



# Beaver Creek Fecal Bacteria TMDL Development and Amendment to Lynchburg Area James River TMDLs

Final Public Meeting  
March 23, 2010



NATURAL RESOURCE SOLUTIONS  
THROUGH *Science* AND *Engineering*

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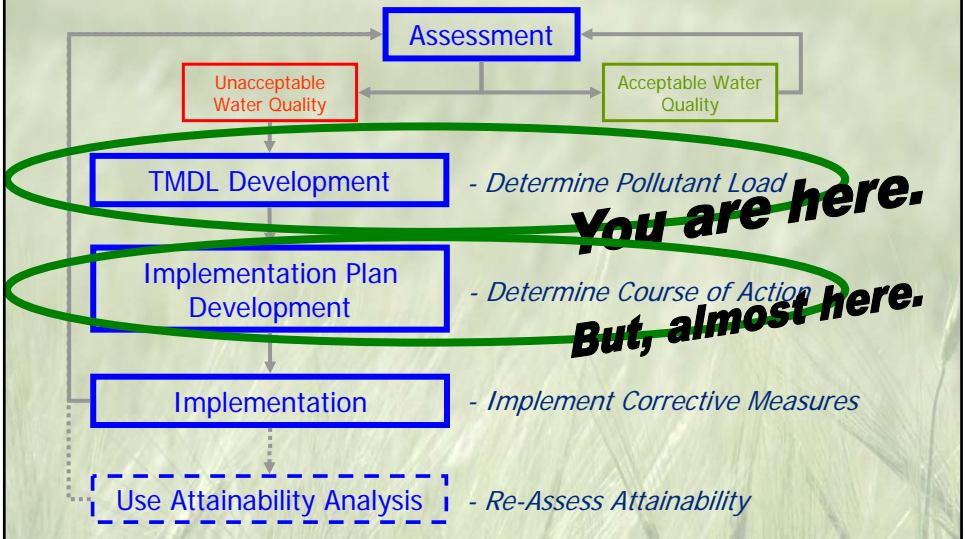
## A Joint Effort

- Virginia's Region 2000  
Local Government Council
- City of Lynchburg
- Virginia's Department of  
Environmental Quality



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# TMDL Process

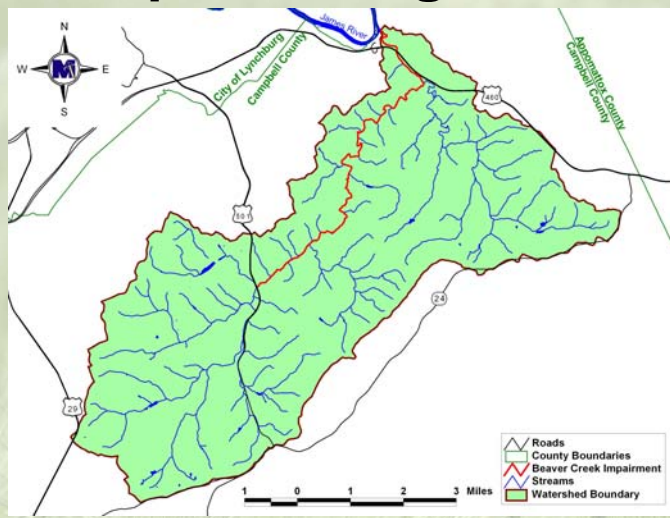


## Why are we here tonight?

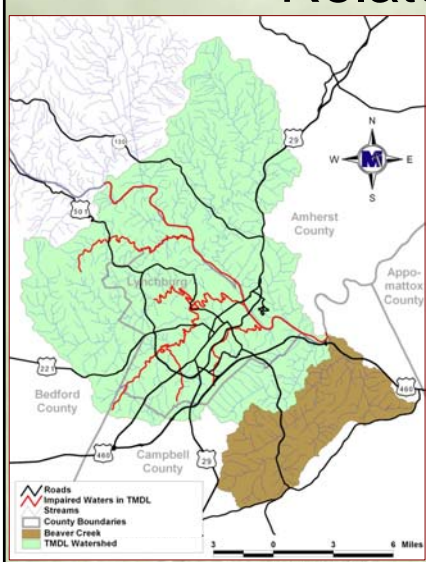
- Fecal Bacteria in Beaver Creek
  - What’s Fecal Bacteria?
    - Bacteria associated with feces from warm blooded animals (fecal coliform, *E. coli*)
  - Why should we care?
    - Pathogens (including some strains of *E. coli*)
    - Parasites
  - Water Quality Standard
    - Swimming & Fishing Use
    - Instantaneous: 235 cfu/100 ml *E. coli*
    - Monthly Geometric Mean: 126 cfu/100 ml *E. coli*



# Impaired Segment



# Related TMDLs



- James River**      *from Holcomb Rock Dam to Archer Creek*
- Ivy Creek**        *from Cheese Creek to Blackwater Creek*
- Fishing Creek**    *from its headwaters to the James River*
- Blackwater Creek** *from Tomahawk and Burton Creeks to the James River*
- Tomahawk Creek** *from its headwaters to Burton Creek*
- Burton Creek**      *from its headwaters to Tomahawk Creek*
- Judith Creek**     *from its headwaters to the James River*



# Bacteria Reduction Goals

Impaired Segment	Livestock Direct	Cropland Pasture	Straight Pipes	Urban & Residential	CSOs
Beaver Creek	99	99	100	64	--
Judith Creek	99	0	100	0	--
Ivy Creek	99	87	100	87	100
Tomahawk Creek	99	87	100	87	--
Burton Creek	100	87	100	87	--
Fishing Creek	72	67	100	67	100
Blackwater Creek	92	87	100	87	100
James River	83	75	100	75	75

No Reductions from wildlife sources indicated.



## TMDL Table

- Bacteria Colonies per Year

Impairment	WLA <sup>1</sup>	LA	MOS	TMDL
<b>Beaver Creek</b>	<b>3.26E+11</b>	<b>2.97E+13</b>		<b>3.00E+13</b>
VA0062031	2.61E+10			
Future Load	3.00E+11			
<b>Judith Creek</b>	<b>5.60E+12</b>	<b>7.83E+12</b>		<b>1.34E+13</b>
VA0091162	2.61E+10			
VAR040008	5.44E+12			
Future Load	1.34E+11			
<b>Ivy Creek</b>	<b>4.44E+12</b>	<b>4.44E+13</b>		<b>4.88E+13</b>
VAR040008	3.96E+12			
Future Load	4.88E+11			
<b>Tomahawk Creek</b>	<b>6.06E+12</b>	<b>6.44E+12</b>		<b>1.25E+13</b>
VAR040008	3.94E+12			
Future Load	1.25E+11			
<b>Burton Creek</b>	<b>4.64E+12</b>	<b>6.54E+12</b>		<b>1.12E+13</b>
VAR040008	4.27E+12			
VAR040118	2.6E+11			
Future Load	1.12E+11			

Implicit



# TMDL Table (Continued)

- Bacteria Colonies per Year

Impairment	WLA <sup>1</sup>	LA	MOS	TMDL
<b>Fishing Creek</b>	<b>2.93E+12</b>	<b>9.34E+12</b>		<b>1.23E+13</b>
VAR040008	2.81E+12			
Future Load	1.23E+11			
<b>Blackwater Creek</b>	<b>3.28E+13</b>	<b>1.62E+14</b>		<b>1.95E+14</b>
VAR040008	3.09E+13			
Future Load	1.95E+12			
<b>James River</b>	<b>2.69E+15</b>	<b>1.45E+14</b>		<b>2.84E+15</b>
VA0027618	4.35E+10			
VA0063657	2.59E+09			
VA0024970	3.83E+13			
VA0024970 (CSO)	2.14E+15			
VA0062031	3.00E+11			
VA0061042	3.81E+10			
VA0082546	1.63E+09			
VAR040008	3.63E+14			
Future Load	1.53E+14			

Implicit



# And then:

- Public Review (30 days)
- Submit to EPA
- State Approval
- Implementation Plan Development
- Implementation



## Contact Information

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