

# Public and Private Drinking Water Options for Cluster Development

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# Overview

- Definition/examples of cluster development
- Advantages/disadvantages
- Water and wastewater options
- Management options
- Conclusions



# Cluster Development

- Group homes on one part of parcel on smaller lots
- Remainder of parcel in open space- maybe agriculture?
- Open space may be owned and managed by local government, homeowners' association or private party
- May place a conservation easement on the open space



# Virginia Cluster Mandate

- Virginia Code Section 15.2-2286.1
- Covered localities must provide, by July 1, 2007, for clustering of single-family dwellings and “preservation of open space developments”
- Must be “of-right” for “a minimum of 40% of the unimproved land contained in residential and agricultural zoning district classifications”
- May vary the provisions for such developments in each different residential zoning classification



# Cluster Development



Total Site Area: 1,150 ac  
Total Lots: 47  
Lot Size: 20 ac  
Preserved Area: 432 ac



Total Site Area: 1,150 ac  
Total Lots: 47  
Lots Size: 5 ac  
Preserved Area: 853 ac



# Advantages of Cluster Development

- Maintain rural character
- Provide open space
- Preserve critical land qualities/critical environmental areas (conservation subdivision design)
- Reduces infrastructure costs
- Increases value of homes



# Disadvantages of Cluster Development

- Uncertainty or skepticism of the market, local officials, developers and community
- Design will take more effort and skill than cookie-cutter subdivisions
- Mechanisms to manage the open space, waste water and water supply must be put into place



# Does Cluster Development Protect Farmland?

- It depends
- Open space parcels must be large enough for agricultural activities
- Noise, dust, odors, etc. from farm operations can cause cluster lot owners (who wanted to move to “the country”) to complain



# Does Cluster Development Prevent Sprawl?

- It depends
- If overall densities remain low, cluster development is, at best, “pretty sprawl”
- Density bonuses help
- Only increased densities truly “conserve” land



# Water/Wastewater Options for Cluster Development

- Public water and sewer
- Individual well and septic
- Shared wells and shared septic fields or small package systems



# Public Water and Sewer are EXPENSIVE

- In U.S., we need an ADDITIONAL \$23 billion a year over current expenditures for Clean Water Act and Safe Drinking Water Act compliance and maintenance (Water Infrastructure Network (WIN), 2000)
- Citizens, through water and sewer bills, already pay \$60 billion/year (90%) to build, operate and maintain public water and sewer systems (WIN, 2001)
- Cost of building, operating and maintaining water and waste water infrastructure for next twenty years is approximately \$2 trillion (WIN, 2001)



# Public Water and Sewer are INEFFICIENT

- Leaking pipes lose an estimated 7 BILLION gallons of clean drinking water a day (American Society of Civil Engineers, 2009)
- Aging wastewater systems discharge BILLIONS of gallons of untreated wastewater into U.S. surface waters each year



# Public Water and Sewer Promote SPRAWL

- Public water and sewer lines are often the drivers for sprawl (Planning Commissioners Journal)
- Many communities are attempting to manage growth through the judicious extension of water and sewer lines
- People are like rats...



# Cluster Development Management Issues

- Construction
- Operation
- Maintenance



# Current Management Situation

- Open space
- Storm water drainage
  - grassed swales/large detention ponds
  - curb and gutter
- Wastewater treatment
- By-laws and Covenant enforcement

# Cluster Development Management Options

## Private

- Homeowners' Association
- Privatized Joint Venture

## Public

- Municipal Utility
- Sanitary Districts
- Service Districts



# Conclusions

- Cluster development holds the potential to minimize sprawl, maintain rural character and provide benefits to the environment
- The devil is in the details, however
- Public water and sewer are often impracticable
- Various management options exist for shared, private or semi-public options