policy of mitigating it with green infrastructure. While the city reaches 72% build-out, the SNAD managed to survive with only 30% impervious cover -- in spite of DCP's policy to allow applications 50% hard cover.[11] Fifty percent impervious cover is too much for a natural area.

In an email to BCEQ on 9/5/19 DCP (see Appendix) stated that "discretionary rules proposed for large sites to preserve and protect natural features are significantly stronger than today's rules. ….. the proposal will require preservation of up to 25-35% of large sites (1 acre or more) of habitat

[11] FSCOW, page 25: "…..DCP ~~has~~ established a guideline that lots should generally have no more than 50 percent coverage by ~~impervious~~ hard surface areas ~~surfaces~~."

areas in perpetuity. Institutions will be required to preserve up to 50% of the site – up to 35% for existing habitat area and an additional 15% as open space. There is no such requirement under the current regulations. …. The proposal sets strict limits on hard surfaces on every site regardless of lot size or residential or institutional use (143-22). These limits do not exist under the current regulations." This is the opposite of what the agency stated in the Final Scope of Work.

COMMENT 6: The DEIS fails to list the community facilities in the SNAD, which caused us to create a quick list. (see Appendix for list of community facilities.) Without a complete list of community facilities, documentation of impervious surfaces is impossible.

COMMENT 7: The DEIS fails to establish baseline of existing conditions, making it difficult to tell if there is an impact under the present SNAD or under a future SNRD.

COMMENT 8: The DEIS fails to understand the engineering benefits of Green Roofs, which need deeper roots and therefore the minimum of 3 inches should be changed to a range of 8 to 12 inches.

COMMENT 9: The DEIS fails to present the New Zoning Resolution in a manner that the general public could understand, making it difficult to compare what was changed and what was inserted, as is customary. It does not reflect the updated SNRD A-Text; a "technical memorandum" is not sufficient to determine environmental impacts for a new zoning text. (see Appendix for examples of customary)

COMMENT 10: The DEIS neglected to identify the number of lots and acres of the different categories of 10,000 sf, less than one acre, greater than one acre, and community facility. It allows development on properties of less than one acre in affected areas to avoid City Planning review and the public participation which it entails, in favor of Buildings Department approval.

COMMENT 11: The DEIS omits natural resources such as the Harlem and Hudson Rivers, and Alderbrook. It was impossible to consider the extent to which their proposal would permit widespread development in areas previously determined ecologically sensitive and/or buffers alongside Alderbrook stream, the Harlem and Hudson Rivers.

COMMENT 12: The DEIS fails to examine the impact of reversing the DCP's own 197a's recommended 2005 Zoning change for all SNADs from the 46,000 sf to 10,000 sf.

COMMENT 13: The DEIS neglects to examine the impact or even mention the Long-Term Control Plans for Combined Sewer Overflows and MS4, or the indicators of those impacts – flooding problems which cause the increase use of salt during winter storms, thereby leading to the pollution of the parkland and adjacent waterbodies. Flooding, identified as a problem in Bronx CB8's 197a Plan, has never been solved.

COMMENT 14: The DEIS fails to include letters from interested agencies as is customary, such as from the Departments of Environmental Protection, and Parks and Recreation, etc. These letters will identify information that DCP may not be aware of.

COMMENT 15: The DEIS fails to explain why these changes are needed in the Bronx SNAD but the Queens and Staten Island SNADs are unchanged. It makes no mention of the environmental successes or failures in this locality and instead offers fact-free assertions of the need for SNRD.

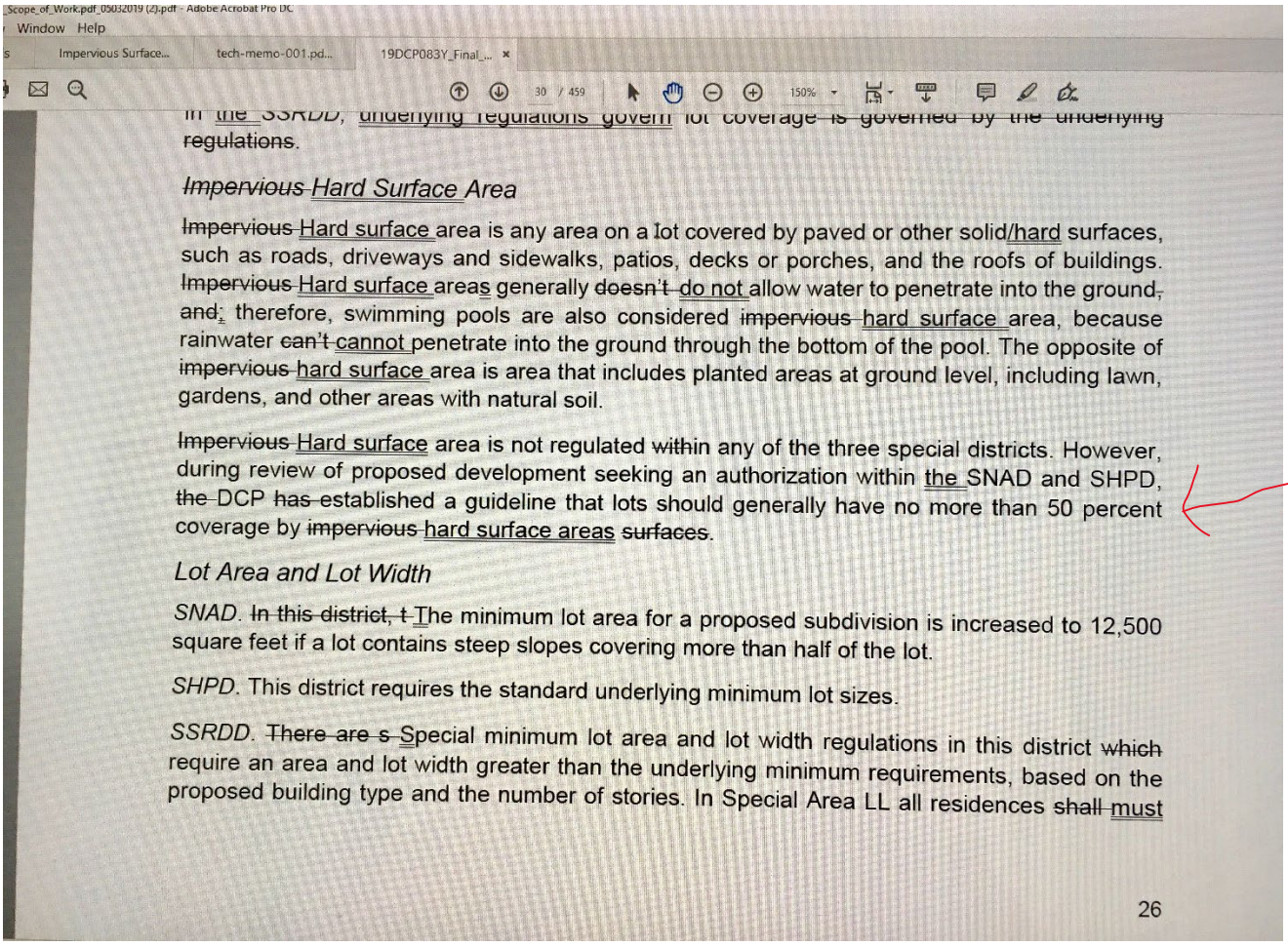
COMMENT 16 The DEIS fails to explain why the one size fits all and relief from a burdensome cost of concern is needed for the Bronx SNAD or for Bronx residents.

CONCLUSION

The City proposed to change the rules about impervious surfaces, by changing the wording in the zoning text, then choosing a guideline (of no more than 50 %) in an arbitrary and capricious manner without any scientific basis or municipal approval, and finally stating that they are not increasing development, when the opposite is true.

The Proposed Action crossed off the wording *impervious surfaces* to hard area surfaces, and that they have established a guideline of no more than 50% without any study or public comment period. The following is excepted from the text of the Final Scope of Work, page 25:

> DCP established a guideline that lots should generally have no more than 50 percent coverage by hard surface areas.



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~~In the SSRDD, underlying regulations govern lot coverage is governed by the underlying regulations.~~

~~Impervious~~ Hard Surface Area

~~Impervious~~ Hard surface area is any area on a lot covered by paved or other solid/hard surfaces, such as roads, driveways and sidewalks, patios, decks or porches, and the roofs of buildings. ~~Impervious~~ Hard surface areas generally ~~doesn't~~ do not allow water to penetrate into the ground~~,~~ ~~and~~; therefore, swimming pools are also considered ~~impervious~~ hard surface area, because rainwater ~~can't~~ cannot penetrate into the ground through the bottom of the pool. The opposite of ~~impervious~~ hard surface area is area that includes planted areas at ground level, including lawn, gardens, and other areas with natural soil.

~~Impervious~~ Hard surface area is not regulated ~~within~~ any of the three special districts. However, during review of proposed development seeking an authorization within the SNAD and SHPD, ~~the~~ DCP ~~has~~ established a guideline that lots should generally have no more than 50 percent coverage by ~~impervious~~ hard surface areas ~~surfaces~~.

Lot Area and Lot Width

SNAD. ~~In this district, t~~ The minimum lot area for a proposed subdivision is increased to 12,500 square feet if a lot contains steep slopes covering more than half of the lot.

SHPD. This district requires the standard underlying minimum lot sizes.

SSRDD. ~~There are s~~ Special minimum lot area and lot width regulations in this district ~~which~~ require an area and lot width greater than the underlying minimum requirements, based on the proposed building type and the number of stories. In Special Area LL all residences ~~shall~~ must

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The July 30, 2019 Technical Memo stated that there is a maximum percentage that now permits the applicant to increase BEYOND the unjustified 50% maximum to from 60% to 70 %.

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143-22
Hard Surface Area

The maximum permitted #hard surface area# for a #zoning lot# is set forth in this Section. For the purposes of applying the provisions of this Section, a #zoning lot# with 75 percent or more of its #floor area# allocated to #residential use# shall be defined as a #zoning lot# containing predominantly #residential use#.

R1 R2

(a) In the districts indicated, for #zoning lots# containing predominantly #residential use#, the maximum permitted #lot coverage# set forth in paragraphs (a) or (b) of Section 143-21 (Lot Coverage) shall determine the maximum permitted #hard surface area# in accordance with Table I of this Section. The maximum permitted #hard surface area# on a #zoning lot# shall not exceed the percent of #lot area# set forth in Table I.

TABLE I

PERMITTED PERCENTAGE OF HARD SURFACE AREA FOR ZONING LOTS CONTAINING PREDOMINANTLY RESIDENTIAL USE IN R1 THROUGH R2 DISTRICTS

Maximum permitted #lot coverage# (in percent)	Maximum permitted #hard surface area# (in percent)
12.5	40
15	45
17.5	45
20	50
22.5	50
25	50
30	65

R1 R2 R4 R6

(b) In the districts indicated, the maximum permitted #hard surface area# for all #zoning lots# not subject to paragraph (a) of this Section, shall be as set forth in Table II for the applicable zoning district.

TABLE II

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PERMITTED PERCENTAGE OF HARD SURFACE AREA FOR ALL OTHER ZONING LOTS

Zoning district	Maximum permitted #hard surface area# (in percent)
R1 R2 R4 R6	75

Then on September 5, CPC responded to comments from BCEQ and Friends and stated:

> The discretionary rules proposed for large sites to preserve and protect natural features are significantly stronger than today's rules. For example, the proposal will require preservation of up to 25-35% of large sites (1 acre or more) of habitat areas in perpetuity. Institutions will be required to preserve up to 50% of the site – up to 35% for existing habitat area and an additional 15% as open space. There is no such requirement under the current regulations.[12]

BCEQ Arugment
Given what we now know about impervious surfaces, watershed protection and green infrastructure low impact development guidelines, we can state that the purpose of the Proposed Action is to promote urban sprawl at the expense of natural preservation and restoration.

We found this interesting definition from the Encyclopaedia Britannica:

> **Urban sprawl**, also called **sprawl** or **suburban sprawl**, the rapid expansion of the geographic extent of cities and towns, often characterized by low-density residential housing, single-use zoning, and increased reliance on the private automobile for transportation. Urban sprawl is caused in part by the need to accommodate a rising urban population; however, in many metropolitan areas it results from a desire for increased living space and other residential amenities. Urban sprawl has been correlated with increased energy use, pollution, and traffic congestion and a decline in community distinctiveness and cohesiveness. In addition, by increasing the physical and environmental "footprints" of metropolitan areas, the phenomenon leads to the destruction of wildlife habitat and to the fragmentation of remaining natural areas.[13]

Add to that the impact of impervious surfaces as a result of such urban sprawl, is noted in the "Impervious Surfaces in the New York City Watershed" article by Marc Yaggi, Esq.:

> ….At the same time, sprawl degrades water quality, reduces biodiversity, reduces open space, and deteriorates existing hamlets and village centers. Sprawl also raises taxes by increasing the costs of roads, housing, schools, utilities, and transportation. Sprawl lowers the quality of life by decimating agricultural lands, natural areas and open spaces; concentrating poverty and accelerating socio-economic decline in cities, towns, and older suburbs; and increasing pollution and stress.' Furthermore, sprawl deteriorates civic life and the social fabric in the United States. Sprawl's greatest threat to water quality is the resulting increase in impervious surfaces.[14]

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[12] See Appendix for copy of the email.
[13] Urban sprawl, by John P. Rafferty at https://www.britannica.com/topic/urban-sprawl
[14] Impervious Surfaces In The New York City Watershed**, by** *Marc A. Yaggi at* Fordham Environmental Law Review, Volume 12, Number 3 2000 Article 12. (Footnotes not included for ease of reading. Full document is in Appendix)

Let's review the Proposed Action's wording. If natural areas begin to degrade at 10%, and are stressed at 20-35%, then increasing the guidelines to 50%, 65% or 70% hard surfaces is the real definition of hard-core sprawl. Promoting the Proposed Action negates the whole idea of preserving and or restoring restoration.

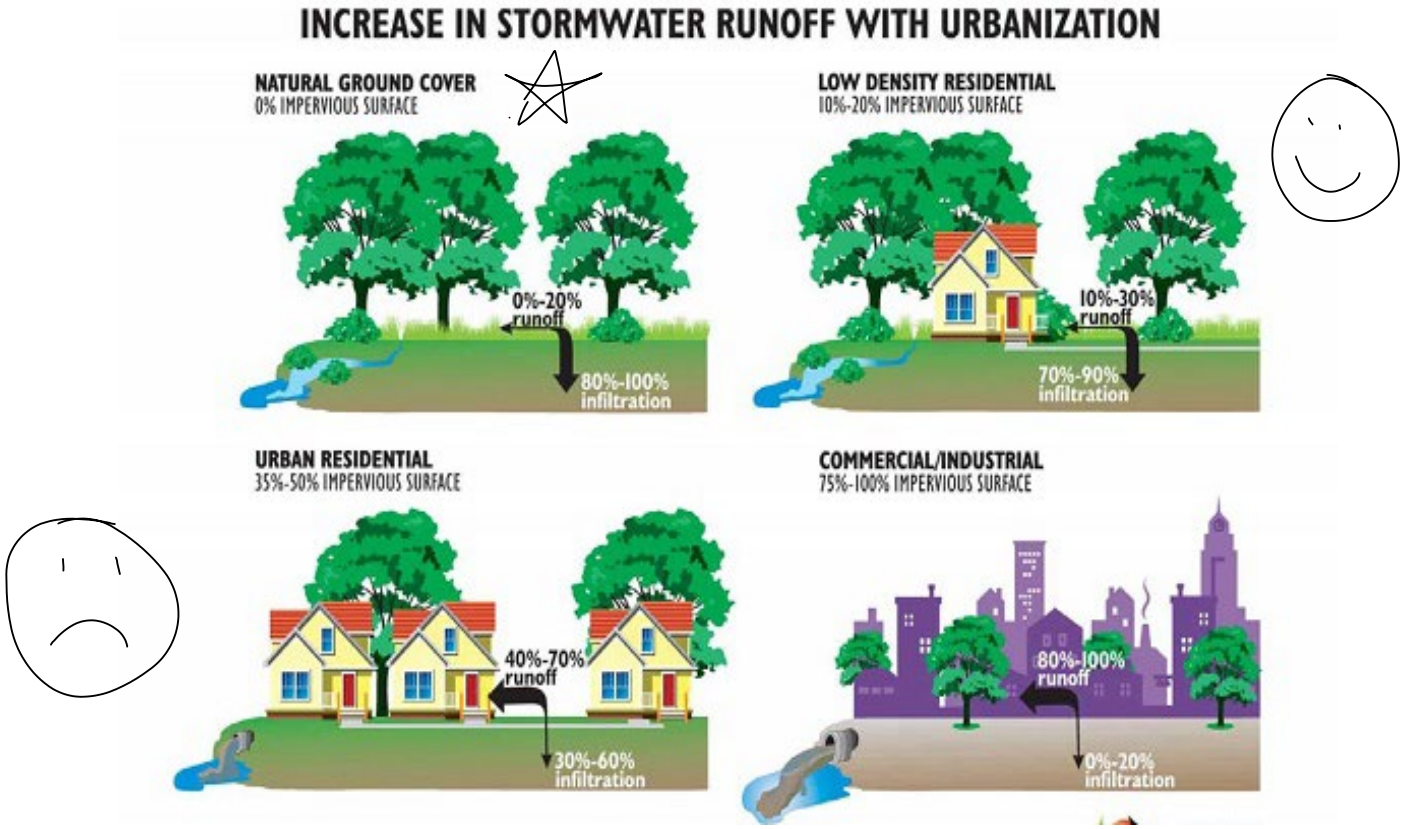
The City should not be surprised by this science argument – it is not new. Moreover, the City itself promoted these concepts on the upstate Drinking Water Watershed communities. They said they could not protect the water supply from development Westchester and Putnam County in the Croton Watershed. That area was the size of the City of New York itself, and had 180,000 people who lived on properties that were two to four acres!

The problem in the Croton Water Supply was so severe, that the City fought our community to build a plant to filter that water, spent over $4 Billion to do it, and took away 43 acres of land from the public in Van Cortlandt Park.

Development …. begets Development.

The most critical threat facing urban watersheds

is the increase of impervious surface.



Thank you for this opportunity to comment.

The Bronx Council for Environmental Quality seeks to establish — as an Inherent Human Right — a sound, forward-looking environmental policy regarding an aesthetic, unpolluted, environment protecting a natural and historic heritage. Founded in 1971, BCEQ is a non-profit 501(c)3 membership organization located in NYC's only mainland borough — The Bronx. We are a diverse collection of individuals all seeking to leave our great grandchildren better air, land, and water quality than we have at present. We are an all-volunteer group with no staff. www.bceq.org

Kindly respond to our comments to rsvp@bceq.org