

# Re-Inspection Programs: Challenges and Solutions

OOWA Municipal Re-Inspection Information  
Session - September 16, 2016

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- Challenges and Solutions
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  - Data Acquisition and Management.
  - What do the results mean, and what do we do with them?
  - Other Points to Consider.
- Summary of Program Results



# RE-INSPECTION BACKGROUND

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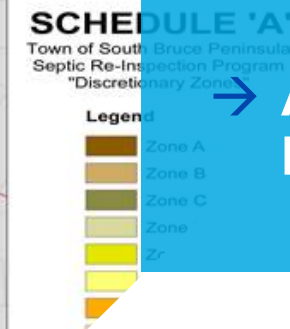


# Re-Inspection Background

→ **Currently completing the Town of South Bruce Peninsula, Town of Caledon, and Wellington County Septic System Re-Inspection Programs:**

- Approximately 5,950 properties will be inspected in a 4 year timeframe (2013-2016);
- Re-Inspecting all classes of systems older than 5 years and with flows less than 10,000 L/day;
- Property Owners must be present for the inspection (or a representative).

→ **Approximately 5,650 systems have been re-inspected to date (95%).**



# Re-Inspection Background



- **A hybrid “Phase I” and “Phase II” maintenance inspection, as outlined in the March 2011 MMAH guidelines is completed. Key components include:**
  - Inspection of septic tank;
  - Inspection of scum and sludge levels;
  - Inspection of leaching bed; and
  - Inspection of holding tanks, distribution boxes, pump chambers, grey water systems, outhouses, etc.
- **Focus on property owner education throughout inspection process.**
- **Many property owners are financially responsible (directly) for the majority of the re-inspection program.**

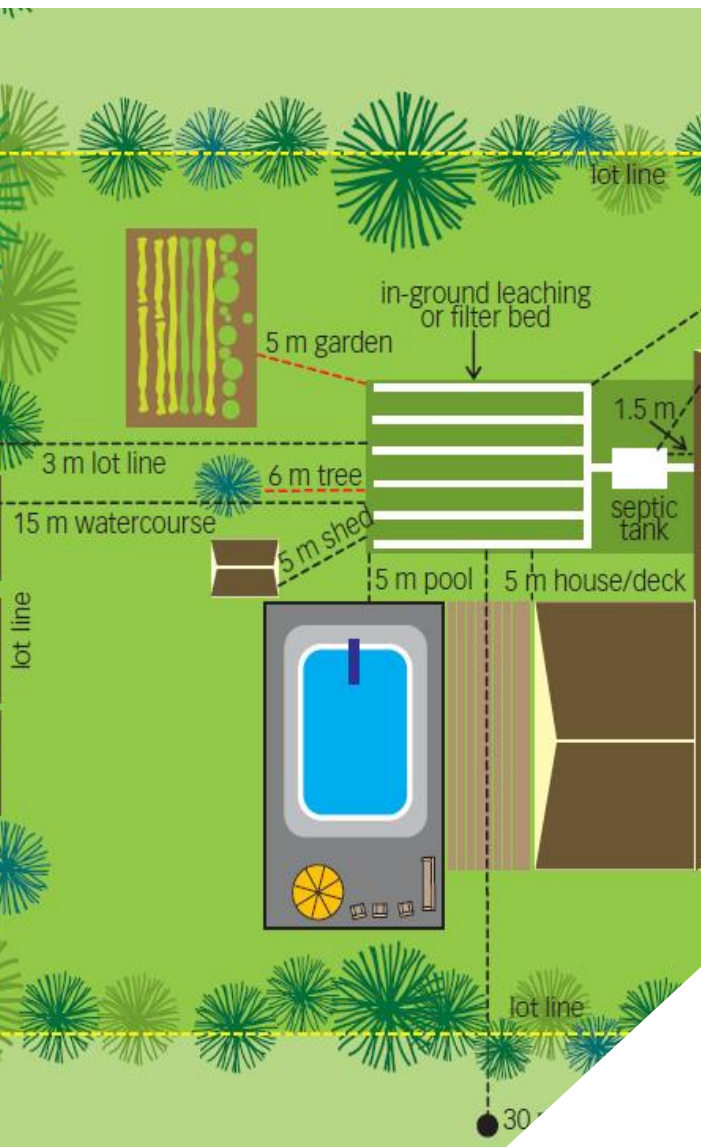
# CHALLENGES AND SOLUTIONS

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# Public Acceptance and Participation

## → Problem:

- How do you gain public acceptance of a program that will directly impact property owners?
- How do you gain a high level of public participation when homeowners are required to be present, and/or financially responsible, for the inspection process?
- There is a wide range of concerns from homeowners that may need to be addressed (financial, space, disturbance, inconvenience, conspiracy, etc.).

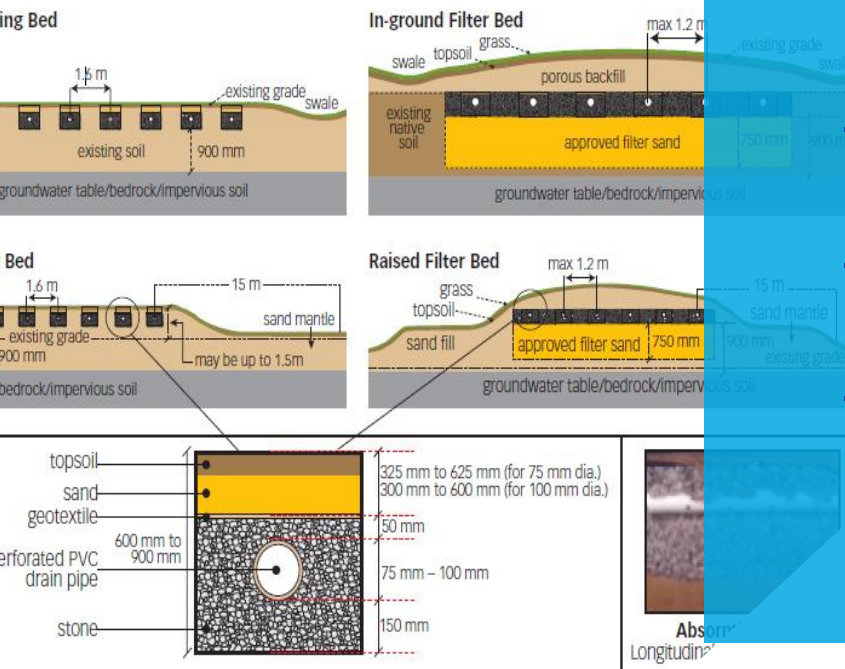




# Public Acceptance and Participation

## → Solutions:

- General mailing to all residents explaining the program.
- Public Open House with a Public Forum for questions and answers. Homeowner education can also be provided.
- Dedicated staff member on telephones each year.
- Providing information to the Property Owner during the inspection process.
- The requirement for owners to be present helps drive acceptance and participation.



- in-ground leaching bed or raised leaching bed\*

Filter Bed — in-ground filter

trenches with stone on the trench bottom and  
PVC drain pipes above  
geotextile fabric around the drain pipes

### Description:

- no trenches
- the bed is



# What is Classified as a Remedial Action?

## Problem:

- Many remedial actions will be an interpretation of the Building Code, rather than a black and white contravention, so what constitutes a remedial action?
- Code clauses such as “land shall be maintained in a condition that will not cause damage to, or impair the functionality of, the Sewage System” will mean different things to different people.



# What is Classified as a Remedial Action?



## Solution:

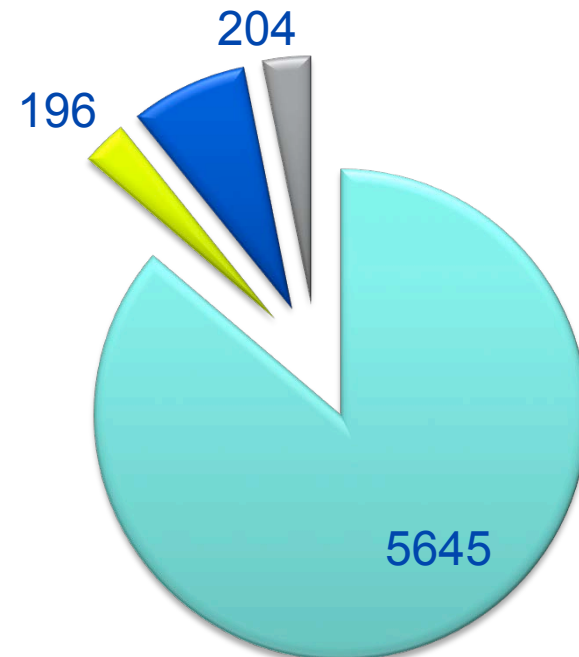
- BCIN Certification for all Inspectors and Project Managers (Design/Inspection and General Legal);
- Consistent annual training of all Inspectors and Project Managers;
- Communication between the Municipality and Inspectors to ensure a common understanding of what will be considered a remedial action;
- Review of all inspection reports and photographs by a single project manager/engineer.

# Data Acquisition and Management

## Problem:


- Massive amounts of data generated from re-inspection programs; how can it be quickly and effectively managed? (300,000 data points; 30,000 photos)
- Only having paper copies of the inspection results would limit the future usefulness of the data.
- Transcription of data from hand written field notes to electronic format would result in errors and inefficiency.
- Digital photos need to be collated with the appropriate inspection results.

Breakdown of Evaluated Properties



- Re-Inspected Septic Systems
- Vacant Parcels
- Deferred Re-Inspections
- Not Completed

# Data Acquisition and Management

Inspection Details	Estimated Septic Tank Volume (L) (Measured: W x L x H)
Property Details	3600 L (800 gal)
Building Details	Effluent Filter Present?
Sewage Servicing Overview	No
Class 1 System (Private)	Scum and Sludge Volume in Septic Tank
Class 2 System (Greywater)	<33% of liquid height
Class 3 System (Cesspool)	Approximate Date of Last Pump-Out
Class 4 System- Tank	Never
Class 4 System- Leach Field	Liquid Level
Class 5 System (Holdover)	At Outlet
Water Supply/ Surface Water	Picture of Tank (General Photo of Tank Location) (#1)
Remedial Actions	<input type="button" value="Capture"/>
Review of Inspection	
Correspondence/ Address	

## Solutions:

- Digital data acquisition to create a consistent data set and allow for the packaging of photos with inspections.
- Remote data uploading to allow for same day data transfer from the field.
- Dedicated Access database to efficiently manipulate the data set.
- Automated download collation

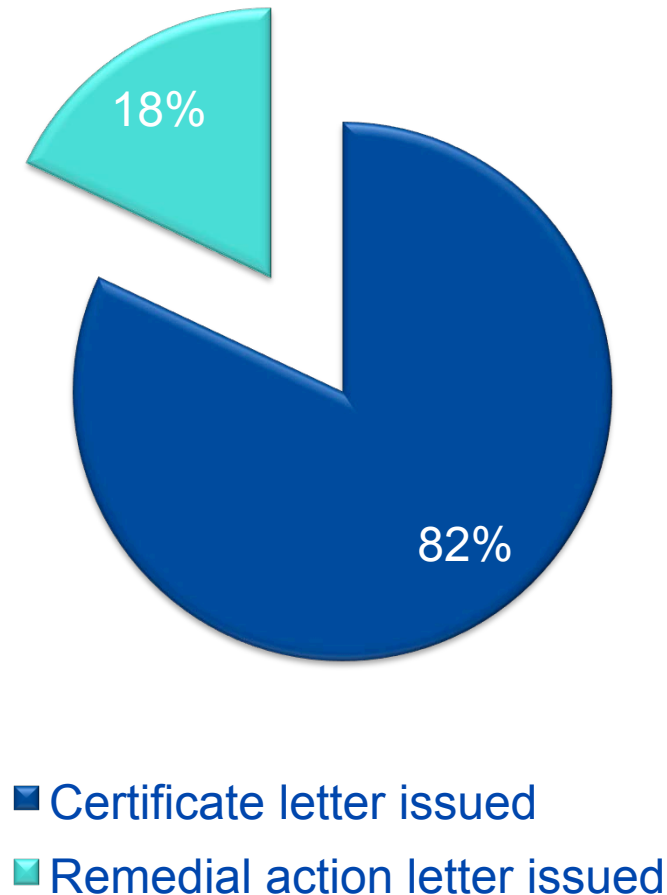


# What do the Results Mean, and What do we do With Them?

## Certificates and Remedial Actions

### Problem:

- The number of observed remedial actions does not provide a complete picture with respect to environmental and human health risks from on-site sewage systems.
- The results are a snapshot in time, how can they be used by Municipalities on an longer term basis.




# What do the Results Mean, and What do we do With Them?

## Potential Solutions:

- Determine the associated “risk” of all the systems inspected using the information generated from the field program
- Integrate GIS tools to map the various data sets, determining “hot spots” for failures and future risk
- Creation of a sewage system management plans for specific areas or specific types of risk



## Other Points to Consider

- 
- How can a program be set up to be effective, yet affordable?
  - What systems should be included in the program, and which systems can be deferred?
  - What do you do with unresponsive property owners, or owners who are not physically able to prepare for or attend the inspection?
  - Unintentional use of the Results.
  - Health and Safety.

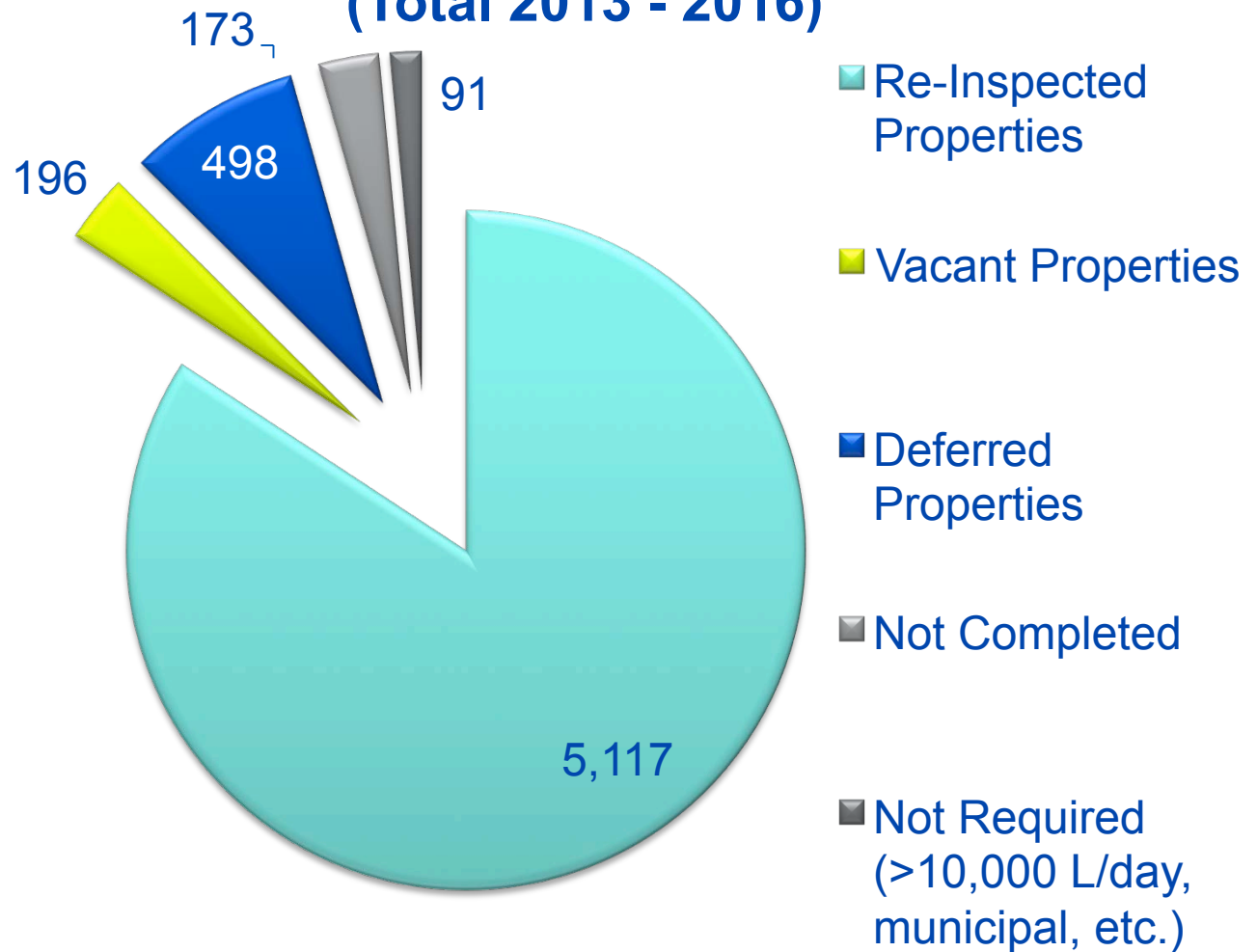
# SUMMARY OF PROGRAM RESULTS

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# Summary of Program Results (TSBP)

## Breakdown of Evaluated Properties (Total 2013 - 2016)

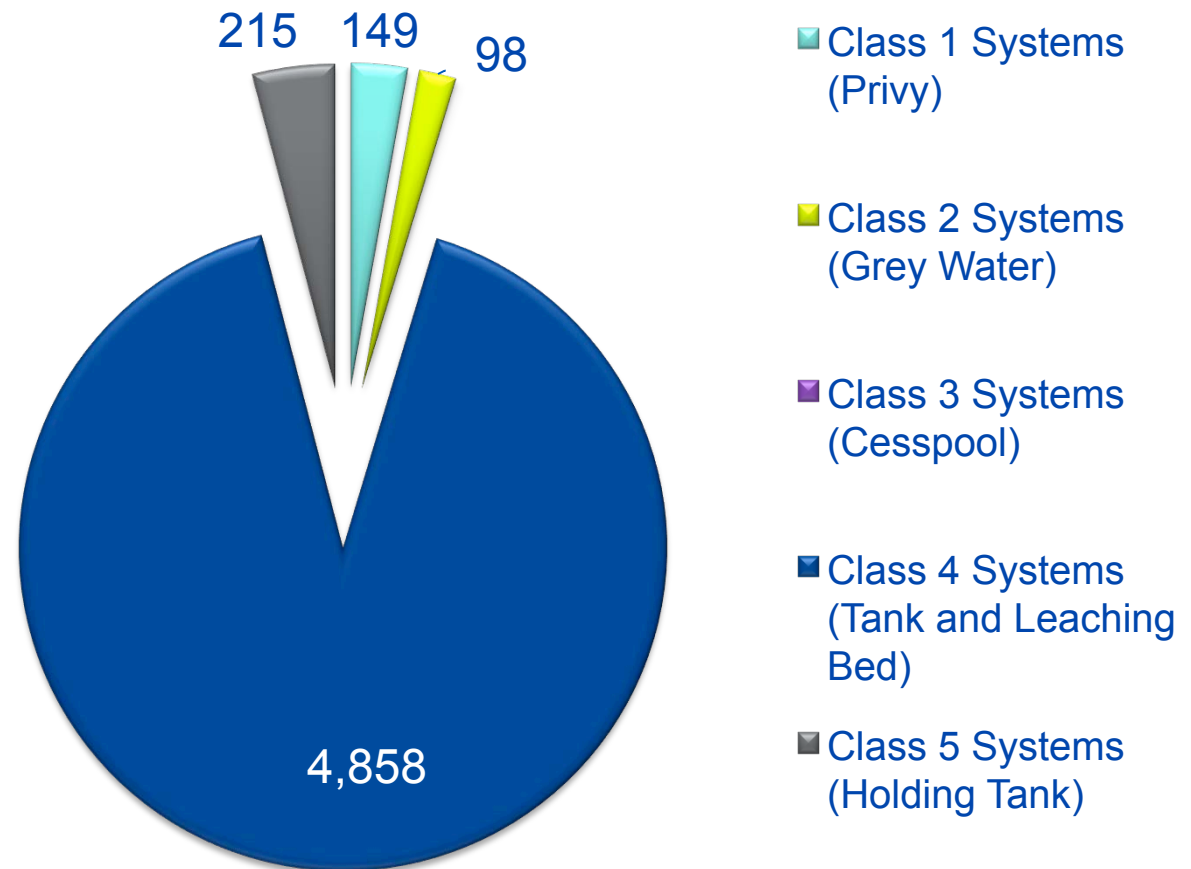


- A total of 6,075 properties have been evaluated to date.
- Of the 6,075 properties, 5,117 have been inspected to date.
- Only 173 of the properties with inspections possibly required have not been completed (<3%).

# Summary of Program Results (TSBP)

## Distribution of Re-Inspections by Class of System (Total 2013-2016)

- In total there have been 5,321 systems re-inspected within the 5,117 properties.
- Dominant servicing type are Class 4 systems (91%).



# Summary of Program Results (TSBP)

## Certificates and Remedial Actions (Total 2013 – 2016)

→ In total 921 remedial action letters have been issued, representing 18% of the properties inspected to date.

