

# Town of Digby/Digby Water Commission Source Water Protection Plan

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January 25, 2018 amended by SWPP Committee

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# 1. Introduction

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## 1.1 Purpose of this Plan

The ability to provide Town residents with a safe and adequate supply of potable water is a fundamental component of municipal services. A safe and adequate water supply is necessary to maintaining a healthy and thriving population and to support economic growth and development.

While the operation and the management of the water supply and distribution system is the responsibility of the Digby Water Commission, education regarding general awareness, the promotion of best practices such as conservation and the protection of the water supply area are responsibilities shared by Town Council, residents, property owners, business and the neighbouring Municipality.

The purpose of this plan is to:

- Promote the continued responsible operation and management of the Town of Digby municipal water supply
- Identify risks to contamination of the water supply area;
- Identify risk management options, plans and strategies;
- Ensure the ongoing monitoring and updating risk management efforts.

This Plan has been prepared in compliance with Section 7 of the Town of Digby's Approval to Operate (Approval No. 2010-070842-AO1, dated February 9, 2015).

This Plan has been prepared utilizing the principles and structures identified in the Province of Nova Scotia Environment's Guide for Developing a Municipal Source Water Protection Plan.

## **1.2 The Digby Water Commission**

While the Town of Digby is the owner of Water Supply System and Associated Works and is the Approval Holder the Digby Water Commission, created by an act of the Nova Scotia Legislature in 1948 (c. 87 SNS 1948 as amended), is responsible for the operation and management of the system. The Commission is comprised of seven members including the Town's Mayor, a member of Town Council and five Town residents.

The Town's Director of Public Works serves as the Operator in Direct Responsible Charge of the Water Supply System and holds a valid Operator Certification Certificate as required by the Approval. The Town's Public Works Foreman is also qualified to serve as an Operator in Direct Responsible Charge as may be needed from time to time. Administrative support is provided to the Commission through the office of the Town's Chief Administrative Officer. The Town of Digby employs two (2) Class 1 Operators and one (1) Class 2 Operator.

The Digby Water Commission has an annual operating budget of approximately \$713,755 and the water supply system has a capital asset value of approximately \$7.8 million dollars.

## **1.3 Digby Source Water Protection Advisory Committee**

To assist the Town in the preparation of this Source Water Protection Plan the Digby Water Commission established a Source Water Protection Advisory Committee in November 2009. The Terms of Reference for the Source Water Protection Advisory Committee (SWPAC) establish a mandate, general responsibilities, membership and operations of the Committee. A copy of the Terms of Reference is attached in Appendix A of this Plan.

The mandate of the Committee, as established in the Terms of Reference is:

“The Source Water Protection Advisory Committee which advises the Town of Digby Water Commission on matters of Source Water Protection, will report to the Town of Digby Water Commission, and will be recognized by the Town of Digby, the Municipality of the District of Digby, and the Town of Digby Water Commission.”

From DSWPAC Terms of Reference, March 2010

The responsibilities of the Committee include:

To review and make recommendations on all activities affecting the Source Water Protection Plan as requested by the Town of Digby Water Commission, the Town of Digby, the Municipality of the District of Digby and Communities in the area.

From time to time request individuals or groups to make representation to the committee on matters affecting the Source Water Protection Area.

To review and comment on water quality monitoring programs and other studies related to the Source Water Protection Area. All water quality information available from member agencies shall be made available to the Committee.

To liaise with government agencies not represented on the Committee with regard to matters affecting the Source Water Protection Area; particularly the Departments of Environment, Health Promotion and Protection, and Fisheries and Oceans Canada.

To develop information and education programs about source water protection for local residents, land owners and other users of the Source Water Protection area lands.

From DSWPAC Terms of Reference, March 2010

The Source Water Protection Advisory Committee is comprised of:

Voting Members:

- One citizen member from Digby Water Commission
- One Councillor/PAC (Municipality of Digby)
- One citizen member (Municipality of Digby)
- One Councillor/PAC (Town of Digby)
- One citizen member (Town of Digby)

Ex-officio Members:

- NS Environment representative(s)
- CAO or designate (Municipality of Digby)
- CAO or designate (Town of Digby)
- Director of Public Works or Designate (Town of Digby)
- One member (4 Site Group Planners)

In addition to the composition of the Committee, the Terms of Reference have provided for the length of appointments, rules of conduct, frequency of meetings and annual reporting requirements. The SWPAC is provided staff and administrative support through the office of the Town of Digby's Chief Administrative Officer. The Committee also receives professional and technical support from the Town of Digby/Digby Water Commission Engineer, the Town's Planning Officer as well as representatives from the Nova Scotia Department of Environment.

The SWPAC operates under the direction of a Chair, duly elected by Committee members. The Committee reports to the Digby Water Commission through the Water Commission's representative. Minutes and all documents relating to the operation of the SWPAC are maintained through the office of the Town's CAO.

## 2. The Digby Water Supply Area

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### 2.1 History

The following brief history and overview of the Digby Water Supply Area is contained in the Hiltz and Seamone Consulting Engineers Ltd./W.G. Shaw and Associates Consulting Geoscientists Digby Wellfield Water Resources Management Plan (2002) and Digby Wellfield Source Water Protection Plan (2009);

“Prior to 1967, the Town of Digby central municipal water system was supplied by Van Tassel Lake, a surface water source located on the south side of North Mountain approximately 4 kilometers northeast of the Town limits.

In 1967, two production wells No. 1 and No. 2 were constructed at a location of one (1) kilometer northwest of the Town limits. These two (2) wells were used as a supplement to Van Tassel Lake during low-flow periods of late summer and early fall.

From 1984 to 1988, Production Wells No. 3, No. 4, No. 5 and No. 6 were constructed to enhance the groundwater component of the raw water supply and to satisfy increasing demand from the Town system.

From 1998 to 2001 Production Wells No. 7, No. 8 and No. 9 were constructed and added to the raw water supply system.

The Towns current system consists of nine (9) water production wells which are supplemented by a surface water source called VanTassel Lake Reservoir. Over the past five (5) years the wellfield has been producing between 2.0 and 3.0 million litres per day (450,000 to 500,000 gpd) with only very minor amounts being produced from VanTassel Lake.”

From Hiltz and Seamone Consulting Engineers Ltd., 2009

As of 2010 seven (7) of the nine (9) wells within the Source Water Protection Area are used as Production Wells are utilized (Wells No. 2, 3, 4, 5, 7, 8 and 9. Wells No. 1 is a small diameter well (4”) with low production and which interferes with Production Well No. 2. Decommissioning of Well No. 1 has been recommended by the Commissions Engineers. Well No. 6 is a low yield well and the well screens have become plugged. A test well drilled in close proximity has proven to be productive and as a result the Commissions Engineers have recommended that Well No. 6 be decommissioned and the test well be placed into production. In term of the current functioning of the water supply system it is also noted that while the capacity of the VanTassel Lake supply to function as a backup source has been maintained it is not directly connected to the system.

As of September of 2014 Well # 1 and Well # 6 and a test well on the road to Well # 6 were decommissioned by W&R Drilling Company Limited.

As of November of 2017 Old Well # 2 and two (2) test wells have been decommissioned.

## **2.2 Digby Water Supply System**

The Town’s water supply currently supports a population of approximately 3,500 people as well as several large institutional and commercial users. The system demand ranges from 2 to 2.5 million litres per day (per Hiltz and Seamone 2009).

The water system serves all of the Town, the joint Town/Municipality Industrial Park, Mount Pleasant, BelAire Drive, Pleasant Street and a portion of the Municipality along Highway 217 between the Town boundary and the community of Seabrook.

The system is comprised of:

- Wellfield as primary source with a non-connected back up surface supply VanTassel Lake;
- 7 production wells;
- 2 1-million gallon storage tanks;
- approximately 40 km of transmission mains;
- approximately 950 residential service customers and 25 commercial/industrial services customers.

### **2.3 Source Water Protection Area Delineation**

The development of the wellfield, including the location and placement of test and production wells has been undertaken through the direction of the Digby Water Commission's engineers Hiltz and Seamone Co. Ltd. Consulting Engineers. In 2002, with the assistance of W. G. Shaw and Associates, Hiltz and Seamone prepared the Digby Wellfield Water Resource Management Plan.

The Plan identified the regional setting, hydrogeology, wellhead location and well production data as well as wellfield protection recommendations based upon the identification of protection zones.

The 2002 Hiltz and Seamone Digby Wellfield Water Resource Management Plan identified an area of approximately 24.5 sq. km of land, primarily located within the Municipality of Digby which constitutes the area of contribution for the Town's wellfield.

The Plan identified 3 protection zones based on estimated groundwater travel times to wellheads: a wellhead protection zone (0 to 1 year time of travel); a wellfield contribution zone (1 to 5 year time of travel); and a wellfield recharge zone (5 to 25 year time of travel). The Plan also identified, utilizing topographic data, the watershed area for VanTassel Lake which serves as a back up/emergency water supply (the watershed protection zone) as well as an area with geological characteristics which would be appropriate for future well construction (the wellfield expansion zone).

The Digby Wellfield Water Resource Management Plan also identified a number of potential risks for contamination and recommended a variety of land use controls within the Wellfield Protection Area. These recommendations formed the basis of a Municipal Planning Strategy and Land Use By-law, adopted by the Council of the Municipality of the District of Digby in 2004, for the purposes of reducing the potential risks to groundwater contamination through inappropriate development with the wellfield area.

In 2009, Hiltz and Seamone with W.G. Shaw and Associates Ltd. prepared the Digby Wellfield Source Water Protection Plan. The 2009 Digby Wellfield Source Water Protection Plan updated data relating to well production statistics, identified estimates for long term safe yields of the existing production wells,

described the methodology for delineation of protection zones (hydrogeologic mapping interpretation and analytical equation modeling) and brought identification of wellfield protection zone boundaries into line with current requirements of the Nova Scotia Environment.

The Hiltz and Seamone Digby Wellfield Source Water Protection Plan identified, in addition to a wellhead zone, 3 protection zones based on 0 to 2 year time of travel (Zone A), 2 to 5 year time of travel (Zone B) and 5 to 25 year time of travel (Zone C).

The 2009 plan serves as the technical basis of the source water protection area delineation and zone boundaries location utilized by this plan. It is noted that the 2009 Hiltz and Seamone plan did not incorporate any specific reference to the VanTassell Lake backup supply or the lake's watershed area with respect to protection measures or zones. The DSWPAC has incorporated the information contained in the 2002 Hiltz and Seamone plan as it relates to VanTassell Lake. A map identifying the source water protection area and the protection zones from the 2002 and 2009 Hiltz and Seamone Plan is attached as Appendix B of this plan.

### **3. Contamination Risk Identification**

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Both the 2002 and 2009 Hiltz and Seamone mapping have been migrated to a computer-based municipal GIS (Geographic Information System) environment to enable the overlay of digital topographic, roadways, community features and property ownership data. The Town's GIS resources enable integrated data analysis. Mapping tools have been utilized in the development of land use and utility operations and management policies which have been adopted to date by the Digby Water Commission and the Municipality of Digby.

#### **3.1 Contamination Sources**

With the assistance of technical staff, a general scan was undertaken by the SWPAC to identify potential groundwater contamination sources and contaminant types which may be present within the Digby Wellfield Protection Area. The following contaminant types were identified:

Mircobial – bacteria from wastewater management and septic systems, agricultural livestock;

Inorganic – salt and metals from commercial/industrial operations and salt from seasonal road maintenance;

Organic – organic chemicals including hydrocarbon and petroleum products, paints, chlorine from residential, commercial, industrial and municipal operations;

Pesticides and Herbicides – from residential, agricultural and recreation uses.

### **3.2 Point and Non-Point Source Contamination Risks**

With the assistance of technical staff, a general scan was also undertaken by the SWPAC to identify various land use activities, locations and specific point activities which present a risk for potential groundwater contamination within the Source Water Protection Area.

A generalized range of 5 non-point source contamination risk activities were identified by the Committee. These uses included: residential; commercial/industrial; forestry; agriculture; and quarry. In addition to these land use categories the SWPAC noted that specific activities occurring within the Source Water protection Area also represented varying risk for contamination. In particular it was noted that illegal dumpsites, the presence of off highway vehicles, vehicle trails and the use of road salt and saltwater intrusion represented potential sources of contamination to groundwater.

Point source contamination risk sites were considered to be properties which currently contain or have previously contained land uses which present identifiable and significant risk of groundwater contamination either due to their inherent character, such as bulk fuel storage, or the use of materials and or processes which represent a risk of groundwater contamination such as the use of chemicals, lubricants and paints in relation to the operation of a machine shop. Also included in this site and source specific risk assessment component were the Water Commission's former production wells located within the wellfield area. Approximately 18 specific properties were identified in the context of site specific contamination risk potential.

Utilizing base mapping for the Source Water protection Area each of the point and non-point source risks were considered relative to their presence within the 3 Source Water Protection Area zones: Zone A, 0 to 2 year time of travel to wellhead; Zone B, 2 to 5 year time of travel to wellhead; and Zone C, 5 to 25 year time of travel to wellhead.

The following tables summarize the point and non-point source contamination risks within the Source Water Protection Area together with a brief description of the associated type of contamination risk as identified by the Committee

**Table 1**  
**Contamination Risk Present Within Zone A**

<b>Non-Point Source</b>	<b>Description</b>
Agriculture	Cattle, horses, bacteria, manure storage
Forestry	Fuel, pesticides
Residential	Septic, fuel, pesticides, chemicals, fertilizers, dug and drilled wells
Salt Water Intrusion	Increase in salinity
Road Salt	Inorganic contaminants, increased salinity and hardness
<b>Point Source</b>	
Digby Pines Golf Course	Septic, fertilizer, pesticides, diesel, gas, chemicals
VJ Rice Concrete Plant	Currently not operational but have an approval to operate – fuel and concrete additives
Salvage Yard	Chemicals, fuel
Wastewater Collection Lift Stations	Bacteria
West Nova Bulk Storage	Diesel, furnace oil, gasoline
Test Well	Pathway to aquifer

**Table 2**  
**Contamination Risk Present Within Zone B**

<b>Non-Point Source</b>	<b>Description</b>
Agriculture	Cattle, horses, bacteria, manure storage
Residential	Septic, fuel, pesticides, chemicals, fertilizers, dug and drilled wells
Road Salt	Inorganic contaminants – increased salinity and hardness
Salt Water Intrusion	Increase in salinity
<b>Point Source</b>	<b>Description</b>
Water Treatment Plant	Chlorine
Town Public Works Yard	Salt, fuel
Cemeteries	Chemicals, bacteria

**Table 3**  
**Contamination Risk Present within Zone C and Watershed**

<b>Non-Point Source</b>	<b>Description</b>
Forestry	Fuel, pesticides
Quarry	Fuel, fluids, and interaction with water table
Residential	Septic, fuel, pesticides, chemicals, fertilizers, dug and drilled wells
Salt Water Intrusion	Increase in salinity
Road Salt	Inorganic contaminants – increased salinity and hardness
<b>Point Source</b>	<b>Description</b>
Marina	Fuel Storage
Jayne's Funeral Home	Embalming Fluid
DRHS	Fuel, Chemicals
Digby Arena	Chlorine
Cemeteries	Chemicals, bacteria
Larche's	Paint, chemicals, fuel
Tidal Boatworks	Fuel, paint, chemicals (fiberglass)
Pines Hotel	Fuel
Wind Turbines	Lubricants
Illegal Dump Sites	Various containments
OHV Lake	Sedimentation, fluids and fuels
Dental Offices	Chemicals
Elevators	Hydraulic fuel
Sobey's	Refrigeration equipment, fertilizer, and manure
Fish Plants	Refrigeration equipment
NSP Depot	Transformers, creosote poles, fuels, and oils
DFO	Fuel
DJ Manufacturing/ Screen King	Sand blasting, chemicals
Restaurants	Fuel, oils, bacteria

## **4. Risk Management Strategies**

### **4.1 Current Risk Management Efforts**

At present the Town of Digby together with the Digby Water Commission, and with the support of the Municipality of Digby, are pursuing a number of efforts to manage and mitigate risks of groundwater contamination within the source water protection area.

It is significant to note the following:

- The Town is the approved holder of a valid Approval to Operate the Digby Water Supply System and is compliant with all related regulatory requirements and conditions of the Approval including compliance with standards established in the Guidelines for Canadian Drinking Water Quality (GCDWQ) (attached as Appendix C);
- The Digby Water Commission has prepared a Contingency Plan for the purposes of establishing response and communications protocols to be initiated after the occurrence of an incident or event which poses a risk to the operation of the water supply system or the creation of an environmental or health hazard (attached as Appendix D);
- The Town has pursued an ongoing program of the acquisition of critical lands within the source water protection area including wellhead areas;
- Fencing and related security efforts have been implemented at wellhead locations;

- The adoption of planning and land use control documents (Municipal Planning Strategy and Land Use By-law) for that portion of the source water protection area located within the Municipality of Digby which include restrictions of high risk land use and related development activities (attached as Appendix E);
- The drafting of Municipal Planning Strategy and Land Use By-law provisions for that portion of the area located within the Town of Digby boundaries which include restrictions of high risk land use and related development activities (attached as Appendix F);
- The creation of the Source Water Protection Advisory Committee which is responsible for providing a forum for the preparation of a detailed Source Water Protection Plan and ongoing consideration and advise regarding issues relating to source water protection.

#### **4.2 Risk Management Strategies**

The Digby Water Commission has identified and initiated a number of efforts to manage risk relating to the operation of the water supply system and the protection of the source water area. The Province, through its' guidelines, and other water utilities have recognized a number of risk management strategies which collectively can serve to proactively address and minimize health and environmental risks relating to the operation of a public water supply. These strategies include: the acquisition of land; implementation of land use planning and controls; adoption of Best Management Practices; the preparation of Contingency Plans; the legal Designation of a water source pursuant to Provincial legislation; and public awareness, education and stewardship.

### **Acquisition of Land**

Public ownership of lands within the Source Water Protection Area, and in particular at wellhead locations, provides the Town the ability to directly control use of the lands. Ownership and/or control of lands within the Source Water Protection Area is a significant risk management strategy.

The Town had either acquired lands or entered into lease agreements with property owners in relation to the existing wellhead locations. The Town currently owns a significant amount of lands within the VanTassell Lake watershed. It has also been recognized that the development of any new wells should only take place on publically owned lands and therefore land acquisition will be a component in all future well development strategies.

In July, 2011 the Town of Digby acquired land from Clayton Van Tassell (PID # 30132344) 195 Culloden Road Mount Pleasant. This property borders the Well# 2 property and encompasses the now decommissioned Well # 1.

### **Land Use Planning**

Through the cooperation of the Municipality of Digby a Municipal Planning Strategy and Land Use By-law were adopted in 2002 for that portion of the Source Water Protection Area located within the Municipality. The planning documents establish protection zones and regulate land use relative to its proximity to wellhead and well recharge areas. Certain uses which have been deemed as being high risk are prohibited entirely from the Source Water Protection Area.

In conjunction with a comprehensive review of its own Municipal Planning Strategy and Land Use By-law the Town of Digby has drafted amendments to the planning documents which would impose land use

and development controls which compliment and support the Municipality's regulations within that portion of the Source Water Protection Area located within the Town.

Planning documents are reviewed and updated on a regular basis and consideration of changing requirements for source water area protection will be considered on an ongoing basis.

### **Best Management Practices**

Over time and through experience recognition has been given to standardized and generally accepted principles and practices regarding both the operation of a public water supply system and the protection of a source water area. The Digby Water Commission has and will continue to seek out, assess and adopt relevant Best Management Practices (BMP). It is noted that BMP exist for a wide variety of activities which are outside the direct control of the Commission such as agricultural practices, chemical and fuel storage practices, septic system construction and maintenance practices and commercial waste and bi-product disposal practices. BMP represent a significant opportunity for contamination risk mitigation within the Digby Source Water Protection Area and their adoption by all stakeholders is critical.

### **Contingency Planning**

A Contingency Plan establishes and identifies response protocols which are to be followed in the event of an incident which creates environmental or health risk to the water supply system. The Digby Water Commission has prepared and adopted a Contingency Plan which addresses treatment plant operations, environmental contamination responses, boil water

directives, public and private resources and contractors capable of assistance as well as communications with stakeholders and the general public. Regular review and updating for the Contingency Plan is a responsibility of the Commission.

### **Protected Water Area Designation**

The Nova Scotia Environment Act (Section 106) enables an operator of a public water supply to apply for formal Designation for a Protected Water Area in order to regulate activities within the area for the protection of water quality. The Designation of a Protected Water Area requires public notice and consultation as regulations prescribed pursuant to the Designation can have significant implications for land use and activities within the area.

Given that a majority of the land within the Digby Source Water Area is located outside of the Town, that the level of development activity in the area is relatively modest and in light of the fact that the adjacent Municipality has adopted land use controls specifically for the Area to promote protection of groundwater quality it is not currently envisioned that formal Designation of the Area pursuant to the Environment Act is necessary or warranted.

### **Education and Stewardship**

A wide variety of stakeholders are directly and indirectly responsible for protection of the source water area, in particular private property owners within the source water area itself. Aware of water quality issues and education relating to the protection of groundwater can be an effective means of managing and mitigating the risk of contamination within the source water area. The Town and the Commission have access to a significant amount of information which can be made available to various stakeholder groups relating to best practices, land use activities and

personal and business behaviours which can create positive awareness of protection issues, promote a sense of shared responsibilities and which can contribute to reducing contamination risks.

### **4.3 Risk Management Initiatives**

This strategy contains action plans which include both education and public awareness efforts directed a broad range of stakeholders as well as specific contingency plans which focus on risk management and mitigation relating to a particular activity or property. These initiatives have been identified by the DSWPAC in consultation Nova Scotia Environment and other professional support staff.

In general, the strategies have been identified utilizing a process of summarizing: the Issue; the Goal/Objective of the undertaking; identification of specific actions; identification of Responsibilities and Resources, including cooperation of multiple stakeholders; and the identification of Timeline for implementation.

It is recognized that source water protection will be an ongoing process; therefore, an annual review of the strategic undertakings will done and new priorities added as required. The protection initiatives contained in this plan are not presented in priority however assignment of priority to subsequent undertakings will be a critical component of the Contamination Risk Analysis effort.

Initiative 1	
Contamination Risk Analysis	
Issue	Point and Non-Point Source contamination have been identified and should be assessed as to their relative significance.
Goal	To assign risk ratings to Point and Non-Point Source contamination risks within the Source Water Protection Area and identify appropriate risk management strategies for each.
Action	Utilizing professional input each Point and Non-Point Source risk will be ranked in a matrix of low (5), medium (3) or high (1) risk.  Consideration will be given to risk management strategies best suited to mitigate the risk (i.e. land acquisition, BMP, Education/stewardship).  Detail contingency plans for high risk concerns may be considered.
Resources	DSWPAC, Consulting Engineers, 4Site Group Budget, \$1000.00
Timeline	Assemble documentation – Jan. 2011 (Completed) Analysis – Feb. – April 2011 (Completed) Recommendation/Strategy development June 2015 (Completed)

\*\*Initiatives updated by the Committee March 23, 2017

Initiative 2	
Land Use Inventory	
Issue	Location of Point and Non-point source contamination risks within the Source Water Protection Area must be identified.
Goal	To prepare a detailed inventory of land use within the Source Water Protection Area.
Action	Prepare a base map with current property boundaries and features. Undertake a physical inventory of all land use within the Source Water Protection Area. Develop and utilize common classification of land use.
Resources	Town of Digby, 4Site Group Planners \$2,000.00
Timeline	Prepare base plan, April 2011 (Completed) Complete field survey of all land use, May 2015 Prepare mapping, Sept. 2015 Draft field survey of all land use, January 2015  Determined that Municipality of Digby has access to GIS system with instant access to land owners information this is determined to be complete with the ease of access to information –(Complete)  **Note the land use(ie Farming, forestry ) was not identified**

\*\*Initiatives updated by the Committee March 23, 2017

Initiative 3	
Public Awareness and Education Program	
Issue	Non-point source contamination risks from agriculture, residential and forestry activities within the SWPA
Goal	Increase awareness of property owners Increase awareness of general public Provide information on best practices, mitigation efforts and responsibilities of property owners
Action	Assemble information on best practices options for property owners Distribute information packages to all assessed property owners Provide general public access to data via Town and Municipality of Digby Web sites Hold public awareness meeting Document properties and their use in the well field protection zone
Resources	Town of Digby in cooperation with Digby Municipality \$5,000.00
Timeline	Assemble documentation – May 2012 – Sept 2012 Prepare information package – May 2012–Sept 2012(Complete) Hold public meeting – May 2012 (Completed) Distribute information package – September 2012 Ongoing/Long-term Update website with BMP, December 2017 **anticipated completion date**

\*\*Initiatives updated by the Committee March 23, 2017

Initiative 4	
Detailed Contingency Response Plans for High Risk Locations	
Issue	High risk Point and Non-Point Source contamination locations require individual/detailed contingency plans
Goal	To develop detailed contingency plans for those specific locations and activities which are deemed to be the highest risk.
Action	Assessment and analysis of risk issues for each high risk location. Collection, evaluation and integration of any/all existing site specific contingency plans Identification of appropriate risk management strategies Preparation of contingency plans which can be incorporated into the Digby Water Commission's general Contingency Plan
Resources	DSWPA, Consulting Engineers, Digby Water Commission, Town, Digby Municipality, property owners. \$4,000.00
Timeline	Initiative documentation – May 2012 – October 2012 Draft contingency plan for Well # 3(Completed October 2016) Finalize contingency plan – (Completed October 2016) Monitor and update - ongoing

\*\*Initiatives updated by the Committee March 23, 2017

Initiative 5
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<p>Planning and Land Use Control Provisions for Source Water Protection Area within the Town of Digby</p>	
<p>Issue</p>	<p>Planning and development control provisions can regulate the location of land use and development activities so as to mitigate risk of groundwater contamination.</p>
<p>Goal</p>	<p>To identify and adopt land use controls which serve to mitigate against the risk of groundwater contamination within the Town of Digby.</p>
<p>Action</p>	<p>Identify specific land use and development which present a risk to groundwater contamination.</p> <p>Identify appropriate regulation for high risk uses.</p> <p>Prepare planning and land use control documents in conformity with Municipal Government Act enabling legislation.</p> <p>Identify nature of proposed regulation to the public through consultation efforts</p> <p>Adoption of regulations by Town Council.</p>
<p>Resources</p>	<p>DSWPAC, Town Planning Advisory Committee, Town Council, 4Site Group Planners \$3,000.00</p>
<p>Timeline</p>	<p>Assemble documentation – Nov. 2010 (Completed) Public Consultation, March 2012 (Completed) Adopted: June 21, 2012</p>

\*\*Initiatives updated by the Committee March 23, 2017

Priority Action 6

Revision and Update of Planning and Land Use Control Provisions, Municipality of Digby	
Issue	Municipality of Digby has adopted a Municipal Planning Strategy and Land Use By-law for a portion of the Digby Source Water Protection. Review of the documents in light of recent Hiltz and Seamone report is appropriate/necessary.
Goal	To identify and adopt amendments to the current planning and land use control documents which ensure consistency with current engineering and geosciences.
Action	Review 2010 Hiltz and Seamone/W G Shaw Digby Source Water Protection Plan against 2002 Hiltz and Seamone/ W G Shaw Water Resource Management Plan. Identify appropriate amendments the Digby Wellfield Area MPS and LUB. Provide for public awareness of proposed amendments through public consultation. Adopt draft amendments.
Resources	DSWPAC, Consulting Engineers, Municipal Planning Advisory Committee, Municipal Council, 4Site Group Planners \$5,000
Timeline	Analyze technical documentation – December 2014 (Completed) Draft MPS/LUB Amendments– April 2015 (Completed) Public Awareness/Consultation – June. 2015 (Completed) Adoption by Municipal Council – September. 2015 (Completed)

\*\*Initiatives updated by the Committee March 23, 2017

Initiative 7	
Land Acquisition, Source Water Protection Area	
Issue	Public ownership of critical/sensitive lands within the Source Water Protection Area is an important risk management strategy.
Goal	Public ownership of critical/sensitive lands within the Source Water Protection Area
Action	Identify critical properties. Consider establishment of Reserve Fund for property acquisition purposes. Approach owners with informal request to sell. Engage a real estate agent for assistance.
Resources	Cooperation with property owner Budget estimate and financial implications will vary depending on properties.
Timeline	Ongoing, Long term **Purchased land in Mount Pleasant May 2011 near Well # 2**

\*\*Initiatives updated by the Committee March 23, 2017

## 5. Monitoring Program and Evaluation

The Town of Digby Water Commission currently operates the Digby water supply system under Approval to Operate – Water Supply System Serviced By Non-GUDI Wells with Disinfection only Approval No. 2010-070842. The Town of Digby Water Commission performs testing and sampling as per the Sampling Requirements set out in Schedule A of the approval to operate (Appendix C).

The Laboratories that are used for testing results are:

- Yarmouth Regional Hospital Laboratory
- Nova West Laboratory
- Maxxam Laboratory
- AGAT Laboratory

The current monitoring practices include but not limited to:

See Appendix I for the Town of Digby Annual Sampling Plan dated October 2016

Both point and non-point source contamination risks were identified in Section 3. A contamination risk analysis will be performed as part of the risk management initiatives in Section 4.3 of this Plan. The opportunity for enhanced monitoring to address specific risk concerns will be addressed through the risk analysis and recommendations incorporated into the ongoing monitor program.

The Water Commission will engage a consultant during the review of the Source Water Protection Plan to offer advice on improvements in the monitoring plan.