



## NEW YORK STATE WATER RESOURCES INSTITUTE

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### **Written Testimony of the New York State Water Resources Institute Before the New York City Council Committee on Housing and Buildings and the New York City Council Committee on Resiliency and Waterfronts Regarding Intro 566 and Intro 962**

**February 8, 2021**

The New York State Water Resources Institute respectfully submits the following written statement to provide the council with scientific input regarding Intro 566 and Intro 962.

The New York State Water Resources Institute (“WRI”), based at Cornell University, is a federally and state-mandated institution formed to advance water resource management and to address critical water resource problems in New York State. WRI conducts and funds research, provides technical support to communities and institutions, trains undergraduate and graduate students, and coordinates outreach and education programs across the state. Over the past decades, WRI—in collaboration with academics and practitioners across the state and country—has done significant work on flood hazards, especially given the critical and ongoing threat of climate and ecological change. WRI thanks council for the opportunity to provide this testimony.

**Intro 566:** Given the significant and persistent inequities in access to flood insurance (Finch et al. 2010), a free elevation certificate program could be an important step in making flood insurance more accessible to low-to-moderate income households. Research has shown that flood vulnerability is not equally distributed across socioeconomic factors, with lower income and BIPOC communities often disproportionately vulnerable to flooding due both to increased exposure to flooding and decreased capacity to deal with its impacts (Cutter et al. 2009, Cutter 2012). Flood insurance increases homeowner’s capacity to recover from flooding, but less than half of homeowners in flood zones are insured (Kriesel et al. 2004). Free elevation certificates reduce barriers to participation in flood insurance programs, while still allowing for risk-based premiums (Michel-Kerjan & Kunreuther 2011). Elevation certificates in the New York City region are valued at \$800 to \$1,000 and can lower a homeowner’s premiums in a high-risk flood zone by more than 50% (Dixon et al. 2017).

While likely helpful, a free elevation certificate program alone is insufficient given New York City’s significant and escalating flood risk (Garner et al. 2017, DeGaetano & Castellano 2017). Nor would the program mitigate the effects of increasing flood insurance burdens on low-income homeowners (Dixon et al. 2017, Elliott 2019).

**Intro 962:** Reducing impervious cover reduces peak runoff and, in turn, pluvial flooding (Schuster et al. 2005, Du et al. 2015) and can reduce urban heat island effects if a green infrastructure approach is employed (Takebayashi & Moriyama 2007, Susca et al. 2011). Therefore, this measure may have positive impacts on stormwater management and could help promote urban design with secondary benefits.

That said, New York City is approximately 60% impervious surfaces already (MacFaden et al. 2012), suggesting that limiting new development to 50% impermeability may not meaningfully reduce flooding. Additionally, much of the catastrophic flooding in New York City is forecasted to come from storm surge (Lin et al. 2010, Rahmstorf 2017). While there are compounding effects of rainfall and storm surge on flooding (Wahl et al. 2015), it is not likely that reducing impervious cover alone will significantly mitigate storm surge flooding.

While we endeavor to scientifically evaluate the pros and cons of each of these bills, we stress that it is difficult to evaluate their utility without accounting for the broader context of New York City and New York State's approach to flood risk management, climate adaptation, and environmental justice. Generally speaking, given the significant challenges New York City faces with respect to flooding, we feel it would be prudent to:

- monitor the impacts of these laws within a framework of adaptive management,
- encourage the incorporation of green infrastructure and ecological restoration in site design where appropriate,
- closely consult with the populations these laws are most likely to impact, especially the most vulnerable and marginalized, and
- continue to take a broad, research-informed view of flood risk reduction in New York City that incorporates the risks of flooding from multiple drivers and reduces inequities in flood vulnerability.

WRI thanks council for the opportunity to provide this testimony and urges council to continue advancing work that is grounded in scientific knowledge and that upholds the principles of climate and environmental justice.

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