

Inflow and Infiltration:

Strategies to eliminate sanitary sewer overflows in the Mystic River Watershed.

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Mystic River Watershed Association



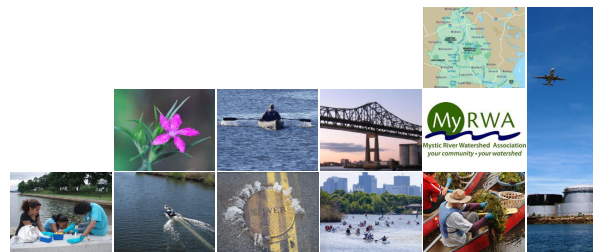
What is Infiltration and Inflow?

Infiltration: ground water that seeps into the sanitary sewer through cracks or joints.

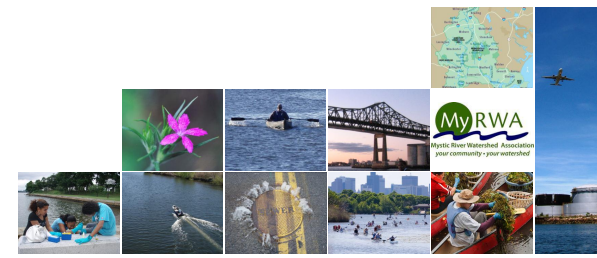
Inflow: rain water that enters the sanitary sewer through holes in manhole covers, catch basins, or improper plumbing connections.



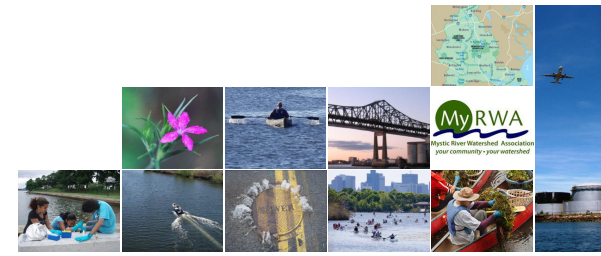
<http://www.crd.bc.ca/wastewater/ii/about.htm>



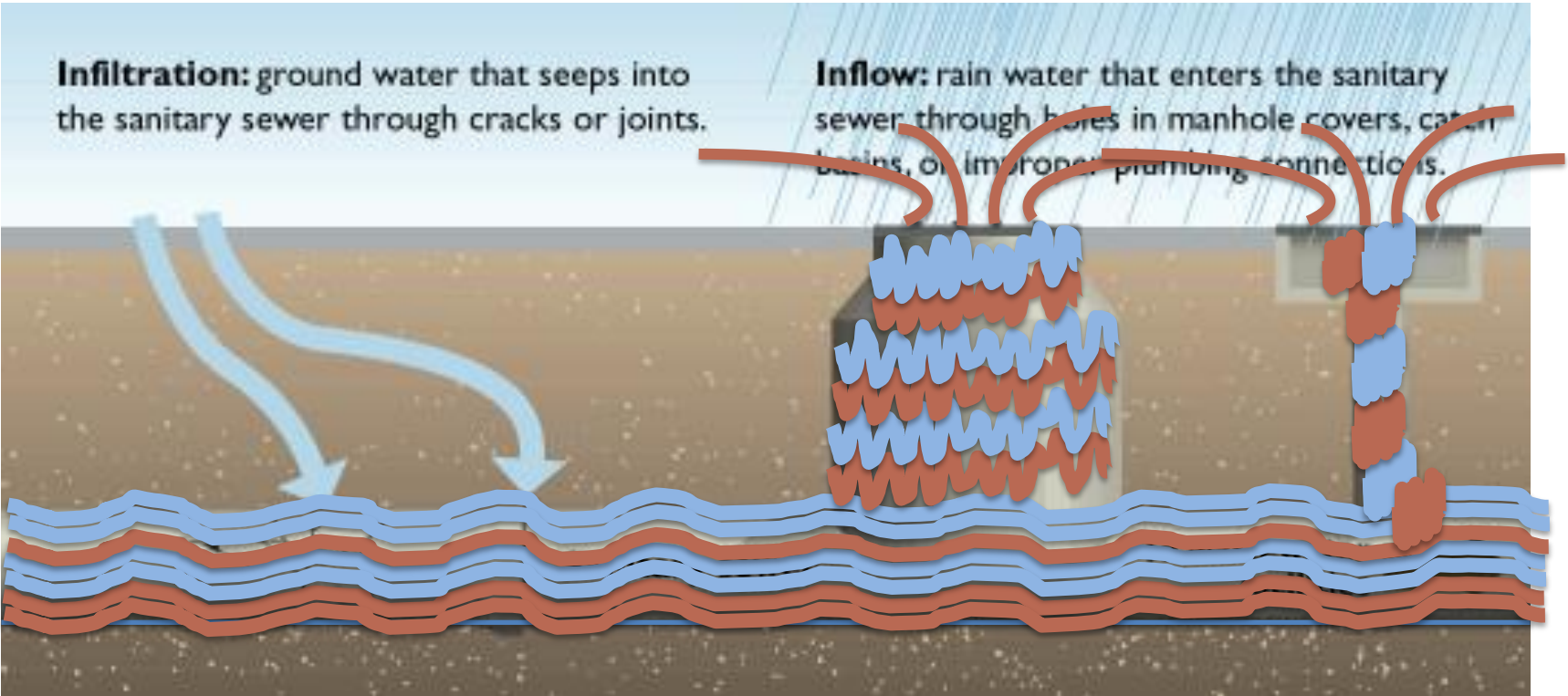
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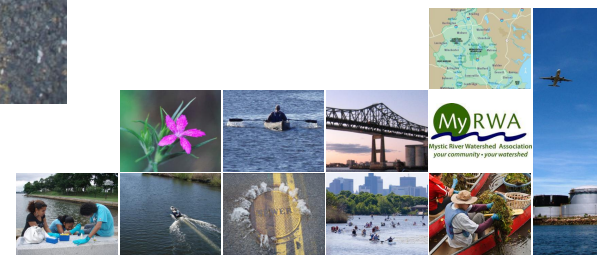


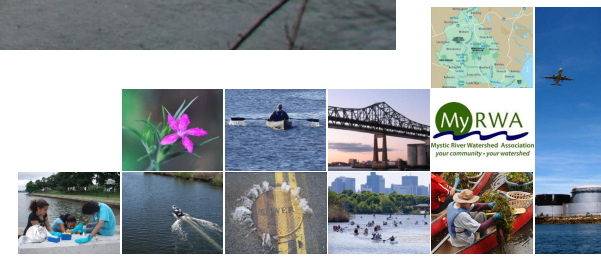
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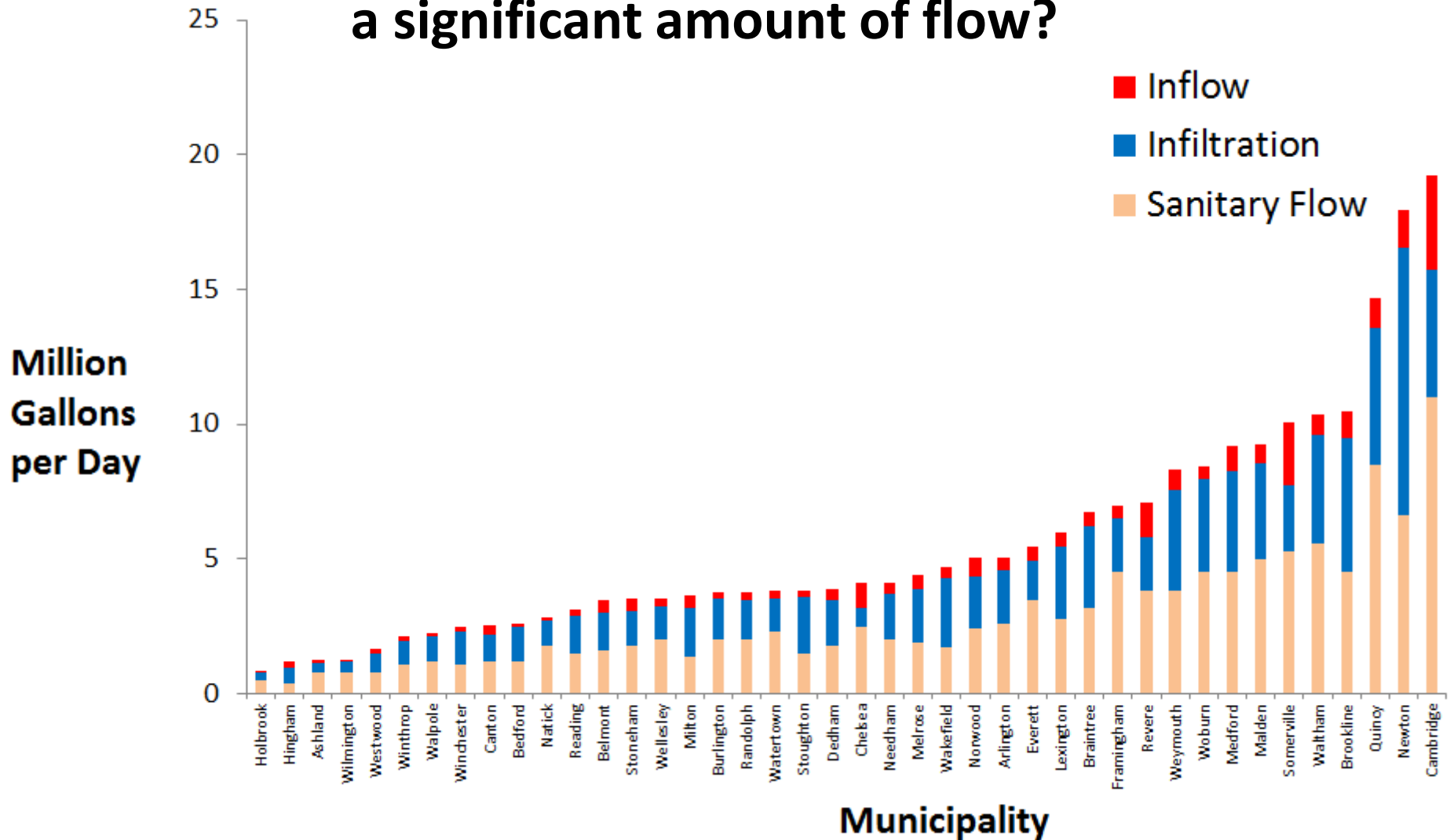
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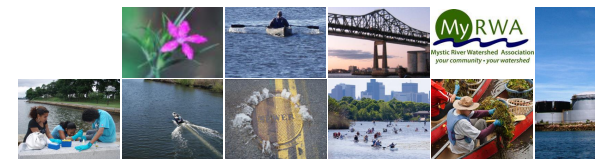




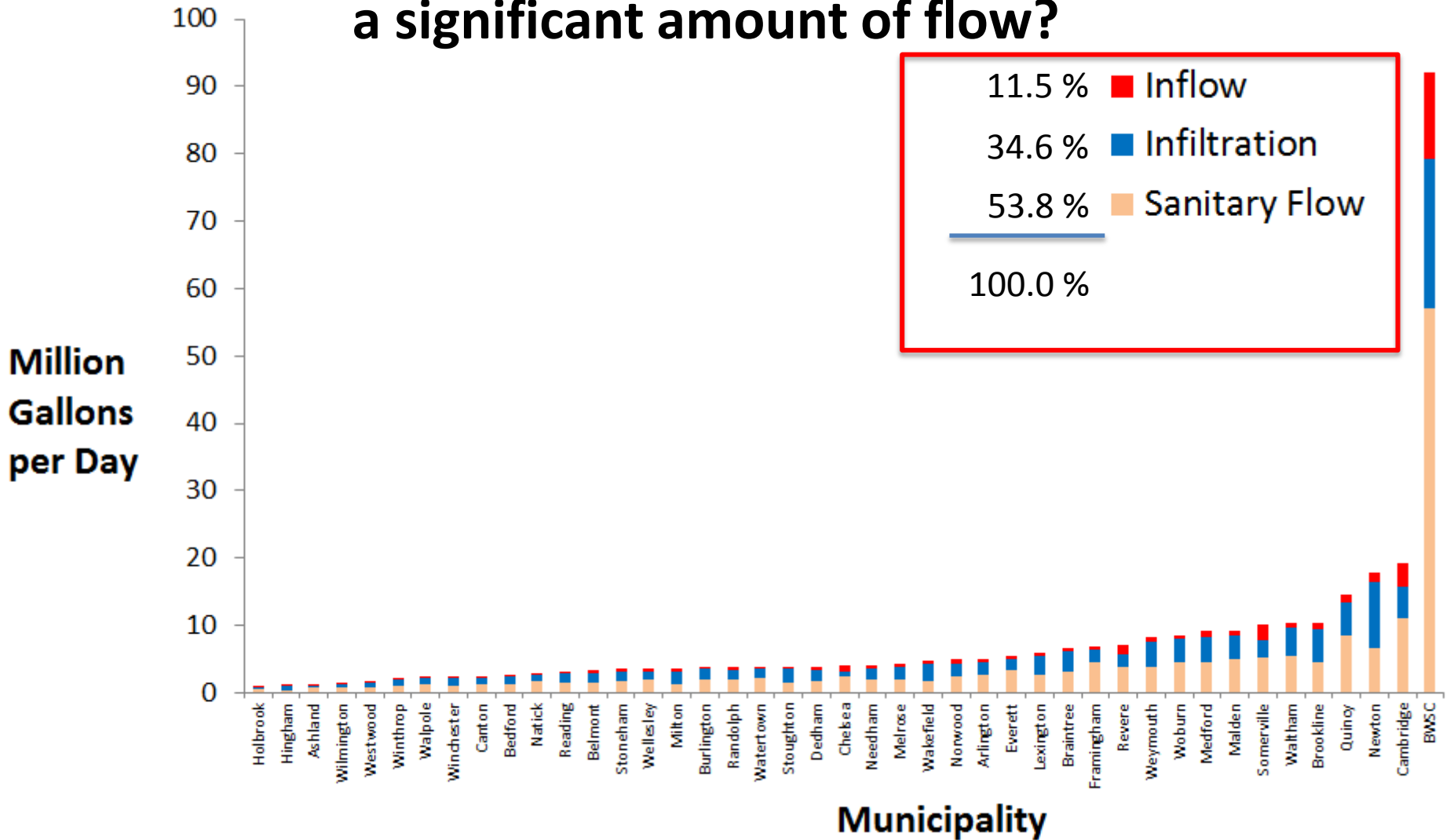
Does I/I contribute a significant amount of flow?



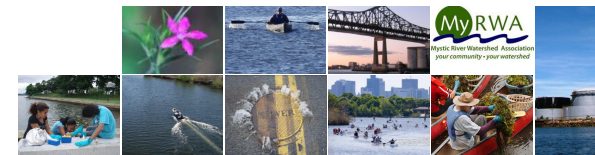
Source: 2009 MWRA Average Daily Flows



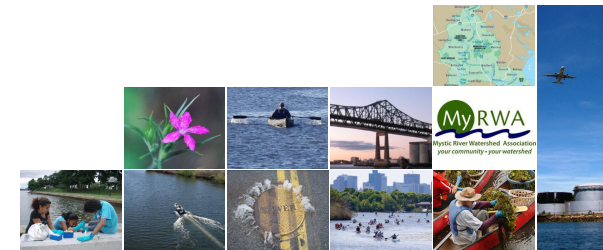
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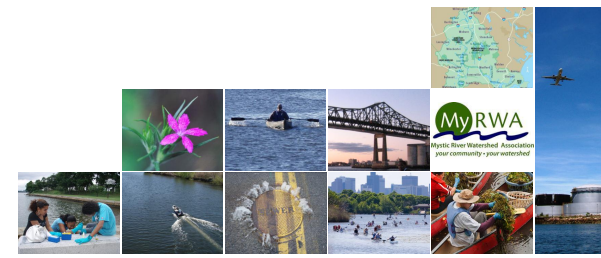
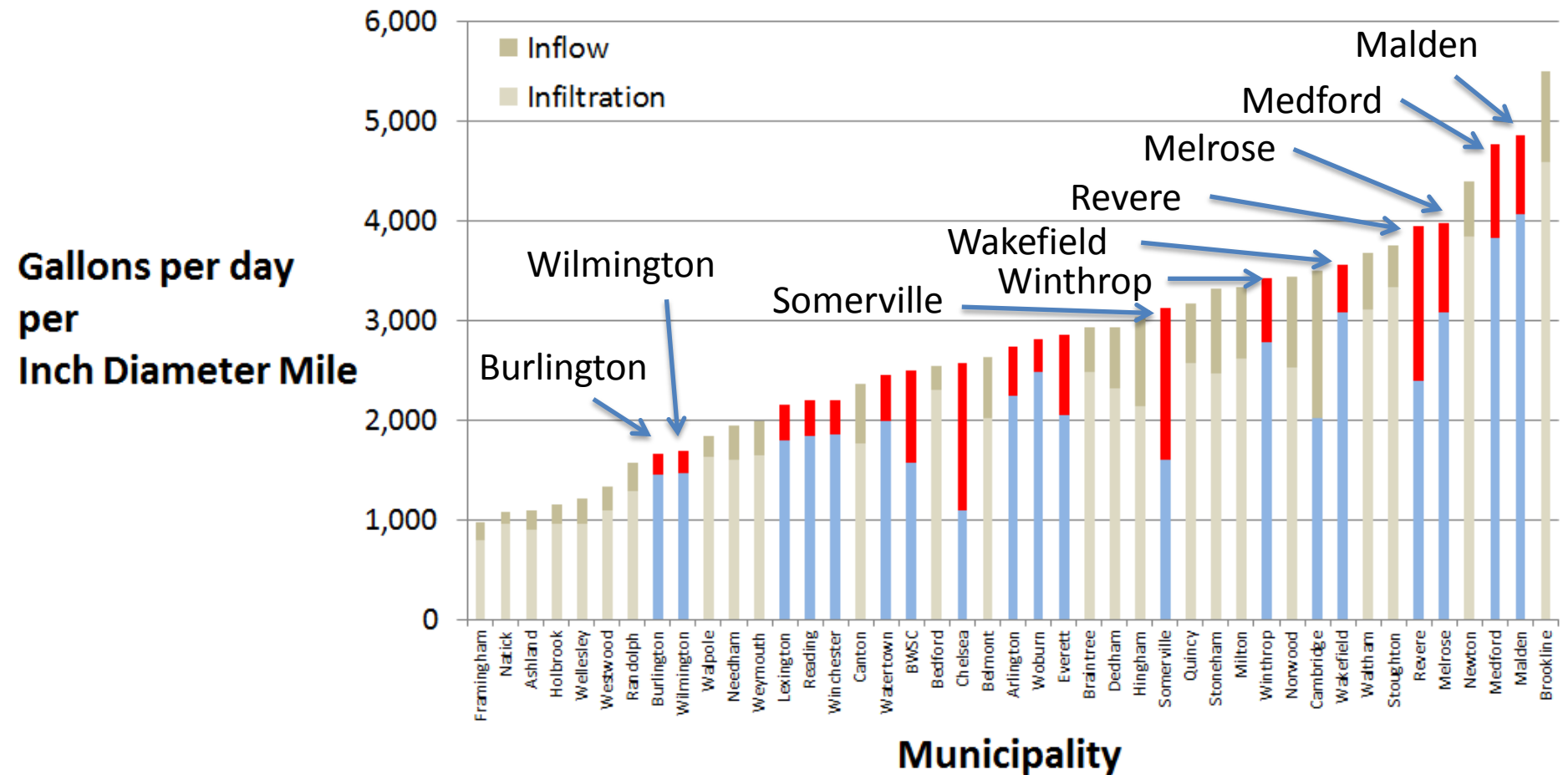
Source: 2009 MWRA Average Daily Flows



**Gallons per day
per
Inch Diameter Mile**

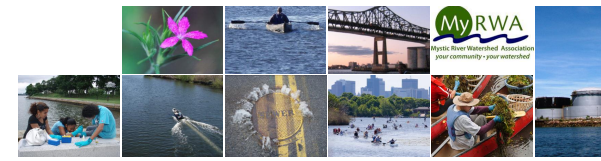
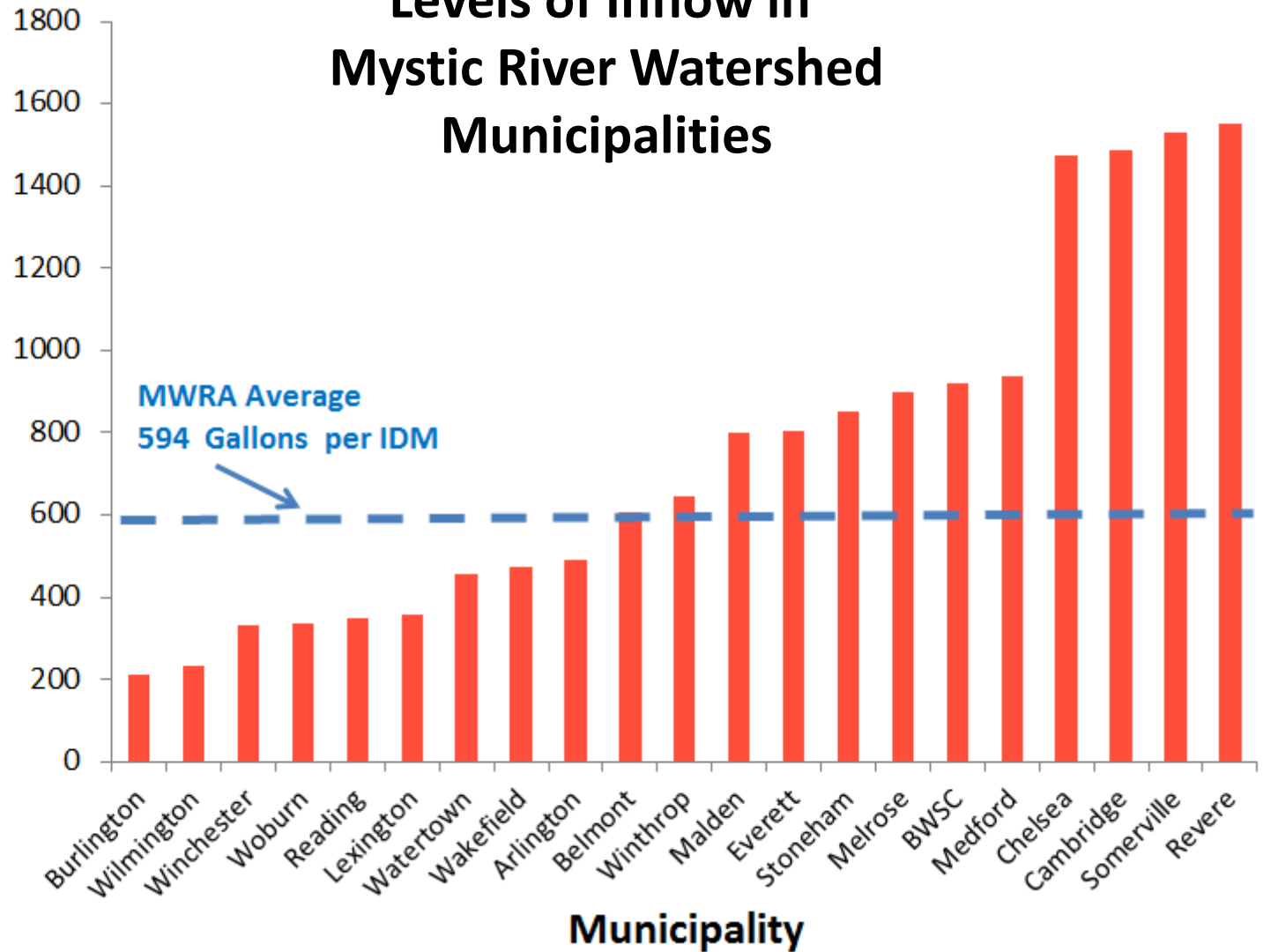


2009 ADF: Inflow and Infiltration in all MWRA Sewer Communities



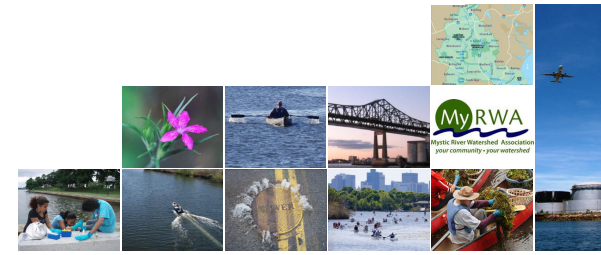
Levels of Inflow in Mystic River Watershed Municipalities

Gallons per day
per
Inch Diameter Mile



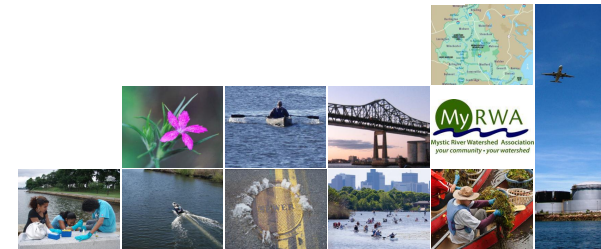
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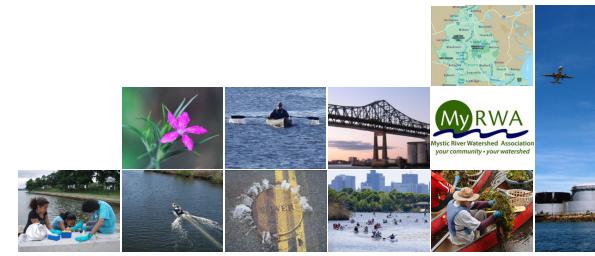
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How is Inflow and Infiltration being worked on?

MWRA I/I Program (45% Grant, 55% Interest free loan)

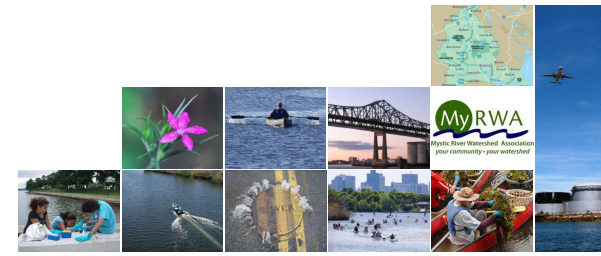
Since 1993, \$195 million has been allocated

Municipal Efforts

Every municipality is taking advantage of I/I funds

Every municipality is implementing a unique strategy

Regulatory oversight

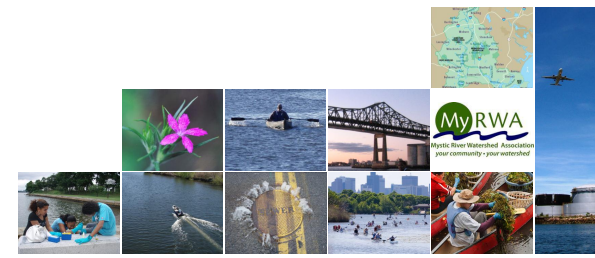


Burlington:

- 1) Illicit/Sump Pump Sewer Connection Amnesty Program
<http://www.burlington.org/engineering/Sewer%20Infiltration%20&%20Inflow.htm>
- 2) Private Residential Source Inflow Removal Program
- 3) Phase 4 investigations targeted 428 homes, ID'd 28 illicit connections

Lexington:

- 1) 500 house inspections initiated with Weston and Sampson
- 2) Winthrop Road Sewer Upgrades expected to remove 400,000 peak design I/I



How do we need to work on I/I and SSOs?

- 1) **Municipal subcommittee meeting on I/I**
 - 2) **Improve the template for reporting SSOs**
 - 3) **Provide notification** to public on SSOs that are occurring.
 - 4) **Prioritize funding** toward reducing SSOs: **Target Inflow.**
 - 5) **Data from individual storms** that model 1, 2, 5 yr, etc. storms
Identify locations where SSOs are occurring in smallest storms
 - 6) **Location specific meetings on SSOs.**
(e.g. all member contributing to major SSO)
 - 7) **Financial disincentives** for SSOs to occur in municipality
 - 8) **Recalculation of 1, 2, 5, 10, 25 yr model storms**
 - 9) **Long term plan**
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