Source Water Protection Plan

*[Date]*

For

*[Waterworks Name]*

*[PWSID #]*

*[Location]*

*[Optional – Insert waterworks logo or source water related photo]*

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# Record of Review

The Source Water Protection Plan should be reviewed and updated at least every 3 years.

|  |  |  |
| --- | --- | --- |
| **Date of Review** | **Name of Reviewer** | **Description of Updates (if any)** |
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# Statement of Adoption

The *[insert waterworks name]* waterworks adopted this Source Water Protection Plan (SWPP) and has a copy of the plan on file with the Virginia Department of Health (VDH). The service and assistance of the waterworks’ representatives in preparation of the plan is acknowledged and greatly appreciated.

*[ODW recommends inserting a copy of the page from Town Council/Board of Supervisors meeting minutes recording the adoption of the SWPP]*

# Introduction

## Protection of Surface Water Sources

Protection of sources which supply public drinking water is of vital importance to the residents of the *[Waterworks Name]*. The water supply represents a valuable resource and investment which, if it were to become polluted, could negatively impact public health and would be expensive to restore or replace. Reducing or preventing chemical and microbiological contamination of source waters may allow public waterworks to avoid costly treatments and minimize monitoring requirements. The costs associated with drinking water contamination include the following:

* Providing emergency replacement water;
* Paying for treatment and/or remediation expenses;
* Finding and developing new supplies;
* Paying for consulting services and staff time;
* Litigating against responsible parties;
* Conducting public information campaigns when incidents occur;
* Failing to meet the regulations of the Safe Drinking Water Act;
* Reducing property value or tax revenue;
* Adding health-related costs from exposure to contaminated water;
* Economic impacts, such as interruptions to businesses and loss of development opportunities; and
* Losing community acceptance of treated drinking water.

Source Water Protection is a voluntary program in Virginia. Proposed source water protection strategies are not mandated by state or federal regulations. Proposed commitments and schedules by waterworks’ representatives are subject to change.

Surface water is vulnerable to contamination by several pathways, including:

* Inorganic contaminants as a result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming;
* Microbial contaminants, such as viruses and bacteria, which can come from sewage treatment plants, failing septic systems, agricultural livestock operations and wildlife;
* Pesticides and herbicides, which can come from a variety of sources such as agriculture, storm water runoff, and residential uses;
* Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and can also come from gas stations, urban storm water runoff and failing septic systems; and
* Radioactive contaminants, which can occur naturally or as the result of oil and gas production and mining activities.
* Any of the above contaminants as a result of chemical spills from storage tanks, trains, trucks, or pipelines.

The characteristics (land use, land cover, soil types, vegetation types, etc.) within the watershed can also impact the likelihood of contamination from a potential source migrating to a surface water intake. Preventing contamination is key to keeping drinking water supplies safe.

## Plan Purpose

The purpose of the Source Water Protection Plan (SWPP) is to protect surface water which serves as a source of public water supply from the threat of contamination as a result of accidents or unwise practices from nearby residential, industrial, commercial, agricultural, waste management, or transportation activities.

## Plan Goals

The goals of the SWPP are:

* To promote public health, economic development, and community infrastructure by maintaining an adequate drinking water supply for all residents of the community;
* To create an awareness of the communities’ drinking water source(s); and
* To provide for a comprehensive action plan in case of an emergency affecting the water source.

# Local Advisory Committee (LAC)

The purpose of the LAC is to evaluate the site-specific risks to the source water, develop site- specific recommended actions to mitigate the risks, and to ensure that the recommended actions are implemented. Community involvement is a critical element to developing a successful SWPP. The LAC involves the community in this process by incorporating community members and local officials into its membership, and by holding meetings with local stakeholders.

The LAC membership typically consists of waterworks employees, town or local government officials, county or regional government representatives, board members, and/or water customers. Extensive knowledge of source water protection or the water system components is not a prerequisite to being a committee member.

The *[insert waterworks name]* LAC consists of:

|  |  |  |
| --- | --- | --- |
| Name | Organization | Title |
|  |  |  |
|  |  |  |
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The LAC contributes information to aid the development of the SWPP, reviews draft SWPPs, and ensures the implementation of recommended actions. The recommended actions that the LAC proposes are presented to the local officials and the waterworks for implementation.

The LAC holds meetings to solicit information from other local stakeholders, such as emergency response personnel, local health professionals, land or business owners, and other concerned citizens.

After reviewing the available information characterizing the water source and the Source Water Protection Area, the LAC develops recommended actions to best protect the *[insert waterworks name]* water source(s). The recommended actions developed by the LAC are listed in the following section.

# Recommended Actions

The following source water protection measures are recommended to prevent potential contamination of the *[insert Waterworks’ name]* water supply.

*[The LAC should modify this list as appropriate for the waterworks. A planned timeline should be developed by the LAC for completion of the recommended actions that is ambitious, but practical.]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Action**  **Number** | **Recommended Action** | **Planned Completion Date** | **Actual Completion Date** |
| 1 | Promote education of the residents within the Source Water Protection Area (SWPA). Distribute brochures to customers within the SWPA that describes the importance of source water protection and a list of general do’s and dont’s. See Appendix C for a brochure template. | *[insert date]* |  |
| 2 | Provide information about source water protection on your waterworks website and Annual Water Quality Report. | *[insert date]* |  |
| 3 | Install signs along roads in high visibility locations near the designated boundary of the SWPA that state “Entering [insert waterworks or watershed name] Source Water Protection Area”. (Note that signs on road right-of-way will require approval from VDOT.) | *[insert date]* |  |
| 4 | Annually review with pertinent emergency response personnel *[insert city, town or county name]* the designated SWPA zone and appropriate response procedures. Provide an emergency information sheet that shows the SWPA, roads, and emergency contact information. Conduct an annual meeting/training/review with emergency response personnel to highlight the significance of the SWPA, and review appropriate response procedures for incidents in the SWPA. Such actions should include the following in the event of a spill or potential source of contamination: | *[insert date]* |  |
| 5 | Hold an annual meeting between the *[insert Waterworks name]* utility operators and the town council members to discuss source water protection information and activities in the community. | *[insert date]* |  |
| 6 | Update the *[insert city, town, or county name]* Comprehensive Plan to include goals and policies to facilitate source water protection. | *[insert date]* |  |
| 7 | Develop a Memorandum of Inter-jurisdictional Cooperation with *[insert the names of other localities in which portions of the SWPA are located]*. | *[insert date]* |  |
| 8 | Designate a Source Water Protection Overlay District that would:   * specify minimum restriction for SWPAs (i.e. provide a generic SWP Overlay), and/or * allow the designation of a specific Overlay District proposed by the locality   Concerns that could be addressed include:   * restriction of certain type of businesses and activities, * regular inspection and maintenance of septic systems,   guidelines on approval and abandonment of private wells. | *[insert date]* |  |
| 9 | Revise plan review procedures to better protect water sources. | *[insert date]* |  |
| 10 | Develop or revise a septic system ordinance requiring all septic systems shall be pumped out and maintained in good working order once every five years | *[insert date]* |  |
| 11 | Evaluate and rank the potential risk (from highest to lowest) of each of the Potential Sources of Contamination. Factors to consider are:   * proximity to the source, * type of contaminates, and * likelihood of release of contamination. | *[insert date]* |  |

# Source Water Protection Area

## Delineation of Source Water Protection Area

VDH delineates two different Source Water Assessment Area zones for each waterworks source. These zones are defined for surface water sources as follows:

* Zone 1 is the watershed bounded by a 5 mile radius and is a priority zone for managing potential sources of contamination; and
* Zone 2 is the entire watershed outside of Zone 1.

The Source Water Protection Area (SWPA) is defined as the surface area surrounding a water source, supplying a waterworks, through which contaminants are likely to move toward and reach the water source. A map of the SWPA for each intake may be found in Appendix A.

## Land Use

*[Insert a brief summary of the land use activities in the SWPA.]*

An existing land use map for the SWPA is presented in Appendix B-1.

## Future Land Use *[Optional]*

*[Insert a brief summary of the land use activities in the SWPA.]*

A future land use map for the SWPA is presented in Appendix B-2.

# Potential Sources of Contamination

## Potential Sources of Contamination

VDH conducts an inventory of PSCs within the SWPA through its Source Water Assessment Program. This inventory, which is presented in Appendix C, contains information regarding the ownership of the PSC, the types of contaminants produced by the PSC, as well as the distance of the PSC to the water source. This inventory is summarized below in Figure 4.

The location maps of potential sources of contamination (PSC) within of the SWPA are presented in Appendix A. These PSC include publicly available information from DEQ, VDH, EPA, and other sources. *[insert only in non-public version of SWPP:**Information on these sources, as well as the sources of the map reference data, is available in Appendix D.]*

The risk of each potential contamination source varies depending on proximity to the intake. The highest priority area for protection includes the activities within Zone 1 of the SWPA. *[Water System Name]* should use the PSC inventory of Zone 1 in evaluating the risk posed by each PSC and the need for protections measures.

*[Insert PSC Summary]*

## Potential Future Sources of Contamination

Identification of existing contamination sources may address immediate concerns about protection of the local water supply. To ensure that the supply remains uncontaminated, continual review of land use activities and identification of potential sources of contamination is necessary.

# Source Water Protection Plan

The SWPP describes the actions necessary to minimize the risk to the quality of the source water utilized by the *[insert waterworks name]*. The goal of the plan is to reduce or eliminate potential threats to drinking water supplies within the SWPA either through existing regulatory or statutory controls, or by using non-regulatory (and often voluntary) measures centered around an involved public.

## Existing Measures and Activities

Current measures in place for protecting the quality of water within the SWPA are:

*[Unique to each water system, fill in appropriately. This may include activities performed to meet the requirements of the Virginia Stormwater Management Program, the MS4 Program or the Sediment Control Program.]*

## Source Water Protection Emergency Response Plan

“Emergency Response Planning Template for Public Drinking Water Systems” produced for the Rural Community Assistance Partnership (RCAP) National Network and the Rural Community Assistance Corporation (2005) was used to develop an Emergency Response Plan. The Emergency Response Plan provides contact information and defines basic emergency response procedures to aid the waterworks in responding to a source water contamination event. *[insert only in non-public version of SWPP: The Source Water Protection Emergency Response Plan is located in Appendix E]*

## Public Education and Outreach

In order for citizens to appreciate the benefits of source water protection, they must first understand what the problems are in providing safe drinking water, and how they can become involved in the process. Public education is the greatest promoter of voluntary action and public support for a community’s source water protection program.

Activities and opportunities should be sought that will increase public awareness that source water protection is a local issue and that each citizen plays a part. A public education brochure template is available in Appendix C. Some other examples of public education and outreach include providing information about source water protection on your waterworks website and Annual Water Quality Report, and by installing signs along roads in high visibility locations near the designated boundary of the SWPA that state “Entering *[insert waterworks or watershed name]* Source Water Protection Area”.

## Implementation and Funding

The initial step in implementation should be to discuss responsible parties and timelines to implement the strategies. Community members can determine the best process for completing activities within the projected time periods.

Numerous funding opportunities are available to aid communities in the implementation of source water protection initiatives. The following is a summary funding sources currently available to support source water protection in Virginia:

Wellhead Protection Implementation Projects Grants – Virginia Department of Health – Office of Drinking Water

Funding type: grant

Description: This program supports the implementation of wellhead protection projects including well abandonment, educational outreach, wellhead fencing, advancing ordinances, emergency response planning, hazardous waste collection, and protection area delineation. This program requires that the waterworks have a protection strategy in-place(i.e. Source Water Protection Plan) and an active source water protection committee.

Link: <http://www.vdh.virginia.gov/drinking-water/source-water-programs/source-water-protection-assistance-funding-opportunities/>

Drinking Water State Revolving Fund – Virginia Department of Health – Office of Drinking Water

Funding type: low interest loan with possible principal forgiveness

Description: This program provides planning funding, which could be used to analyze solutions to source water measures or evaluate potential new sources. This program also provides low interest loans with possible principal forgiveness for waterworks construction projects including new wells and intake modifications, and low interest loans for waterworks to acquire land or conservation easements and to establish local voluntary incentive-based source water protection measures. Funding is prioritized for small, financially stressed, community waterworks.

Link: <http://www.vdh.virginia.gov/drinking-water/financial-construction-assistance-programs/>

Nonpoint Source Management Implementation Grant Program – Virginia Department of Environmental Quality

Funding type: grant

Description: This program provides grants for watershed projects, demonstration and educational programs and nonpoint source pollution control program development.

Link:<http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/NonpointSourcePollutionManagement.aspx>

Virginia Wastewater Revolving Loan Fund – Virginia Department of Environmental Quality

Funding type: low interest loan

Description: This program provides low interest loans for acquisition of title or other rights to real property to protect or improve water quality, and for storm water runoff control best management practices.

Link:<http://www.deq.virginia.gov/Programs/Water/CleanWaterFinancingAssistance/VCWRLFTableofContents.aspx>

Virginia Clean Water Revolving Loan Fund – Virginia Department of Environmental Quality

Funding type: low interest loan

Description: This program primarily funds wastewater treatment projects, but also funds agricultural best management practices and non-point Source Pollution Abatement. This program can provide low interest loans to waterworks or localities to provide loans or other incentives to facilitate the implementation of agricultural best management practices.

Links:

Land conservation - <http://www.deq.virginia.gov/Programs/Water/CleanWaterFinancingAssistance/LandConservation.aspx>

Stormwater - <http://www.deq.virginia.gov/Programs/Water/CleanWaterFinancingAssistance/StormwaterFundingPrograms/StormwaterLoans.aspx>

Stormwater Local Assistance Fund – Virginia Department of Environmental Quality

Funding type: cost-share

Description: This fund provides matching grants for stormwater projects including new stormwater best management practices, stormwater best management practice retrofits, stream restoration, low impact development projects, buffer restorations, pond retrofits, and wetlands restoration.

Link:<http://www.deq.virginia.gov/Programs/Water/CleanWaterFinancingAssistance/StormwaterFundingPrograms/StormwaterLocalAssistanceFund(SLAF).aspx>

Virginia Land Conservation Foundation – Virginia Department of Conservation and Recreation

Funding type: grant

Description: Grants are awarded to help fund the purchase of permanent conservation easements, open spaces and parklands, lands of historic or cultural significance, farmlands and forests, and natural areas. This program may allow public waterworks to permanently protect land in the SWPA at little cost to the waterworks.

Link: <http://www.dcr.virginia.gov/virginia-land-conservation-foundation/>

The Land and Water Conservation Fund State and Local Assistance Program – Virginia Department of Conservation and Recreation

Funding type: cost-share

Description: This program supports the acquisition and/or development of public outdoor recreation areas. This may aid utilities in purchasing land in the SWPA when the source water protection goals do not conflict with the recreational use of the land. It should be noted that all LWCF assisted areas must be maintained and opened, in perpetuity, as public outdoor recreation areas.

Link: <http://www.dcr.virginia.gov/recreational-planning/grants>

Other Virginia Department of Forestry funding programs –

VDF administers a number of programs aimed at promoting healthy forests and wildlife habitat that may help waterworks to limit erosion on land that they control within the SWPA. Additionally, VDF administers programs aimed at supporting agricultural best management practices. Waterworks can use these programs to promote Best Management Practices within their SWPA.

Link: <http://www.dof.virginia.gov/costshare/index.htm>

Urban Waters Small Grants Program – US Environmental Protection Agency

Funding type: grant

Description: This program provides small grants to restore their urban waters in ways that also benefit community and economic revitalization. In general, projects should address local water quality issues related to urban runoff pollution, provide additional community benefits, actively engage underserved communities; and foster partnership

Link: <https://www.epa.gov/urbanwaters/urban-waters-small-grants>

Healthy Watersheds Consortium Grant – U.S. Endowment for Forestry & Communities, Inc.

Funding type: grant

Description: This program provides grants to accelerate strategic protection of healthy, freshwater ecosystems and their watersheds. The primary focus for applicants should be protection and stewardship of the landscape that comprises the watershed, rather than restoration of degraded habitats or projects with a strictly water quality improvement outcome.

Link: <http://www.usendowment.org/healthywatersheds.html>

Regional Conservation Partnership Program – U.S. Department of Agriculture

Funding type: cost share

Description: This program provides funding to locally driven, public-private partnerships that improve the nation’s water quality, combat drought, enhance soil health, support wildlife habitat and protect agricultural viability. The program connects partners with producers and private landowners to design and implement voluntary conservation solutions that benefit natural resources, agriculture, and the economy. Applicants must match or exceed the federal award with private or local funds.

Link: <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/farmbill/rcpp/>

# Appendix A-1: Source Water Protection Area Zone 1 Map

*[Insert Zone 1 Map]*

# Appendix A-2: Source Water Protection Area Zone 2 Map

*[Insert Zone 2 Map]*

# Appendix B-1: Source Water Protection Area Land Use Map

*[Insert Land Use Map]*

# Appendix B-2: Source Water Protection Area Future Land Use Map *[Optional]*

*[Insert Future Land Use Map]*

# Appendix C: Residential Brochure Template

# Appendix D: Potential Sources of Contamination Inventory *[omit from public versions of the document]*

*[Insert PSC Inventory]*

# Appendix E: Source Water Protection Emergency Response Plan *[omit from public versions of the document]*

*[Insert the Emergency Response Plan. ODW recommends that the waterworks utilize the document “Emergency Response Planning Template for Public Drinking Water Systems” produced for the Rural Community Assistance Partnership (RCAP) National Network, and the Rural Community Assistance Corporation to produce the Emergence Response Plan. This template is located at:* <https://www.epa.gov/sites/production/files/documents/erp_rcap.pdf>. *Section 6 subsections A, B, C, D, E, H, I, J, K, L, N, and P may not be applicable to the SWPP.]*