What this session will cover

- The basics of land development regulations
- The basics of stormwater requirements
- How traditional codes dictate lot coverage
  - Drawing exercise
- A Look At a Model Stormwater Ordinance
  - Reading exercise
- When the ordinance worlds collide & why people are nervous
  - "Zoning - meet Stormwater. Stormwater, - meet Smart Growth"

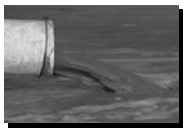
What Do Traditional Land Development Regulations Control?

- Type and mix of uses (or lack of mix)
- Lot size requirements
- Building type, size and height
- Building setbacks
- Parking
- Infrastructure

Examples of Land Development Regulations

- State laws
- Zoning Ordinances
- Building Codes
- Subdivision Regulations
- Street Standards
- Parking Requirements
- Comprehensive Plans

How Stormwater Came to be Regulated



In the 70's - Water pollution control began by regulation of point sources – for example, factories

To control point sources – EPA developed permits that allowed factories to discharge water to waterbodies

however …

Most pressing water problems arise with non-point source pollution

A stormwater permit was created for Larger cities in 1990 – Phase I

Medium and small cities in 2003 - Phase II

In essence – cities are treated as if they are factories when it comes to stormwater

How does a Municipal NPDES Permit Work?

- Clean Water Act
  - Federal permit program is NPDES
  - National Pollutant Discharge Elimination System
  - Permitting delegated to most states
  - The states develop the permit and requirements needed to obtain coverage
  - Permit leads to local stormwater management plan
  - Local stormwater management plans spell out requirements for managing stormwater
- Who must apply?
  - Cities that meet certain population and density requirements - "MS4s"

What Matters for Smart Growth - Six “Minimum Measures”

- Public Outreach and Education
- Public Involvement and Participation
- Illicit Discharge
  - Identification & Elimination
- Construction Site Runoff
- Post Construction Runoff Minimization
- Pollution Prevention and Good Housekeeping Measures

- Important -
  (1) The measures are met by selecting “Best Management Practices”
  (2) Adopted by “ordinance or other regulatory means”
  (3) Each of these must be spelled out with measurable goals.

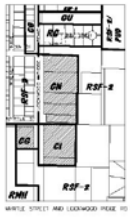
Post Construction Runoff Minimization

Controlling runoff over the life of the project

- Most important for smart growth
- The Good
  - Many smart growth techniques have been listed in model codes, guidance, BMP manuals
  - Smart growth’s attention to compact design is good for minimizing disturbance & development footprint
  - Many permits favorable to redevelopment
  - Calls for narrow streets, less parking

The “In Certain Circumstances” Not so Good
- Emphasis on on-site infiltration infeasible in urban areas
- Many favored techniques require lots of land
- Many permits not favorable to redevelopment
- Many permits still look at control project by project

Drawing Exercise



- Go over typical zoning code for neighborhood commercial
  - **purpose**
  - **uses**
  - **density, bulk, setbacks height regulations**
- **Parking**
  - **Sometimes embedded in zoning**
  - **Often separate**


ADT


7
ELEVEN


ACE
HIGH
PERFORMANCE


TASTE PARADISE! NEW KONA BLEND COFFEE


CLARENDON

Reading Exercise

- Maryland Model Stormwater Management Ordinance
- Refers to larger design manual
- July 2000
  - **Purpose, intent, authority**
  - **Definitions**
  - **Applicability**
    - **exemptions, waivers,**
  - **Discussion on treatment of development and redevelopment**

Important Logic

- Exemptions from Baseline Requirements
  - supported categories
- Waivers from Baseline Requirements
  - 1) waiver if MS4 following larger plan
  - 2) hardship or impracticality
  - Alternative Measures
    - fees, participation in off-site measures
    - other

Maryland Stormwater Design Manual , Volumes I & II

Environmentally Sensitive Development

- Credit is given (to avoid structural practices) when a group of environmental site design techniques are applied to low density or residential development.

- *total site impervious cover is less than 15%,*
- *clustering*
- *disconnected rooftop runoff*
- *grass channels versus curb and gutter*

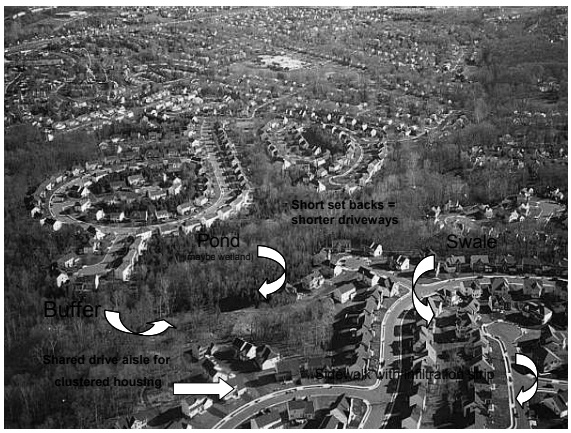
In addition…...

For residential

- Narrower residential road sections
- Shorter road lengths
- Smaller turnarounds and cul-de-sac radii
- Subdivisions with open space
- Smaller front yard setbacks
- Shared parking and driveways

For commercial

- Smaller parking stalls
- Angled one way parking
- Narrower sidewalks
- Permeable spill-over parking areas
- Smaller parking demand ratios



What could it mean for infill?

- Environmentally sensitive?
  - Mix of uses
  - multi-modal
  - compact
  - less parking
  - more density
    - more intensity on a smaller footprint

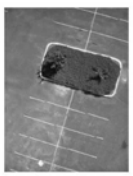
Courtesy: PBPlacemaking

Before we Talk about Best Management Practices...

This should make you mad

- **Ultimate in conservation design -improve this paved over site**
  - **In between two metro stations**
  - **site = 16,327 square feet, building - 5288 square feet**
  - **What is the zoning?**
    - **C-2 allows for 6 stories, mixed use, 1.5 FAR**
  - **What does this mean?**
    - **2 story building on 75% site**
    - **3 stories on 50%**
    - **about 4 stories on footprint**
  - **Parking requirements blow the equation - commercial (1/580 ft^2)**
    - **2 stories -42 spaces**
    - **4 stories on same footprint -**

What BMPs?



BMP Selection typically developed by engineering firm - will depend on

- **pollutant types & volume**
- **budget**
- **site constraints**
- **in some instances, BMP must be on approved list**

Pond - not recommended for sites this small. Swale - maybe

Sand filter - primarily to remove pollutants and sediment

Landscaped island/bioretention

Devices - best for controlling things like oil, grit

How about reducing parking requirements or allowing on-street?

What is the redevelopment value?

Where will zoning and stormwatercodes clash?

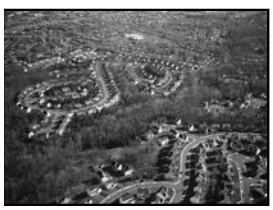
- Site Level
  - Setbacks - & what happens in setbacks
  - Lot coverage & on-site BMP requirements
    - This is a big one - what happens to infill?
- District Level
  - Street widths
  - Parking standards and redevelopment
  - Detailed landscaping requirements
  - Compact, connected districts
- Watershed Level
  - Unanticipated consequences

Unanticipated consequences

Source: MPCA

- Some may be good for smart growth
  - renovate versus disturb
- Language could lead to larger lot sizes to meet infiltration or performance goals.
  - affordability
  - walkability
- Site by site evaluations
  - misses the big picture

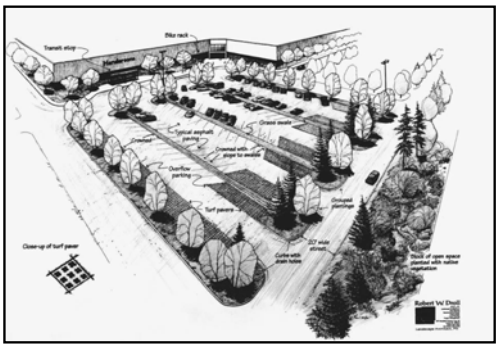
The Big Picture



Housing like this….

…is, by design, served by retail and roads like this

Critique this site plan



The end word in stormwater management

- All BMPs are not created equal
  - need to get the pattern "BMPs" right first
- When it's all totaled up - do our ordinances make sprawl easier and smart growth harder?

For more information on the integrated smart growth and water case

- www.epa.gov/smartgrowth
- www.epa.gov/owm (go to link for stormwater)
- www.smartgrowth.org

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