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Lessons for New York: Comparative Urban Governance and the Challenge of Climate Change

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LESSONS FOR NEW YORK: COMPARATIVE URBAN GOVERNANCE AND THE CHALLENGE OF CLIMATE CHANGE

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INTRODUCTION

Climate change and the weather disasters to which it contributes are major challenges for urban governance. The impact of Superstorm Sandy on New York City (the "City"), resulting in loss of life, substantial property damage, evacuation of critical health care facilities, flooded infrastructure, and an extended period of power outage, required an extensive response from the City.[1] Using New York City's experience with Superstorm Sandy as a launching point,

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1. *See* THE CITY OF NEW YORK, COMMUNITY DEVELOPMENT BLOCK GRANT–DISASTER RECOVERY: PARTIAL ACTION PLAN A 1 (2013) [hereinafter N.Y.C. CDBG-DR PARTIAL ACTION PLAN A], *available at* http://www.nyc.gov/html/cdbg/downloads/pdf/cdbg-dr_full.pdf.

this Article addresses the fundamental question of urban governance that weather disasters present. Recognizing the direct and immediate connection local government bears to coastal land, infrastructure, and the people who live and work within its borders, the role of a municipality in preparing for and responding to weather disasters is clear. However, although the effects of extreme weather typically are experienced locally, the conditions that contribute to climate change are global in scope. The enormity and complexity of weather-related disaster preparedness limit the capacity of any individual local government to cope with these phenomena.

To consider the governance challenge in the context of weather disasters, Part I of this article contextualizes the question by providing an overview of New York City's principal pre-Superstorm Sandy climate change mitigation measures under the administration of former Mayor Michael Bloomberg. It then examines, in Sandy's aftermath, the City's commitment to a set of initiatives to develop capacity to withstand future weather events.[2] It first considers the City's set of initiatives in relation to the governance structure in the United States that serves as the source of authority, policy guidance, and fiscal support for confronting the challenges of climate change. The structure of governance encompasses multiple levels of government in a hierarchical, vertical relation, operating at successively "higher" territorial and jurisdictional scales in relation to a city.[3] Thus, in the United States, we routinely think of a city's climate-change initiatives within the larger context of federal and state government programs and policies, as well as regional governance schemes wherever they happen to exist, that address the impact of weather-related harms.

The balance of this Article explores an alternative approach for addressing climate-change challenges that links urban governments horizontally, across national borders.[4] Specifically, Part II introduces

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2. *See* N.Y.C. SPECIAL INITIATIVE ON REBUILDING & RESILIENCY, A STRONGER, MORE RESILIENT NEW YORK 7 (2013), *available at* http://www.nyc.gov/html/sirr/html/report/report.shtml; Annie Karni, *Bloomberg Lays Out Post-Sandy Strategy*, CRAIN'S N.Y. BUS. (Dec. 6, 2012), http://www.crainsnewyork.com/article/20121206/REAL_ESTATE/121209942.

3. *See* NEIL BRENNER, NEW STATE SPACES: URBAN GOVERNANCE AND THE RESCALING OF STATEHOOD 8–11 (2004).

4. *See infra* notes 34, 56, 134, 147–48, and accompanying text addressing features of interurban cooperative networks, which sociologist Neil Brenner refers to as "new state spaces," in the distinct context of urban locational policies driving capitalism in Western Europe. These Western European networks nonetheless suggest models with respect to governance and scale that are useful in analyzing the potential of transnational networks for developing resilient strategies to address climate change.

the interurban networks, which are a set of arrangements bearing some family resemblances to other networks, both public and private, in the sense that they are information-driven and embrace collaborative approaches to problem solving.[5] They operate within a normative framework established by international protocols.[6] This Part focuses attention principally on the foundational assumptions grounding three networks of cities: the C40 Cities Climate Leadership Group, an organization of large cities in partnership with the World Bank, the International Council for Local Environmental Initiatives (ICLEI)—Local Governments for Sustainability, and a number of philanthropic organizations;[7] Rockefeller Foundation-initiated resilience networks;[8] and Resilient Cities, an annual global forum initiated in 2010 by ICLEI, the World Mayors Council on Climate Change, and the City of Bonn, Germany.[9]

Part III discusses the concomitant possibilities for comparative urban governance of these transnationally connected cities. This Part draws on the literature of network governance models that proliferate information in the service of flexibility, problem solving, and development of best practices, that typically involve devolution from the national to a local scale, and entail voluntary compliance with network-generated norms.[10] It considers how these networks can offer a framework for comparative governance by serving as a continuing reference point on climate change, and a basis for

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5. *See, e.g.*, Scott Burris et al., *Changes in Governance: A Cross-Disciplinary Review of Current Scholarship*, 41 AKRON L. REV. 1, 22, 30–31 (2008), *cited in* Paul Harpur, *New Governance and the Role of Public and Private Monitoring of Labor Conditions: Sweatshops and China Social Compliance for Textile and Apparel Industry/CSC9000T*, 38 RUTGERS L. REC. 49, 50 n.7 (2011); Richard B. Stewart, *Administrative Law in the Twenty-First Century*, 78 N.Y.U. L. REV. 437, 448–49 (2003); *see also* Louise G. Trubek, *New Governance and Soft Law in Health Care Reform*, 3 IND. HEALTH L. REV. 139, 148–50 (2006).

6. *See generally International Framework for Addressing Adaptation*, ACCCRN, http://www.acccrn.org/uccr/international-framework-addressing-adaptation (last visited Aug. 4, 2014).

7. *See Our Partners & Funders,* C40 CITIES, http://www.c40.org/partners (last visited Aug. 4, 2014).

8. *See About the ACCCRN Network*, ACCCRN, http://www.acccrn.org/about-acccrn (last visited Aug. 4, 2014).

9. *See About the Global Forum,* RESILIENT CITIES, http://resilient-cities.iclei.org/resilient-cities-hub-site/about-the-global-forum/ (last visited Aug. 4, 2014).

10. *See, e.g.,* Burris et al., *supra* note 5, at 30, 38–39; *see also* Trubek, *supra* note 5, at 148–50; Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342, 388, 396, 425–26 (2004), *cited in* Harpur, *supra* note 5, at 50 n.4.

generating shared norms for developing resilience to climate-change effects.

Specifically, Part III addresses ways in which interurban initiatives such as C40 Cities and Resilient Cities make cities more salient, by recognizing the crucial role that cities play both as contributors to greenhouse gas emissions, and thus global warming, and as loci of innovation, experimentation, and creativity.[11] It develops the argument that these collaborative networks exemplify an alternative approach to governance in which cities are linked together horizontally to commit to innovation, promote policy diffusion through the exchange of ideas, expertise, and resources, and adopt best practices for climate-change mitigation and adaptation strategies.

Part IV takes up potential limitations upon the discussed conception of comparative governance. The limitations include the enduring pro-growth orientation of cities, which may militate against city-led climate-related resilience strategies, referred to as "managed coastal retreat,"[12] that entail scaling back waterfront development. Another consideration is that cities' climate, geography, and economy will vary, and in any given instance a city's experience may not be replicable in other contexts.[13] This Part also takes up the concern that highly influential non-state actors engaged in international development or philanthropy may eclipse the role of local governments and reinforce paternalism vis-à-vis less resourced localities.[14] To address the first concern, this Article refers to countervailing considerations of costs and incentives that could moderate the force of the urban growth imperative. Responding to the second concern, the Article notes how networks can be formed in ways that emphasize commonalities among member cities. It also addresses potential domination by powerful non-state actors with reference to the centrality of local governments' participation in these networks.

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11. *See What is Urban Climate Change Resilience?*, ACCCRN, http://www.acccrn.org/uccr/what-urban-climate-change-resilience (last visited Aug. 4, 2014).

12. *See generally* ANNE SIDERS, COLUMBIA CTR. FOR CLIMATE CHANGE LAW, MANAGED COASTAL RETREAT: A LEGAL HANDBOOK ON SHIFTING DEVELOPMENT AWAY FROM VULNERABLE AREAS (2013), *available at* https://web.law.columbia.edu/sites/default/files/microsites/climate-change/files/Publications/Fellows/ManagedCoastalRetreat_FINAL_Oct%2030.pdf (analyzing managed retreat measures).

13. *See* CDP, PROTECTING OUR CAPITAL: HOW CLIMATE CHANGE ADAPTATION IN CITIES CREATES A RESILIENT PLACE FOR BUSINESS 17 (2014), *available at* https://www.cdp.net/CDPResults/CDP-global-cities-report-2014.pdf.

14. *See* Burris et al., *supra* note 5, at 19–21.

Noting the general benefits that cities can derive from a problem solving approach responsive to, but not limited by, individual cities' experience and scale, this Article concludes that cities' participation in transnational urban networks holds some promise from a comparative governance perspective. To the extent that these interurban networks can promote members' voluntary participation in, and adherence to, developing norms and practices for addressing climate-related risks, they enhance transnational problem solving on an issue that is simultaneously local and global. Further, they raise the possibility that local-level innovation of climate-related measures falling within the scope of local authority can jumpstart the stalled process of developing wider consensus on climate change that has eluded efforts of governments at the national scale.

I. NEW YORK CITY AND WEATHER DISASTER: ADDRESSING CLIMATE CHANGE IN A SCHEME OF VERTICAL GOVERNANCE

This Part will consider the governance implications of the pressing climate- and weather-related challenges that a major U.S. coastal city such as New York faces. The New York case study, despite its local context, is used to demonstrate how climate change, as well as the weather disasters to which it contributes, present urban governance challenges that are global in scope. Recognizing the broad scope of the problem, this Article considers the benefits of a broader framework and a comparative approach, an approach this article refers to as horizontal urban governance.

A municipality is the first line of defense in preparing for weather disasters, given the relationship a local government bears to land use, infrastructure, and public health and safety. Drawing on the example of New York City, this Part examines the City's recent engagement with climate-change risks and its embrace of resilience strategies[15] within the context of a vertical, hierarchically organized governance scheme for addressing extreme weather events. Cities occupy a subordinate position within the hierarchical structure in relation to a state and national government; they operate within a single national frame rather than comparatively and transnationally.

A critical geographic fact that New Yorkers themselves may lose sight of is that New York has 520 miles of waterfront.[16] Superstorm Sandy, which struck New York City on the evening of October 29, 2012, reached properties, residents, and infrastructure in the City's

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15. *See* N.Y.C. SPECIAL INITIATIVE ON REBUILDING & RESILIENCY, *supra* note 2.
16. *See* N.Y.C. CDBG-DR PARTIAL ACTION PLAN A, *supra* note 1, at 3.

five boroughs beyond the Zone subject to an evacuation order, flooding many of the city's subways and tunnels. The storm's toll included forty-three deaths and the total loss of approximately 300 homes; left 800,000 New York residents and businesses without power; caused the evacuation of five hospitals and thirty residential facilities that sustained flooding damage and power failures; and placed 6800 persons forced to evacuate their homes in seventy-three city shelters.[17] The storm's impact on fuel terminals, pipelines, and fueling stations led to fuel shortages requiring rationing.[18] It produced some 700,000 tons of refuse, extensive damage to boardwalk and waterfront structures, and the loss of more than two million cubic yards of sand from city beaches.[19]

Property damage from Sandy included 402 buildings covering 35,000 units owned by the New York City Housing Authority (NYCHA); more than 80,000 residents of NYCHA-owned high-rise buildings, including the elderly and infirm, were stranded without essential services following the flooding of basements in which heating and electrical systems were located;[20] heat, hot water, and electric power were fully returned to all NYCHA buildings on November 18, nearly three weeks after the storm struck.[21] Even a year later, reports persisted that storm-related leaks and mold growth in public housing units were not remedied.[22] This sense of continuing vulnerability to the effects of weather-related risk is the kind of evidence that has contributed to the characterization of New York as "two cities," differentiated by the extent to which its residents have access to resources.[23]

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17. LINDA I. GIBBS & CASWELL F. HOLLOWAY, NYC HURRICANE SANDY AFTER ACTION REPORT 8, 16, 18 (2013).

18. *See id.* at 21.

19. *Id.* at 18–23.

20. *See* FURMAN CTR. FOR REAL ESTATE AND URBAN POLICY, SANDY'S EFFECTS ON HOUSING IN NEW YORK CITY 4–5 (2013).

21. *See* GIBBS & HOLLOWAY, *supra* note 17, at 20.

22. *See* Mireya Navarro, *Public Housing Residents Relying on Agency Still Recovering from Storm*, N.Y. TIMES, Oct. 29, 2013, http://www.nytimes.com/2013/10/30/nyregion/public-housing-residents-relying-on-agency-still-recovering-from-storm.html.

23. *E.g.*, Ed Pilkington, *De Blasio Vows Action on Inequality to Tackle New York's 'Tale of Two Cities'*, GUARDIAN, Jan. 2, 2014, http://www.theguardian.com/world/2014/jan/01/bill-de-blasio-mayor-inauguration-new-york; Sam Roberts, *Poverty Rate Is Up in New York City, and Income Gap Is Wide, Census Data Show*, N.Y. TIMES, Sept. 19, 2013, http://www.nytimes.com/2013/09/19/nyregion/poverty-rate-in-city-rises-to-21-2.html.

In the years before Sandy struck, the mayoral administration of Michael Bloomberg launched a number of initiatives that focused attention on climate risk. In 2007, New York had introduced a sustainability blueprint, PlaNYC 2030, in which the City planned for population growth and targeted climate change as a significant challenge.[24] Updated in 2011, PlaNYC committed the City to reducing greenhouse gas emissions, increasing the resilience of the City's structures, communities, and natural systems, improving the City's preparedness for extreme weather, and taking other steps to limit the harmful effects of climate change.[25]

In 2008, with funding provided by the Rockefeller Foundation, Mayor Bloomberg assembled the New York City Panel on Climate Change, which is an advisory body of climate science, legal, and risk management specialists designed to function similarly to the Intergovernmental Panel of Climate Change by providing projections and technical analysis of climate-change risks.[26] The following year the panel reported as "extremely likely" a mean annual sea-level rise in New York of between two to five inches by the 2020s and a mean annual rise of between seven to twelve inches by the 2050s.[27] In 2011 the City produced a comprehensive waterfront plan,[28] which included the goal of developing strategies for the City to improve its resilience to changing climates and rising sea levels.[29] Concomitantly, the City identified specific projects, including strategic planning, data

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24. *See Sustainability*, PLANYC, http://www.nyc.gov/html/planyc2030/html/theplan/the-plan.shtml (last visited Aug. 4, 2014).

25. *See* PLANYC, CLIMATE CHANGE: A GREENER, GREATER NEW YORK 151 (2011), *available at* http://s-media.nyc.gov/agencies/planyc2030/pdf/planyc_2011_planyc_full_report.pdf.

26. *See* N.Y.C. PANEL ON CLIMATE CHANGE, CLIMATE RISK INFORMATION 3–4 (2009) [hereinafter CLIMATE RISK INFORMATION 2009], *available at* http://www.nyc.gov/html/om/pdf/2009/NPCC_CRI.pdf. In 2012, the City adopted legislation constituting the NPCC as a continuing entity with responsibilities linked, in part, to the release of the Assessment Reports of the Intergovernmental Panel on Climate Change. *See* N.Y.C. PANEL ON CLIMATE CHANGE, CLIMATE RISK INFORMATION 2013: OBSERVATIONS, CLIMATE CHANGE PROJECTIONS, AND MAPS 7 (2013) [hereinafter CLIMATE RISK INFORMATION 2013], *available at* http://www.nyc.gov/html/planyc2030/downloads/pdf/npcc_climate_risk_information_2013_report.pdf.

27. *See* CLIMATE RISK INFORMATION 2009, *supra* note 26, at 3. In June 2013, however, the Panel on Climate Change released a report revising and increasing its earlier projections of sea level rise. *See* CLIMATE RISK INFORMATION 2013, *supra* note 26.

28. *See* N.Y.C. DEP'T OF CITY PLANNING, VISION 2020: NEW YORK CITY COMPREHENSIVE WATERFRONT PLAN (2011), *available at* http://www.nyc.gov/html/dcp/pdf/cwp/vision2020_nyc_cwp.pdf.

29. *Id.* at 105–13.

assessment, piloting physical measures to increase coastal resilience, zoning and building code changes, community-level planning, and emergency preparedness efforts.[30]

The impact of Superstorm Sandy drew attention to the fact that even a well-resourced city that had become proactive in gathering data and planning for climate change was not fully prepared for the extent and effect of sea-level surges and inundation on coastal areas and the city's infrastructure. A road map of "coping strategies" that had in fact been suggested for the city and region in a 2011 study conducted at the Lamont-Doherty Earth Observatory of Columbia University seems, in retrospect, prescient:

> The uncertainty of the exact increment of risk due to sea level rise and global warming can therefore not serve as an excuse to avoid dealing with the region's storm surge risk. The coping strategies to be explored are likely to include a mixture of modern engineering solutions, regulatory measures, taxation and/or financial or insurance discounting, and—as the ultimate tool—innovative land use combined with buyouts and relocations. Costs and benefits of these various options, including the mounting costs of not facing these issues at all, need to be addressed quantitatively in forthcoming studies. They could not be resolved in this initial phase of assessment. This assessment does however clearly show the magnitudes of problems that will need to be tackled.[31]

In the aftermath of Sandy, the City established a Special Initiative on Rebuilding and Resiliency to pursue such strategies, and in June 2013 issued *A Stronger, More Resilient, New York,* outlining over 250 initiatives that seek to improve the City's ability to withstand the effects of storm surges linked to sea-level rise.[32] Also in 2013, the City's Panel on Climate Change updated its 2009 sea-level rise projections.[33]

In these post-disaster responses to weather-related risk, the City has acted within the larger context of federal and state government programs and policies instituted at "higher" territorial and

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30. *Id.* at 112–13.

31. KLAUS H. JACOB ET AL., CLIMATE CHANGE AND A GLOBAL CITY: AN ASSESSMENT OF THE METROPOLITAN EAST COAST (MEC) REGION 4 (2011), *available at* http://metroeast_climate.ciesin.columbia.edu/reports/infrastructure.pdf.

32. N.Y.C. SPECIAL INITIATIVE ON REBUILDING & RESILIENCY, *supra* note 2.

33. The Panel announced mid-range projections of between four and eight inches by the 2020s, with a high estimate of eleven inches, and by the 2050s, mid-range projections of between eleven and twenty-four inches, with a high estimate of thirty-one inches. CLIMATE RISK INFORMATION 2013, *supra* note 26, at 14–16.

jurisdictional scales in relation to the City.[34] These include the New York State 2100 Commission's preliminary report addressing ideas to improve the resilience of New York State's infrastructure,[35] and the Hurricane Sandy Rebuilding Task Force, chaired by former Secretary of Housing and Urban Development, Shaun Donovan, a nascent regional governance arrangement.[36]

These levels of government have a role to play in shaping the City's efforts both to mitigate and adapt to the impact of weather-related harms, by (1) providing financial assistance, technical expertise, and crucial data, (2) approving City proposals that are linked to that assistance, and (3) serving as a source of policy guidance. For example, the City received $1,772,820,000 under the federal Department of Housing and Urban Development's first distribution of Community Development Block Grant-Disaster Relief (CDBG-DR) funds.[37] The City was required to (and did) obtain approval from the federal government for its plans to use these funds for housing, business recovery, infrastructure, and resilience investments.[38] In addition to this allocation of CDBG monies, the

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34. BRENNER, *supra* note 3, at 8–11; *see also* Jacob Alderdice, *Impeding Local Laboratories: Obstacles to Urban Policy Diffusion in Local Government Law,* 7 HARV. L. & POL'Y REV. 459, 463–65 (2013) (noting the limits on local governments' powers to effectuate policy innovation inhering in the varying scope of local home rule powers and authority among states to preempt local action); Richard C. Schragger, *Can Strong Mayors Empower Weak Cities? On the Power of Local Executives in a Federal System*, 115 YALE L.J. 2542, 2556, 2563–64 (2006) (arguing that in the United States local governments are "subservient" to federal and state governments in the vertical structure created under federalism, which restricts the efforts of cities to achieve public policy goals). *But see* Richard Briffault, *Home Rule and Local Political Innovation,* 22 J.L. & POL. 1 (2006) (pointing to successful examples of local legislation concerning government structures and electoral procedures, and arguing that these measures can serve as local "laboratories" for policy developments that are potentially national in scope).

35. NYS 2100 COMMISSION, RECOMMENDATIONS TO IMPROVE THE STRENGTH AND RESILIENCE OF THE EMPIRE STATE'S INFRASTRUCTURE 139 (2013), *available at* http://www.governor.ny.gov/assets/documents/NYS2100.pdf.

36. HURRICANE SANDY REBUILDING TASK FORCE, HURRICANE SANDY REBUILDING STRATEGY: STRONGER COMMUNITIES, A RESILIENT REGION 36–37 (2013), *available at* portal.hud.gov/hudportal/documents/huddoc?id=hsrebuildingstrategy.pdf (recommending regional coordination of infrastructure planning and strengthening). *See generally id.* at 49–83.

37. Mireya Navarro, *City to Begin Distributing Storm Aid This Summer*, N.Y. TIMES, May 10, 2013, http://www.nytimes.com/2013/05/10/nyregion/city-plans-to-dispense-nearly-2-billion-in-hurricane-aid-starting-this-summer.html?_r=0. The City allocated $1.77 billion for Hurricane Sandy recovery, including $648 million for housing programs, $293 million for business programs, $360 million for infrastructure and other City services, and $294 million in resilience investments. *Id.*

38. *See* N.Y.C. SPECIAL INITIATIVE ON REBUILDING & RESILIENCY, *supra* note 2, at 402.

City has had access to other federal funding, including grants from the Federal Emergency Management Agency (FEMA), Small Business Administration Disaster Loans, and National Flood Insurance Program disbursements. However, with the funding comes the necessity to follow federal program mandates and procedures.[39]

Similarly, when the City issued *A Stronger, More Resilient New York,* it enumerated the federal and state agencies with which it would be required to cooperate to receive funding, technical and logistical support, and authority to achieve certain reforms.[40] For example, the City needs assistance and funding from the U.S. Army Corps of Engineers to implement various beach renourishment and floodgate repair projects,[41] review by FEMA of flood-related building standards, FEMA's allowance of mitigation credits for flood insurance policyholders who undertake resilience improvements and other changes in residential insurance policy features, and FEMA's authorization of a more flexible building classification in the National Flood Insurance Program.[42] To secure changes in price gouging laws and laws regulating gasoline supply contracts, the City must call on New York State to adopt legislation,[43] reflecting limits on its home rule authority.[44]

The City is also subject to planning and funding within a regional context. In August 2013 the Hurricane Sandy Rebuilding Task Force, chaired by then HUD Secretary Shaun Donovan, issued its report,

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39. *E.g.*, Patricia E. Salkin & Charles Gottlieb, *Engaging Deliberative Democracy at the Grassroots: Prioritizing the Effects of the Fiscal Crisis in New York at the Local Government Level*, 39 FORDHAM URB. L.J. 727, 735–39 (2012) (discussing fiscal federalism and the impact on local governments of decreasing levels of federal aid).

40. N.Y.C. SPECIAL INITIATIVE ON REBUILDING & RESILIENCY, *supra* note 2, at 416–34.

41. *Id.* at 417–18.

42. *Id.* at 420–21. The City is also limited in any effort to craft resiliency strategies applicable to privately-owned multifamily residential buildings that are subject to the requirements of state-administered rent stabilization laws, NYU FURMAN CTR., THE PRICE OF RESILIENCE: CAN MULTIFAMILY HOUSING AFFORD TO ADAPT? 37–39 (2014), http://furmancenter.org/files/NYUFurmanCenter_ThePriceofResilience_July2014.pdf, or to federal and state laws governing buildings subject to affordable housing subsidies. *Id.* at 39–41.

43. N.Y.C. SPECIAL INITIATIVE ON REBUILDING & RESILIENCY, *supra* note 2, at 423.

44. See N.Y. CONST. art. IX, § 2 (conferring home rule powers of local governments); N.Y. MUN. HOME RULE LAW § 10 (McKinney 2014) (authorizing local governments to adopt laws in relation to their property, affairs, or government, in addition to other enumerated powers). For a discussion of the origins and permutations of home rule doctrine, see Richard Briffault, *Our Localism: Part 1—The Structure of Local Government Law*, 90 COLUM. L. REV. 1, 10–18 (1990).

Hurricane Sandy Rebuilding Strategy: Stronger Communities, A Resilient Region,[45] promoting regional coordination to infrastructure development[46] and strategies for enhancing the ability of state and local governments to develop long-term approaches to recovery and resilience following the storm.[47]

In sum, notwithstanding its initiatives in climate-change planning and goal setting, as a municipality in a federal system New York does not operate completely autonomously in responding to weather disaster or in developing climate-change resilience strategies. Rather, the formal legal structure of local governments in the United States, vis-à-vis states and the federal government, positions a city as subordinate to governments that subsume it territorially, jurisdictionally, and politically; cities responding to disasters engage federal and state agencies for aid without any presumption of leverage or entitlement.[48] Referring to this structure, Richard Schragger has observed that "cities and their leaders are three levels down the political food chain and must normally ask the states for whatever powers they have or wish to exercise."[49]

Schragger argues that the constraints on cities inhere in the formal separation of federal, state, and local government authority, which can limit a local government's ability to shape policy.[50] These constraints also implicate the "vertical competition" among federal, state, and local officials for recognition and loyalty among local constituents, where the interests among these governmental representatives are not necessarily congruent.[51] Certainly, as Richard Briffault has observed, the actual scope of local authority is variable and difficult to assess, "reflecting an ever-shifting mix of state delegation and oversight, the vagaries of judicial interpretation, fluctuations in the local capacity to initiate measures, the strains of interlocal conflict and the changing economic, social and technological dimensions of the problems local governments are

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45. HURRICANE SANDY REBUILDING TASK FORCE, *supra* note 36.

46. *See id.* at 49–83.

47. *Id.* at 129–41.

48. Schragger, *supra* note 34, at 2562 (discussing difficulties encountered by New Orleans' Mayor Nagin after Hurricane Katrina in securing aid from higher levels of government); *see also* Salkin & Gottlieb, *supra* note 39, at 735–55 (examining the impact on local governments of decreasing or fluctuating levels of federal and state aid and, in the specific context of New York, the effect of state-imposed restrictions on taxation and unfunded mandates).

49. Schragger, *supra* note 34, at 2545–46.

50. *Id.* at 2562–64.

51. *Id.* at 2564–68.

called upon to address."[52] Thus, the picture is complicated, and even recognizing the authority that cities generally wield with respect to land use,[53] the issues and impacts resulting from climate change-induced weather disaster typically have externalities that may cause them to be understood as multijurisdictional.

However, other governance possibilities exist and, in fact, at the same time that New York City has acted, and at times has been constrained, within a vertical governance scheme, it has also played an active role in the C40 Cities Climate Leadership Group,[54] an alternative modality to address climate-change challenges highlighting the role of cities as generators of policies and practices that can spread and gain adherents among other cities.[55] The next section examines in greater detail the attributes of C40 Cities and related interurban networks, which position urban governments horizontally rather than vertically, linking cities in networks across national borders.[56]

II. ENGAGING CLIMATE CHANGE THROUGH TRANSNATIONAL URBAN NETWORKS

Scholars of alternative governance models emphasize that contemporary conditions of "complexity, diversity, and particularity" are not well served by a centralized, "one size fits all" approach to problem solving; rather, these conditions call for a process that can adapt to changing circumstances and call upon multiple participants from the public and private sectors.[57] It is under these conditions that the concept of the network has emerged as a "metaphor" to convey the idea of a system of "distributed governance" functioning under a variety of arrangements.[58] Networks are "polycentric" and typically

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52. Briffault, *supra* note 44, at 18.

53. *Id.* at 57–59. For a recent ruling by the New York Court of Appeals affirming "the preeminent power of a locality to regulate land use," see Cooperstown Holstein Corp. v. Town of Middlefield, No. 130 (N.Y. 2014), *available at* http://www.nycourts.gov/ctapps/Decisions/2014/Jun14/Jun14.htm (holding that towns may prohibit hydrofracking within the borders of a municipality through local zoning laws because state legislation did not preempt municipalities' home rule authority to regulate land use).

54. *About C40*, C40 CITIES, http://www.c40.org/about (last visited Aug. 4, 2014).

55. *E.g.*, *Bus Rapid Transit: Transportation Initiative*, C40 CITIES, http://www.c40.org/networks/bus_rapid_transit (last visited Aug. 4, 2014) (describing how the C40 Bus Rapid Transit Network promotes sharing of knowledge and spreading of energy-efficient bus rapid transit across cities).

56. *See* BRENNER, *supra* note 3, at 286–94.

57. Burris et al., *supra* note 5, at 4–6; Stewart, *supra* note 5, at 448–52.

58. Burris et al., *supra* note 5, at 12–13.

"regulate" through the use of "soft" law,[59] setting goals and targets, aggregating data related to outcomes, and sharing information.[60] They operate at all levels of government as well as in the private sector.[61]

Networks in the transgovernmental context have been described as "fast, flexible, and decentralized," benefiting from the absence of a formal bureaucratic structure,[62] even as others raise concerns of a "technocratic conspiracy."[63] International law scholar Anne-Marie Slaughter has identified categories of transgovernmental networks that have arisen among national-level officials.[64] By contrast, the resilience networks under consideration here comprise local government officials pursuing strategies to mitigate or adapt to climate change, although they operate within a framework established by international protocols, including the Intergovernmental Panel on Climate Change and the United Nations Framework Convention on Climate Change.[65] The recent appointment of former New York City Mayor Michael Bloomberg as U.N. Special Envoy for Climate Change and Cities[66] suggests networked cities' increasingly visible role in global strategies to combat climate change. Bloomberg, who also serves as President of the Board of Directors of the C40 Cities for Climate Change network, was named to this new post specifically to assist the U.N. Secretary-General in engaging cities to muster the political wherewithal needed to undertake climate-change measures and to offer ideas and strategies to the U.N Climate Summit in New York on September 23, 2014.[67]

The salience of cities operating in a global context as loci for developing increased resilience to climate change is further

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59. *See, e.g.*, *id.* at 4, 30, 38–39 (discussing characteristics of networks in relation to more traditional state-centered, command–and-control modes of governance); Trubek, *supra* note 5, at 149–50 (noting how soft law entails greater procedural informality, interaction among a range of actors, "learning and feedback" through cooperative exchange of information, and the building of consensus).

60. Trubek, *supra* note 5, at 148–49.

61. Lobel, *supra* note 10, at 375–76.

62. *Id.* (quoting Anne-Marie Slaughter, *The Accountability of Government Networks*, 8 IND. J. GLOBAL LEGAL STUD. 347 (2001)).

63. Anne-Marie Slaughter, *The Accountability of Government Networks*, 8 IND. J. GLOBAL LEGAL STUD. 347–48 (2001).

64. *Id.* at 355–59.

65. *International Framework for Addressing Adaptation*, supra note 6.

66. Press Release, United Nations, Secretary-General Appoints Michael Bloomberg of United States Special Envoy for Cities and Climate Change (Jan. 31, 2014), *available at* http://www.un.org/News/Press/docs/2014/sga1453.doc.htm.

67. *Id.*

highlighted by the recent formation of the Medellin Collaboration on Urban Resilience at the conclusion of the Seventh World Urban Forum.[68] The Forum, in turn, was organized by the UN Habitat for a Better Urban Future, the Programme for Human Settlements, which takes a global approach to sustainable urbanism.[69] The collaboration comprises the UN-Habitat, the United Nations Office for Disaster Reduction (UNISDR), the World Bank Group, the Rockefeller Foundation, C40 Cities, ICLEI, 100 Resilient Cities, the Inter-American Development Bank, and the Global Facility for Disaster Risk Reduction and Recovery. All of these groups are transnational in scope and have as their focus the city as a jurisdictional, population settlement, or economic unit.[70] With its emphasis on resilience, the collaboration seeks to assist cities to address the effects of climate change and respond to disaster risks. It does so chiefly by coordinating and reconciling cities' approaches to improving resilience; increasing cities' access to financing that could help protect against vulnerability; promoting sharing of best practices among cities; and encouraging coordinated action with urban networks.[71] A number of these priorities are part of the collaborations that are a focus of analysis in this Part.

Specifically, this Part will consider the foundational assumptions underpinning: (1) the C40 Cities Climate Leadership Group, the World Bank, ICLEI—Local Governments for Sustainability, and a number of philanthropic organizations;[72] (2) resilience initiatives supported by the Rockefeller Foundation;[73] and (3) Resilient Cities,

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68. *See* Jonathan Andrews, *New Global Collaboration for Urban Resilience Announced*, CITIES TODAY (Apr. 11, 2014), http://cities-today.com/2014/04/new-global-collaboration-urban-resilience-announced/#more-4940. The World Urban Forum hosts a biennial conference drawing attendees from national, state, and local governments, non-governmental and community-based organizations, the private sector, United Nations organizations, and various funders and development-fostering bodies. It focuses on issues related to the implications of accelerated growth of cities worldwide. WORLD URB. F., http://wuf7.unhabitat.org/theworldurbanforum (last visited June 12, 2014).

69. UN-HABITAT BETTER URB. FUTURE, http://unhabitat.org (last visited June 12, 2014). The program focuses on seven areas of urban study: urban legislation, land, and governance; urban planning and design; urban economy; urban basic services; housing and slum upgrading; risk reduction and rehabilitation; and urban research and capacity. *Id.* Among its activities are the cities and climate change initiative and the city resilience profiling program. *Id.*

70. *Id.*

71. *Id.*

72. *Our Partners & Funders, supra* note 7.

73. *See, e.g.*, *About the ACCCRN Network*, *supra* note 8.

an annual global forum initiated in 2010 by ICLEI, the World Mayors Council on Climate Change, and the City of Bonn, Germany.[74]

A. C40 Cities: Developing Metrics and Best Practices Among Large Cities

Founded in 2005 by the former Mayor of London, the C40 Cities Climate Leadership Group is a network of the world's largest cities that seeks to reduce greenhouse gas emissions and to take other actions to decrease climate-related risk.[75] That cities are gaining greater prominence in the campaigns to reduce climate risk is based on their substantial consumption of energy and production of greenhouse gas emissions, the expansion of urbanized areas globally, and the high percentage of cities located in coastal areas subject to flooding as a result of sea-level rise.[76] Working in conjunction with its partners[77] and funder organizations,[78] the Climate Leadership Group organizes networks of cities based on shared interests into seven broad "initiative areas": adaptation and water; energy; finance and economic development; measurement and planning; solid waste management; sustainable communities; and transportation.[79] An illustrative adaptation and water initiative links to a network of delta

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74. *About the Global Forum*, *supra* note 9.

75. C40 CITIES, http://www.c40.org/about (last visited July 10, 2014).

76. *Why Cities? Ending Climate Change Begins in the City*, C40 CITIES, http://c40.org/ending-climate-change-begins-in-the-city (last visited Aug. 4, 2014).

77. In addition to the Clinton Climate Initiative, partners include Arup, an interdisciplinary professional services group that has assisted with workshops on carbon reduction and producing reports documenting the work of C40 mayors; ICLEI—Local Governments for Sustainability to help develop a broadly applicable standard for tabulating and reporting greenhouse gas emissions; World Resources Institute, to work with ICLEI on an instrument for measuring city-level emissions; CDP (formerly the Carbon Disclosure Project) to assist in collecting and reporting data on cities' greenhouse gas emissions; the World Bank, to institute a metric to facilitate cities' measuring and reporting emissions and demonstrating progress in qualifying for financial assistance for major projects; Siemens, a corporation engaged in energy, healthcare, financial, and technology sectors that has helped institute a city climate leadership competition. *See Our Partners & Funders*, *supra* note 7.

78. Funders include Bloomberg Philanthropies, Children's Investment Fund Foundation, an organization working to support children's welfare in developing nations; Realdania, a philanthropic group derived from a former mortgage credit organization that focuses on built resources; and Siemens, also a partner providing various kinds of support for cities' capacity to measure their climate initiatives. *See Our Partners & Funders*, supra note 7.

79. *Networks: Connecting Cities on Topics of Common Interest*, C40 CITIES, http://www.c40.org/networks (last visited Aug. 4, 2014).

cities to enable these cities to share learning on climate adaptation.[80] The sustainable urban development network led by the city of Melbourne is undertaking an initiative that encompasses three strategic projects—intervention and policy mapping, benchmarking and goal setting, and collaborative resourcing—all of which are designed to lead toward the establishment of green cities.[81] This group in particular signaled its intent to work with the private sector to produce large infrastructure projects.[82] C40 Cities also provides direct assistance to cities, such as dedicated staffing and other resources.[83] The projects supported by C40 Cities are informed by the consortium's animating belief that, in the absence of clear indications that intergovernmental initiatives at higher scales have been effective, cities can drive efforts to reduce greenhouse gas emissions and improve resilience against the effects of climate change.[84] With particular relevance to governance considerations, the assumption behind C40 Cities is that mayors have clear accountability to those who live and work in the cities they lead and that city-level governments are better able to respond flexibly to changing needs and circumstances to effectuate climate-change mitigation and adaptation.[85] To substantiate that insight, C40 Cities collected survey data in 2011 and again in 2013 to document mayoral powers and trends in climate actions at the city level. As former New York City Mayor and current President of the C40 Board of Directors Michael Bloomberg wrote in the Foreword to the 2013 survey report, cities have the "power, the expertise, the political will and the resourcefulness to continue to take meaningful climate action, and are more than ever before, at the forefront of the issue of climate change as leaders, innovators and practitioners."[86] Survey data

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80. *Connecting Delta Cities: Adaptation and Water Initiative*, C40 CITIES, http://www.c40.org/networks/connecting_delta_cities (last visited July 10, 2014).

81. *Sustainable Urban Development: Sustainable Communities Initiative*, C40 CITIES, http://www.c40.org/networks/Sustainable_Urban_Development (last visited July 10, 2014).

82. *Melbourne to Lead Global Network of Cities on Sustainable Urban Development*, CITY MELBOURNE (Mar. 30, 2012), http://www.melbourne.vic.gov.au/AboutCouncil/MediaReleases/Pages/MelbournetoleadGlobalNetworkofCitieson.aspx.

83. *Networks: Connecting Cities on Topics of Common Interest*, *supra* note 79.

84. ARUP & C40 CITIES, CLIMATE ACTION IN MEGACITIES: C40 CITIES BASELINE AND OPPORTUNITIES VOLUME 2.0 5 (2014), *available at* http://issuu.com/c40cities/docs/c40_climate_action_in_megacities/3?e=10643095/6541335.

85. *Why Cities? Ending Climate Change Begins in the City*, *supra* note 76.

86. Michael R. Bloomberg, *Foreword* to ARUP & C40 CITIES, *supra* note 84, at 3. For example, survey data indicate that mayors have the largest degree of authority

indicate that cities have the capacity to lead by setting broad policy priorities and shifts that set the stage for climate actions across other sectors, including transportation, energy, waste, and finance.[87]

The network operates in large part through supporting the production and dissemination of information by and for the benefit of its members, and thus substantiates the emphasis in the scholarship of networks on the role of information as an instrument of governance.[88] C40 Cities' research and communications infrastructure for disseminating new knowledge and strategies is illustrative.[89] The network conducts ongoing research, and recently embarked on a project to study ways in which actions taken by cities can help achieve the global commitment to limit global warming to two degrees Celsius above pre-industrial measurements.[90] The group also produces case studies documenting the efforts of individual cities.[91] C40 Cities sponsors workshops on specific topics including bus rapid transit, green growth, solid waste management[92] and other programming to facilitate peer exchanges in which similarly situated cities can share information and their experience with energy efficiency practices and

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over the Buildings, Water, and Community-scale Development sectors in the climate change arena. ARUP & C40 CITIES, *supra* note 84, at 18.

87. ARUP & C40 CITIES, *supra* note 84, at 17–18.

88. *See, e.g.*, Burris et al., *supra* note 5; Trubek, *supra* note 5; Slaughter, *supra* note 63, at 363–64 (noting the view that information distribution supplants more coercive measures for achieving "policy convergence").

89. *See generally C40 Research*, C40 CITIES, http://www.c40.org/research (last visited Aug. 4, 2014).

90. *See Research Spotlight: Demonstrating City Impact on National Emissions Reduction Targets*, C40 BLOG (May 14, 2014), http://www.c40.org/blog_posts/research-spotlight-kerem-yilmaz-c40-director-of-research-projects.

91. *See Case Studies*, C40 CITIES, http://www.c40.org/case_studies (last visited Oct. 5, 2014). Examples include programs to reduce greenhouse gas emissions and improve energy efficiency in Seoul, *Eco-mileage: A Citizen's Participation Programme for Protecting the Environment*, C40 CITIES (Apr. 21, 2014), http://www.c40.org/case_studies/eco-mileage-a-citizen-s-participation-programme-for-protecting-the-environment, lessen vulnerability to flooding from sea level rise and high tides through a system of moveable barriers in Venice, *The Mose System to Safeguard Venice from Flooding,* C40 CITIES (Apr. 21, 2014), http://www.c40.org/case_studies/the-mose-system-to-safeguard-venice-from-flooding, reduce carbon dioxide levels in transportation, *Venice Integrated Mobility Plan,* C40 CITIES (Apr. 17, 2014), http://www.c40.org/case_studies/venice-integrated-mobility-plan, and use alternate energy sources in Boston, *Renew Boston,* C40 CITIES (Apr. 4, 2014), http://www.c40.org/case_studies/renew-boston.

92. *See 2nd C40 Green Growth Network Workshop*, C40 CITIES, http://c40.org/events/2nd-c40-green-growth-network-workshop (last visited Aug. 4, 2014) (green growth); *C40 Bus Rapid Transit Workshop*, C40 CITIES, http://c40.org/events/c40-bus-rapid-transit-workshop (last visited Aug. 4, 2014) (bus rapid transit); *Solid Waste Networks Workshop,* C40 CITIES, http://c40.org/events/solid-waste-networks-workshop (last visited Aug. 4, 2014) (solid waste management).

greenhouse gas emissions.[93] The network points to 2013 survey data documenting increases in cycle share programs, rising use of LED street lighting, and increasing adoption of bus rapid transit programs that accommodate large numbers of passengers (spreading from South American cities increasingly to more developed northern cities) as evidence that its programs have been effective in promoting circulation of data and best practices across cities.[94]

Based on responses to survey questions, C40 Cities and its publication partners recently released "In Focus" reports on ten individual cities, nine of which are C40 members, which highlighted their accomplishments in increasing energy efficiency and addressing climate change.[95] New York City's documented efforts to respond to Superstorm Sandy's devastation and to plan for future extreme weather episodes are featured in one of the ten reports.[96] Included in the report are data on high-level physical risks the City faces as a result of increases in the rate of sea-level rise, storm surges, hot days, and average annual rainfall, coupled with the vulnerability occasioned by older infrastructure.[97]

Since its inception, C40 Cities has held biennial mayors' summits, most recently in the city of Johannesburg, South Africa, where the gathering became the occasion for interchange with the international community's climate-change programs. In Johannesburg, a substantial group of C40 mayors asked that the United Nations' Open Working Group on Sustainable Development goals include a specific goal for urban areas. The Executive Secretary for the United Nations Framework Convention on Climate Change attended the summit and solicited the involvement of cities in the development of national-

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93. *See Networks: Connecting Cities on Topics of Common Interest*, *supra* note 79.

94. *See* ARUP & C40 CITIES, *supra* note 84, at 5–6. For example, survey data show that fifty-seven percent of C40 cities that currently have, or plan to implement, bus rapid transit systems are located in the global north. *Id.*

95. *See* C40 Cities, *Research Spotlight: New Publications Highlight 10 Cities Delivering Best in Class Climate Action Reporting*, C40 BLOG (June 4, 2014), http://c40.org/blog_posts/research-spotlight-new-publications-highlight-10-cities-delivering-best-in-class-climate-action-reporting.

96. *See generally* CDP, Data Provided for the CDP CITIES 2013 REPORT: NEW YORK CITY (2013), *available at* http://c40-production-images.s3.amazonaws.com/other_uploads/images/82_CDP_2013_New_York_small.original.pdf?1401861985. This report covers the city's governance, risks and adaptations, opportunities created by climate change, greenhouse gas emissions at the governmental and community levels, and strategy. *Id.* at 3.

97. *See id.* at 10–12.

level climate-change programs.[98] C40 mayors rotate on the Steering Committee, its governance arm;[99] overall leadership is provided by an elected Chair, a position that is held for a three-year period.[100] The C40 Cities Board of Directors reviews and guides the day-to-day management of the organization.[101]

B. Rockefeller Foundation Initiatives: Promoting Multi-Sectoral Collaborations

In the broader effort to increase knowledge and capacity about climate change, the Rockefeller Foundation has been a leading proponent of developing resilient systems and the need for multi-sectoral collaboration. In its white paper titled *Building Climate Change Resilience*, the Foundation developed a definition of climate change resilience that emphasizes its global relevance for developed cities such as New York as well as more transitional urban areas.[102] In its recently inaugurated 100 Resilient Cities Centennial Challenge, the Foundation is funding a $35 million initiative to support member cities' efforts to develop resilience plans.[103] To be eligible a city must have a population in excess of 50,000 and an established governance structure.[104]

To date, sixty-seven cities have been chosen in two cohorts to participate in the network and will receive technical and financial support to develop resilience plans, which the initiative defines as "the capacity of individuals, communities, institutions, businesses and systems within a city to survive, adapt, and grow no matter what kinds

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98. *See* Press Release, C40 Cities, C40 Mayors Summit Demonstrates Why Cities are Leading On Global Climate Change (Feb. 5, 2014), *available at* http://c40-production-images.s3.amazonaws.com/press_releases/images/54_Summit_all-up_FINAL_1_5_14_9am.original.pdf?1391599813.

99. *See Steering Committee*, C40 CITIES, http://www.c40.org/steering_committees (last visited Aug. 4, 2014).

100. *See Chair of the C40*, C40 CITIES, http://www.c40.org/leadership (last visited Aug. 4, 2014) (noting rotating role of mayors acting as Chair and indicating that mayors to date generally have served a three-year term).

101. *See Board of Directors*, C40 CITIES, http://www.c40.org/board_of_directors (last visited Aug. 4, 2014).

102. ROCKEFELLER FOUND., BUILDING CLIMATE CHANGE RESILIENCE (2009), *available at* http://www.rockefellerfoundation.org/uploads/files/c9725eb2-b76e-42eb-82db-c5672a43a097-climate.pdf.

103. *See* Matt Chaban, *Rockefeller Foundation Target: 100 Resilient Cities,* CRAIN'S N.Y. BUS. (May 14, 2013), http://www.crainsnewyork.com/article/20130514/REAL_ESTATE/130519952/rockefeller-foundation-target-100-resilient-cities.

104. *See* Katie Watkins, *The Rockefeller Foundation Kicks Off Its 100 Resilient Cities Challenge*, ARCHDAILY (Aug. 28, 2014), http://www.archdaily.com/541742/the-rockefeller-foundation-kicks-off-its-2014-resilient-cities-challenge/.

of chronic stresses and acute shocks they experience."[105] Support includes financing for cities to employ a Chief Resilience Officer and to disseminate research and best practices.[106] The incorporation of "stresses" in the definition of resilience contemplates that conditions that impair a city's day–to-day functioning—such as high unemployment, inadequate public transportation, food and water insecurity, and pervasive violence—also threaten resilience and must be addressed.[107] The initiative identifies resilience's key attributes: constant learning, rapid rebound, "safe" failure, flexibility, and spare capacity.[108]

Citing the rationale for setting this challenge, Foundation President Judith Rodin has underscored a critical need for a shared problem solving approach:

> But in today's hyper-connected world, our challenges are distinguished by their frequency, scale, and ability to ripple over borders and across continents. Once-in-a-lifetime storms now threaten the Eastern Seaboard of the United States every few years. Disasters in urban areas can impact millions of people and shut down entire economic systems and supply chains. And whether they are public health threats, contagions in our financial markets, or volatile weather events, our challenges are indeed shared challenges, and vulnerability in one area often shakes the stability of another.[109]

In spearheading this project, the Foundation replicated a process of urban exchange and linking that it has fostered in the Asian Cities Climate Change Resilience Network (ACCCRN).

Inaugurated in 2008, ACCCRN links ten medium-sized cities in India, Vietnam, Thailand, and Indonesia in an effort to help them build resilience to the effects of climate change,[110] and to generate useful knowledge that these cities can apply and share in designing resilience strategies.[111] The network draws its funding from the

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105. *City Resilience*, 100 RESILIENT CITIES, http://www.100resilientcities.org/resilience (last visited Aug. 4, 2014); *see also About Us,* 100 RESILIENT CITIES, http://www.100resilientcities.org/pages/about-us#/ (last visited Mar. 11, 2015); *100 Resilient Cities Challenge*, 100 RESILIENT CITIES, www.100resilientcities.org/pages/100-resilient-cities-challenge#/ (last visited Mar. 11, 2015).

106. *See* Judith Rodin, *100 Resilient Cities*, ROCKEFELLER FOUND. (Aug. 5, 2013), http://www.rockefellerfoundation.org/blog/100-resilient-cities.

107. *About Us, supra* note 105.

108. *See generally City Resilience*, *supra* note 105.

109. Rodin, *supra* note 106.

110. *See* Anna Brown, *Three Keys for Protecting Mid-Sized Asian Cities*, ROCKEFELLER FOUND. (Mar. 12, 2014), http://www.rockefellerfoundation.org/blog/three-keys-protecting-mid-sized-asian.

111. *See generally* ABOUT ACCCRN, *supra* note 8.

Rockefeller Foundation and technical, strategic, and logistical input from city and regional collaborators, including community-based organizations, local government actors, the business sector, and disaster relief agencies.[112] Its advisory board draws representatives from academia, research institutes, civil society, municipal government, and international agencies.[113]

Similar to C40 Cities, member cities organize international workshops, fora, and conferences to promote knowledge on urban resilience and adaptation.[114] Despite a specific aim to support resilience approaches that benefit poor and developing populations, the resources that ACCCRN develop relate to challenges affecting coastal cities generally, such as public safety, housing design, building and infrastructure protection, and public health.[115] ACCCRN's participation in international fora highlights the insights that its applied research has generated. For example, at the Association of Southeast Asian Nations Community 2015 Forum, ACCRRN identified three critical components for defending mid-sized cities from the triad of climate change, explosive urban growth, and vulnerability: access to adequate funding; building capacity in local governments acting in conjunction with other partners; and fostering cross-sectoral collaboration that includes government, the private sector, and funders, and that promotes coordination and sharing of information.[116]

C. Resilient Cities

The Rockefeller Foundation is also a partner supporting Resilient Cities, which brings together local government leaders and climate adaptation specialists to discuss adaptation issues in an urban context around the globe on such topics as urban risk, resilient urban logistics, financing the resilient city, urban agriculture, smart infrastructure, and others.[117] This forum is a focal point of the work of the World

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112. *See ACCCRN Partners*, ACCCRN, http://www.acccrn.org/about-acccrn/acccrn-partners (last visited Aug. 4, 2014).

113. *See Advisory Board,* ACCCRN, http://www.acccrn.org/about-acccrn/advisory-board (last visited Aug. 4, 2014).

114. *See generally* ACCCRN, http://www.acccrn.org/ (last visited Aug. 4, 2014).

115. *See, e.g., ACCCRN Newsletter August 2013*, ACCCRN, http://us6.campaign-archive2.com/?u=5e61f404aed445cfe1dbb07a9&id=94961de618 (last visited Aug. 4, 2014).

116. *See* Brown, *supra* note 110.

117. *About the Global Forum*, *supra* note 9; *Partners*, RESILIENT CITIES, http://resilient-cities.iclei.org/resilient-cities-hub-site/partners/ (last visited Oct. 8, 2014).

Mayors Council on Climate Change and the Bonn Declaration of Mayors.[118] Convening annually in Bonn, Germany, the forum hosts workshops, panel discussions, and plenary sessions that typically showcase demonstrations and experience sharing from specific cities. Consistent with the approach of the other networks discussed in this section, the 2014 Forum promoted dissemination of city-generated knowledge and experience.[119] Sessions featured GIS-based[120] data analysis from Wuppertal, Germany, and Rotterdam, Netherlands, and green infrastructure developments in the United States and Japan; case studies from Bangladesh and South Africa on use of locally-determined funding; and an ecosystem–based adaptation with examples from London, Singapore, and Copenhagen. Although its own governance structure seems looser than that of C40 Cities or ACCCRN, the Resilience Cities Congress annually holds the Mayors Adaptation Forum, considered the leadership component of the program that brings together heads of local government with technical support and collaborators.[121] Each year the Forum culminates in the Bonn Declaration of Mayors, a hortatory document highlighting developments and prospective action to promote resilience and sustainable development.[122]

Resilient Cities identifies supporting partners, sponsors (funders), media partners, and, in addition, thirty-eight endorsing partners comprising nine United Nations organizations, two German federal ministries, other German and European organizations, development institutes, scientific and research-oriented bodies, a planning association, and environmental and conservation agencies.[123] Two of the endorsing partners are themselves associated with urban and regional governance: the Congress of Local and Regional Authorities

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118. *About the Global Forum*, *supra* note 9; *Partners, supra* note 117.

119. *See 5th Global Forum on Urban Resilience and Adaptation*, RESILIENT CITIES 2014, http://resilient-cities.iclei.org/index.php?id=773 (last visited Aug. 4, 2014).

120. GIS refers to a geographic or geospatial information system, a computer system for gathering and displaying data, drawn from such sources as satellites and maps related to land use and location. *GIS (Geographic Information System)*, NAT'L GEOGRAPHIC EDUC., http://education.nationalgeographic.com/education/encyclopedia/geographic-information-system-gis/?ar_a=1 (last visited Aug. 13, 2014).

121. *Mayors Adaptation Forum at Resilient Cities*, RESILIENT CITIES, http://resilient-cities.iclei.org/index.php?id=833 (last visited Oct. 2, 2014).

122. *Id.*; *see, e.g.*, *2013 Bonn Declaration of Mayors*, ICLEI, http://www.iclei.org/fileadmin/user_upload/ICLEI_WS/Images/events/Suwon2013/Resilient_Cities_2013/MAF2013_Bonn_Declaration_of_Mayors_Draft_20130602.pdf (last visited Aug. 4, 2014).

123. *Endorsing Partners*, RESILIENT CITIES, http://resilient-cities.iclei.org/resilient-cities-hub-site/partners/endorsing-partners/ (last visited Aug. 4, 2014).

of the Council of Europe, a political body dedicated to enhancing local and regional democracy and governance in Europe,[124] and the Network for Regional Governments for Sustainable Development (nrg4SD), an international group of subnational governments that highlights the role of these governments in fostering sustainable development and promotes the formulation of subnational-level territorial policies.[125]

That the inhabitants, institutions, and infrastructure of local governments face the most direct threats from extreme weather events underscores that local actors are highly knowledgeable about the local conditions, resources, and vulnerabilities that must be considered in developing appropriate responses. The networks and organized fora discussed in this Part support cities in producing information—which they use to create, disseminate, and encourage a shared commitment to—norms, metrics, and practices outside of the vertical governance structures in which local governments typically occupy a subordinate position. Part III will examine in more detail the theory and governance implications of these networks, which offer the possibility of an alternative approach for addressing transnational climate–related problems. This approach is based on a decentered[126] and, more specifically, a polycentric[127] modality in place of conventional, centralized command-and-control mechanisms. In these networks, legitimacy and efficacy must be gauged with reference to more flexible processes that involve comparison and sharing among multiple approaches and participants,[128] and that ultimately seek to build consensus.[129]

III. HORIZONTAL URBAN GOVERNANCE: TRANSNATIONAL NETWORKS AS A COMPARATIVE GOVERNANCE SCHEME

The burgeoning scholarship of governance often obscures the concept's plural meanings—encompassing both government bodies and more informal arrangements, private as well as public forms of

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124. *The Congress of Local and Regional Authorities, the Guarantor of Local and Regional Democracy in Europe*, CONGRESS LOC. & REGIONAL AUTHORITIES, http://www.coe.int/t/congress/presentation/default_en.asp?mytabsmenu=1 (last visited Aug. 4, 2014).

125. *Missions and Objectives*, NETWORK REGIONAL GOV'T FOR SUSTAINABLE DEV., http://www.nrg4sd.org/missions-and-objectives (last visited Aug. 4, 2014).

126. Harpur, *supra* note 5, at 50; Lobel, *supra* note 10, at 381–85.

127. Burris et al., *supra* note 5, at 3.

128. Stewart, *supra* note 5, at 447–50, 451–52 (describing network-based systems in use in the United States and the European Union).

129. Trubek, *supra* note 5, at 149–50.

management.[130] If governance is understood at a base level as "organized efforts to manage the course of events in a social system,"[131] certainly the emergence of polycentric institutional arrangements of state and non-state actors engaged in collaborative problem solving, typically through mobilizing (collecting, reporting, and disseminating) information, actualizes the governance-by-network metaphor.[132]

As a cross-disciplinary concept,[133] the network can be analyzed through the lens of geography in addition to its sociological, political theory, and legal regulatory dimensions. In the context of urban locational policies in Western Europe, sociologist Neil Brenner has analyzed cooperative interurban networks to illustrate the ostensible advantages and limitations of "rescaling outward."[134] Although Brenner's analysis has a distinct context and purpose, identifying features in interurban networks that reinforce competition and uneven development under capitalism,[135] the horizontal, city-to-city orientation that such networks entail is useful for this discussion. The network concept offers an alternative way to understand urban governance spatially and provides a basis for comparison across urban approaches. In the language of geography, these networks constitute "horizontal interlinkages among geographically dispersed nodal points"; the "nodal connectivity" of networks replaces the "territorial enclosure" of political units whose jurisdiction is defined by bounded territory.[136] These networks are envisioned as "leapfrogging" over space,[137] disrupting the idea that a city is limited by its political territoriality.

Brenner refers to these networks in the Western European context as "new state spaces," but in a number of respects they appear as latter-day variants of a centuries-old practice from an era before the development of the nation state: their historical antecedents are

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130. *See* Bradley C. Karkkainen, *"New Governance" in Legal Thought and in the World: Some Splitting as Antidote to Overzealous Lumping*, 89 MINN. L. REV. 471, 472 (2004).

131. Burris et al., *supra* note 5, at 3.

132. *Id.* at 4–5; Stewart, *supra* note 5, at 450, 452.

133. *See generally* Burris et al., *supra* note 5, at 12–44 (discussing wide-ranging scholarship of networks).

134. *See* BRENNER, *supra* note 3, at 286–94.

135. *Id.*

136. *Id.* at 292–93.

137. *Id.* at 292 (quoting Helga Leitner et al., *Networks, Governance, and the Politics of Scale: Inter-Urban Networks and the European Union*, *in* GEOGRAPHIES OF POWER: PLACING SCALE 207 (Andrew Herod & Melissa W. Wright eds., 2002)).

traceable to the medieval period, when merchants and then cities in Northern Europe formed networks known as the Hanseatic League, a mercantile and security-promoting alliance.[138] Recent scholarly analysis of the League using network theory emphasizes characteristics of networks—"a horizontal, little formalized and constantly changing structure . . . [that] develops around one or more hubs or nodes"[139]—that are distinguishable from both hierarchical organizations and a market structure.[140] Reflecting this distinctive structure, the networks of Hanse merchants and cities were heterarchical—interlinked with nodes of varying densities—and at both a local and transnational level.[141]

Further, as the Hanseatic trading networks expanded and gained influence, the networks generated norms and rules that ensured stability and a reliable basis for cooperation by setting criteria of merchantable quality and measurement, permitting debt claims, and recognizing individual liability.[142] The network structure anchored in the trading offices that enforced these rules also served important coordinating and information-exchange functions.[143]

Network theory and the historical example of the Hanseatic networks provide a conceptual model and a point of comparison for transnational networks formed to promote sustainable urbanism and initiatives to address climate change. In the context of climate-change mitigation and adaptation strategies, various United Nations institutions, in particular UN-Habitat for a Better Urban Future[144] and the newly established Special Envoy for Climate Change and Cities,[145] look to networked cities as crucial actors in amassing relevant knowledge, generating standards for action, and serving as reference points for similarly situated cities.

Executive Director of UN-Habitat Joan Clos made this point at the close of a three-day conference hosted by the United Nations

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138. *See, e.g.*, *id.* at 293 n.7; BRUCE KATZ & JENNIFER BRADLEY, THE METROPOLITAN REVOLUTION: HOW CITIES AND METROS ARE FIXING OUR BROKEN POLITICS AND FRAGILE ECONOMY 166–68 (2013). *See generally* Margrit Schulte Beerbühl, *Networks of the Hanseatic League*, EGO: EUR. HIST. ONLINE (Jan. 13, 2012), http://www.ieg-ego.eu/schultebeerbuehlm-2011-en.

139. Beerbühl, *supra* note 138, at ¶ 2.

140. *Id.*

141. *Id.* at ¶¶ 12, 46.

142. *Id.* at ¶ 25.

143. *Id.* at ¶ 28.

144. *See* UN-HABITAT BETTER URB. FUTURE, *supra* note 69.

145. *Mayors on Frontline of Battle Against Climate Change—UN*, UN NEWS CENTRE (May 29, 2014), http://www.un.org/apps/news/story.asp?NewsID=47924.

Economic and Social Council, on May 27–29, 2014. Specifically, Clos cited the leading role that mayors have played in efforts to address climate change as he announced support for a compact that various networks, comprising thousands of cities, would sign to pledge support for adopting climate-change resilience strategies.[146] At the same conference, United Nations Special Envoy for Cities and Climate Change Michael Bloomberg opined that mayors' executive powers positioned them to move forward on climate-change efforts, and that they "did not have to wait for Government actions."[147] Presumably the Special Envoy referred to state, regional, or national government regulatory action under a vertical governance model, although in actuality the extent of mayoral powers across cities, and the form of policymaking authority that can be exercised on behalf of cities under that model, vary.[148]

Reflecting the direct stake that cities have in addressing climate risk, the networks invoked with approval under these United Nations

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146. *Id.*

147. *Id.* Analogously, interurban networks have been viewed as a way to bypass national governments in the context of local urban development in Western Europe, as noted in Neil Brenner's analysis. BRENNER, *supra* note 3, at 288.

148. Special Envoy Bloomberg's assessment actually may apply to mayors in other political systems more reliably than in the United States, for example in Germany and Russia, where cities are allowed to be represented at higher levels of government, and in France, where mayors can also occupy national office. Schragger, *supra* note 34, at 2570. By contrast, in the United States, the dominant form of mayoralty is the council-city manager system, in which the council, the legislative body, appoints an administrator and the mayor has no real authority. Alderdice, *supra* note 34, at 466; Schragger, *supra* note 34, at 2550. The strong-mayor alternative is more prevalent in larger U.S. cities such as New York. Alderdice, *supra* note 34, at 466; Schragger, *supra* note 34, at 2550. Even there, the mayor shares power with a city council that is empowered by the City Charter to enact legislation, adopt budgets, and exercise authority over land use. *See* Elizabeth Fine & James Caras, *Twenty-Five Years of the Council-Mayor Governance of New York City: A History of the Council's Powers, The Separation Of Powers, and Issues for Future Resolution*, 58 N.Y.L. SCH. L. REV. 119, 126–35 (2013–2014). However, that is with a mayoral veto for significant categories of land use action, including zoning map changes, land disposition or acquisition, and urban renewal plans. *See* N.Y.C. CHARTER § 197-c. Further, New York City mayors' resort to executive orders, and other executive agency action to effectuate policy, is not without limitation. Courts have invalidated such orders when they determine that they trench upon legislative policymaking authority. *See* Fine & Caras, *supra*, at 127. As a recent example, the New York Court of Appeals held that the New York City Board of Health's adoption of a rule limiting the portion size of sugary beverages provided in food service establishments constituted an exercise of lawmaking and infringed on the legislative powers of the City Council. N.Y. Statewide Coal. of Hispanic Chambers of Commerce v. N.Y.C. Dep't of Health & Mental Hygiene, No. 134 (N.Y. 2014), *available at* http://www.nycourts.gov/ctapps/Decisions/2014/Jun14/134opn14-Decision.pdf.

auspices operate horizontally in contrast to vertical governance schemes to promote "policy diffusion." This governance concept refers generally to the horizontal dispersion and adoption by other government units of an idea or policy, typically through processes that include gaining exposure to policy innovation, monitoring its progress, and justifying adoption of a similar policy on the basis of its demonstrated success and appropriateness.[149] An example of policy diffusion in the interurban climate-change context, as mentioned above, is the recent spread of bus rapid transit programs, a policy originating in South America and then adopted in more developed northern cities.[150]

Judith Resnik's work on translocal organizations of government actors[151] suggests productive analogies to the horizontal interurban relationships discussed here. Resnik's analysis notes the potential for the organizations she describes, for example the U.S. Conference of Mayors, to "create norms for office holders and shape policy preferences," to "model behavior as [translocal actors] cooperate and pool resources," and to serve as "conduits for border crossings- state to state, state to federal, and international."[152] The transnational climate-change networks similarly operate by creating norms, shaping policy, modeling behavior, and facilitating broader dissemination and adoption of policy related to adapting to climate risks.[153]

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149. Alderdice, *supra* note 34, at 461–62 (citing Justice Brandeis' oft-quoted reference in *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) to a subnational state government as "laboratory" for trying out new policy approaches in the context of U.S. federalism).

150. ARUP & C40 CITIES, *supra* note 84. A recent example of urban policy diffusion in the United States context is New York City's adoption of a measure authorizing cities to issue municipal identification cards, seen as benefitting undocumented immigrants, homeless persons, and other individuals whose statuses might otherwise be questioned. Mara Gay, *New York Municipal ID Program Approved by City Council*, WALL ST. J., June 26, 2014, http://online.wsj.com/articles/new-york-city-council-has-approved-a-municipal-id-program-expanding-access-for-500-000-illegal-immigrants-1403818740. Similar measures have been adopted in other U.S. cities, including New Haven and Los Angeles. *Id.*

151. Heather Gerken and Ari Holtzblatt point to Resnik's work in their discussion of horizontal federalism in the U.S. context. Heather Gerken & Ari Holtzblatt, *The Political Safeguards of Horizontal Federalism*, 113 MICH. L. REV. 57, 60 n.7 (2014).

152. Judith Resnik, *The Internationalism of American Federalism: Missouri and Holland*, 73 MO. L. REV. 1105, 1132 (2008).

153. *See* Judith Resnik, *Foreign as Domestic Affairs: Rethinking Horizontal Federalism and Foreign Affairs Preemption in Light of Translocal Internationalism*, 57 EMORY L.J. 31, 50–63 (2007) (citing examples in which U.S. cities adopted measures or asserted policy positions supporting international norms embodied in the Convention on the Elimination of all Forms of Discrimination against Women

Interurban initiatives such as C40 Cities and Resilient Cities recognize the central role that cities play both as contributors to greenhouse gas emissions, and thus global warming, and as loci of innovation, experimentation, and creativity.[154] These transnational, interurban networks facilitate coordination and communication among cities and help them assemble critical financial and technical support, essential in light of the fiscally dependent conditions in which cities in vertical governance structures operate.[155] Further, the networks help develop cities' capacity to disseminate knowledge and methodologies, ideas, policy innovation, expertise, and resources, and shape policy and problem solving on critical climate-resilience issues. Although not a condition of network membership, a desirable outcome for the networks is to bring about collective action among participating cities to adopt or commit to shared norms and practices.[156]

In short, resembling the interconnected Hanseatic League trading networks and the overlapping network of cities that supported them,[157] the transnational interurban networks discussed in Part II seek to develop norms, standards, and best practices, such as measuring and reporting climate-change effects that, in turn, serve as a continuing point of reference and comparison for other cities participating in the networks. To the extent that member cities consent to be bound by these developing climate-change resilience standards (and assuming they are not precluded from doing so by domestic law), the networks offer a framework for problem solving-oriented governance[158] that is horizontal rather than vertical,

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and the Kyoto Accord for reducing greenhouse gas emissions when national government institutions in the United States failed to do so).

154. *What is Urban Climate Change Resilience?*, ACCCRN http://www.acccrn.org/uccr/what-urban-climate-change-resilience (last visited Aug. 4, 2014).

155. *See* Beerbühl, *supra* note 138.

156. *See supra* note 146 and accompanying text (discussing UN-Habitat Executive Director's call for cities to sign a compact committing to climate-change resilience strategies).

157. Beerbühl, *supra* note 138, at ¶¶ 31–34, 46.

158. The network model discussed here arguably bears some surface resemblances to the global experimentalist governance (GXG) model, a process for collective problem solving that operates transnationally, and requires the following steps: (1) discussion among stakeholders of a shared problem; (2) development of a "framework understanding" with aims that are not preordained; (3) adaptation of framework norms by actors knowledgeable about local conditions; (4) assessment of results, subject to peer review; and (5) periodic review and revision of goals and practices based on results of peer review. Gráinne de Búrca et al., *Global Experimentalist Governance* (Columbia Law Sch. Pub. Law & Legal Theory, Research Paper No. 14-393, 2014).

heterarchical/nodal rather than hierarchical, and comparative in operation.

IV. ADDRESSING POSSIBLE LIMITATIONS

Before concluding, this Part surfaces and responds to potential limitations upon this governance approach. These include the impact of a pro-growth orientation prevalent in cities on the adoption of climate-resilient strategies and the possibility that variable conditions among horizontally-linked cities may not be replicable in other contexts or serviceable to a horizontal governance model. Further, this Part addresses concerns that well-resourced non-state participants will dwarf the role of local government actors and, perhaps, reinforce dynamics of dependency among cities in less developed regions.

Scholars and commentators of urban government and policy have long associated cities with a pro-growth ideology that elevates business and developer preferences and initiatives over those motivated by efforts to overcome resource inequality or that otherwise limit the conditions under which growth that is subject to a minimum of restraints can occur.[159] The tension between pro-growth and alternative preferences is particularly pronounced as cities turn to resilience strategies to address climate change. For coastal cities such as New York, waterfront development is typically tied to economic well-being and is widely regarded as desirable.[160] However, given projections of continuing sea-level rise and increased risk of surges, unrestrained waterfront development can pose significant costs and risks.[161]

Because the model contemplates the participation of actors at multiple levels and a more structured, systematized process for advancing its work, *id.*, it is distinguishable from the interurban network models discussed here, which link cities in a range of more diffuse exchanges and collaborations. However, the steps identified with the GXG process are, at least in their attention to problem solving, reference to local expertise and local implementation, and peer exchanges, compatible with key premises under which the urban climate change networks have formed.

159. Alderdice, *supra* note 34, at 470–72 (summarizing theories and rationales for cities' pro-growth orientation).

160. N.Y.C. DEP'T OF CITY PLANNING, *supra* note 28, at 109; N.Y.C. SPECIAL INITIATIVE ON REBUILDING & RESILIENCY, *supra* note 2, at 7.

161. Kate Sheppard, *Flood, Rebuild, Repeat: Are We Ready for a Superstorm Sandy Every Other Year?*, CITYLAB (July 29, 2013), http://www.theatlanticcities.com/politics/2013/07/flood-rebuilld-repeat-are-we-ready-superstorm-sandy-every-other-year/6352/.

Developing the waterfront requires construction or extension of infrastructure and, in turn, necessitates structural (hard) armoring strategies[162] to protect against storm surges and other weather-related damage. Resorting to such measures is costly, requiring investment in maintenance or replacement of these armoring structures.[163] These weather-related costs supply an economic rationale for reassessing the growth orientation of coastal cities. As a further economic consideration, cities seeking to balance growth and strategies of climate resilience could offer or increase financial incentives to promote "green" rather than waterfront development. The mutually reinforcing effect of large numbers of cities linked in a network committed to policies promoting sustainability and resilience could potentially moderate the force of the growth imperative.

To address the concern that variations in the cities' climate, geography, and economy may preclude useful comparisons, networks can be formed in ways that emphasize commonalities among member cities. For example, organizing cities in terms of size, geographic characteristics, extent of development and economic wherewithal, or in terms of more specific policy concerns or subissues[164] within the broader ambit of climate change, can achieve more nuanced linkages among similarly situated cities. Examples include C40 Cities, the members of which are linked by their megacity status,[165] and the ACCCRN, in which member cities are linked by geography, medium size, and the objective to support resilience measures for developing populations.[166]

The potential problem that influential non-state actors will dominate these networks[167] points to a concern that networks lack legal accountability.[168] Particularly in light of the prominent role that well-resourced foundations and philanthropies already play in

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162. "Hard armoring" mechanisms include sea walls, bulkheads, levees, and riprap or revetments, which entail installing large boulders or concrete structures at shorelines. *See, e.g.*, Megan M. Herzog & Sean B. Hecht, *Combatting Sea-Level Rise in Southern California: How Local Governments Can Seize Adaptation Opportunities While Minimizing Legal Risk*, 19 HASTINGS W.-NW. J. ENVTL. L. & POL'Y 463, 472 (2013).

163. Sheppard, *supra* note 161. Beyond the costs involved, when these protective measures fail, coastal buildings, infrastructure, and residents are put at risk. *Id.*

164. *See, e.g.*, BRENNER, *supra* note 3, at 287.

165. *History of the C40*, C40 CITIES, http://www.c40.org/history (last visited Aug. 4, 2014).

166. *See* Slaughter, *supra* note 63; Stewart, *supra* note 5.

167. *See* Burris et al., *supra* note 5, at 23.

168. Slaughter, *supra* note 63, at 360–66; Stewart, *supra* note 5, at 452.

promoting these interurban linkages,[169] one might question whether network cities are in fact driving and diffusing innovation. Further, that network methods replicate practices and rhetoric favored by the private sector, including aggregating information, reliance on feedback, and use of yardsticks and targets,[170] further demonstrates the ways in which governance has modulated the traditional role and practices of government.[171] These considerations are not easily dismissed. However, the central role of consortia of local governments in these networks, including the C40 Cities mayors, ICLEI, the World Mayors Council on Climate Change, and the Congress of Local and Regional Authorities of the Council of Europe, suggests that participation in the networks will likely strengthen local governments' capacity, voice, and access to information on climate-related issues.

An additional point to recognize is that networked cities' authority to adopt norms horizontally/heterarchically is subject to the requirements of the hierarchical governance structure under which each city also operates. These include the extent of a city's home rule power, noted in Part I, which is tied to the nature of the policy or practice involved. Certainly in New York, to the extent that local climate-change initiatives are considered regulation of land use, such local action should in the first instance fall within the ambit of home rule authority;[172] the possibility that a preemption challenge would succeed, however, is less predictable. Even under circumstances in which a network-member city's climate-change initiative were deemed preempted by state or federal law, the city's proactive testing of policies and practices would have value: such local action contributes to the body of knowledge and experience available to other cities in the network. In addition, it provides a blueprint for, and exerts upward pressure upon, higher levels of government in a vertical governance scheme to move forward on useful climate-change initiatives.

CONCLUSION

A turn to transnational urban networks to generate and diffuse climate-related norms and practices is an approach warranting further consideration. Although the concerns identified in Part IV merit

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169. *See* BRENNER, *supra* note 3, at 293 n.7.
170. Lobel, *supra* note 10, at 396.
171. *See* Burris et al., *supra* note 5, at 14–19.
172. N.Y. CONST. art. IX, § 2; N.Y. MUN. HOME RULE LAW § 10 (McKinney 2014).

attention, the interurban network model does hold the potential to expand participating cities' resources and knowledge opportunities. It increases cities' capacity to address an issue that is simultaneously local and global, that calls for intergovernmental and multi-sectoral collaboration, and that has generally confounded efforts to achieve a workable consensus at the national scale.

A problem-solving and policy-making approach that is attentive to an individual city's experience and scale while drawing on the shared experience of multiple network-linked cities increases the potential benefits of the individual city's membership. As it moves forward with climate-resilience initiatives, a city such as New York that participates in transnational interurban networks can both draw from and contribute to the knowledge and experience generated by other cities in its cohort. This accumulated knowledge and practice can form the basis for an alternative modality of loose or soft governance, a framework of norms, standards, and metrics to which cities can agree to be bound.

The use of urban networks is not a new idea or scalar arrangement, but it alters the tendency to overemphasize vertical governance schemes and the scale of national government. Climate-oriented urban networks may have more initial success than other levels of government in promoting the diffusion of guiding norms, policies, and problem-solving practices because they foreground cities' preeminent knowledge of local conditions and harness their practical incentives to develop resilient approaches. By proliferating information and promoting comparison at the urban level, transnational urban networks may reinvigorate efforts to build and scale up a broader intergovernmental climate-change adaptation and resilience consensus.