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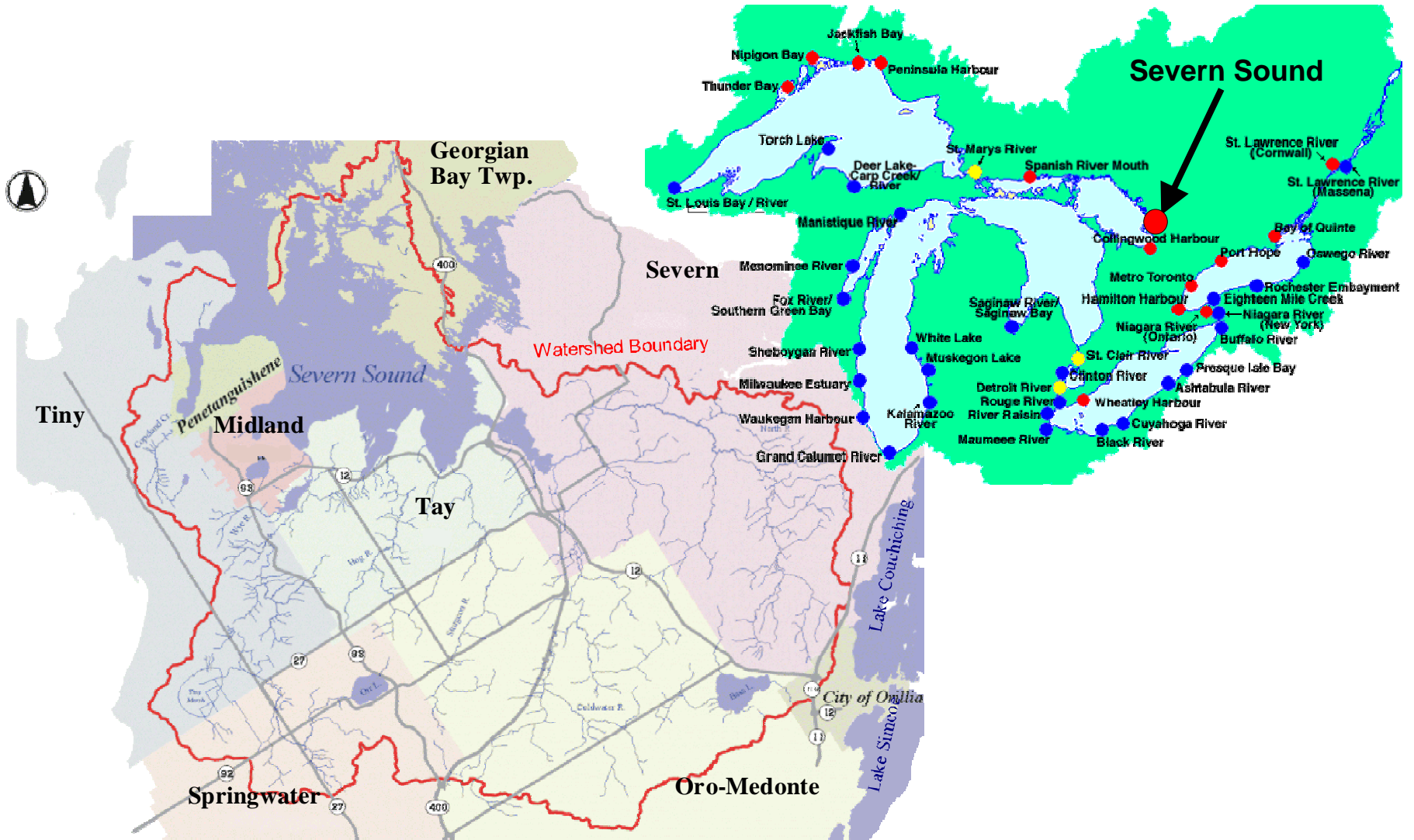
# Municipal Toxics Management Strategy for Severn Sound

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Severn Sound Environmental Association



# Severn Sound Area



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# Objectives

- Identify and quantify the storage, release and use of persistent toxic substances in the Severn Sound area as per Great Lakes Binational Toxics Strategy
  - Summarize ambient contaminant concentrations in various available media
  - Develop strategy including implementation options, prioritized by substance for future reduction/elimination actions
  - Conduct consultation amongst Severn Sound municipalities on implementation
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# Mercury Reduction Strategy

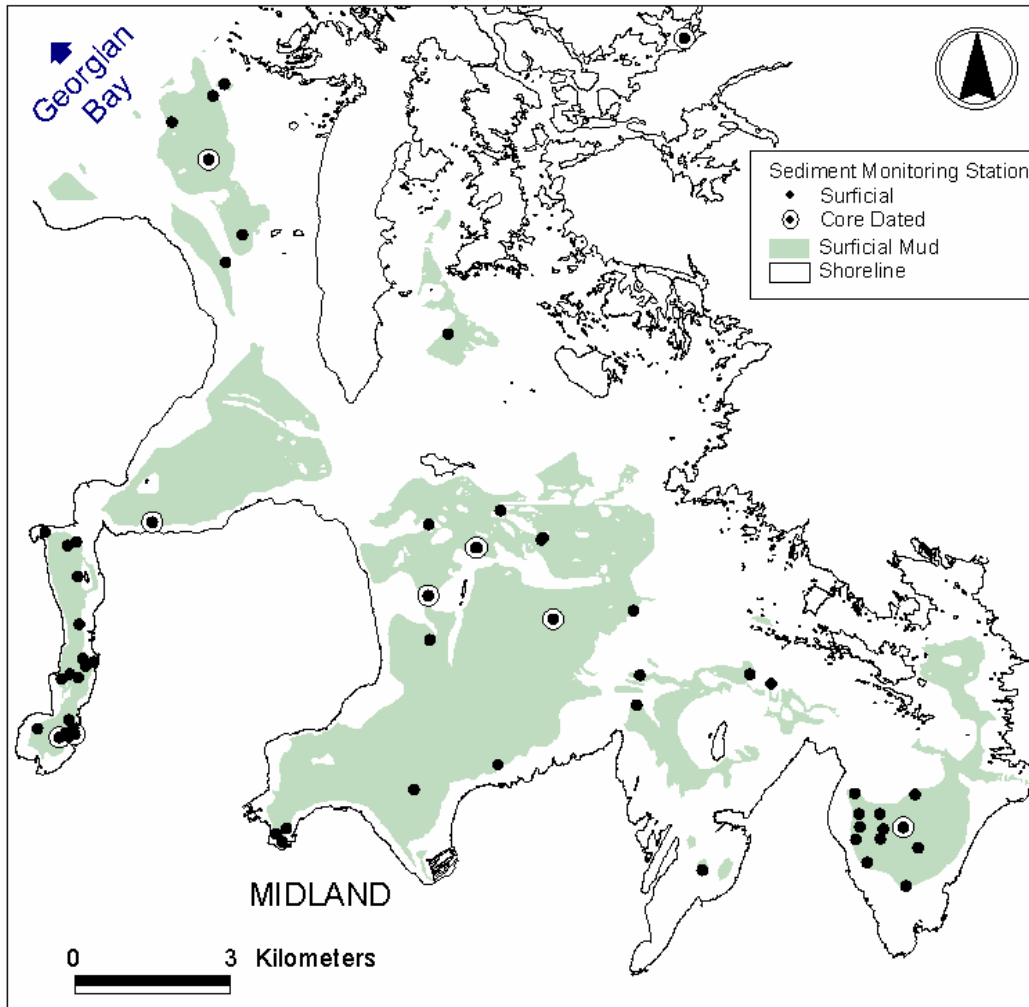
- Ambient mercury levels and trends – open water sediments, biota, sewage plant biosolids and spreading sites
  - Inventory of municipal buildings – offices, works, sewage plants, arenas, hospitals
  - Review of current municipal policies, practices and pathways
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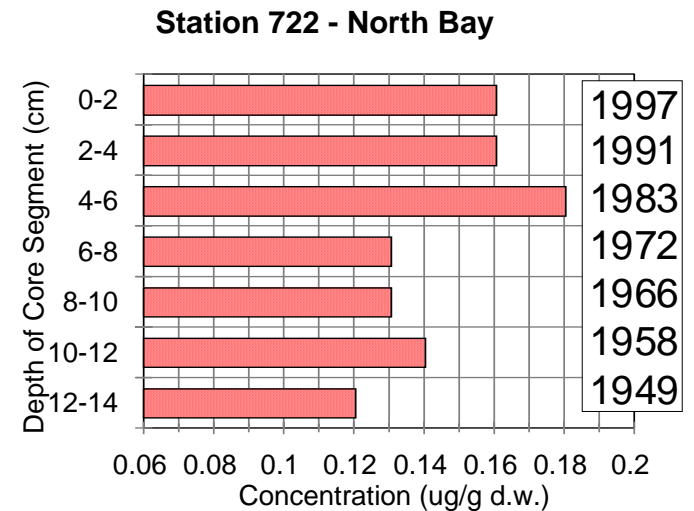
## Three Level Approach to Mercury Reduction in Severn Sound

1. Immediate removal/replacement – Mercury-containing devices, representing a risk of loss, which could easily be replaced with non-mercury devices
  2. Change-out with time – Mercury-containing devices, representing a low risk of loss, changed as a non-routine/routine maintenance task
  3. Policies covering safe disposal/recycling of essential mercury-containing devices
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# Deposition Sediment in Severn Sound

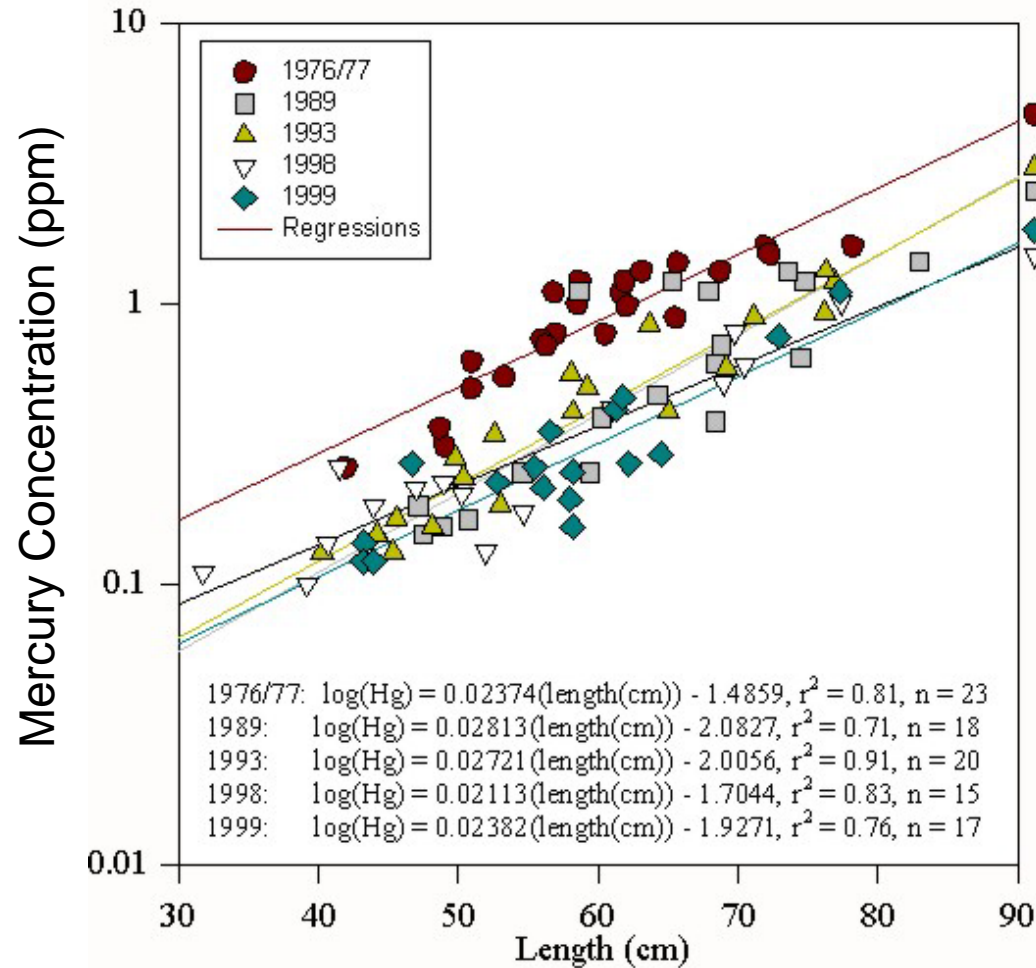


- mercury in surficial sediment concentration range  $<0.03$  to  $0.16$   $\mu\text{g/g dw}$



Source: SSEA unpublished

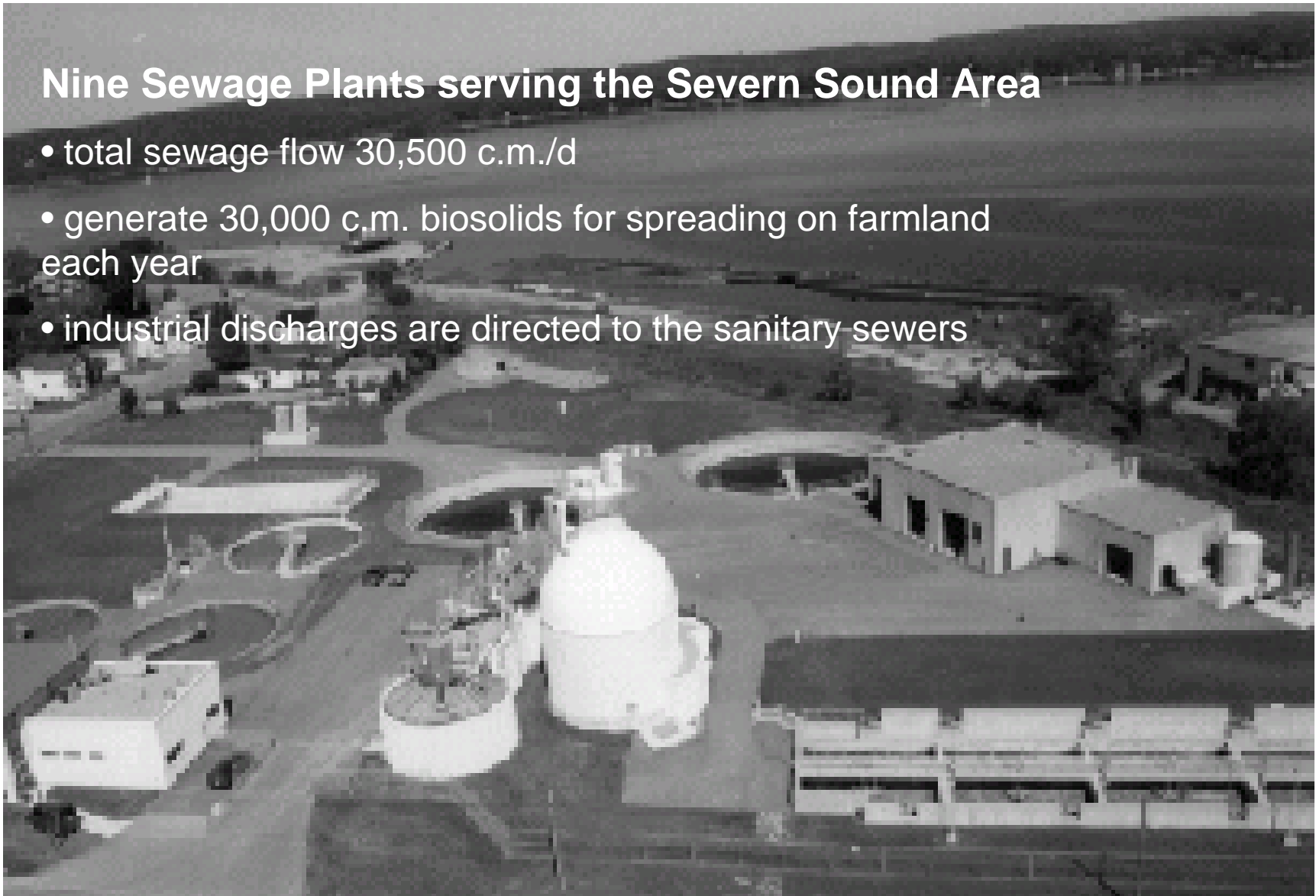
# Mercury Concentrations vs. Fish Length for Severn Sound Walleye



Source: Severn Sound RAP Stage 3 Report, 2003

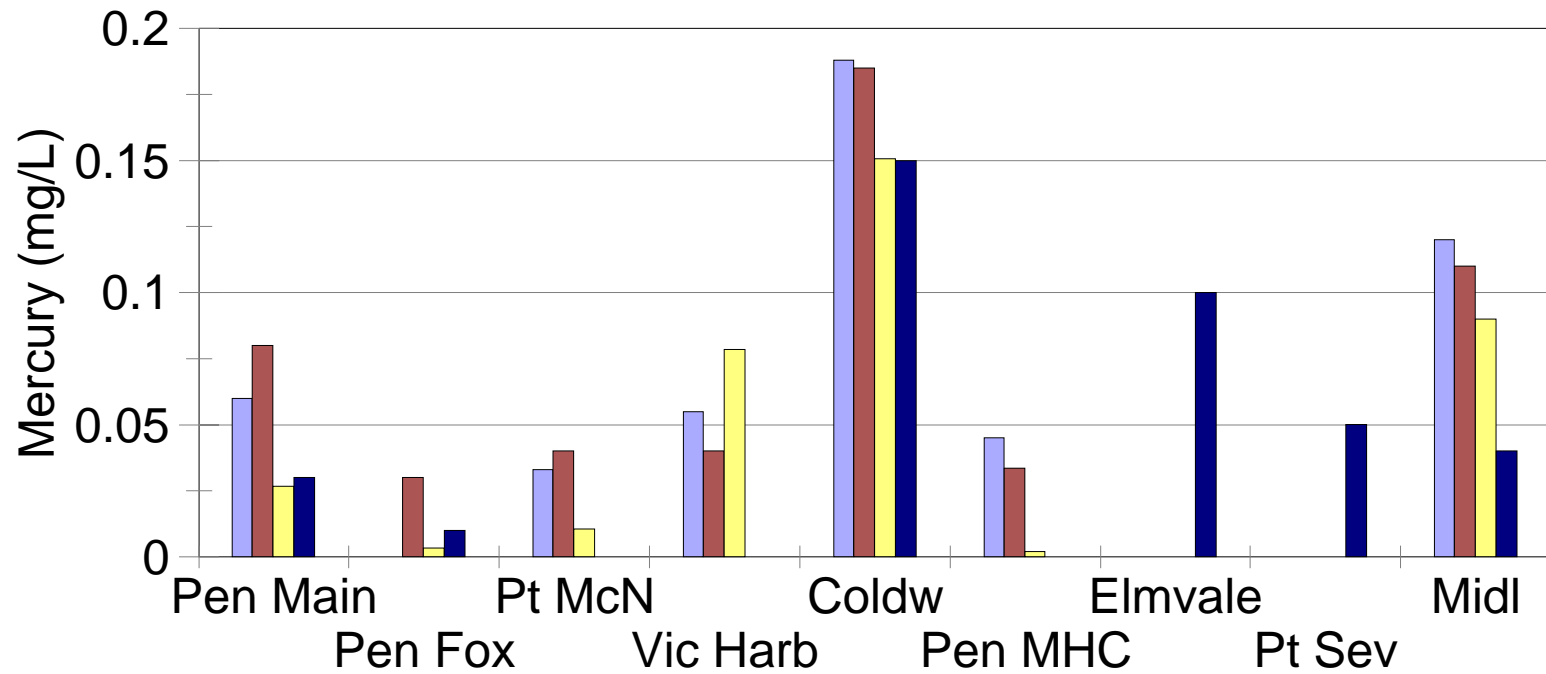
## Nine Sewage Plants serving the Severn Sound Area

- total sewage flow 30,500 c.m./d
- generate 30,000 c.m. biosolids for spreading on farmland each year
- industrial discharges are directed to the sanitary sewers



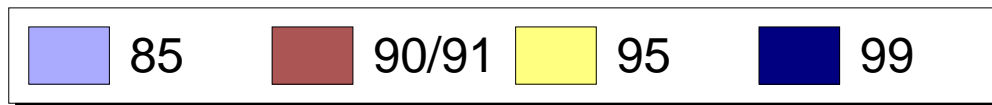


# Biosolids quality of STPs in Severn Sound - Mercury



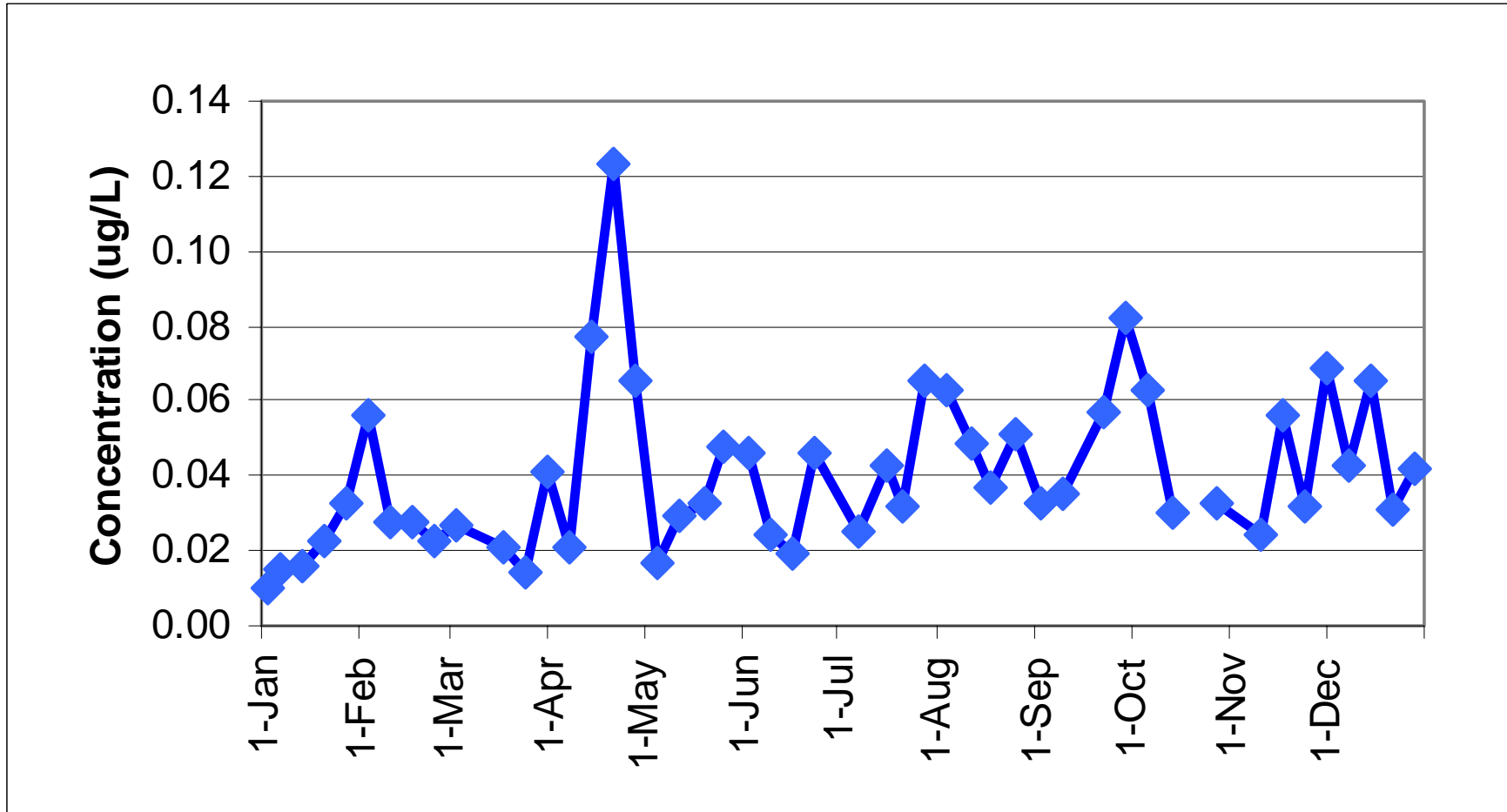
Design flow  
m<sup>3</sup>/d X1000

4.6      1.5      2.4      2.4      0.6      0.6      2.0      0.7      15.7



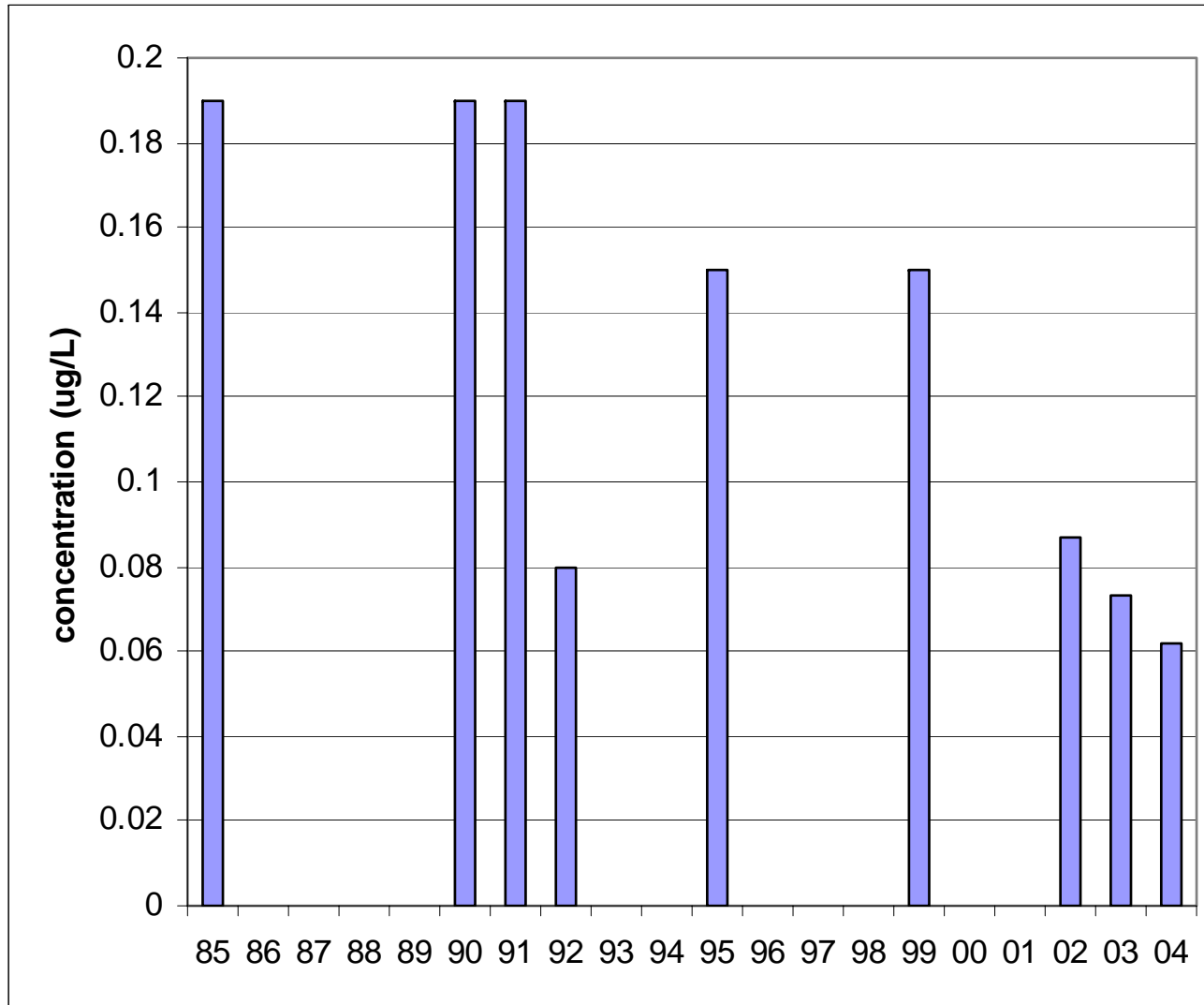
Source: Severn Sound Municipal STP Operations Monitoring Data Mean Results

# Mercury in Biosolids from Midland STP, 2003



Source: Town of Midland STP Operations Monitoring Data for hauled biosolids

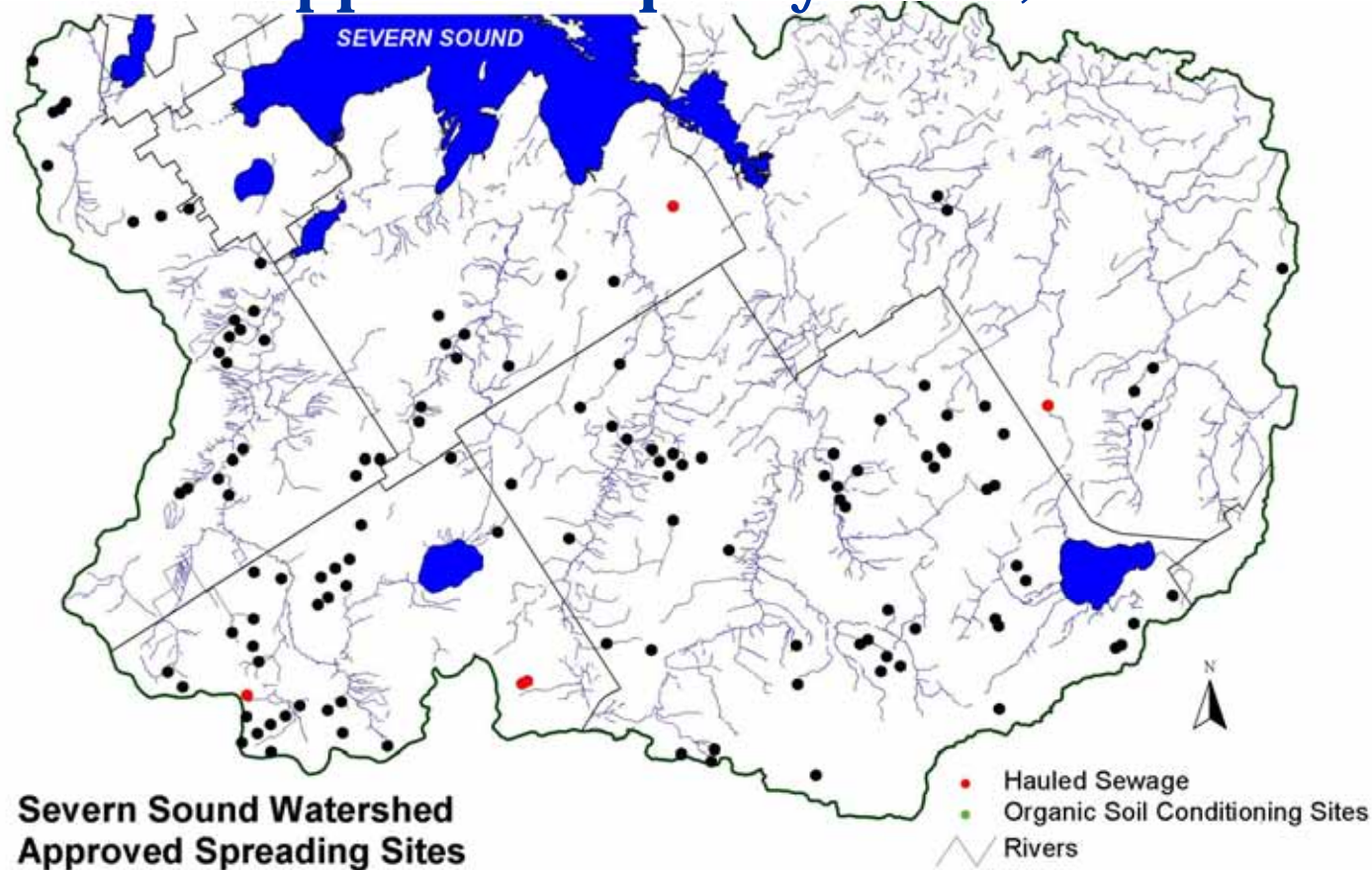
# Mercury in Biosolids from Coldwater STP, 1985 to 2004



Source: Ontario Clean Water Agency Coldwater STP Operations Monitoring Data for hauled biosolids

## Biosolids spreading sites in Severn Sound

- 117 approved sites + 5 Hauled waste sites
- total approved capacity = 275,000 c.m.



Source: MOE Approved Biosolids Spreading sites as of 2003

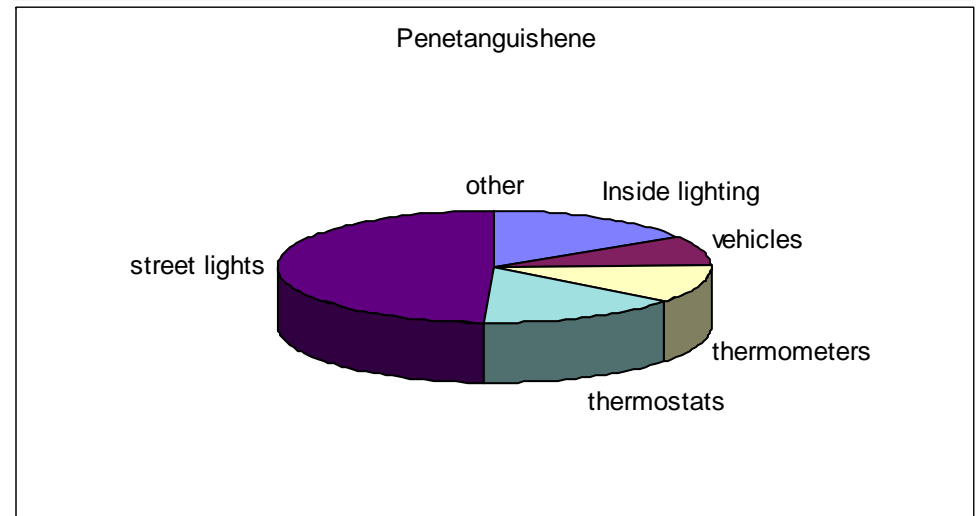
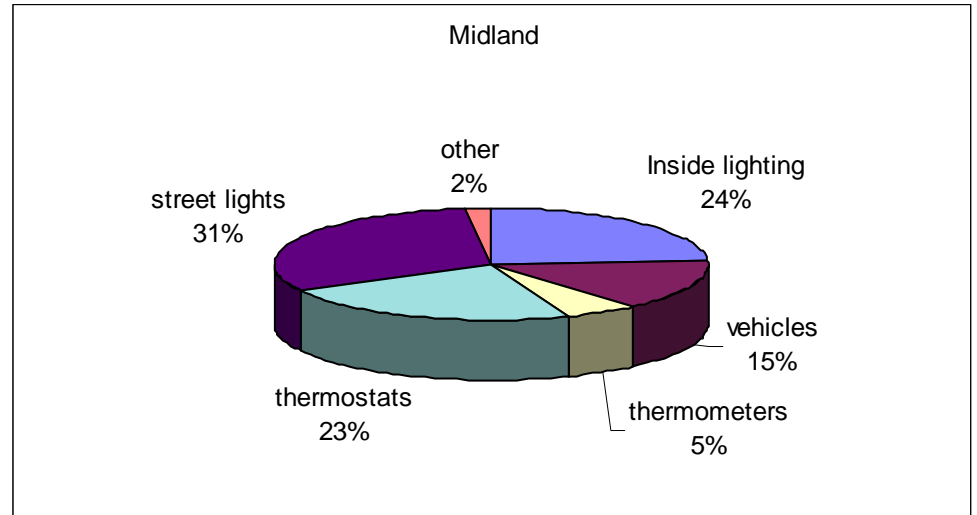


## Biosolids Spreading

-Soil testing for Hg  
<0.05 ug/g

# Mercury Inventory for Midland and Penetang 2003/2004

<u>Source</u>	<u>Midland</u>	<u>Penetang</u>
Inside lighting	105	34
vehicles	64	18
thermometers	24	24
thermostats	100	32
street lights	137	105
other	8	
<b>Total</b>	<b>439</b>	<b>213</b>



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# Comparison of Street Lamps Towns of Penetanguishene and Midland

Town of Penetanguishene		Town of Midland	
<u># Lamps</u>	<u>g Hg</u>	<u># Lamps</u>	<u>g Hg</u>
373	105	1361	137
100%		77%	

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## Huron District Hospital Mercury inventory and progress on mercury reduction 2002 to 2004

<b>Source</b>	<b>Original Inventory (g Hg)</b>	<b>Mercury removed (g Hg)</b>	<b>Mercury remaining (g Hg)</b>
Gastroenterology	5700	5700	0
Sphygmometry	840	840	0
Thermometers	180	30	150
Lighting	51	0	51
Switches	23	0	23
Total	6773	6570	173

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# Additional Actions

- Thermometer exchange from households initiated with local pharmacies in partnership with the County of Simcoe
  - Thermostat exchange from households in progress – discussions with local electricians and suppliers on availability of mercury-containing thermostats
  - Consultation with automotive repair and wreckers for removal and recycle of mercury switches
  - Continued public awareness and education on reduction and recycling of products containing toxic substances
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# Barriers to Implementation

- Detection limits in biosolids and soils testing
  - Level of detail in cataloguing household hazardous goods at County Hazardous Waste Days
  - Lack of incentive to recycle – programs will require funding (eg. Mercury switches in automobiles)
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# Next Steps

- Approaching Staff and Councils to develop policies for continued mercury reduction and recycling
  - Discussions with County of Simcoe on recycling of mercury switches from white goods under way
  - Additional sampling and analyses of biosolids and soils for other level I & II substances and emerging substances of concern
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