

## STORMWATER REGULATION MODIFICATIONS

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## Stormwater Regulations - Local

County Minimum Standard stormwater requirements:

- All development within Volusia County (unincorp. or incorp.)
- Cities can tighten requirements but cannot relax requirements
- Water quality requirements very general
- Similar to requirements of State's attenuation requirements

Regulation of **Water Quality (Treatment)** and **Attenuation (Flooding)**.





## Stormwater Regulations - Local

Stormwater requirements – **Attenuation**:

- Pre vs Post Rate of Discharge & Volume
  - Open Basin criteria: 25 yr / 24 hr storm
  - Closed Basin criteria: 100 yr / 24 hr storm
- Typical Methods: “Best Management Practices” – Retention or Detention





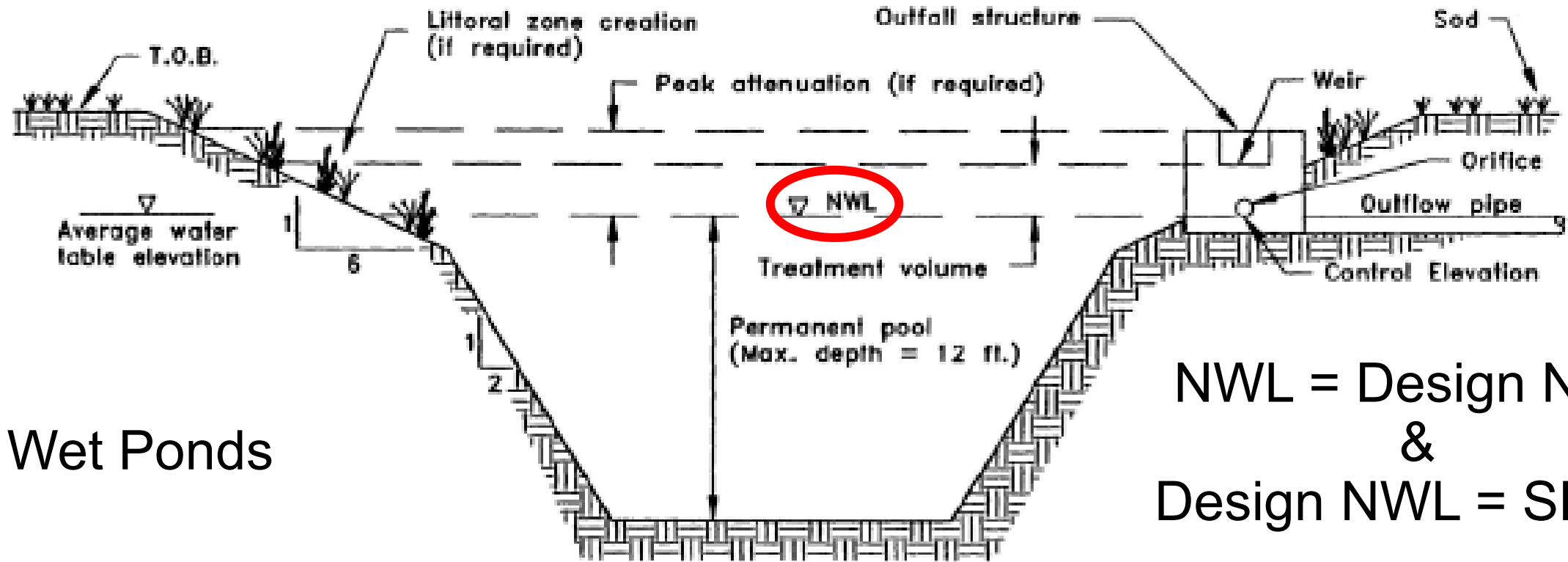
## Stormwater Regulations - Local

### Stormwater Rule Potential Modifications:

- Seasonal High ground water elevation
  - Require Geotech or Biologist to add safety factor to elevation
  - Require a minimum number of borings per area
- Curve Numbers
- Tailwater elevation



## SHWL & Stormwater systems



Wet Ponds

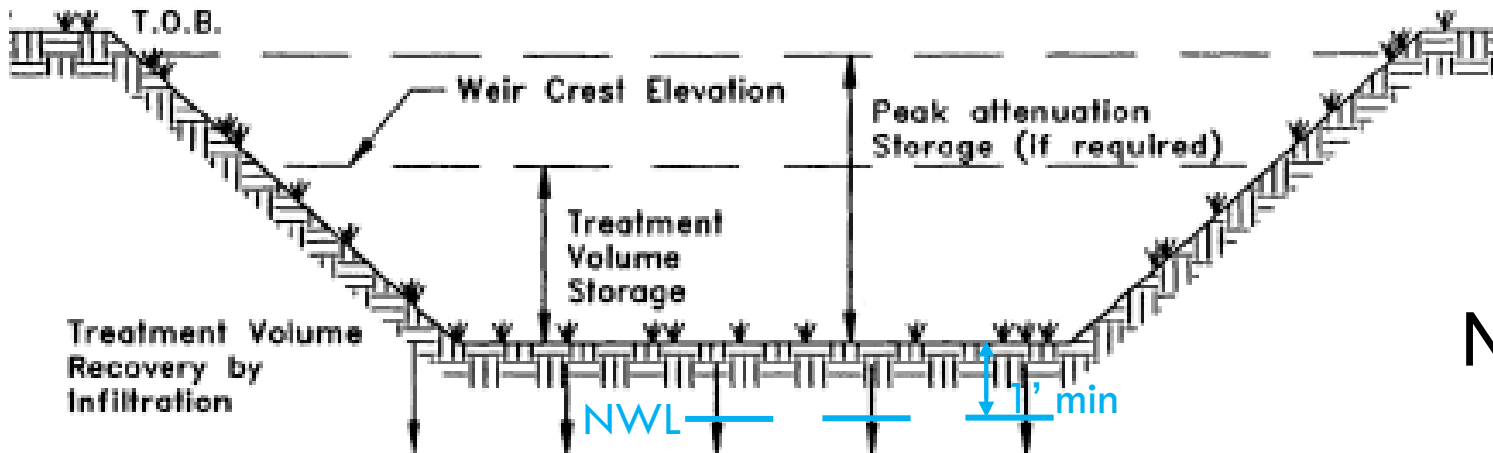
NWL = Design NWL  
&  
Design NWL = SHWL





## SHWL & Stormwater systems

### Dry Systems



NWL = Design NWL  
&  
Design NWL = SHWL



## Curve Number – Runoff Rate

Type	TR-55 Cover Type	Curve Number (TR – 55)			
		HSG A	HSG B	HSG C	HSG D
Assumed Impervious	Impervious Area	98	98	98	98
Sidewalk	Impervious Area	98	98	98	98
Road/Parking	Impervious Area	98	98	98	98
Building	Impervious Area	98	98	98	98
Other Asphalt/Concrete	Impervious Area	98	98	98	98
Dense Forest	Woods	36	60	73	79
Light Forest/Tree Canopy	Woods - Grass Combination	43	65	79	82
Brush/Bush	Brush	35	56	70	77
Open Space (Lawn)	Open Space	49	69	79	84
Gravel	Streets & Roads - Gravel	76	85	89	91
Light Bush/Dirt/Mulch	Open Space - Poor Condition	68	79	86	89
Dirt	Streets & Roads - Dirt	72	82	87	89

“A” Soils = sandy,  
well drained soils

“D” Soils = clayey,  
heavily saturated  
soils with organics

What would the number be for wetlands?



## Curve Numbers – Runoff Rate

TABLE 17.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hard-ness	Ini-tial	Total	Uncoated steel	Concrete
					<u>Ft</u>			<u>In</u>		<u>In</u>	<u>In</u>		
18*; Daytona----- Urban land.	B	None-----	---	---	3.5-5.0	Apparent	Jul-Nov	>60	---	---	---	Moderate	High.
19----- Deland	A	None-----	---	---	>6.0	---	---	>60	---	---	---	Low-----	High.
20----- EauGallie	B/D	None-----	---	---	0-1.0	Apparent	Jun-Feb	>60	---	---	---	High-----	Moderate.
21----- EauGallie**	B/D	None-----	---	---	+1-1.0	Apparent	Jun-Sep	>60	---	---	---	High-----	Moderate.
22----- Electra	C	None-----	---	---	2.0-3.5	Apparent	Jul-Oct	>60	---	---	---	Low-----	High.
23----- Farmton	D	None-----	---	---	0-1.0	Apparent	Jun-Oct	>60	---	---	---	High-----	High.
24* Fluvaquents													
25----- Gator**	D	Frequent----	Very long	Jun-Apr	+1-0	Apparent	Jun-Mar	>60	---	2-6	20-28	High-----	High.
26----- Holopaw	B/D	None-----	---	---	0-1.0	Apparent	Jun-Nov	>60	---	---	---	High-----	Moderate.
27----- Hontoon**	A/D	None-----	---	---	+2-1.0	Apparent	Jan-Dec	>60	---	4-8	>52	High-----	High.
28* Hydraquents													

VOLUSIA COUNTY, FLORIDA







## Stormwater Regulations - Local

Stormwater Rule Potential Modifications:

- Stormwater facilities (ponds) locations on site
- Design storms
- Frequency of storms/recovery
- Redevelopment standards





## Hampton Inn





## Stormwater Runoff – Rainfall

Depending on basin there are different storm sizes/rainfall amounts:

- Open Basin – Mean Annual (~5 inches) & 25 year/24 hour (~8 inches)
- Closed Basin – 25 year/96 hour (~11 inches)

