

THE INFRASTRUCTURE FUNDING GAP: HOW ARE MUNICIPALITIES MANAGING?

PROFILING THE CITY OF MISSISSAUGA AND THE DEFICIT IN STORMWATER MANAGEMENT INFRASTRUCTURE



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WHY STUDY THE INFRASTRUCTURE FUNDING GAP?

- Economic and human cost of the gap
- July 8, 2013 storms



The Star (2013)

CORE QUESTION

- **What are the tools available for municipalities to keep essential assets in a state of good repair?**

PROJECT METHODOLOGY

- **My time at the City of Mississauga**
- **Government Literature Review**
 - **Policy documents**
 - **Slide decks**
 - **Consultation reports**
- **Interviews with public servants**
- **Literature Review**

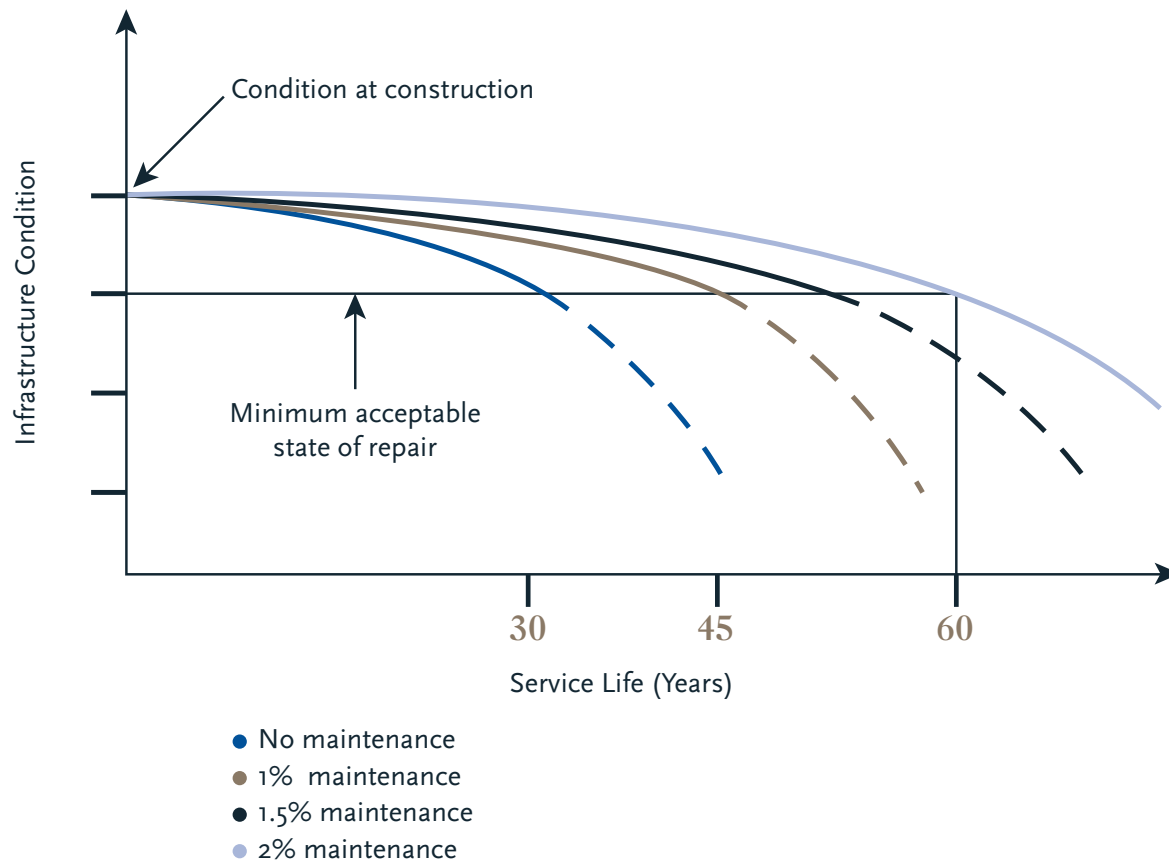
AGENDA

- **The Infrastructure Deficit: What is it and how did we get here?**
- **Stormwater Management Infrastructure**
 - **Challenges and Pressures**
 - **Potential Financing Solutions**
 - **The City of Mississauga's Approach**
- **Concluding Thoughts**
- **Discussion**

THE INFRASTRUCTURE DEFICIT

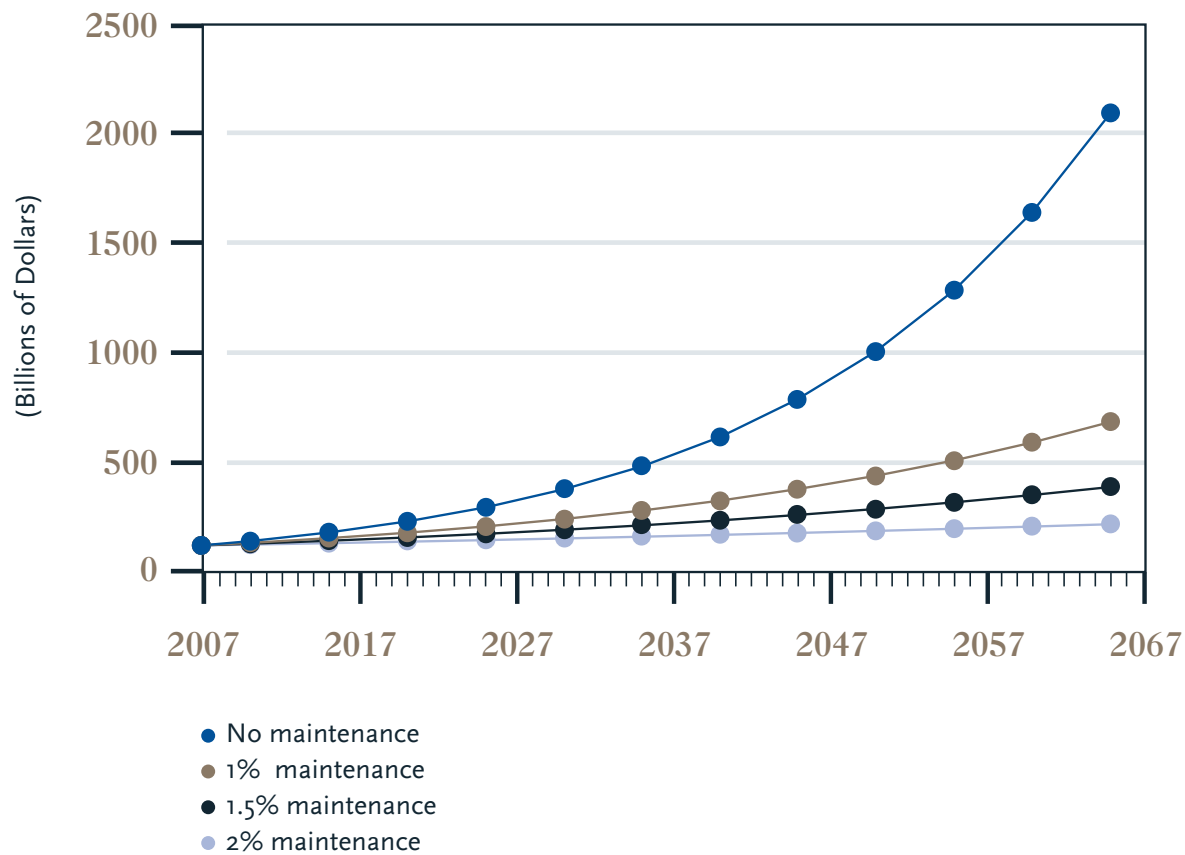
- **Municipal Infrastructure**
 - **Examples: sewage treatment plants, roads, bridges, parks**
- **Assets nearing end of service lives**
 - **Asset condition in the 50s, 60s, 70s**
- **The Deficit**
 - **FCM's oft-cited figure: \$123B**
 - **2012 Report Card: \$172B for roads and water systems only**

THE INFRASTRUCTURE DEFICIT



Infrastructure Condition Determined by Maintenance
Mirza (2007, 17)

THE INFRASTRUCTURE DEFICIT



**Projected Growth
in Deficit as a
Consequence of
Neglect**
Mirza (2007, 18)

STORMWATER MANAGEMENT INFRASTRUCTURE

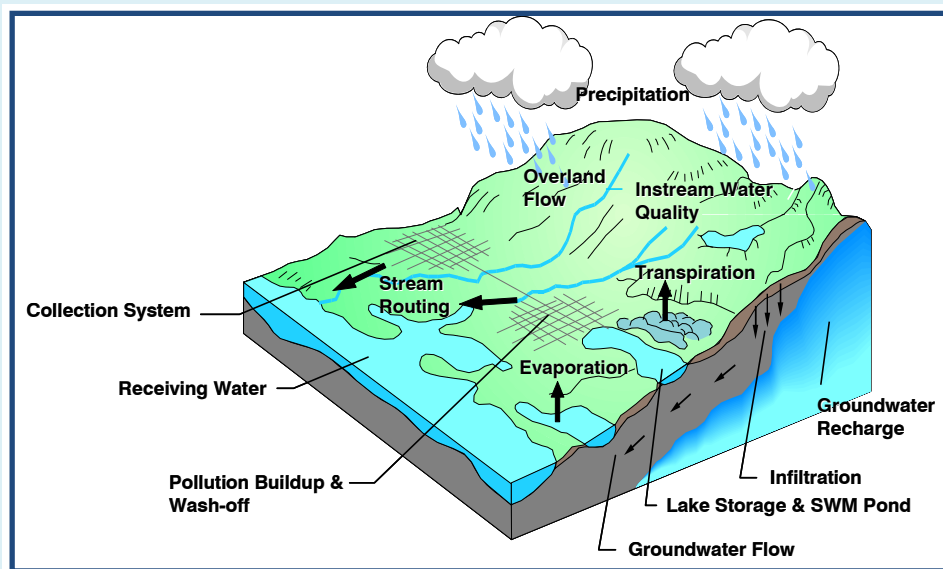
- The system consists of storm sewers, catch basins, stormwater management ponds, bridges and culverts
 - Primarily invisible and underground
 - It controls the runoff from rain and melted snow
- Estimated national deficit in 2007: \$31B
 - ON's deficit between 2005-2020: \$28B

CHALLENGES

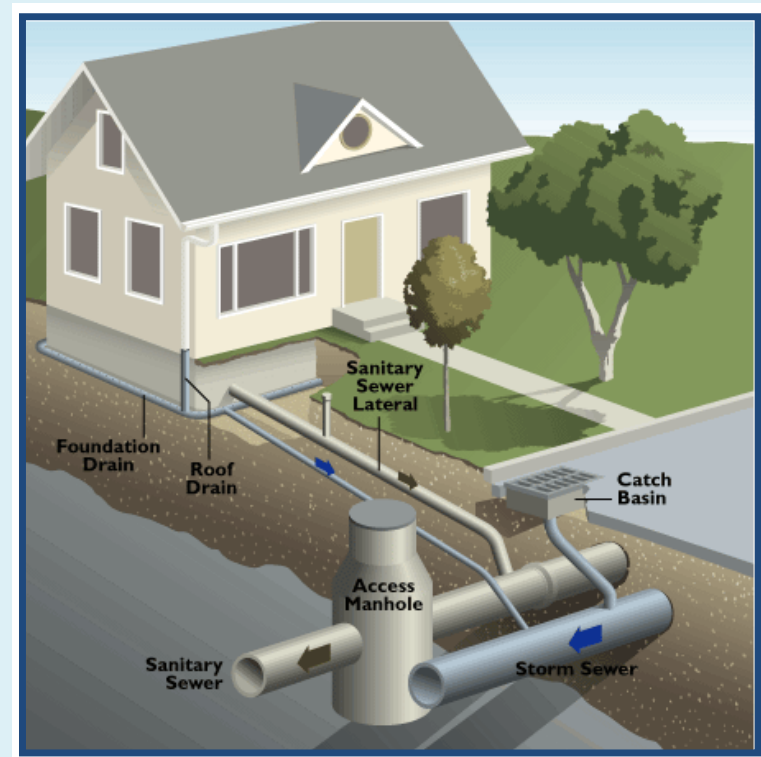
- **Urbanization**
- **Climate Change**
- **Fiscal Constraints and the Logic of Local Politics**

CHALLENGE 1: URBANIZATION

- Urbanization has affected the natural hydrologic cycle because of increase in impermeable areas



AECOM (2012)



CHALLENGE 1: URBANIZATION



Low Runoff



AECOM (2012)



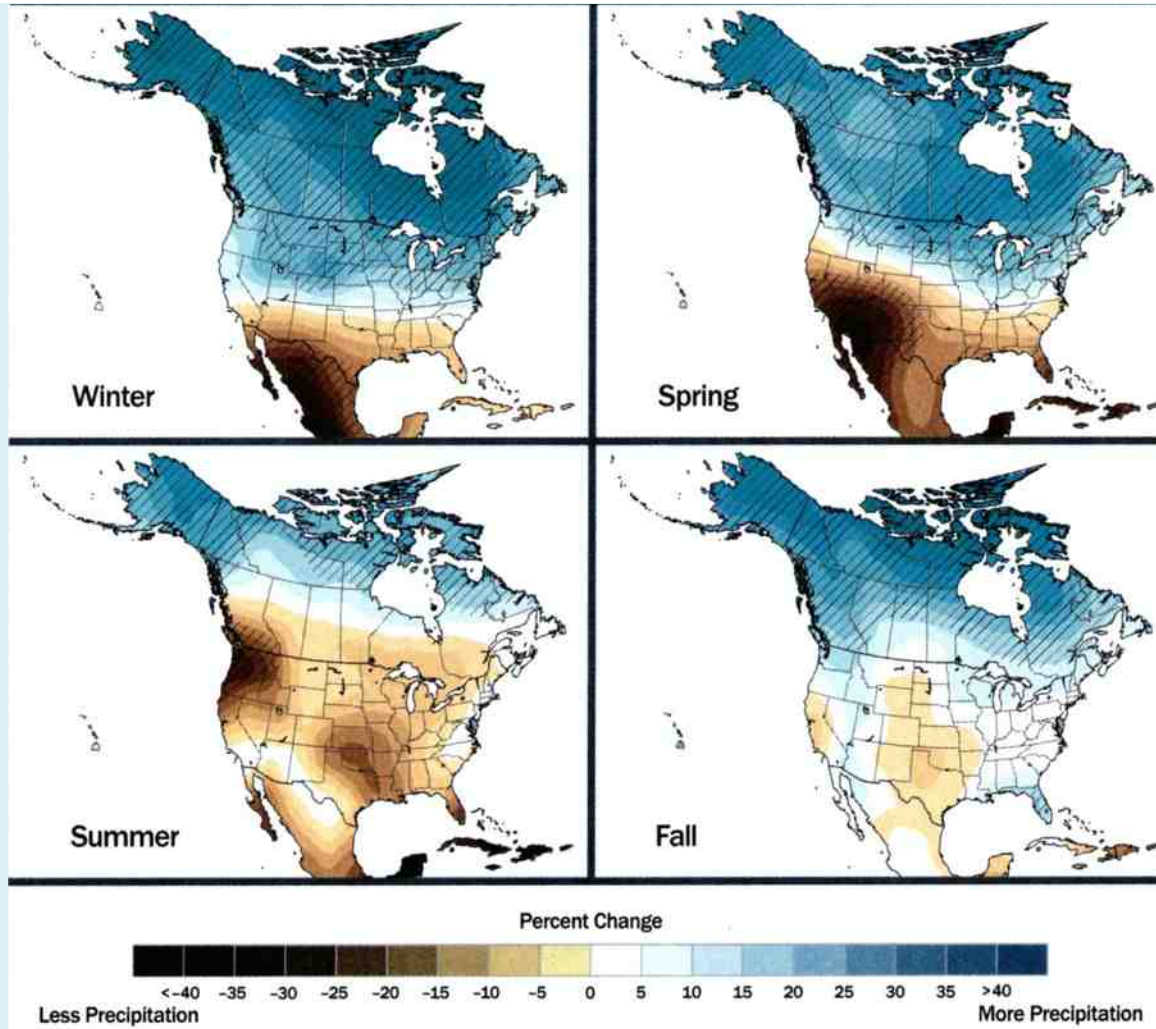
High Runoff



CHALLENGE 2: CLIMATE CHANGE

- Temperatures in Canada increased by more than 1.3 degrees Celsius between 1984-2007
- Stormwater management systems designed to withstand 2- to 5-year storms
 - However, increase in frequency larger storm events
- IBC: water is now leading cause of property damage

CHALLENGE 2: CLIMATE CHANGE



**Precipitation in
North America
by 2080-2099
Kessler (2011)**

CHALLENGE 3: CONSTRAINED BUDGETS AND THE LOGIC OF LOCAL POLITICS

- **Municipalities are fiscally strained**
 - They lack the tax base and fiscal tools
 - Federal support in the form of grants, but not dedicated to stormwater infrastructure
- **Stormwater management not a “hugely sexy thing” (Mayor Nenshi)**
 - Federal grants and the prioritization of crowd-pleasing projects

WHAT CAN WE DO IN RESPONSE TO THESE PRESSURES?

- **Asset Management**
 - **Condition assessment**
 - **Life costing**
 - **Risk management**
 - **Funding**

POTENTIAL FUNDING SOLUTIONS

■ Property Taxes

- Advantageous from administrative perspective
- Not equitable or sustainable

■ Development Charges

- Cover capital costs associated with growth
- More equitable than property taxes but not sustainable

POTENTIAL FUNDING SOLUTIONS

■ Grants

- Have supported infrastructure development
- Awarded conditionally and may distort local decision-making

■ Debenture

- Distribute the costs of assets over the life of the assets
- Should be implemented alongside other tools

POTENTIAL FUNDING SOLUTIONS

- **User Fees**
 - **Stable revenue source**
 - **Fair and equitable**
 - **May not be well received**
 - **Administrative costs associated with implementation**

WHAT ARE CITIES GENERALLY DOING?

- **Cities of Kitchener and Waterloo**
 - Started investigating alternative funding tools in 2005
 - Implemented stormwater rate according to runoff contribution in 2011
- Other cities who have implemented user fees: London, Aurora, St. Thomas
- Investigating user fees: Markham and Toronto

THE CITY OF MISSISSAUGA'S CURRENT FUNDING SYSTEM

- Two-tier municipality
 - City: handles storm water
 - Region of Peel: handles sewage
- Current assets valued at \$1.6B in replacement value
- Funding comes from:
 - Property taxes
 - DCs

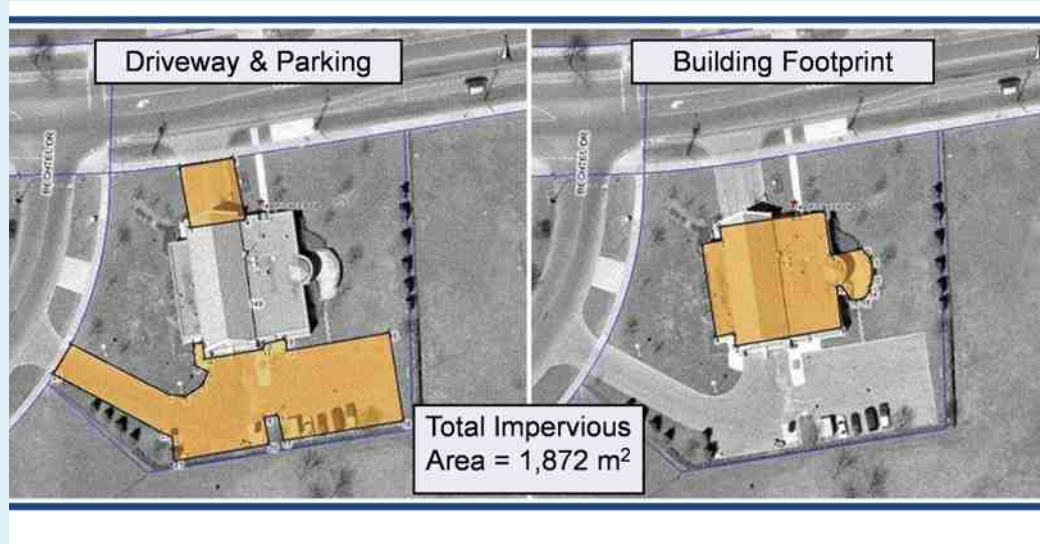


THE CITY OF MISSISSAUGA'S STRATEGY: USER FEES

- **In December 2013, Council approved the implementation of user fees**
 - **User fees dedicated to stormwater management**
 - **Credit and incentive programs**
 - **Billing: Region of Peel water bill**
- **Target implementation date of January 2016**

THE CITY OF MISSISSAUGA'S STRATEGY: USER FEES

- Pricing based on a Tiered Single Family Unit (TSFU) method
- Basic calculation: total cost of providing service divided by billing units with the city



AECOM (2013)

THE CITY OF MISSISSAUGA'S STRATEGY: USER FEES

Parcel Type	Number of Parcels	Dwelling Units (d.u.)	Est'd Impervious Area (m ²)		SFU Factor	Tiered SFU Distribution			
			Total	Avg/d.u.		Count	%		
Single-Family (small)	9,370	9,370	1,723,100	184	0.69	6,459	1.9%		
Single-Family (medium)	74,967	74,967	20,001,200	267	1.00	74,967	22.0%		
Single-Family (large)	9,370	9,370	3,414,400	364	1.37	12,798	3.8%		
Two Unit Residences	31,205	31,205	5,705,500	183	0.69	21,385	6.3%		
Triplex	53	159	18,000	113	0.42	67	0.0%		
4-plex	10	40	4,000	100	0.38	15	0.0%		
5-plex	7	35	2,500	71	0.27	9	0.0%		
6-plex	24	144	12,900	90	0.34	49	0.0%		
Condominium	59,451	59,451	3,634,200	61	0.23	13,622	4.0%		
Townhouse/Row House	5,204	5,024	702,900	140	0.52	2,635	0.8%		
Multi-Family (7+ Units)	298	31,900	1,555,100	49	0.18	5,829	1.7%		
Linked Homes	1,945	1,945	341,700	176	0.66	1,281	0.4%		
Row Housing	51	2,894	345,000	119	0.45	1,293	0.4%		
Co-Op Housing	23	2,804	104,000	37	0.14	390	0.1%		
Mobile Home Park	3	313	80,900	259	0.97	303	0.1%		
Residential Subtotal	191,981	229,621	37,645,400	163		141,102	41.5%		
Industrial/Comm/Institutional	10,776	n/a	53,101,400	n/a	n/a	199,031	58.5%		
Miscellaneous	943		included in total above					included in total above	
Vacant	3,117								
Non-Residential Subtotal	14,836		53,101,400			199,031	58.5%		
Total	206,817		90,746,800			340,133	100.0%		

THE CITY OF MISSISSAUGA'S STRATEGY: USER FEES

- Base annual rates per SFU, according to three levels of service
 - Status quo: \$52.68
 - Interim: \$93.60
 - Sustainable: \$137.64

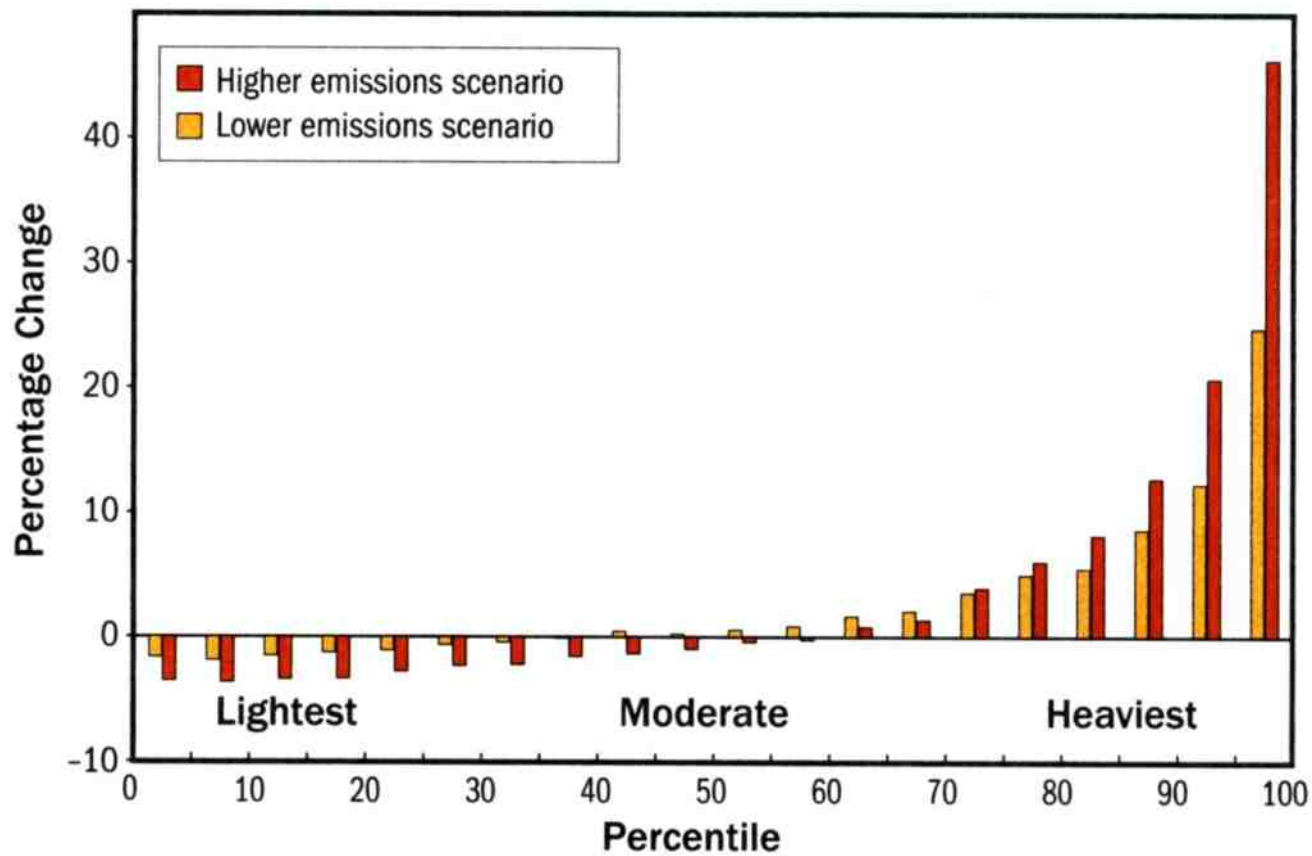
CONCLUDING THOUGHTS

- **The deficit is a pressing but virtually permanent issue facing municipalities**
 - **We need to make cities more resilient in the face of climate change**
- **To deal with it municipalities need more revenue tools**
 - **Stormwater systems are critical and should not be underfunded**

THANK YOU!

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CHALLENGE 2: CLIMATE CHANGE



Kessler (2011)

INCREASING PERMEABILITY



AECOM (2012)

HISTORY OF THE LEVY AND ANNUAL TRANSFERS

- Introduced in 2008 as an Infrastructure Levy only, given that City did not issue debt until 2013

	2008	2009	2010	2011	2012	2013
Capital Reserve	16,020,100	18,720,000	18,720,000	21,690,300	27,584,300	31,017,300
Debt Financing Expense	-	-	-	-	478,000	3,954,000
Total	16,020,100	18,720,000	18,720,000	21,690,300	28,062,300	34,971,300

DEBT FINANCING AND REPAYMENT

- Forecasted debt repayments as a percentage of own source revenues

