

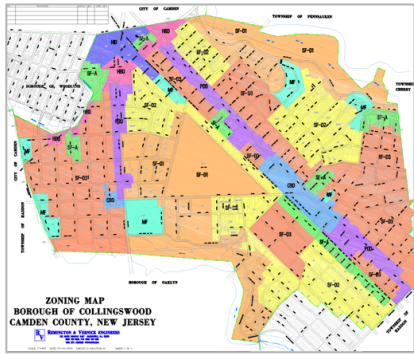
The Cumulative Effect of Zoning Variances on Stormwater Runoff

A Case Study

And a look at who really is in charge

Lorraine Prince
Newton Creek Watershed Association

Related definitions



Zoning

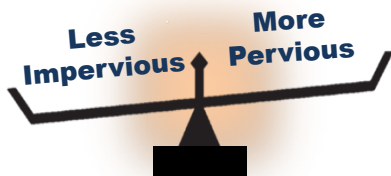
Local regulations that govern how property can and cannot be used.

Variance

An exception granted by a governing body to deviate from a zoning regulation.

Mitigation

An action taken to offset the impact of something.



Pervious surface

Allows fluids to pass through; permeable, porous. Examples: lawn, soil, sand, gravel

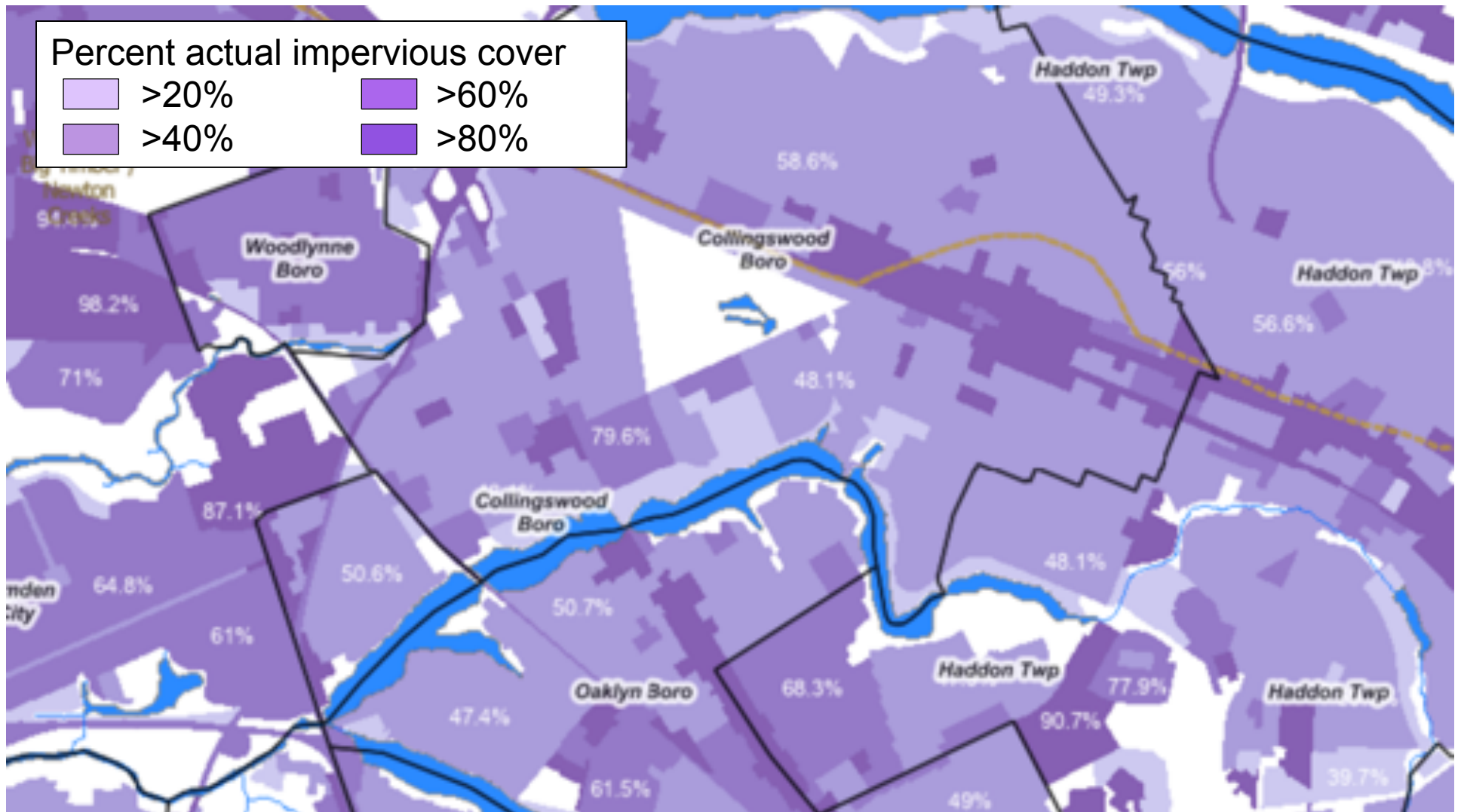
Impervious surface

Prevents fluid from passing through, impermeable, non-porous.

Examples: pavement, roofs, decks



In most older towns, impervious cover exceeds zoning regulations



Source: <http://www.njmap2.org/development/stormwater>

What is protecting our neighborhoods and waterways from flooding and pollution?



Collingswood, April 2014



Newton Lake, late summer 2020



Haddonfield, June 2019

Is it the new NJ stormwater control rules?

NO.

New ordinances recently adopted by many municipalities DO NOT address the “minor development” that increases impervious cover such as:

- Home additions
- Patios
- Driveway extensions
- New swimming pools
- And more...

Or is it our local Zoning Boards?

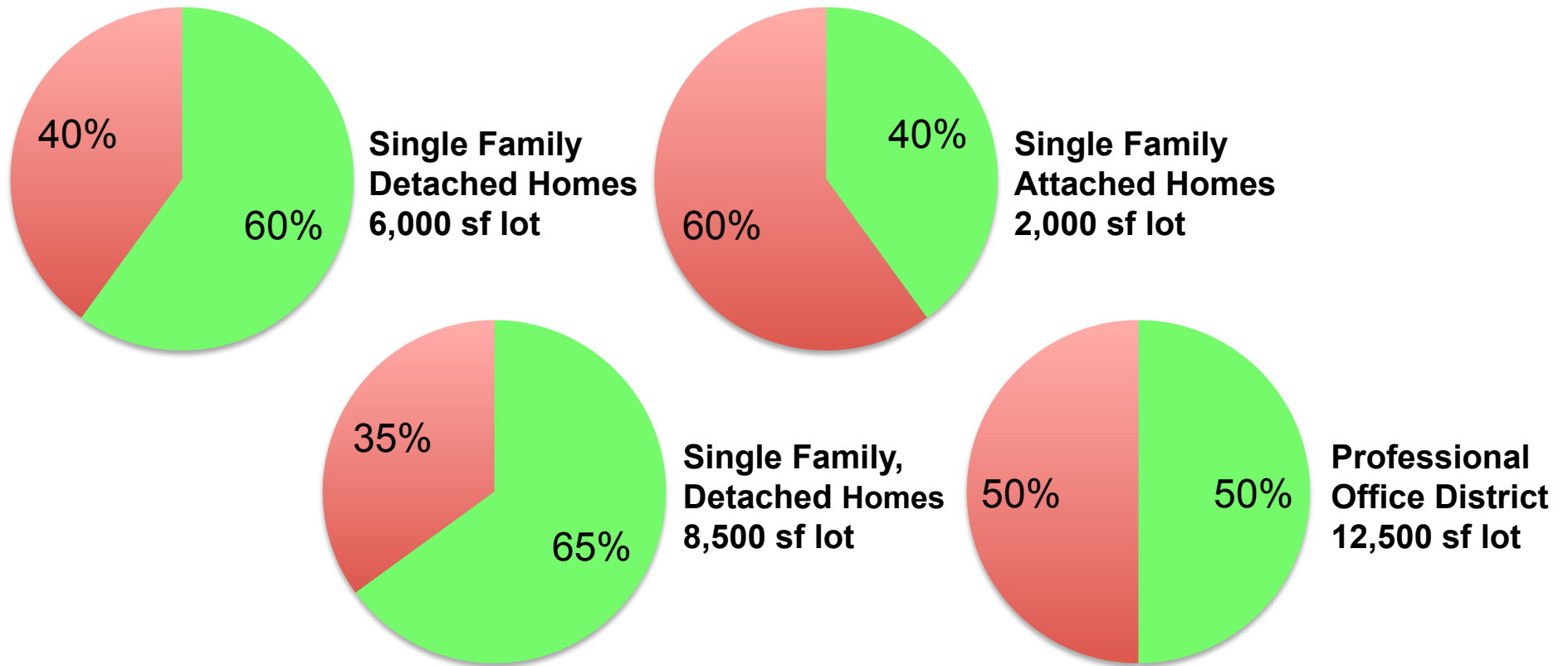


(Surprise! Yes it is, but they don't always know it)

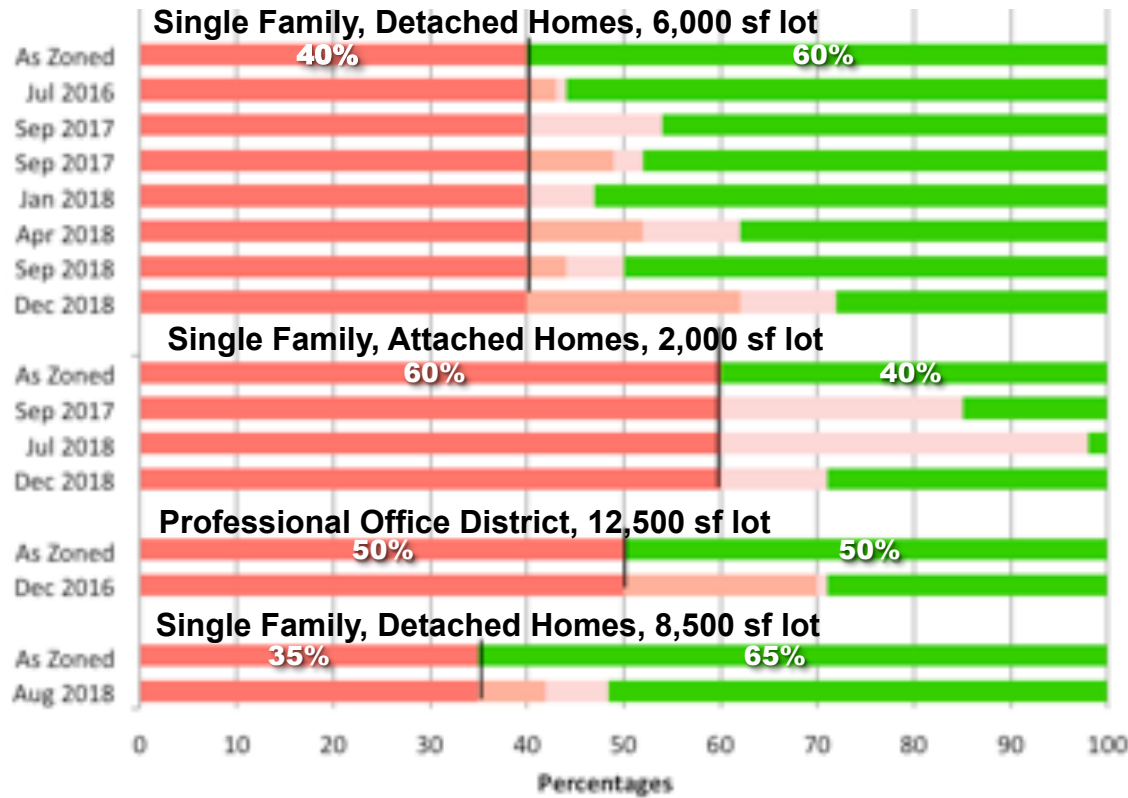
CASE STUDY

Typical zoning regulations for property coverage

Impervious Pervious



Case study: variances requested August 2016 to December 2018



- Impervious cover as zoned
- Increased impervious cover: Earlier Variances
- Increased impervious cover: Latest Variances
- Pervious cover

12
requests for variances were submitted and approved

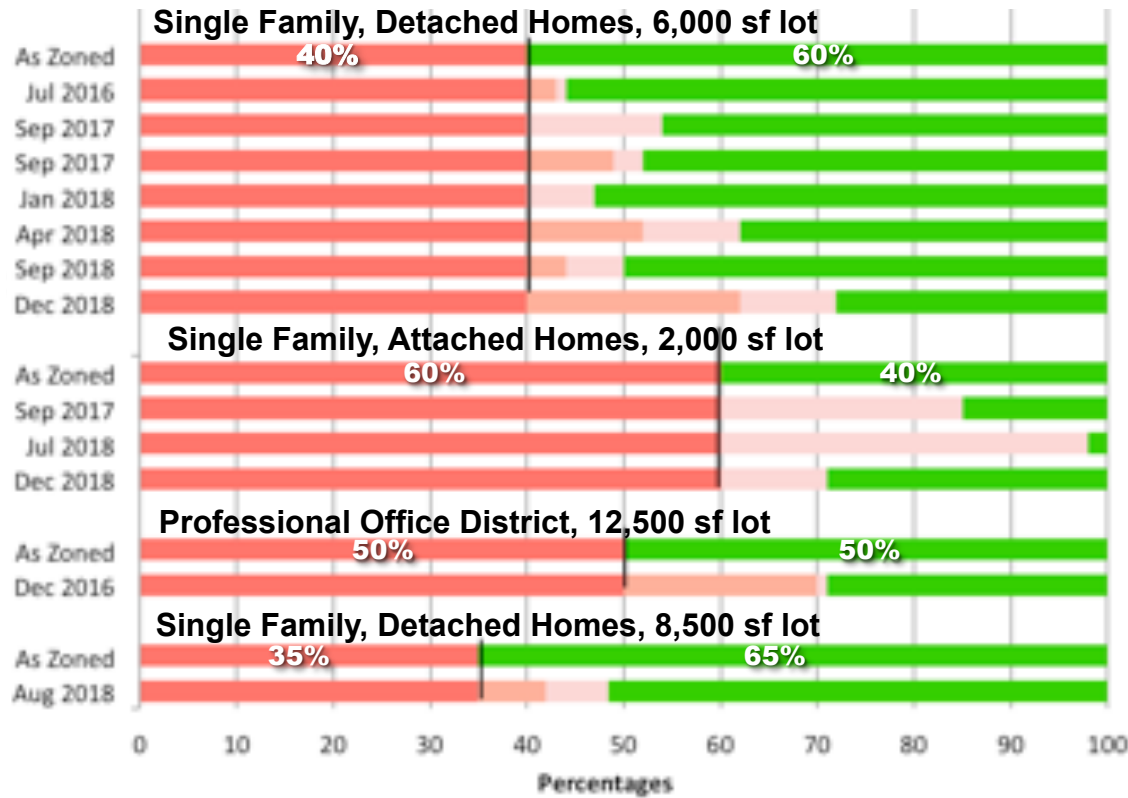
7 out of **12**
requests already exceeded the zoned percentages

1
variance was granted with mitigating conditions

■■■
average increase in impervious cover for the 12 properties that were granted a variance

Source: Borough of Collingswood, NJ

Case study: variances requested August 2016 to December 2018



- Impervious cover as zoned
- Increased impervious cover: Earlier Variances
- Increased impervious cover: Latest Variances
- Pervious cover

12
requests for variances were submitted and approved

7 out of 12
requests already exceeded the zoned percentages

1
variance was granted with mitigating conditions

11%
average increase in impervious cover for the 12 properties that were granted a variance

Source: Borough of Collingswood, NJ

Effects of a **1 percentage point** increase of impervious cover for a 6,000 sq ft property

Impervious surface is increased by;

60 sq ft

Equivalent to 1/4 of a driveway (approx)



Every 1-inch rainfall produces runoff equaling:

36 gallons

Equivalent to two-thirds of a steel drum



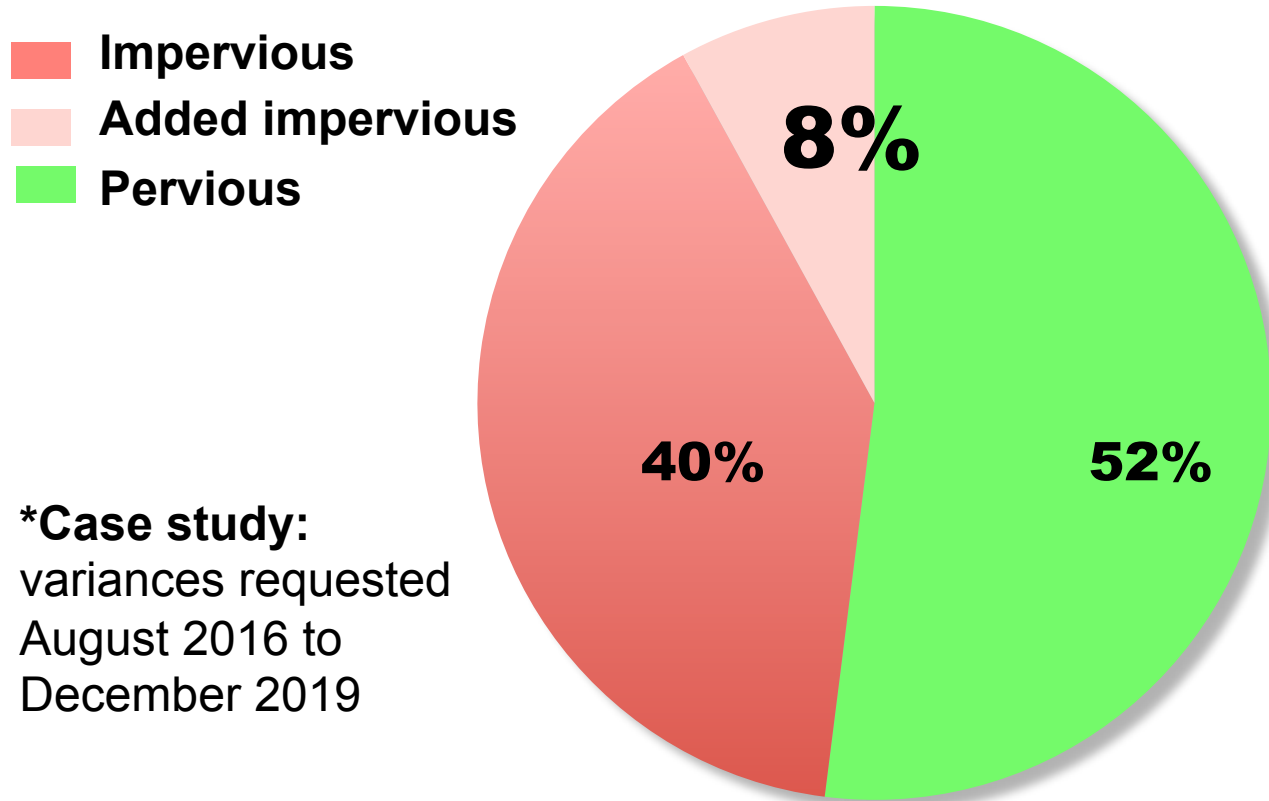
Average yearly rainfall in Camden County is 45 inches per year -so- rainwater runoff in one year is increased by:

1,620 gallons

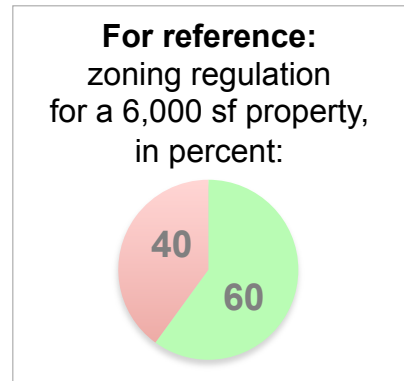
Equivalent to approximately 29 steel drums or 6 kiddie pools (approx)



For each of the seven 6,000 square foot properties, impervious cover increased, on average, **8 percentage points** beyond zoning regulation



***Case study:**
variances requested
August 2016 to
December 2019



Results of an **8 percentage point** increase of impervious cover for each 6,000 sq ft property

Impervious surface is increased by:

480 sq ft

Equivalent to 2 driveways or 1 medium-size home addition



Every 1-inch rainfall produces runoff equaling:

288 gallons

Equivalent to 5 steel drums (approx)



Average yearly rainfall in Camden County is 45 inches per year -so- rainwater runoff in one year is increased by:

12,960 gallons

Equivalent to approximately 236 steel drums or 1 swimming pool



Because of increased impervious cover on these* seven properties, stormwater run-off will be increased by **90,720 gallons** every year

Equivalent to nearly 1/3 of a municipal swimming pool



*Case study: 7 of the 12 variances requested August 2016 to December 2018

Case study: comments from the local Zoning Board regarding approved variances

“The variance relief requested can be granted **without substantial detriment** to the public good and **without substantial impairment** to the intent and purpose of the zone plan and zoning ordinance”

“The benefit to be obtained from the proposed improvement will substantially **outweigh any detriment** that may be deemed to result from same.”

It's time “**detriment**” was re-defined by zoning officials to consider the effects of excess stormwater.

Source: Borough of Collingswood, NJ

Granting a variance that allows for the increase of impervious cover without requiring mitigating conditions is inviting a flood of problems

Most Zoning Boards do not require mitigations

(Impervious cover is **FOREVER**)

Nevertheless, zoning boards should not be the de-facto regulators of impervious cover.

Municipal governments need to address the minor development part of the new stormwater rules.

The takeaway:

- 1.** Make sure your zoning board considers increased impervious cover to be a detriment to your community.
- 2.** Advocate for mitigating conditions when variances that increase impervious cover are granted.
- 3.** Advocate for the inclusion of the “minor development” clauses in your town’s new stormwater ordinances.

Let's continue this dialogue



Thank you!

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