

Le città resilienti: interventi per la mitigazione e l'adattamento al cambiamento climatico

Firenze | 22 febbraio 2016



LA CITTÀ RESILIENTE APPROCCI E STRUMENTI

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CITTA'
DINAMICHE,
STRATEGIE E
VISIONI



RESILIENZA [una digressione] +
MOTIVI E APPROCCIO

riflessioni



CONFRONTI TRA APPROCCI | QUALCHE RIFLESSIONE



CONFRONTI TRA PRATICHE | QUALCHE RIFLESSIONE



APPROCCI E PRATICHE | RESILIENZA E RISCHI



RIFERIMENTI E LINK



Cambiamenti climatici

Rischi territoriali

Scarsità di risorse naturali

Fenomeni e cambiamenti Sociali

Riassetto demografici

Urbanizzazione | megacities/sprawl





CITTA' | DINAMICHE, STRATEGIE E VISIONI

[metafore & parole chiave]



Resilient city



Smart city



Recycled city



VELO-CITY



Resilienza

Adattamento e auto-organizzazione

Infil development

Mobilità lenta

Smart city (ITC)

Modellazione e dati complessi

Servizi ecosistemici

Auto – gestione

Consapevolezza ambientale

Catane alimentari (food palnning)

Inclusione sociale

Nano e bio tecnologie

Edifici intelligenti

Modellazione informatica

Sistemi di mobilità integrata

Robotica

...

Città resilienti [e non solo]




**CENTER FOR
RESILIENT
CITIES**
Good Living Well Grounded



RESILIENZA [una digressione] + MOTIVI E APPROCCIO



Resilienza
ecologica/ecosistemica

pianificazione/progettazione
urbana/territoriale



Pratiche, processi e
soluzioni integrate

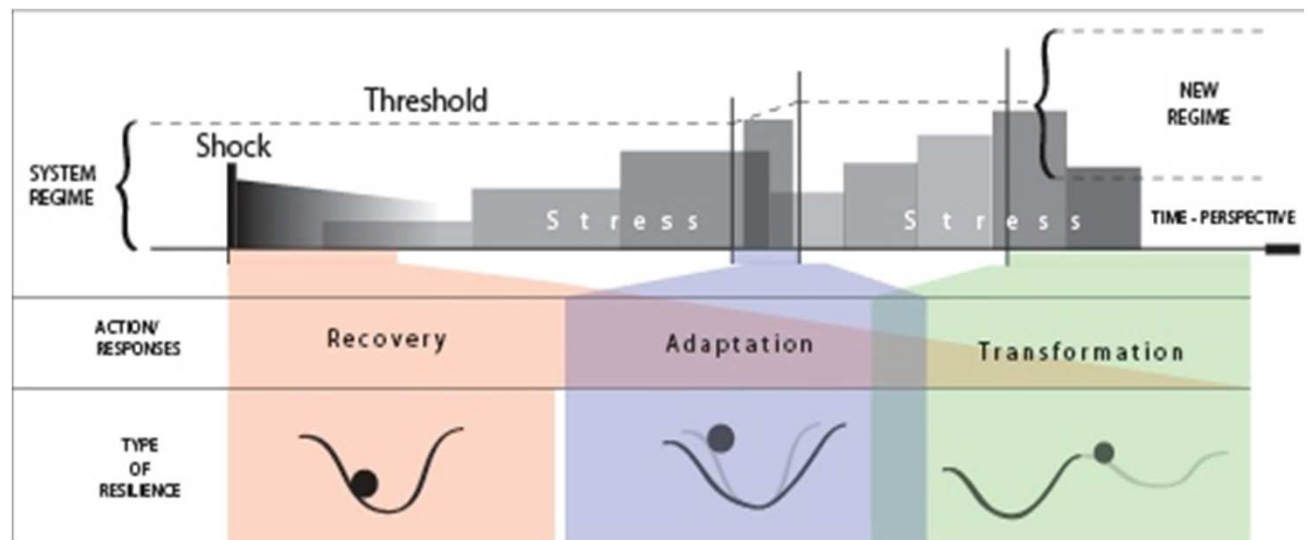


RESILIENZA [una digressione] + MOTIVI E APPROCCIO

la **resilienza ecosistemica** si basa sui concetti di **persistenza**, **cambiamento/impredittibilità**, **adattabilità** e **variabilità**, enfatizzando le condizioni lontane da ogni equilibrio.

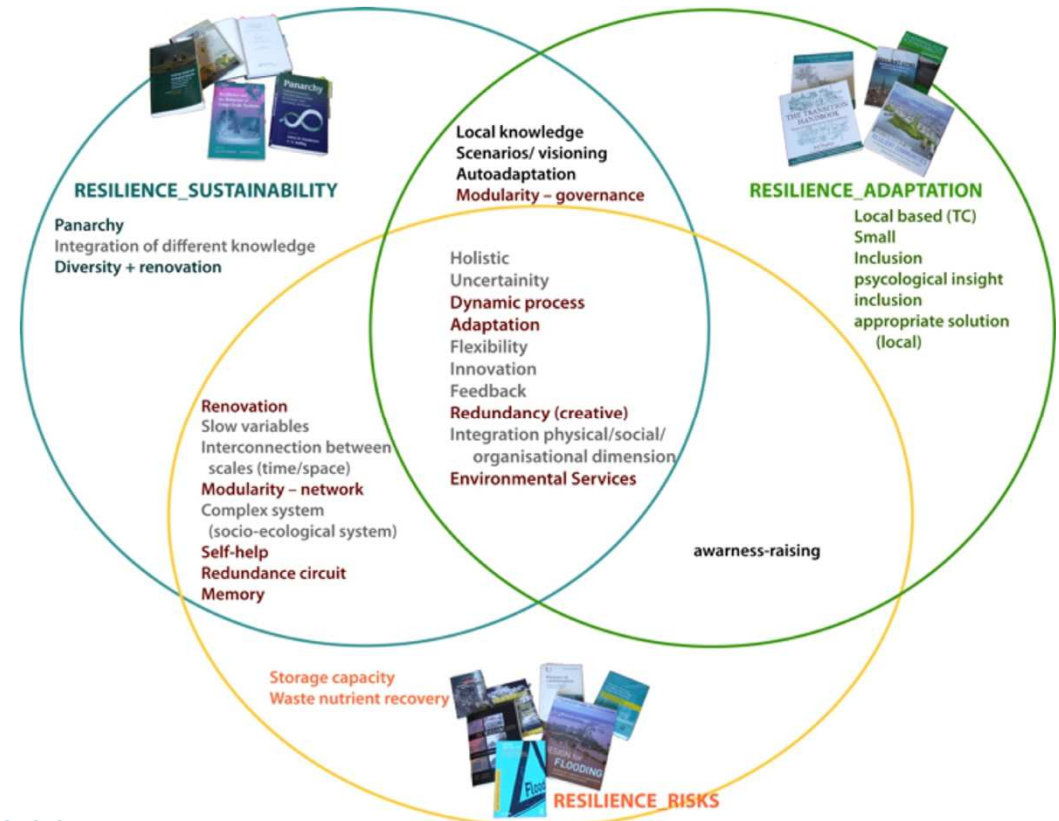
La resilienza è quella **proprietà** dei sistemi complessi di reagire ai fenomeni di stress, attivando strategie di risposta e di adattamento al fine di ripristinare i meccanismi di funzionamento. I sistemi resilienti, a fronte di uno stress, reagiscono **rinnovandosi** ma mantenendo **la funzionalità e la riconoscibilità** dei sistemi stessi” (Holling C.S., Gunderson Lance, 2002, Holling 1996).

La resilienza non implica quindi il ripristino ad uno stato iniziale, ma il ripristino della funzionalità attraverso il mutamento e l'adattamento.





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(diversità creativa) e ridondanza

Adattamento, flessibilità e innovazione

Riconoscimento delle variabili lente (temporalità/transizione)

Conoscenza e comunità (eco-sociali) > condivisione di conoscenze e competenze

Innovazione di processo (rafforzamento comunità locali/responsabilizzazione individui)



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Capacità di resilienza di costruire VISIONI positive strategiche

Processi VS strumenti/metodi

- > Innovazione di strumenti e processi di governance
- > Rilevanza delle dinamiche di processo (flessibilità...)

Soluzioni integrate

- > Rafforzamento delle interconnessioni tra aspetti sociali, ecosistemiche/ambientali e di governance (organizzativi) ;
- > Equità: relazioni tra sostenibilità ambientale e equità sociale

Scale spaziali e temporali

- > Integrazione tra scale spaziali (locale/globale)
- > Differenti temporalità (Recovery/adaptation/transition/evolution)

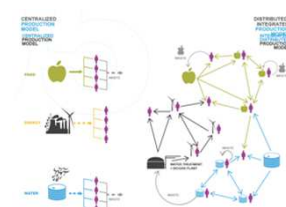
TEMI : Servizi ecosistemici e flussi dei metabolismi urbani



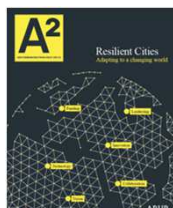
CONFRONTI TRA PRATICHE | QUALCHE RIFLESSIONE



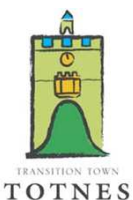
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AdD



TT



RR



Climate Adaptation Strategy
Ho Chi Minh City
moving towards the sea with climate change adaptation

CHICAGO CLIMATE ACTION PLAN

“iniezioni di resilienza”

Complessità e trasversalità
[ecosistemi/sociali]

modularità
[sistemi/sub-sistemi]
[scale spaziali]
[temporalità]

Dinamici/flessibilità
[incorporare i cambiamenti]
[feedback]
[riconoscimento delle
variabili lente]

**Coinvolgimento/responsabi
lizzazione delle comunità
locali**

**Diversità creativa e
ridondanza**



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“punti di opportunità e di rischio”

Visione strategica
[&diffusione]

Continuità / innovazione
[nuovo termine]

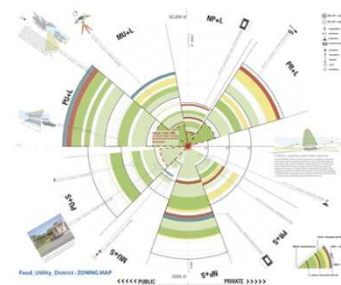
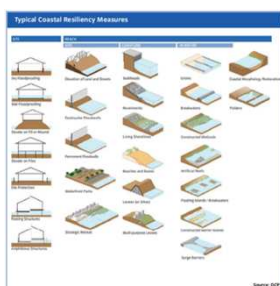
Pratiche bottom up e
locali
[fragilità di esperienze]

CC

AdD

TT

RR





**Beni
comuni/conos
cenze**

Cibo/salute

***Flessibilità
temporaneità***

collection



Condivisione e comunità





Per resilienza ecosistemica si intende la capacità e l'abilità di uscire, a seguito di un evento calamitoso, da una fase di stallo, in una condizione non necessariamente uguale a quella iniziale pre-evento.

La capacità di un territorio di essere resiliente consiste in gran parte dall'organizzazione e dalle relazioni esistenti prima dell'evento, quanto più il sistema sarà flessibile tanto più sarà rapida la ripresa alle normali attività in un'ottica di miglioramento e consapevolezza.

Diffusion and diversity, the Rapid responses proprieties, the Redundance circuit, the Storage capacity and the scale / hierachy connection (time and space).

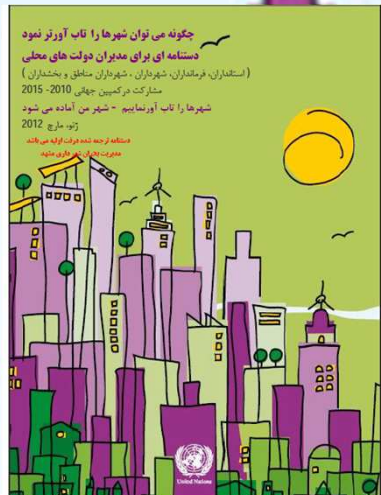


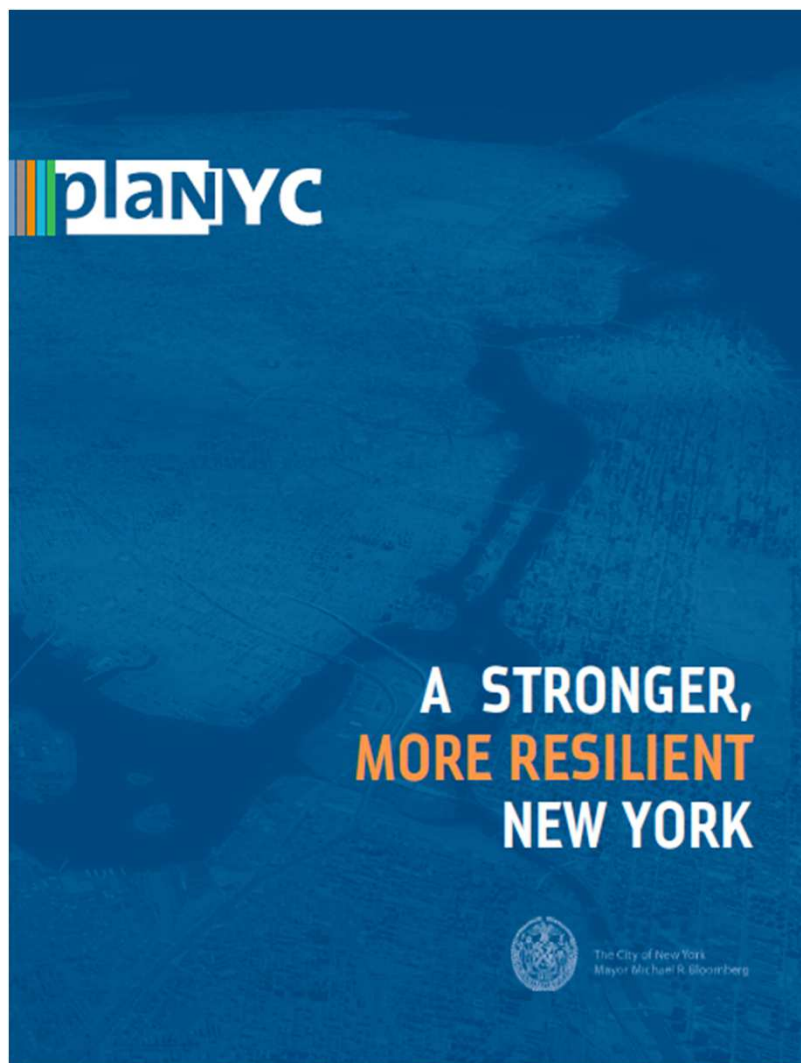
Un sistema, in generale, per essere resiliente dovrebbe tendere ad essere:

- **Ridondante** – con un numero di componenti funzionalmente simili in modo che l'intero sistema non collassi quando un singolo componente si guasta;
- **Diversificato** – con un numero di componenti con funzionalità diverse in modo da proteggere il sistema contro diverse pericolosità;
- **Efficiente** – con una larga disponibilità di energia prodotta da un sistema dinamico;
- **Forte** – con la capacità di resistere ad eventi/attacchi esterni di diverso genere;
- **Indipendente** – con diverse componenti dei diversi sistemi connesse, in modo da supportarsi vicendevolmente;
- **Adattabile** – con la capacità di imparare dalle esperienze e la necessaria flessibilità per cambiare;
- **Collaborativo** – con multiple opportunità ed incentivi che consentano la più ampia partecipazione degli attori coinvolti.



APPROCCI E PRATICHE | RESILIENZA E RISCHI





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APPROCCI E PRATICHE | RESILIENZA E RISCHI

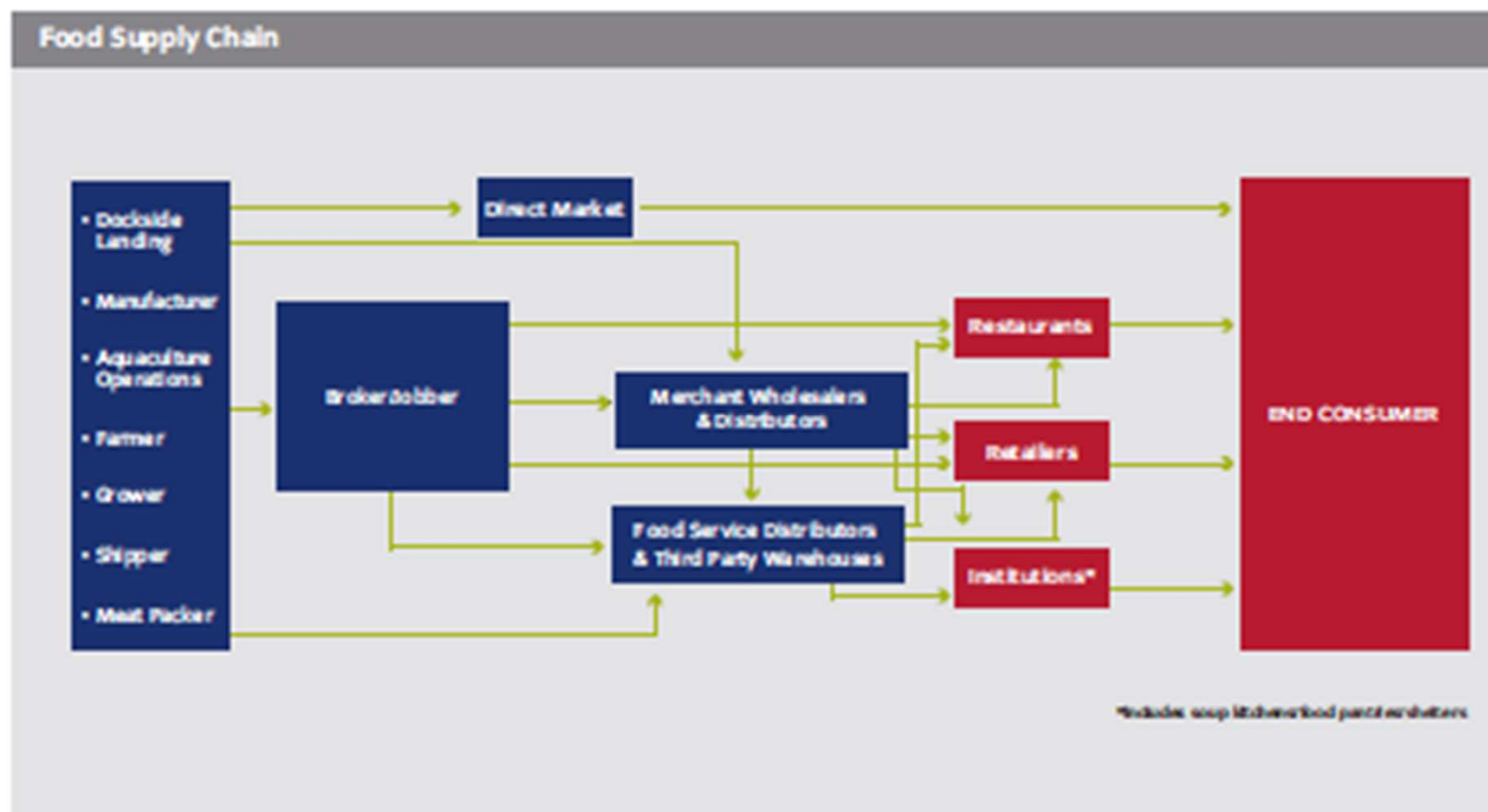
Protect Against Storm Surge

-  **Integrated Flood Protection System**
 -  **Hunts Point, Bronx**
 -  **East Harlem, Manhattan**
 -  **Lower Manhattan / Lower East Side**
 -  **Hospital Row, Manhattan**
 -  **Red Hook, Brooklyn**
 -  **Brooklyn-Queens Waterfront**
 -  **West Midtown, Manhattan**
-  **Floodwalls / Levees**
 -  **East Shore, Staten Island**
 -  **Farragut Substation, Brooklyn**
 -  **Astoria Generating Station, Queens**
-  **Local Storm Surge Barrier**
 -  **Newtown Creek**
 -  **Rockaway Inlet**
 -  **Gowanus Canal, Brooklyn**
-  **Multi-purpose Levee**
 -  **Lower Manhattan**

Increase Coastal Edge Elevations

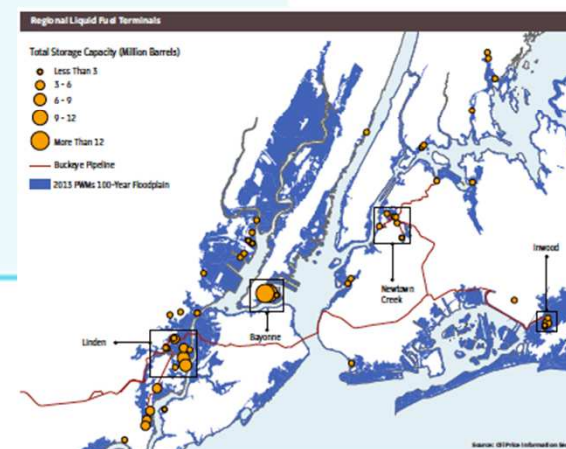
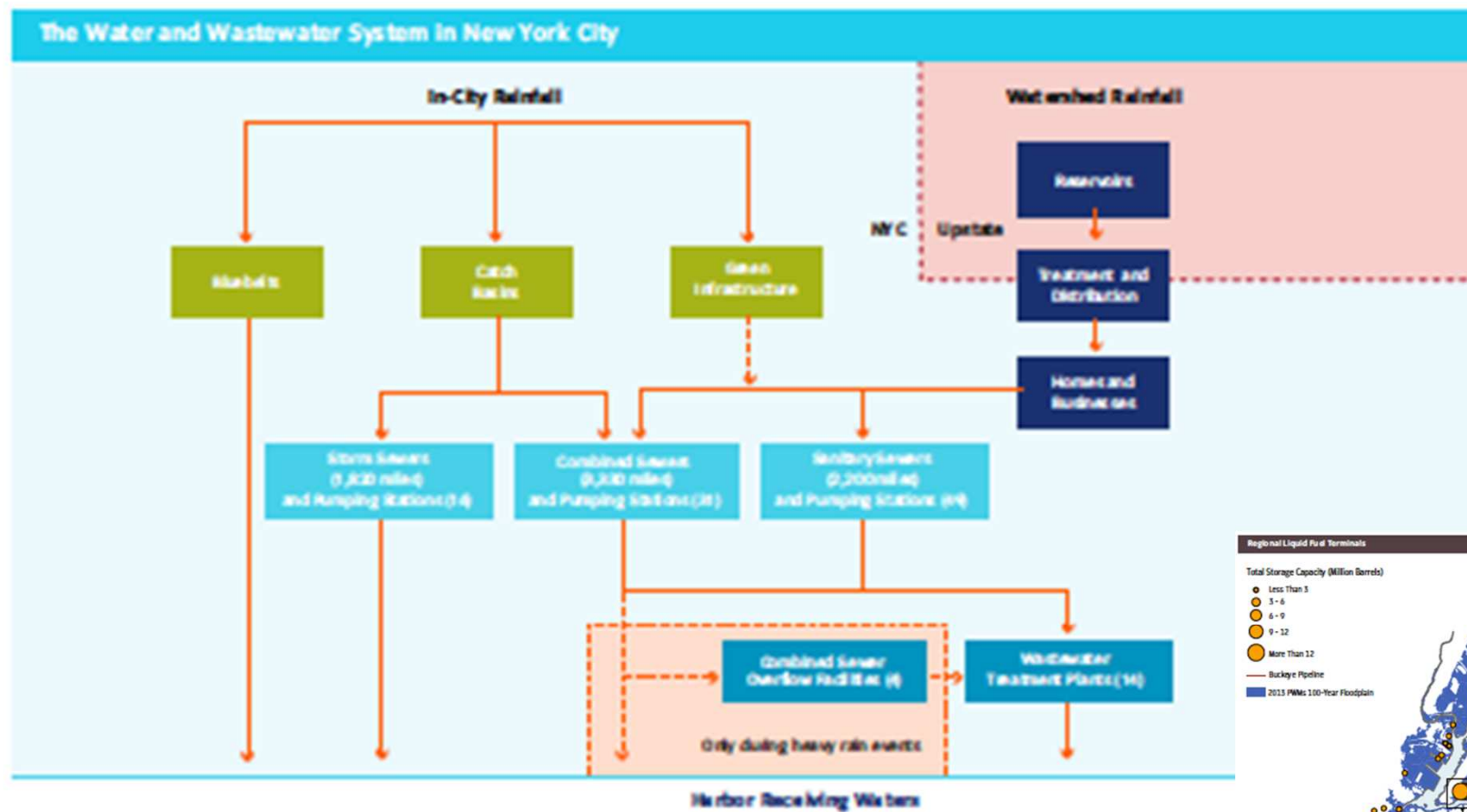
-  **Beach Nourishment**
 -  **Coney Island, Brooklyn**
 -  **Rockaway Peninsula, Queens**
 -  **East and South Shores, Staten Island**
 -  **Orchard Beach, Bronx**
-  **Armor Stone (Revetments)**
 -  **Coney Island Creek, Brooklyn**
 -  **Annadale, Staten Island**
 -  **South Shore, Staten Island**
-  **Bulkheads**
 -  **Citywide Program**
 -  **Belt Parkway, Brooklyn**
 -  **Beach Channel Drive, Queens**
-  **Tide Gates / Drainage Devices**
 -  **Oakwood Beach, Staten Island**
 -  **Flushing Meadows, Queens**
 -  **Coney Island Creek, Brooklyn**
 -  **Mill Creek, Staten Island**
-  **Minimize Upland Wave Zones**
 -  **Dunes**
 -  **Rockaway Peninsula, Queens**
 -  **Breezy Point, Queens**
 -  **Coney Island, Brooklyn**
-  **Offshore Breakwaters**
 -  **Great Kills Harbor, Staten Island**
 -  **South Shore, Staten Island**
 -  **Rockaway Extension**
 -  **City Island, Bronx**
-  **Wetlands, Living Shorelines and Reefs**
 -  **Howard Beach, Queens**
 -  **Tottenville, Staten Island**
 -  **Plumb Beach, Brooklyn**
 -  **Brant Point, Queens**
 -  **Jamaica Bay**
 -  **Bay Ridge Flats**
 -  **Saw Mill Creek, Staten Island**
-  **Groins**
 -  **Sea Gate, Brooklyn**







APPROCCI E PRATICHE | RESILIENZA E RISCHI





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Typical Coastal Resiliency Measures



Source: DCP

Designing for Flood Risk: Urban Design Principles

FEMA and Building Code standards for flood-resistant construction require new or substantially improved buildings in flood zones to be flood-proofed or elevated above projected flood levels. However, elevating buildings more than a few feet above the sidewalk can have negative effects on streetscape, building access, public safety, ground floor activity, architectural quality and neighborhood character. DCP has worked with representatives of the local design community to develop a set of urban design principles to guide the design of flood-resilient buildings.



VISUAL CONNECTIVITY

Having the windows and front door of a building face the public street can create a sense of security and comfort for pedestrians. These architectural elements also provide visual interest, which in turn promotes a walkable neighborhood. Elevating the first floor of a building can limit this visual connectivity. In residential neighborhoods, porches, stoops, and generous access elements can be designed in order to help to mitigate this disconnection. On commercial streets, this visual connectivity is important to the viability of local retail. A common best practice would be to dry flood-proof the commercial space so that it can be closer to sidewalk level and therefore maximize visual and physical connectivity.



FACADE ARTICULATION

Buildings often contribute to the character of a place by offering human-scale architectural elements, particularly on first floors. Elevated buildings with crawl spaces, parking, or storage can create blank walls at grade. Setting a building back from the property line slightly and using landscaping and/or other creative design solutions could help to buffer these voids in an active streetscape. If ground level parking is the only feasible option, then garage doors and curb cuts should be designed to minimize their impact on the pedestrian realm.



INVITING ACCESS

Elevated buildings pose challenges for accessibility. Ramps can be difficult to accommodate, particularly on smaller lots. Even smaller buildings that are not required to meet Americans with Disabilities Act (ADA) standards have the challenge of integrating longer runs of stairs into building or landscape design. Introducing a 90-degree turn or landing, and paying careful attention to overall stair design could make a long run of stairs easier to climb and appear more inviting for pedestrians.



NEIGHBORHOOD CHARACTER

Some neighborhoods exhibit a relative uniformity of building form. Elevating buildings will necessarily produce variations in building height and, in some cases,

Comprehensive Coastal Protection Plan | Full-Build Recommendations

Adapting to higher standards of flood resistance is both a challenge and an opportunity for architects to achieve higher standards of design. The opportunity exists to innovate and produce buildings that contribute to the public realm and have a positive long-term effect on those neighborhoods recovering from Sandy.

Source: DCP



APPROCCI E PRATICHE | RESILIENZA E RISCHI



Final Draft, October, 2013
An initiative of the City of Alexandria



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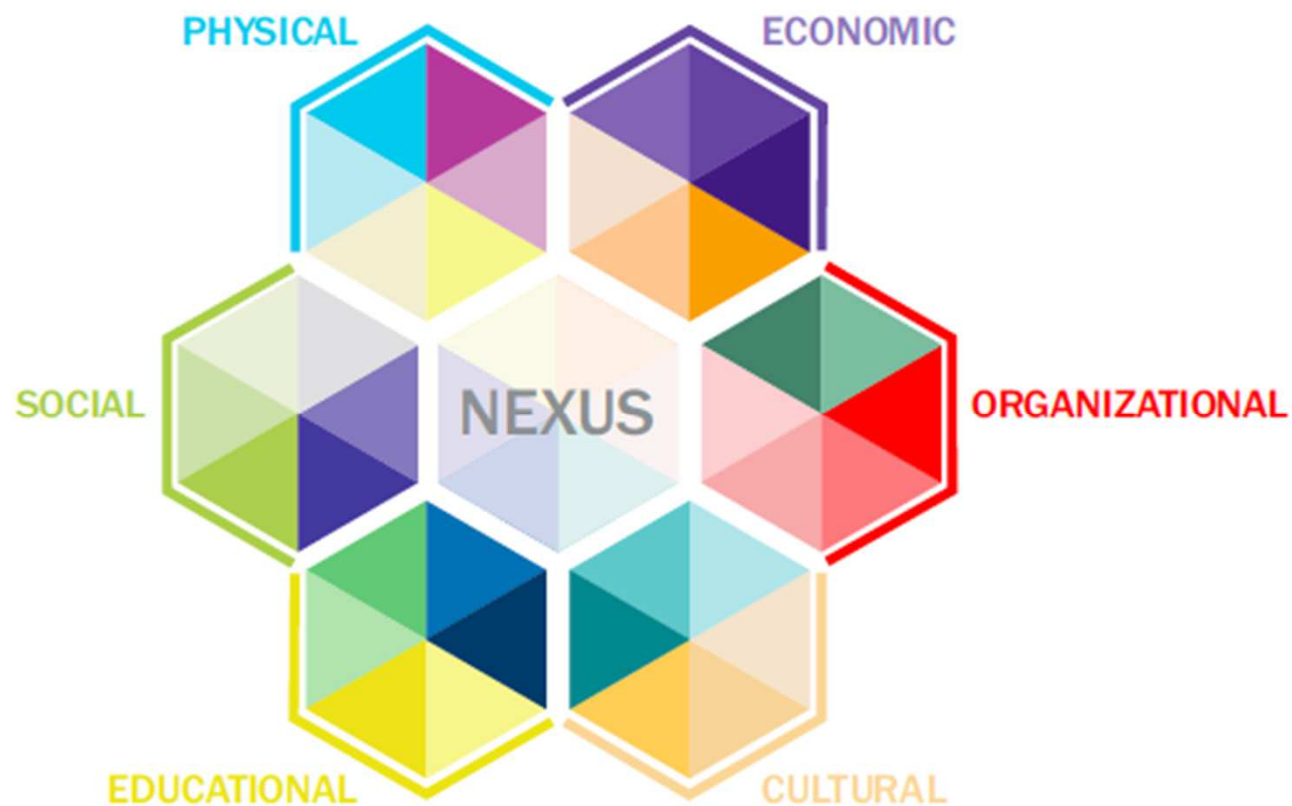
THE LAND USE PLAN
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APPENDIX



The THINKAlex process was organized by the Nexus framework



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THINKAlex Resiliency Plan: Housing
Horseshoe Drive at Sterkx Road



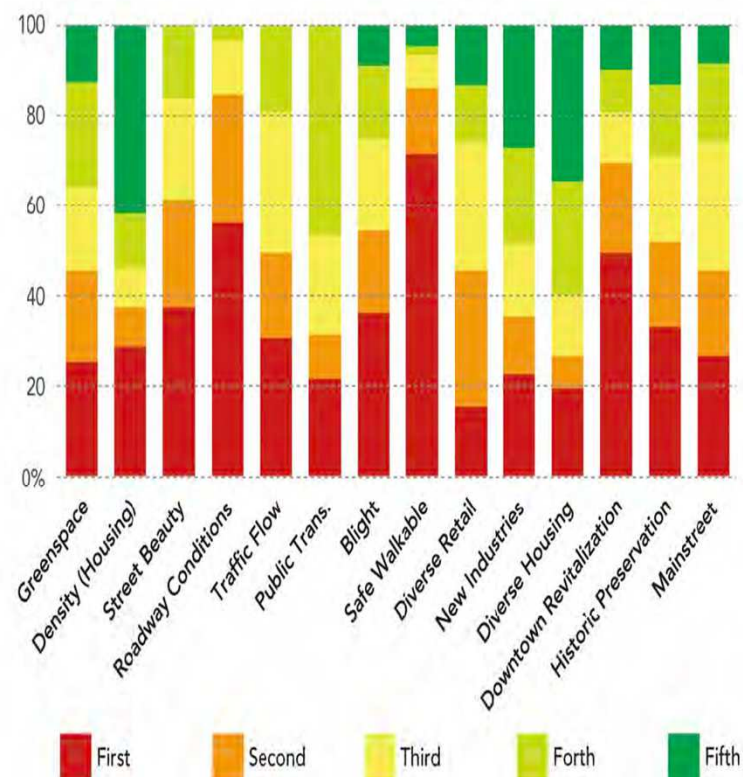
C2 Meeting | Draft Housing Principles Typology Exercise



Options

THINKAlex Resiliency Planning Online Survey Results Ranked Priorities

Walkable communities, roadway conditions, downtown revitalization, eliminating blight, are listed as first priorities among respondents. Density and diversity in housing ranked fifth (last) priority among respondents.



THINKAlex Resiliency Plan: Housing



C2 Meeting | Transportation Investment Exercise



RIFERIMENTI E LINK

<http://www.resalliance.org/>
**RESILIENCE &
SUSTAINABILITY**

**RESILIENCE &
ADAPTATION**

<http://www.transitionnetwork.org/>

<http://resilient-cities.iclei.org/>

<http://www.resilientcity.org/>

RESILIENCE & RISKS

<http://www.unisdr.org/campaign/resilientcities/>

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e strategie

<http://www.jeanmonnet-pv.it>

ÉTUDES - STUDIES

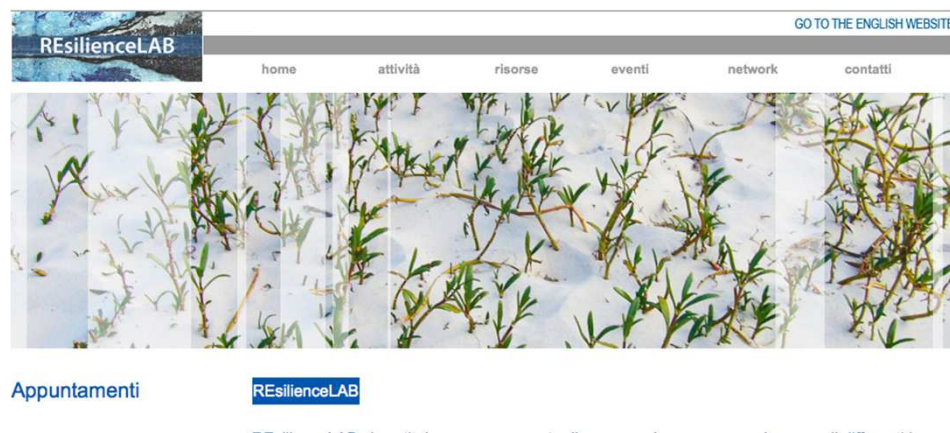
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www.resiliencelab.eu



<http://www.osservatorioresilienza.it/>

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