

# Low Impact Development:

## The Marriage of Quantity, Quality and Stream Channel Protection

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Potomac Watershed Roundtable

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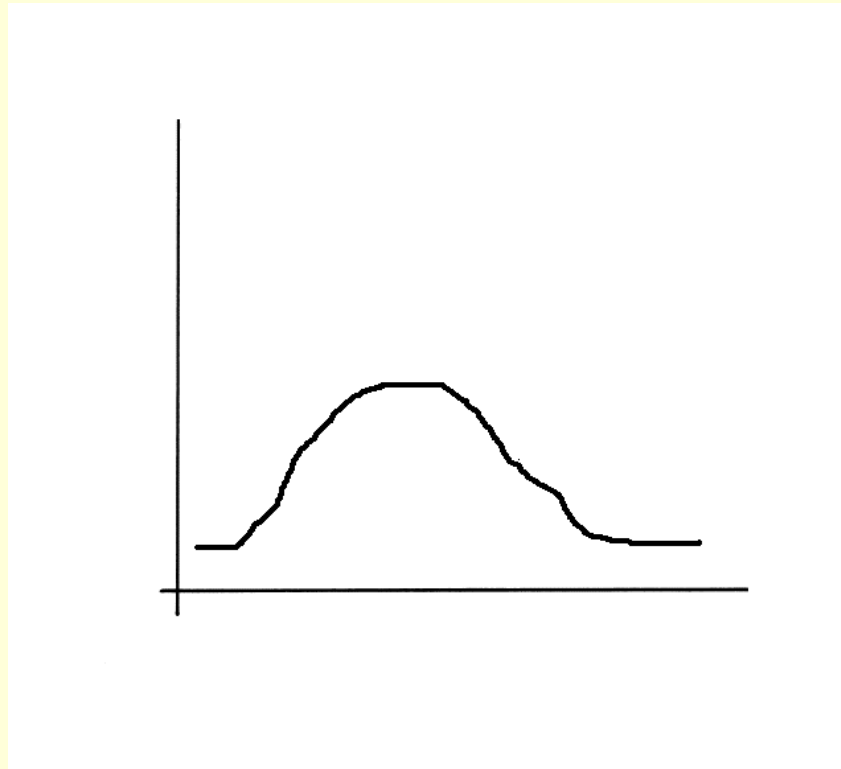
# Discussion Points

- Set the stage for today's discussions
- Low Impact Development
  - What it is & What it isn't.
- What needs to happen to get from here to there.

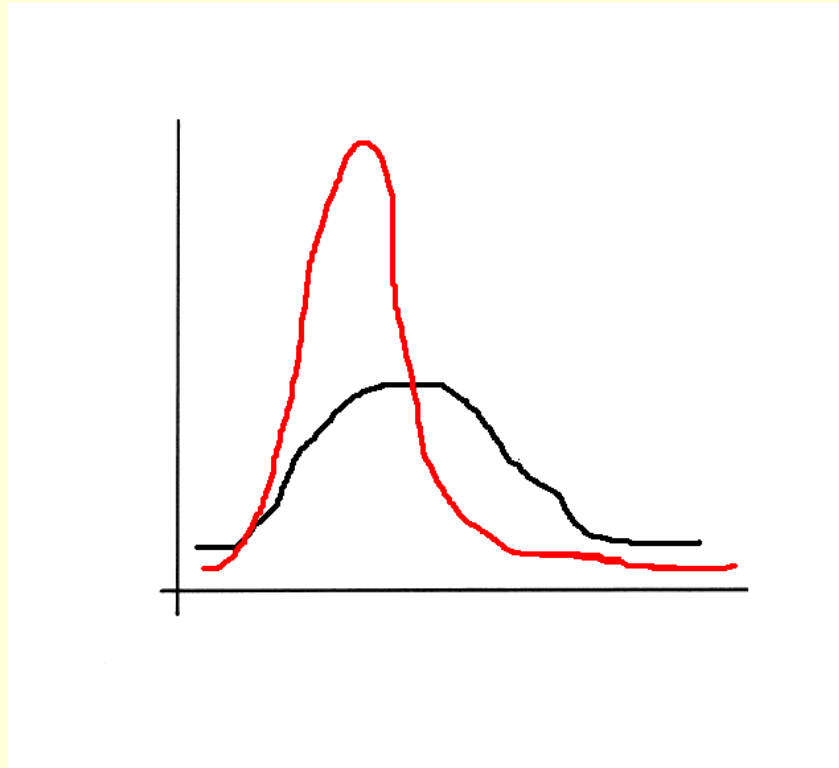
# Why We Manage Stormwater

- Flooding on your property
  - Flooding on the neighbor's property
  - Stream channel protection
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- Water quality

# Hydrograph

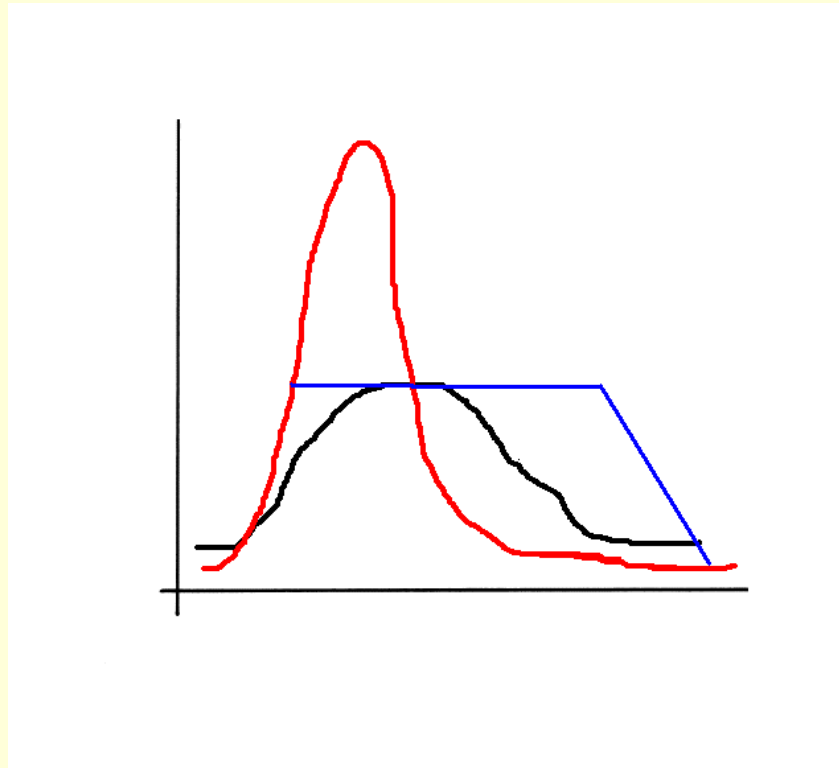


# After Development



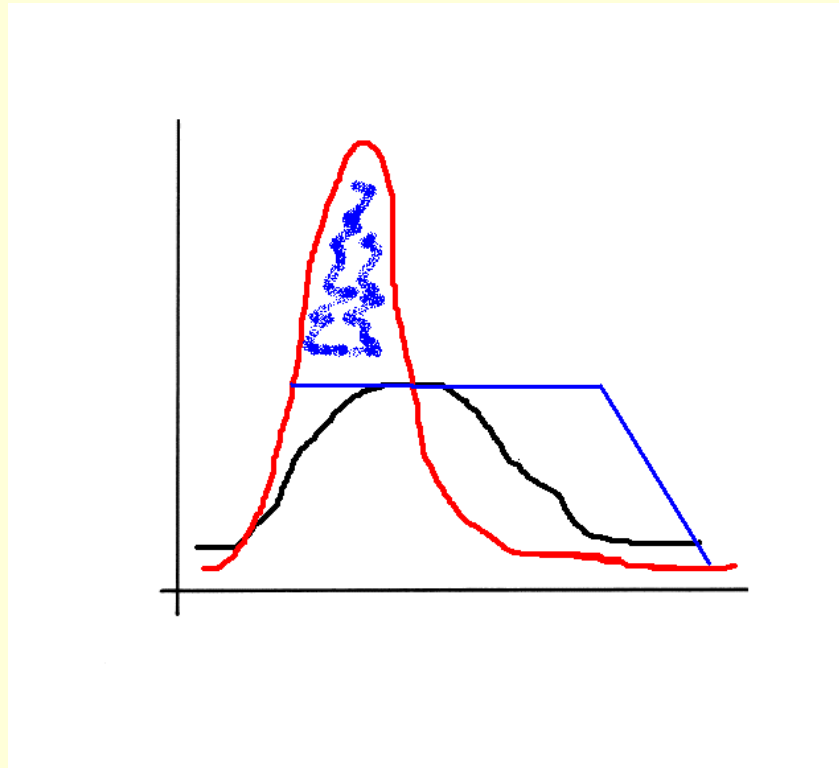
- More Water
- Higher Peak
- Lower Base Flow

# Detention



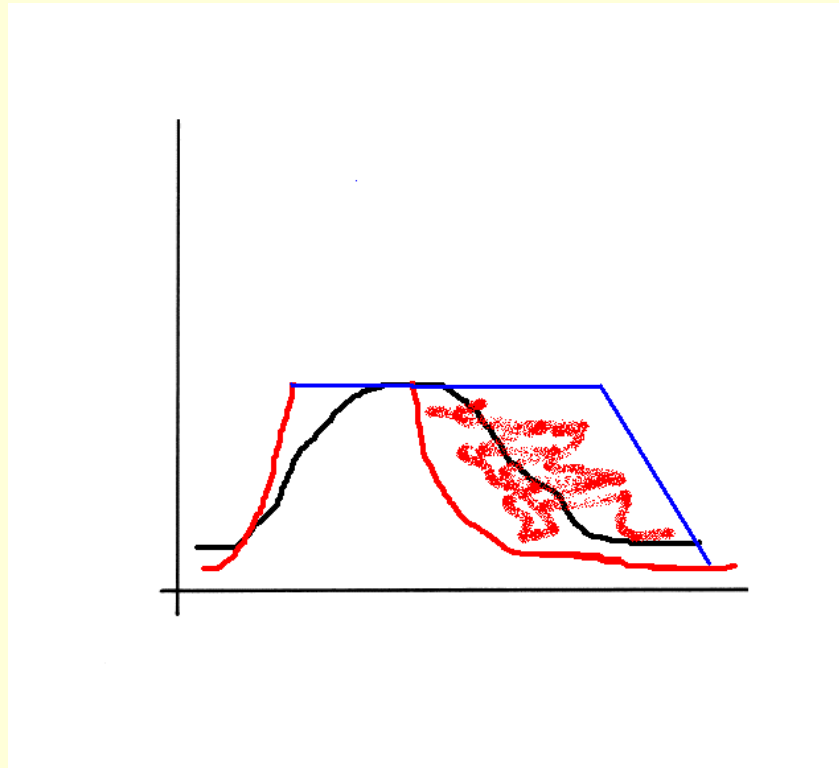
To protect the neighbor's property

# Detention



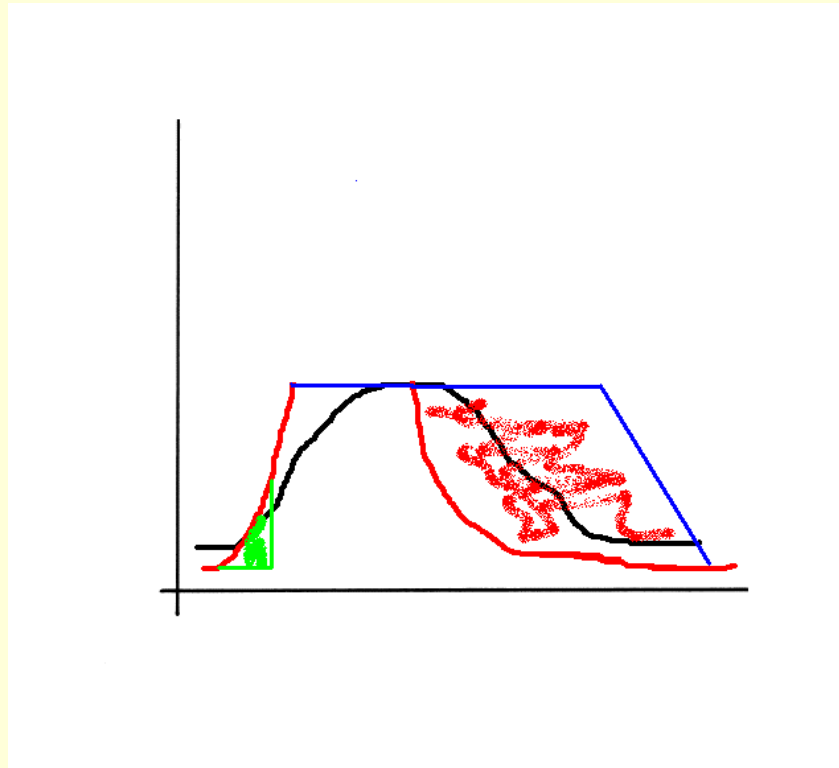
Lowers the flood peak

# Detention

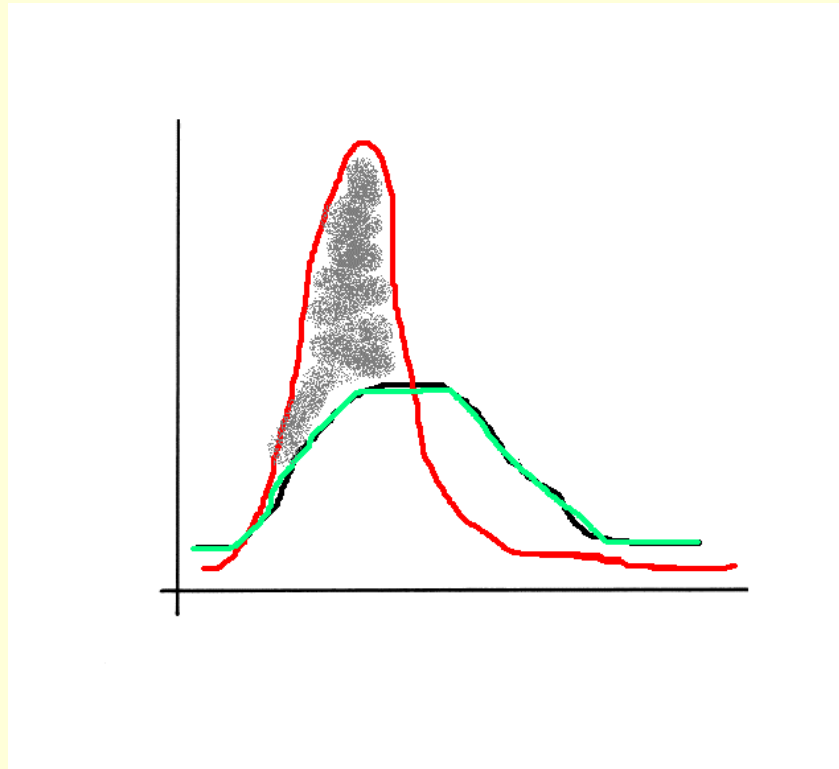


Lengthens the Peak

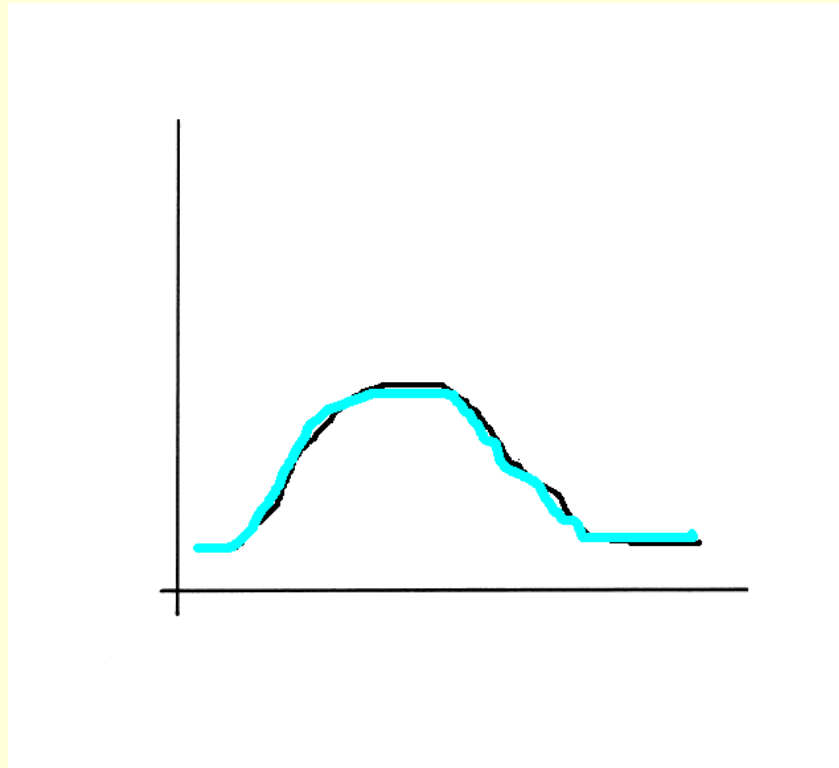
# Water Quality Protection



# Low Impact Development



# Low Impact Development = Comprehensive Stormwater Management



- Infiltrates/Filters Water
- Lowers the Peak
- Increases Base Flow

The Low Impact Development design philosophy aims to recreate the predevelopment hydrology.

# Low Impact Development

- Designs to accommodate nature
  - Conservation of natural/delicate areas & flow paths
    - Ian L. McHarg's "Design with Nature"
- Minimizes impervious surfaces
- Designs for pollution prevention
- Includes small distributed practices (BMPs)

# LID Can Address...

- Quantity of water
  - Flooding properties
- Quality of Water
  - Meeting Chesapeake Bay Requirements
- Stream Channel Protection
  - Recreating the predevelopment hydrograph



# However, LID is not a panacea.

- Physical
  - Problematic if your site does not infiltrate
  - Problematic if your site is a redevelopment/infill site
- Institutional
  - How do you design “with nature”?
  - How do you evaluate those designs?
  - How do you oversee an LID site for its lifetime?
  - Who maintains what could be a myriad of small distributed practices across a jurisdictions?





# LID Supplement to the Northern Virginia BMP Handbook

1. How do you design “with nature”?
  2. How do you evaluate those designs?
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- All Northern Virginia Municipalities
  - Including Fauquier & Stafford Counties



# Goals for the Supplement

- Create a common denominator for plan reviewers & developers
- Meet the current requirements of the State
  - Chesapeake Bay
  - Minimum Standard MS-19
  - “Encourage LID”
- Add another stormwater tool to the toolbox



# Limits to LID Supplement

- Locality stormwater ordinances are varied and robust.
- Will the state accept it?
  - Will a local or regional approach satisfy MS-19?
  - Will MS-19 change to accommodate LID?
  - How do a series of practices work together?
- How do you accommodate a “hybrid” LID site?

# Takeaway Thoughts

- Localities desire to include LID as one tool in their toolbox for addressing stormwater management.
- LID is not a panacea. It's not a perfect tool and it comes with some institutional baggage.
- Localities are stymied until the state can chart the course for LID implementation.



The End

