

Northern Virginia Regional Commission Conservation Corridors

Water Quality Resource Group Meeting

Tuesday, February 22, 2011

Sully District Governmental Center – Frank Room

9:00am – 12:00pm

Meeting Summary

The Water Quality Resource Group meeting was held to solicit feedback and input on a draft theme overlay for the Conservation Corridors Base Map. The meeting was facilitated by Laura Grape, of NVRC, and Karen Firehock of the Green Infrastructure Center. Ms. Grape began by providing a brief overview of the project and Ms. Firehock expanded on the role of the thematic overlays in identifying the location of existing regional assets and their relationship to the Base Map. Local government staff discussed the types of information and data sets that a Water Quality map overlay could display. The group agreed that maps displaying the relationship of the green infrastructure network to the following water quality-related overlays would be helpful:

- Water Quality Assets – important surface and drinking water sources to show regionally-important features dependent upon good water quality.
- Water Quality Impairments – designated impaired water features and forest canopy cover to identify restoration opportunities.
- Inundation Vulnerability – sea level rise and storm surge scenarios to show areas at risk of inundation and cores that could provide buffers for the region's coastal communities.

NVRC committed to revising the map overlays to reflect the discussions to the extent possible, which the Resource and Advisory Group members will have an opportunity to review.

NVRC request that resource group members provide any additional comments and/or suggestions to Laura and Sam by Friday, March 11, 2011.

Appendices:

APPENDIX A: Meeting Agenda

APPENDIX B: Meeting Participants and Invited Organizations

APPENDIX C: Revised Draft Water Quality Resources Map (February 2011)

APPENDIX D: Sample Output from Virginia Department of Forestry's InForest Model

Workshop presentations and maps are available for download at:
www.novaregion.org/conservation

Data Issues with the Existing Water Quality Map and Opportunities

Karen Firehock facilitated a discussion focused on the capacity and function of a water quality theme overlay for the Conservation Corridors project. She highlighted the fact that this map is not intended to serve as a watershed plan but to show how a green infrastructure network supports good water quality. The group and project team recognize there is a challenge in creating this theme overlay due to the inconsistency between state level data and local knowledge, as well as inconsistent water quality monitoring methodologies and programs between the region's local jurisdictions. Ms. Firehock explained that the goal of the resource group meeting is to discuss other useful information and opportunities to express the relationship of the green infrastructure network to good water quality.

Water Quality Theme Map Review

Ms. Grape oriented the group to the map and the legend. The group took time to review the existing draft Water Quality-themed map, then quickly decided that in its current state this map was of no value and agreed that it should be recycled. Ms. Grape affirmed that the input was necessary by resource experts in order to make the maps most useful in the future. The facilitators emphasized considering data at a regional/landscape scale, which could be further refined to the local level at a later date. It was suggested that every core and intact forested area provides a benefit to water quality. Therefore the group decided that it would be most useful to show features that are dependent upon good water quality and impaired water features that could use restoration within their watersheds to improve water quality. The group agreed that it is critical to use comparable water quality data so that the theme is consistent across the region and recognized the challenge in compiling locally-collected water quality data due to the varied method of collection and analysis.

Suggestions for NEW Water Quality Theme Map Overlays

The group agreed that maps displaying the relationship of the green infrastructure network, forested cores in particular, to the following water quality-related overlays would be helpful:

Map Overlays	Description	Possible Map Layers	Possible Sources
Water Quality Assets	Valued surface and drinking water sources to show regionally-important features dependent upon good water quality & highlight streams provide source water.	Designated Scenic Rivers	DCR
		Blueways	DCR
		Reservoirs	Local
		Tidal Wetlands	VIMS
		Public Water Intakes	Local
Restoration Opportunities	Designated impaired water features and forest canopy cover to identify restoration opportunities	Impaired Waters	DEQ 303(d)
		Forest Cover	DOF
Inundation Vulnerability	Sea level rise and storm surge scenarios to show areas at risk of inundation and cores that could provide buffers for the region's coastal communities.	SLR and storm surge scenarios	NVRC

Also, the group identified that it would be of value to highlight streams of local importance, as a further refinement.

In addition to the data suggested for each map, the group recommended highlighting the following specific features:

- Goose Creek Reservoir
- Beaver Dam Run
- Watershed Boundaries

Green Infrastructure and its Role in the Chesapeake Bay TMDL

The resource group recognized that Chesapeake Bay TMDL requirements will be the next big pressure on local land managers and discussed the value of green infrastructure in meeting the allocations. Laura Grape briefly explained the new Virginia Department of Forestry's InForest model which can analyze land cover data scenarios to model different loads for nitrogen, phosphorous, and sediment. The group agreed that the tool could be utilized to illustrate the positive effects of green infrastructure. The InForest model is available online at: <http://ifris.dof.virginia.gov/inforest/>

Future Opportunities

The group discussed several future opportunities including a regional impervious surface analysis was identified as a possible next level of study in order to estimate where good quality streams may be located based on their percent imperviousness.

Next Steps

Ms. Grape requested that participants provide any additional feedback by March 11th. The Water Quality Map(s) will be revised and provided to the Resource and Advisory group members for review.

A copy of the meeting agenda is enclosed as Appendix A, a list of invited organizations and those who attend can be found in Appendix B, a copy of the draft (now recycled) Water Quality Resources Map can be found in Appendix C, and an example output of the InForest Model can be found in Appendix D.

Past presentations, meeting summaries and other project information are available on the project's website: www.novaregion.org/conservation.

Appendix A - Meeting Agenda

Northern Virginia Regional Commission Conservation Corridor Planning in Northern Virginia

Water Quality Theme Resource Group Meeting Tuesday, February 22, 2011

Sully District Governmental Center – Frank Room
9:00 AM – 12:00 PM

Welcome & Participant Introductions

Conservation Corridors in Northern Virginia Project Overview and Base Map with an Overview of Theme Maps and Water Quality Examples

NVRC will provide a brief overview of the Conservation Corridors project. The Green Infrastructure Center will discuss what is a theme map, why is it useful and how does it relate to the green infrastructure network?

Data Issues with the Existing Water Quality Map and Opportunities

NVRC and the Green Infrastructure Center will echo the concerns raised with the data used in the existing water quality map and recommend a solution, for discussion.

Break

Definition of Water Quality Theme

The group will review and discuss the theme definition.

Water Quality Theme Map Review

Content:

- *What is represented?*
- *Does it meet our definition?*
- *Anything missing?*

Patterns and key findings:

- *Are there interesting relationships between the base GI map and these resources?*
- *Does this suggest any areas on the base map that are more significant due to their proximity to important water bodies and/or are located in significant watersheds?*

Representation of data:

- *Review the symbology, clarity and general usability of the maps – can this be improved and how?*

Applications:

- *Can/does this map inform your work?*
- *What are applications that others may have for this themed overlay?*

Next Steps and Wrap-Up

What needs to be collected, fixed or coordinated to complete the map? Additional comments due to NVRC by Thursday, March 3, 2011.



Appendix B- Meeting Participants and Invited Organizations

February 22, 2011 Water Quality Resource Group Meeting Participants:

Name	Organization	Email Address
Joe Gorney	Loudoun County Planning Dept.	Joe.gorney@loudoun.gov
Ray Utz	PWC Planning and Zoning	rutz@pwcgov.org
Noel Kaplan	Fairfax County Department of Planning and Zoning	Noel.kaplan@fairfaxcounty.gov
Heather Ambrose	Fairfax County Stormwater Planning	Heather.ambrose@fairfaxcounty.gov

Organizations invited to send representatives include:

Local Government (Open Space Managers, Land Managers, Urban Foresters)

City of Alexandria	Loudoun County
Arlington County	City of Manassas
Town of Dumfries	City of Manassas Park
City of Fairfax	Town of Occoquan
Fairfax County	Town of Purcellville
City of Falls Church	Town of Quantico
Town of Herndon	Town of Vienna
Town of Leesburg	Town of Clifton

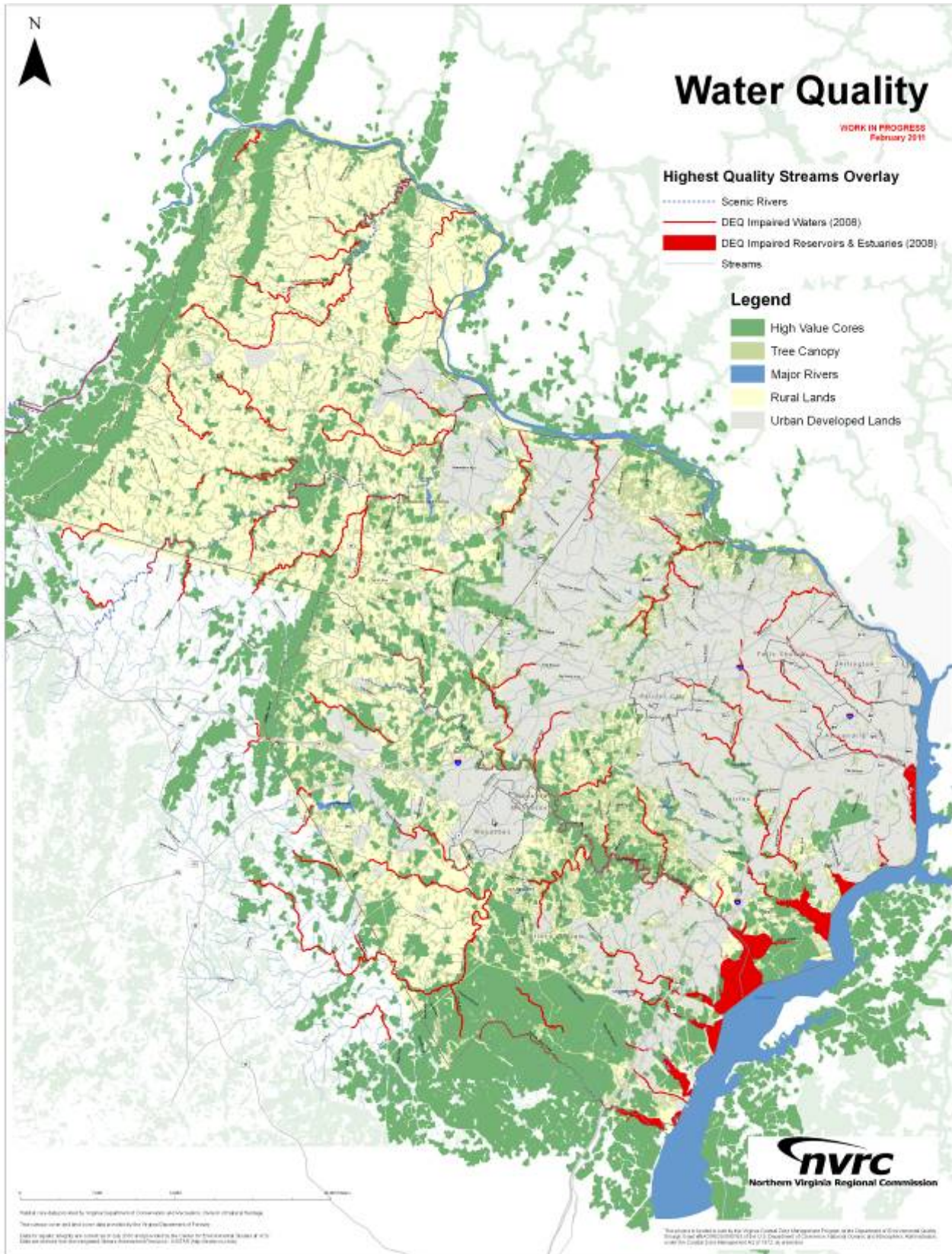
Regional, State, and Federal Organizations

George Washington Regional Commission	National Park Service – GWMP
Rappahannock-Rapidan Regional Commission	National Park Service - Manassas
Metropolitan Washington COG	Bureau of Land Management
VA DCR	US Fish & Wildlife Service
VA DOT	US Army – Ft Belvoir
VA DOF	US Marine Corps Base – Quantico
MD Department of Natural Resources	

Other Interested Parties

Northern Virginia Regional Park Authority	Prince William Conservation Alliance
Northern Virginia Conservation Trust	Northern Virginia Urban Forestry Roundtable

Appendix C- Revised Draft Water Quality Resources Map (February 2011)



Appendix D – Sample Output from InForest Model

**NUTRIENT AND SEDIMENT RUNOFF REPORT
 PROJECT LEVEL**

Project Name: Loudoun/Fairfax

This report estimates the nitrogen, phosphorus, and sediment loading for the area of interest chosen for this project. These values are based on the various land use/cover types found in the project area. The Generalized Watershed Loading Function (GWLF) model is used to run the analysis. The GWLF model is a mid-range watershed loading model developed to assess non-point source flow and sediment and nutrient loading from urban and rural watersheds. The GWLF model provides the user with the ability to simulate sediment and nutrient (nitrogen and phosphorus) loading within a watershed and to estimate the contribution of that loading from the various land uses/covers (e.g., forest, impervious area, pasture, hay, high till) present in the project area.

1) Baseline Project Loads (provided or modified)

<u>Land Use Types</u>	<u>Acres</u>	<u>Nitrogen (lb/yr)</u>	<u>Phosphorus (lb/yr)</u>	<u>Sediment (tons/yr)</u>
Conventional Tillage Cropland	1215.6	4278.3	831.1	1281.7
Hay	755.9	8383.1	786.6	27.3
Forest	3398.9	220.2	20.5	7.9
Barren Area	33.9	70.8	17.2	32.7
Urban Pervious	472.4	862.2	99.4	3.8
Urban Impervious	9.9	110.7	11.9	2.0
Water	6.2	0.0	0.0	0.0

Project TOTAL 5892.8 13925.3 1766.7 1355.4

2) Project Level Changes to Land Uses and Nutrient and Sediment Loads
(with user-identified land use changes)

Land Use Types	Acres	Nitrogen (lb/yr)	Phosphorus (lb/yr)	Sediment (tons/yr)
Conventional Tillage Cropland	0.0	0.0	0.0	0.0
Hay	0.0	0.0	0.0	0.0
Forest	-1500.0	-97.2	-9.0	-3.5
Barren Area	0.0	0.0	0.0	0.0
Urban Pervious	500.0	912.5	105.2	4.0
Urban Impervious	1000.0	11177.4	1197.6	199.6
Water	0.0	0.0	0.0	0.0
Project Load Changes	0.0	11992.7	1293.8	200.1
New Project TOTALs	5892.8	25918.0	3060.5	1555.5

NOTE:

- 1) Baseline Watershed Loads result from the land use distribution for the 12 digit hydrologic unit watershed in which your project is located.
- 2) Project changes involve the shifting of acreage from one land use (indicated by a negative (-) acreage and corresponding load changes (positive or negative (-))), to one or more other land uses (indicated by a positive acreage(s) and corresponding load changes (positive or negative (-))).

