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# **Management of Municipal Wastewater in Newfoundland and Labrador**

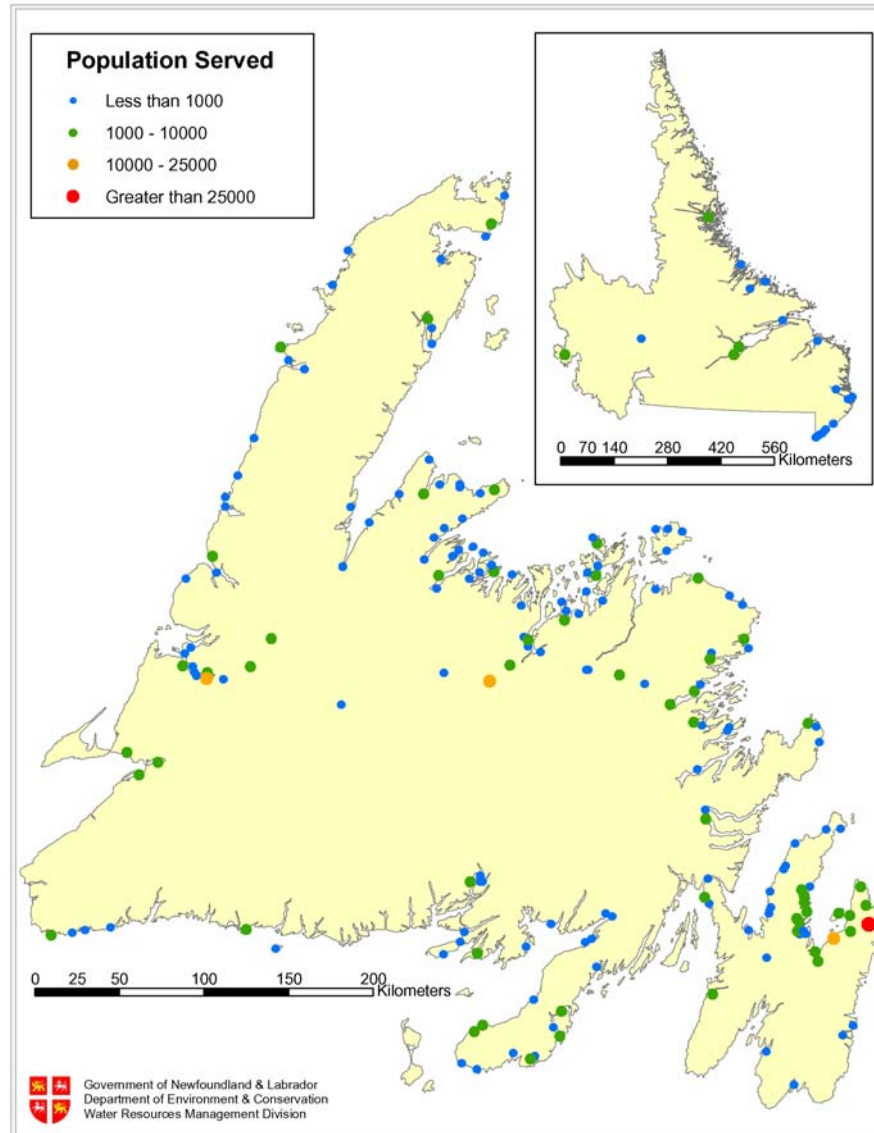
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Department of Environment and  
Conservation

# Introduction

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- **Community Demographics and Servicing**
- **Wastewater Management**
- **Issues and Challenges**
- **Future Direction**

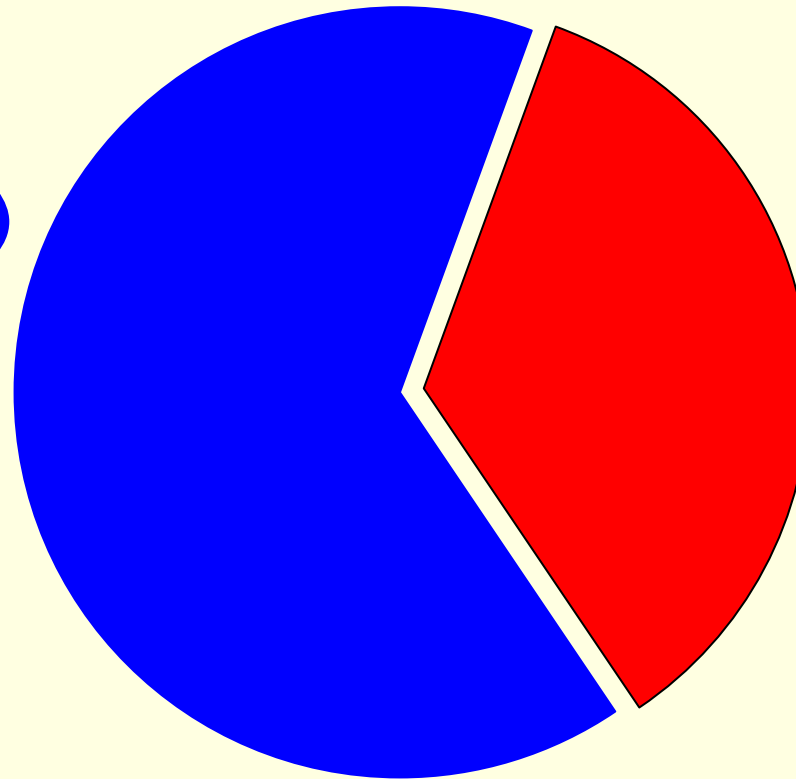
# Demographic and Geographic Diversity



# Community Demographics and Servicing

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**Central  
Wastewater  
Systems**  
**359,051 (70%)**



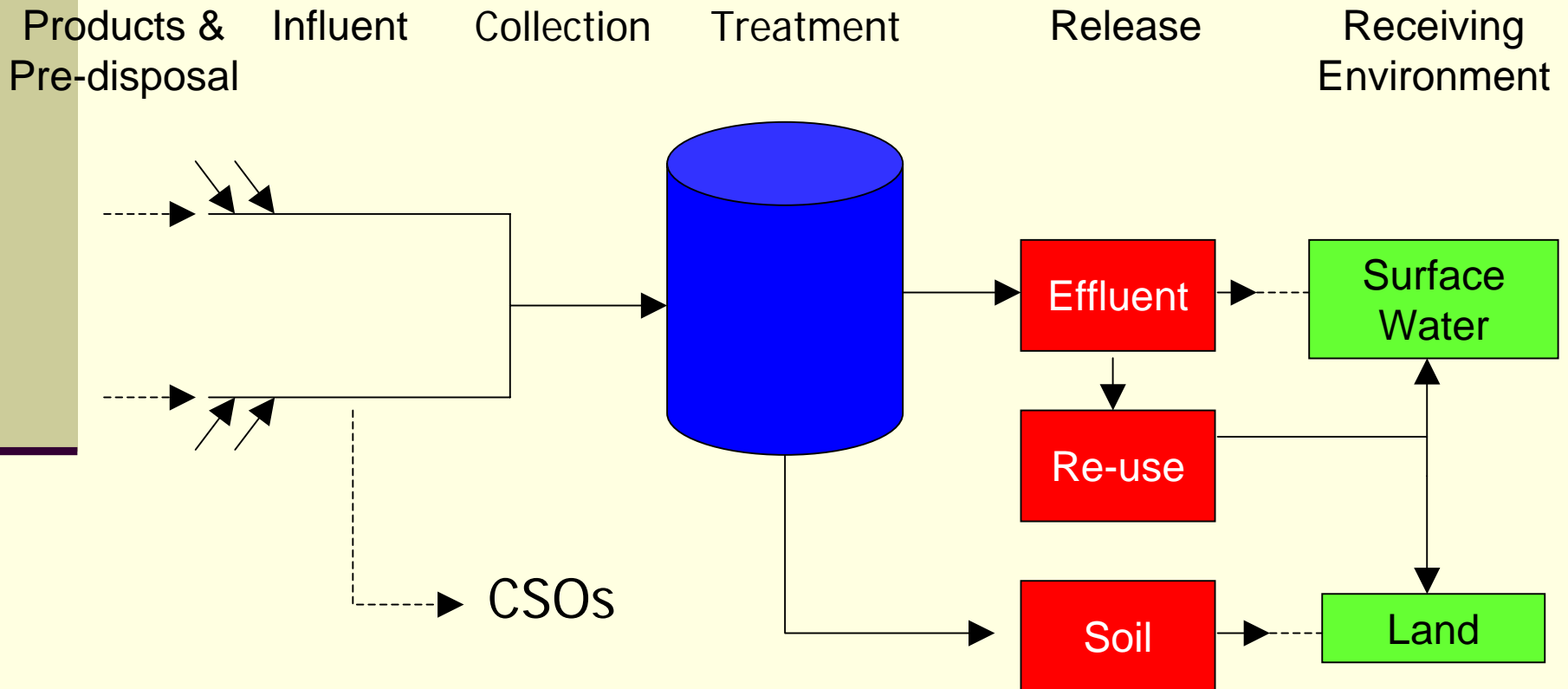
**On-site  
Wastewater  
Systems**

**153,879 (30%)**

# Community Demographics and Servicing

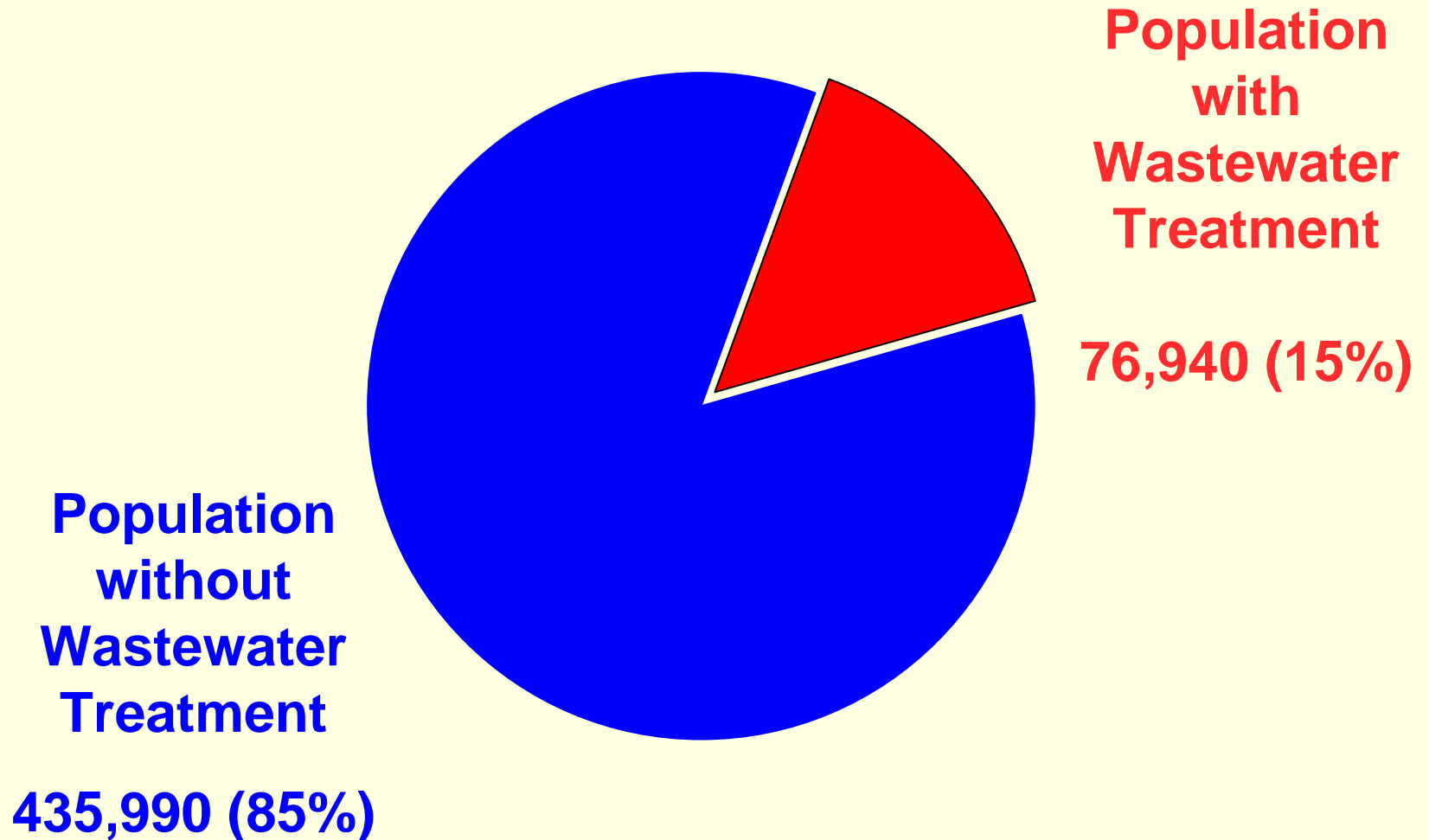
<b>System Size</b>	<b>Population</b>	<b>Number of Systems</b>
<b>Very Small</b>	<b>&lt; 1,000</b>	<b>152</b>
<b>Small</b>	<b>1,000 – 10,000</b>	<b>50</b>
<b>Medium</b>	<b>10,000 – 100,000</b>	<b>3</b>
<b>Large</b>	<b>&gt; 100,000</b>	<b>1</b>

# Wastewater Management

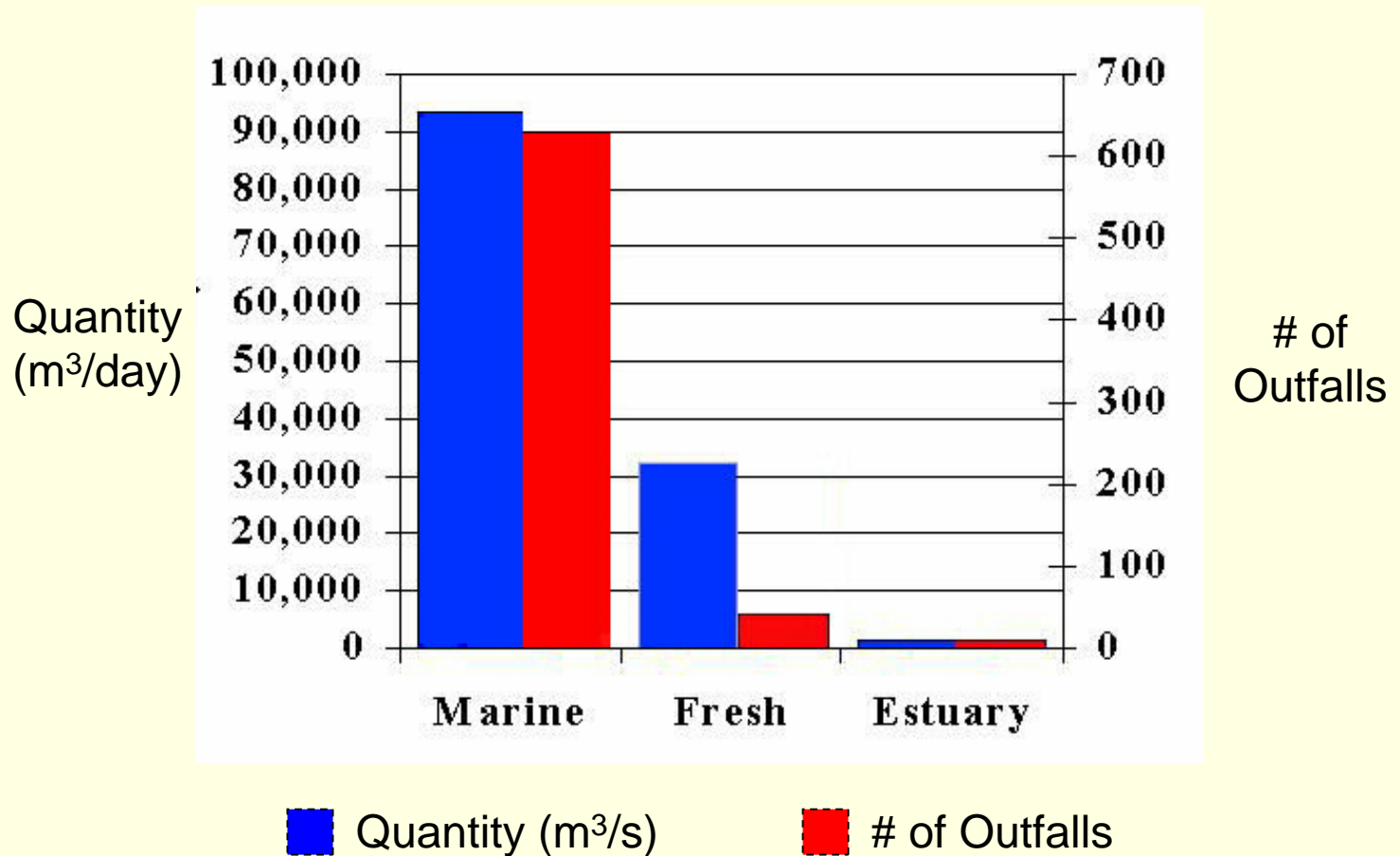


# Wastewater Treatment Current Status

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# Discharges by Receiving Environment



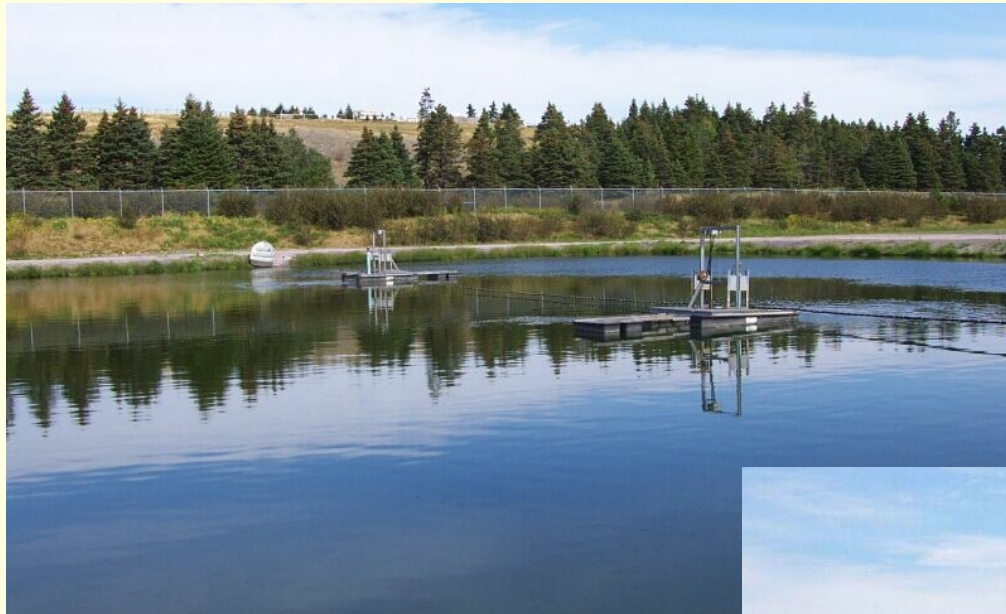


# Land-based Systems

Community	Pop Serviced	Year	Treatment Process	Rec'v Env.
Benton	176	1997	Facultative Lagoon	Fresh
Deer Lake	5,222	1997	Lagoon (Extended Aeration)	Fresh
Grand Falls – Windsor	14,160	1993	Lagoon (Extended Aeration)	Fresh
Pasadena	3,445	1991	Lagoon (Extended Aeration)	Fresh
Steady Brook	450	1995	Lagoon (Extended Aeration)	Fresh
Victoria	1,849	1974	Lagoon (Extended Aeration)	Fresh
Whitbourne	988	1992	Lagoon (Extended Aeration)	Fresh

# Land-based Systems (cont'd)

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**Whitbourne  
Lagoon  
(Extended Aeration)**



# Mechanical Systems

Community	Pop. Serviced	Year	Treatment Process	Rec'v Env
Badger	997	1966	Contact Stabilization	Fresh
Baie Verte	325	1970	Extended Aeration	Marine
Centerville-Wareham-Trinity	884	1982	Extended Aeration	Marine
Churchill Falls	675	1970	Extended Aeration	Fresh
CBS	19,265	1978	RBC	Marine
Eastport	330	1979	RBC	Marine
Gambo	600	1984	Extended Aeration	Marine
Gambo-Middle Brook	800	1979	Extended Aeration	Marine
Gander (Beaver Brook)	7,500	1988	Vortex Separator	Fresh
Gander ( <b>Gander Bay Rd</b> )	3,000	1986	Extended Aeration or Contact Stabilization	Fresh

# Mechanical Systems (cont'd)

Community	Pop. Serviced	Year	Treatment Process	Rec'v Env
Holyrood	2,090	1974	Oxidation Ditch	Marine
Lab City – Drake St.	7,455	1961	Aerobic Digestion	Fresh
Lab City – Harrie Lake	960	1975	Contact Stabilization	Fresh
Lumsden	653	1974	Extended Aeration	Fresh
Norris Arm	1,007	1976	Contract Stabilization	Marine
Placentia	2,000	1980	RBC	Marine
Portugal Cove - St. Phillip's	1,500	2003	SBR	Marine
Robert's Arm	963	1977	Extended Aeration or Contact Stabilization	Marine
St. Alban's	1,563	1976	Extended Aeration or Contact Stabilization	Marine
Wabush (2)	2, 018	1962	Anaerobic Digestion	Fresh

# Mechanical Systems (cont'd)

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**Holyrood  
Oxidation Ditch**





# Wastewater Systems under Construction/Planning

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- **St. John's**
  - **Primary treatment (serviced pop. 157,000)**
  
- **Appleton / Glenwood**
  - **Abydoz reed bed (serviced pop. 1,500)**
  
- **Stephenville**
  - **Abydoz reed bed (serviced pop. 7,500)**

# Issues and Challenges

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## 1. Regulatory

- **Water Resources Act, 2001**
- **Environmental Control Water and Sewage Regulations**
  - **Guidelines for the Discharge of Municipal Wastewater**
  - **Guidelines for the Design, Construction and Operation of Water and Sewerage Systems**
- **CEPA, 1999**
- **Fisheries Act, Section 36**

# Issues and Challenges

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## 2. Technology

- **Affordable and sustainable**
- **Life cycle cost**
- **Technical expertise**



# Issues and Challenges

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## **3. Level of Servicing**

- **Individual on-site systems**
- **Central systems**
- **Cluster systems**

# Future Direction

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- **Harmonized regulatory approach**
- **Performance standards (technology or receiving environment)**
- **Science and research**
- **Economic aspects**