



Roanoke County

Program Level of Service Options Overview

October 24, 2013

The purpose of this paper is to provide context to the accompanying draft Program Level of Service Options Matrix. As discussed at the October 10, 2013 meeting of the Roanoke County Stormwater Advisory Committee (RCSAC), stormwater program gaps and needs have been identified based on a review of the County's and Town of Vinton's existing programs, activities, and regulatory commitments. The next step in the process is to examine these gaps and needs against the goals and priorities identified by the committee in order to make program recommendations for consideration by the County Board of Supervisors and the Town Council. To help facilitate this discussion, AMEC and County/Town staff have developed "level of service" options for addressing these gaps and needs. These options are not the only solutions, but are meant to frame the discussion by the RCSAC.

In most cases, three levels of service are identified – basic, medium, and high. The basic level of service is defined as the minimum level of effort required to address a particular gap or need and to meet minimum program expectations such as regulatory compliance. The high level of service represents an aggressive approach and typically represents a greater investment of resources. In the end, decisions about which levels of service to pursue come down to priorities. Strategically addressing some gaps quicker than others is an inherent part of a resource limited environment. The reason for being more, or less, aggressive can vary. An aggressive approach may be taken because of an urgent need to provide enhanced services or because it is considered important for quality of life purposes. Similarly, an aggressive approach may be taken because an upfront investment will save money in the long-term.

While discussing levels of service, each RCSAC member should consider the following:

- Wear two hats when considering priorities. RCSAC members have been selected to bring a particular perspective to the discussion. At the same time, each member is charged with thinking about what is best for the community as a whole.
- The matrix should be treated as a menu. It is reasonable to select a basic level of service for one program element while at the same time selecting an aggressive level of service for another program element.



- Decisions about one level of service may affect options on other levels of service. There are some levels of service that are inherently connected to one another. Choices in one area will often affect what choices will be available in another area. Likewise, choosing a particular approach may make it possible to achieve another goal in a more cost-efficient or effective manner.
- Program development is incremental. That is, the County and Town are building a program over time, while addressing the most pressing needs now. Many levels of service are designed to provide the County/Town with better information from which to make future decisions. For example, the County does not have a full grasp of stormwater capital needs, including infrastructure and environmental protection and restoration. One of the potential levels of service is to update the County's stormwater drainage plan in order to better identify and prioritize capital needs. Once that plan is developed, the County/Town will have a tool for making decisions about how much to spend annually on project implementation.
- Cost estimates are order of magnitude. At this time, cost estimates are meant to provide the committee with a sense of the financial commitment involved in order to facilitate the decision-making process. In some areas, estimated costs have been provided and in other areas, costs are still being developed. Costs will be refined during the level of service meetings and once the RCSAC provides additional feedback, more specific cost data will be developed.

Finally, many of the proposed levels of service rely on additional staff or the use of external resources. Often, a level of service can be met either way. The right mix of new staff and external resources will depend on a number of factors, including whether there is enough work to justify a new employee and whether the nature of the work is long or short term. Depending on the levels of service recommended by the RCSAC, proposed staff may be eliminated, added, combined, or reorganized.

These details, and how percentages of full time equivalents will be turned into actual people, are issues that will be dealt with once AMEC and County/Town staff have an understanding of the RCSAC's priorities and the Board of Supervisor's and Town Council's willingness to move forward with recommendations.

Roanoke County
Stormwater Programs Development Study
Draft Program Level of Service Options Matrix
October 24, 2013

PROGRAM GAP OR NEED	ASSUMPTIONS AND NOTES	LEVEL OF SERVICE OPTIONS	BENEFITS/ISSUES
MS4 and TMDLs			
<p>BMP Inspections, Maintenance, and Enforcement: County staff is unable to meet the current inspection schedule (annually for County owned facilities and 1/5 year for private facilities) and to work closely with property owners to address maintenance issues. Many HOAs are struggling with maintenance of facilities that were installed as a condition of development. Enforcement is a very difficult issue The number of facilities will increase under new regulations.</p>	<p>~40 County owned facilities ~650 Private facilities (~450 residential and ~200 commercial); currently 130 non-compliant Average facility annual maintenance and replacement cost = \$3,500/year</p>	<p>BASIC</p> <p>(1) Budget for County owned BMP annual maintenance and replacement cost, ~\$140,000 (combination employee and direct costs) (2) Eliminate County provided inspections for non-residential facilities. Require non-residential facility owners to provide periodic inspections by authorized 3rd parties. (3) Cut back technical support to HOAs, current inspector will perform residential inspections only. (4) Add enforcement time for attorney – 30 facilities annually</p>	<p>Permit Compliance; provide less direct service than present.</p>
		<p>MEDIUM</p> <p>(1) County to provide inspections every 5 years for all facilities and continue high level of technical support to citizens. Requires additional 1.0 FTE. (2) Add enforcement time for attorney – 30 facilities annually</p>	<p>Maintain current level of citizen service.</p>
		<p>HIGH</p> <p>(1) County assumes responsibility for maintenance and operation of residential facilities that serve more than 1 lot (approx. 425). Cost to County ~\$1,500,000/year (combination employee and direct costs). Costs to increase over time with increased development. (2) County to provide inspections every 5 years for all other facilities (approx. 225) and continue high level of technical support to citizens. Use existing staff (3) Add enforcement time for attorney – 5 facilities annually (without residential facilities, enforcement requirements drop drastically).</p>	<p>Assure proper maintenance is occurring. Improve aesthetics. Assist with complying with TMDL WLAs requirements. Additional citizen service.</p>

Level of Service Options

Basic	Medium	High
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PROGRAM GAP OR NEED	ASSUMPTIONS AND NOTES	LEVEL OF SERVICE OPTIONS	BENEFITS/ISSUES
<p>The County's public education and outreach efforts are required to identify a minimum of 3 high priority issues and target audiences; and to reach 20% of each audience annually (must be documented).</p>	<p>Continue to partner with Roanoke City and Vinton through Clean Valley Council (CVC) for general stormwater outreach. (County currently pays CVC about \$12,500/yr. Vinton pays about \$5,000)</p> <p>Additional targeted outreach is required by MS4 permit to increase citizen awareness and address TMDL pollutants.</p> <p>County Population: 84,800</p> <p>Vinton Population: 8,100</p> <p>The U.S. EPA has developed cost estimates for what localities should typically be expected to spend on public education and outreach (\$0.30/person for basic; \$0.50/person for medium; and \$1.00/person for high). Additionally, we need to address our TMDLs with an additional \$0.10/person. Currently, the County/Town spends ~\$0.15/person.</p>	<p>BASIC</p> <p>(1) Continue general outreach with CVC.</p> <p>(2) Add additional outreach to targeted audiences. \$21,250 – (additional \$0.25/person)</p>	<p>Permit Compliance</p>
		<p>MEDIUM</p> <p>(1) Basic +</p> <p>(2) Add 0.25 FTE to perform additional outreach and administer targeted business education program and coordinate with Clean Valley Council.</p> <p>(3) \$38,250 - \$0.45/person</p>	<p>Increased citizen awareness and support.</p>
		<p>HIGH</p> <p>(1) Basic +</p> <p>(2) Add 0.25 FTE to perform additional outreach and administer targeted business education program and coordinate with Clean Valley Council.</p> <p>(3) \$81,000 - \$0.95/person</p>	<p>High citizen awareness of program that leads to increased citizen voluntary actions.</p>
<p>The County's current program to address illicit discharges (dumping, leaking equipment, swimming pool discharges, etc.) is primarily reactive.</p>	<p>MS4 permit sets minimum standards for dry weather inspections of outfalls and enforcement.</p> <p>Stewardship issue; these discharges can have a significant local impact on aquatic life.</p> <p>The County's current program meets minimum MS4 requirement of conducting dry weather screening of 50 outfalls annually.</p>	<p>BASIC</p> <p>Use existing staff to:</p> <p>(1) Continue current dry weather screening program (50 outfalls/year).</p> <p>(2) Respond to citizen reports/complaints. No proactive field investigations other than (1) above.</p> <p>(3) Develop written program procedures.</p> <p>(4) Improve record keeping.</p>	<p>Permit Compliance</p>
		<p>MEDIUM</p> <p>(1) Same as Basic +</p> <p>(2) Add 0.10 FTE to proactively search for illicit discharges, educate dischargers, and engage in enforcement.</p>	<p>Increased community awareness, more effective program.</p>
		<p>HIGH</p> <p>(1) Same as Basic +</p> <p>(2) Add 0.25 FTE to proactively search for illicit discharges, educate dischargers, and engage in enforcement.</p>	<p>Increased community awareness, more effective program, and more opportunity for interaction with citizens and businesses for education.</p>

Level of Service Options

Basic	Medium	High
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PROGRAM GAP OR NEED	ASSUMPTIONS AND NOTES	LEVEL OF SERVICE OPTIONS	BENEFITS/ISSUES
<p>The County must develop Stormwater Pollution Prevention Plans (SWPPPs) for all “high priority facilities” and standard operating procedures (SOP) for work activities that could potentially impact stormwater.</p>	<p>Spill Prevention, Control, and Countermeasure Plans (SPCCs) have been done for several facilities but no SWPPPs have been done.</p> <p>SWPPPs must be completed by 2017.</p>	<p>BASIC</p> <p>(1) Develop SWPPPs for high priority facilities (3-5 County facilities) ~ 1/year @ \$7,000/year.</p> <p>(2) Departments develop standard operating procedures with assistance from Community Development with current staff.</p> <p>(3) Conduct biennial (minimum standard) SWPPP and SOP training and implementation (~125 employees every 2 years) ~ \$5,000/year + staff time.</p>	<p>Permit Compliance</p>
		<p>MEDIUM</p> <p>(1) Develop SWPPPs for high priority facilities (3-5 County facilities) ~ 2/year @ \$14,000/year.</p> <p>(2) Conduct annual SWPPP and SOP training and implementation (~125 employees every year) ~ \$10,000/year + staff time.</p>	<p>Quicker implementation and better trained employees.</p>
		<p>HIGH</p> <p>(1) Same as Medium +</p> <p>(2) Develop SWPPPs for other facilities with stormwater pollution concerns.</p> <p>(3) Proactive annual inspections and upgrades.</p>	<p>Quicker implementation and more engaged employees.</p>
<p>The County must implement a comprehensive program to train staff that are regularly in the community to be able to identify illicit discharges and other water quality issues.</p>	<p>New MS4 permit requirement presents funding challenges.</p> <p>Biannual training is required for ~420 employees.</p>	<p>BASIC</p> <p>(1) Conduct biannual illicit discharge training (~420 employees every 2 years)</p> <p>(2) Either purchase or prepare short 10 – 15 minute video to use for training. ~\$3,500 + staff time</p>	<p>Permit Compliance</p>
<p>The County must develop certified nutrient management plans (NMPs) for any County property one acre or greater where fertilizers are applied.</p>	<p>New MS4 permit requirement.</p> <p>Periodic soil sampling and testing is required. Plans must be prepared by state certified nutrient management planner.</p> <p>Plans must be redone every 3 years.</p>	<p>BASIC</p> <p>(1) Hire certified planner to develop plans over 3 year period. (\$10,000/year).</p> <p>(2) Implement nutrient management plans – train current staff ~ \$3,000.</p>	<p>Permit Compliance</p>

Level of Service Options

Basic	Medium	High
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PROGRAM GAP OR NEED	ASSUMPTIONS AND NOTES	LEVEL OF SERVICE OPTIONS	BENEFITS/ISSUES
<p>The County must develop individual TMDL Action Plans to identify best management practices (BMPs) that the County and Town will implement to address each of its 13 TMDL wasteload allocations (WLAs). The plans must include implementation schedules. The County has 6 bacteria, 1 sediment, and 6 PCBs TMDL WLAs that must be addressed in the plans.</p>	<p>New MS4 permit requirement. TMDL Action Plans are required by July 1, 2015. The length of time for implementation is unknown at this time.</p> <p>Area of urbanized Roanoke County covered by TMDL - 27,000 ac</p>	<p>BASIC</p> <p>(1) Develop TMDL Action Plans ~ \$20,000 each for bacteria and sediment TMDLs. Assume that PCBs will be deferred. Total for plans ~\$140,000.</p> <p>(2) Cost per year to implement BMPs is unknown, but is anticipated to be significant (further discussion next meeting).</p>	<p>Permit Compliance</p>
		<p>MEDIUM</p> <p>(1) Same as Basic +</p> <p>(2) Add 0.5 FTE for community outreach to develop community partnerships to assist homeowners with voluntary BMP construction.</p>	<p>Involvement of community in improving water quality. Foster shared public/private efforts. May improve cost-effectiveness of compliance.</p>
		<p>HIGH</p> <p>(1) Same as Basic+</p> <p>(2) Add 1.0 FTE for community outreach to develop community partnerships to assist homeowners with voluntary BMP construction.</p>	<p>Enhanced involvement of community in improving water quality. Stronger public/private efforts. May improve cost-effectiveness of compliance.</p>
DEVELOPMENT SERVICES			
<p>VSMP Construction Permit Administration - The County will be required to administer the state's VSMP construction permit starting in July 2014.</p>	<p>Impact on resources required for review and processing are uncertain. At this time, the County believes existing staff will be adequate.</p> <p>County current review time is 2-3 weeks compared to state maximum of 60 days.</p>	<p>BASIC</p> <p>(1) Use existing staff to perform review and processing necessary.</p> <p>(2) During peak periods may need to extend plan review time to allow current staff to cover VSMP plan review and permitting.</p>	<p>Does not add staff.</p>
		<p>MEDIUM</p> <p>(1) Add 0.5 FTE to ensure that current review times can be maintained.</p>	<p>Ensures that current review times are maintained.</p>
<p>Stringent new stormwater management standards will result in a larger number of smaller stormwater management facilities located throughout a new development.</p>	<p>Additional inspection effort will be required during construction to view BMPs at various points in construction.</p>	<p>BASIC</p> <p>(1) Use existing staff to perform necessary inspections.</p> <p>(2) During peak periods there may be more of a wait for inspectors at construction sites.</p>	<p>Does not add staff.</p>
		<p>MEDIUM</p> <p>(1) Add 0.5 FTE for inspection of smaller SWM facilities during construction. (Could be combined with 0.5 FTE proposed above for reviews to provide combination 1.0 FTE)</p>	<p>Maintain response time to construction sites.</p>

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PROGRAM GAP OR NEED	ASSUMPTIONS AND NOTES	LEVEL OF SERVICE OPTIONS	BENEFITS/ISSUES
INFORMATION TECHNOLOGY			
Community Development does not have staff to routinely update stormwater mapping, track inspection and enforcement data, maintain records, and to perform GIS analyses on pollutant loadings and reductions required for DEQ reporting.	MS4 permit requires updated stormwater mapping; maintaining records; and pollutant analysis for DEQ reporting. GIS systems require programming to better link information and make systems more efficient.	<p>BASIC</p> <p>(1) Continue to obtain support as available from Communications and Information Technology. (2) Periodically use interns to catch up with routine data entry. (3) Add 0.5 FTE to allow mapping updates and analyses on a continuing basis.</p> <p>MEDIUM</p> <p>(1) Same as above but add 1 FTE (instead of 0.5 FTE) to allow for more current robust mapping updates and analyses, assistance from Communications & Information Technology only for programming and enterprise support.</p>	<p>Permit Compliance</p> <p>Able to more effectively maintain GIS systems and records, and releases Com IT resources for other County priorities.</p>
INFRASTRUCTURE MAINTENANCE AND IMPROVEMENTS			
<p>Equipment Replacement</p> <p>Much of the County’s existing equipment for drainage system maintenance has exceeded its planned life expectancy. The County currently does not amortize the cost to replace this equipment; rather the County must pay the full cost all at once.</p>	<p>From County Equipment list. \$1,200,000 in equipment with useful life provided. 14 pieces of equipment in this category: 7 are past life expectancy, 4 reach life expectancy in next 5 years and 3 have greater than 5 years of life.</p> <p>There are many other smaller pieces of equipment.</p>	<p>BASIC</p> <p>(1) Continue existing procedure of asking for appropriation when equipment is worn out.</p> <p>MEDIUM</p> <p>(1) Amortize equipment costs for replacement over next 10 years. (\$120,000/year)</p> <p>HIGH</p> <p>(1) Amortize equipment costs for replacement over next 7 years. (\$175,000/year)</p>	<p>Appropriation is often not funded resulting in inefficiencies due to worn out equipment.</p> <p>Able to maintain minimum effective equipment with level funding.</p> <p>Able to increase field efficiency with better equipment.</p>
<p>Project Backlog</p> <p>The County has a significant backlog of drainage projects that have been identified.</p>	<p>Current backlog is 40 projects, with an estimated cost of \$500,000 direct cost and \$3,000,000 salary and fringe costs. Current backlog would take 10 years to clear if no new complaints were received.</p> <p>Backlog increases by approximately 10% - 15% per year.</p> <p>The County’s last comprehensive drainage plan was developed in the 1990s and is largely out-of-date.</p>	<p>BASIC</p> <p>(1) Detail project costs and prioritize – update to the County’s stormwater drainage plan. (2) Provide additional storm drain crew, cost approximately \$250,000/year.</p> <p>MEDIUM</p> <p>(1) Same as Basic + (2) Provide additional storm drain crew, ~ \$250,000/year. (Total of 2 additional crews)</p> <p>HIGH</p> <p>(1) Same as Medium + (2) Use contractors to clear backlog in 5 years (approximate \$400,000/year for 5 years)</p>	<p>Can provide current level of service and stop growth of storm drainage project backlog.</p> <p>Clear backlog over 10 year period. By the time the backlog is cleared, system will have expanded to point that crew is needed for routine maintenance.</p> <p>Clear backlog in 5 years. Provide responsive citizen service.</p>

Level of Service Options

Basic	Medium	High
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PROGRAM GAP OR NEED	ASSUMPTIONS AND NOTES	LEVEL OF SERVICE OPTIONS	BENEFITS/ISSUES
<p>Storm Sewer System Maintenance</p> <p>System maintenance is currently conducted on a complaint basis rather than systematically planning for the rehabilitation based on age and condition.</p>	<p>The County's storm sewer system consists of approximately 100 miles of pipe, 80 miles of channel, and 5,500 manholes and inlets, with an approximate replacement value of \$100,000,000.</p> <p>The average age of the system components is approximately 35 years for pipes and 15 years for channels. Average useful life is approximately 60 years for pipes and 15 years for channels.</p>	<p>BASIC</p> <p>(1) Maintain current complaint driven program.</p> <p>(2) Conduct system-wide comprehensive assessment of conditions to allow long-term planning and budgeting.</p>	<p>System will continue to deteriorate, but the County will better understand status. Creating a larger future problem.</p>
		<p>MEDIUM</p> <p>(1) Same as Basic +</p> <p>(2) Budget 1.0% of system replacement value annually for repair/replacement of failing infrastructure (\$1,000,000) (some cost overlap with Project Backlog above)</p>	<p>Can slow system deterioration and provide some routine channel cleaning. Lessen the need for emergency driven projects.</p>
		<p>HIGH</p> <p>(1) Same as Basic +</p> <p>(2) Budget 2% of system replacement value annually for repair/replacement of failing infrastructure (\$2,000,000). (some cost overlap with Project Backlog above)</p>	<p>Can provide more routine inspection, cleaning, maintenance, and replacement. Less emergency projects.</p>
<p>Maintenance of Streams</p> <p>The County conducts maintenance as needed of streams within the County right-of-way typically based on complaints.</p> <p>Most County work consists of clearing streams of debris. Many of the County's streams are significantly degraded.</p>	<p>Water quality protection – ties into TMDLs</p>	<p>BASIC</p> <p>(1) Maintain current complaint driven program.</p> <p>(2) Improvements as driven by TMDL WLA program.</p>	<p>Permit Compliance</p>
		<p>MEDIUM</p> <p>(1) Develop comprehensive watershed management plan to better understand overall stream conditions and to help identify and prioritize stream restoration projects. Cost depends on level and detail of analysis. This planning can be performed in conjunction with the TMDL action plans. Estimated cost: ±\$500,000.</p>	<p>Provides a tool to select projects that have the most benefit in terms of meeting regulatory targets and local goals.</p>

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Basic	Medium	High
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