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Resilience, Ecology, and Access at the Water's Edge

WATERFRONT EDGE DESIGN
GUIDELINES (WEDG)


NAREIM | 9/21/2022



Waterfront Alliance
inspires and effects resilient,
revitalized, and accessible
coastlines for all communities.

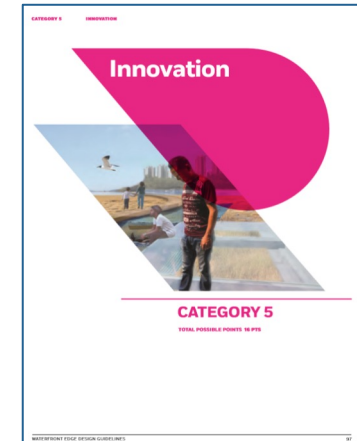
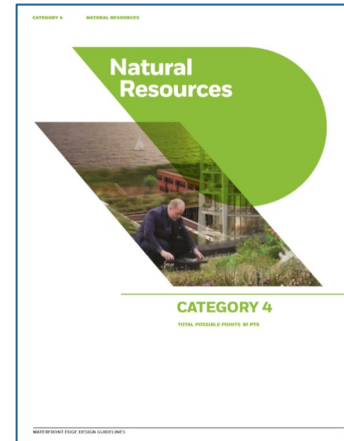
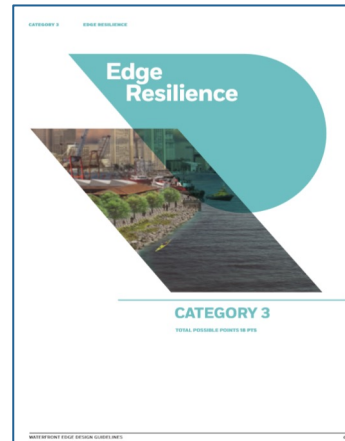
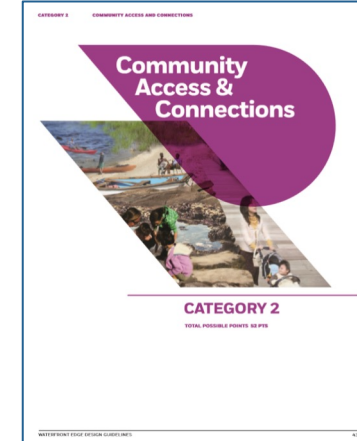
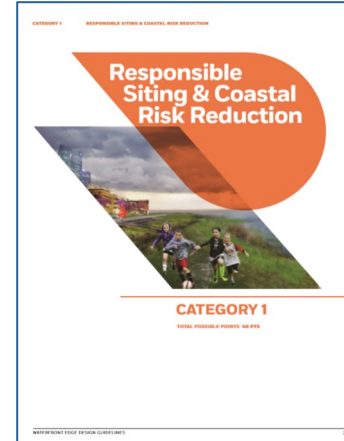
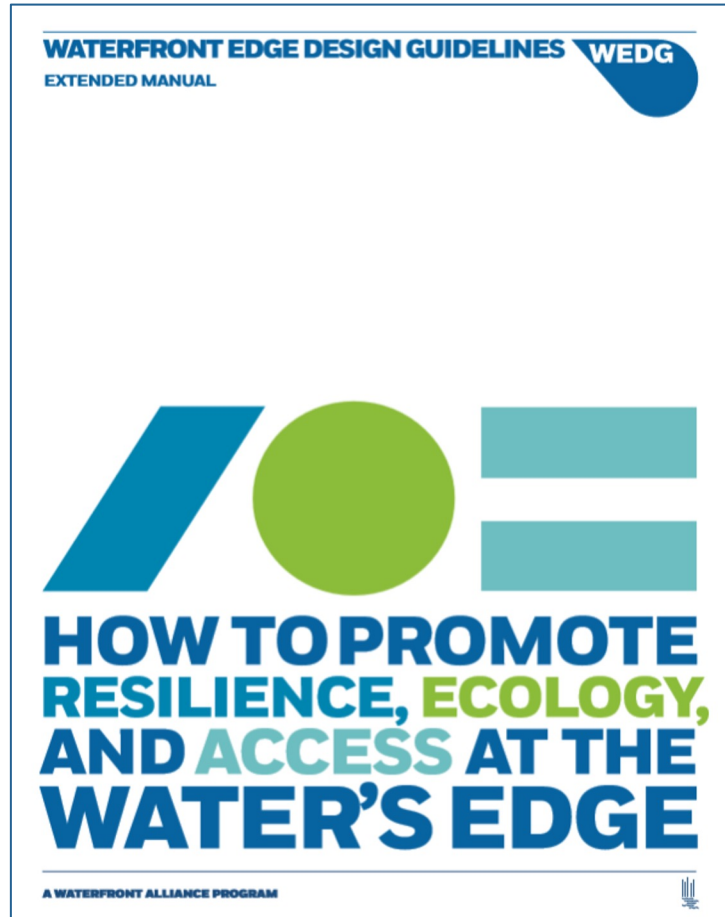
WHY WEDG?

Etienne Frossard



**RESILIENCE
ECOLOGY
AND ACCESS**

The Rating System



WEDG-Verified Projects



Starlight Park
Bronx , NY



Sandy Hook Pilots
Association
Staten Island, NY



Domino Sugar
Brooklyn, NY



North Waterfront Park
Wilmington, NC



Bronx Point
Bronx, NY



Greenpoint Landing
Brooklyn, NY



Hunters Point South
Queens, NY



Brooklyn Bridge Park
Brooklyn, NY



SIMS Recycling
Brooklyn, NY



Oak Point/McInnis Cement
Bronx, NY

Additional Projects in the Pipeline: 9

Investing in Resilience Pays

4:1	Benefit-cost ratio for designing beyond code
6:1	Benefit-cost ratio for designing beyond code to protect against hurricane storm surge
730,000	Retail, office, and multi-unit residential properties facing flood-risk in the US
\$13.5 Billion	Annual structural damage from flood risk
25%	Increase in repair/replacement costs due to climate change over the next 30 years

The Benefits of WEDG Verification – For the **Property**

WEDG creates savings through resilience

WEDG leverages maritime activation

WEDG unlocks positive media and press

WEDG enables savings through green infrastructure

WEDG reduces risk through long-term planning

WEDG promotes great design that becomes a selling point

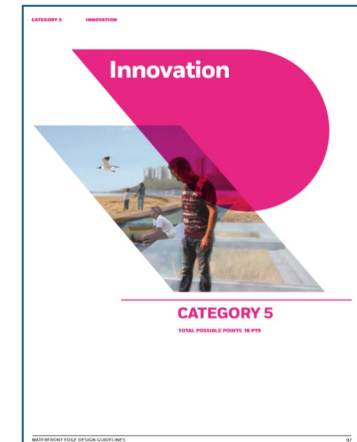
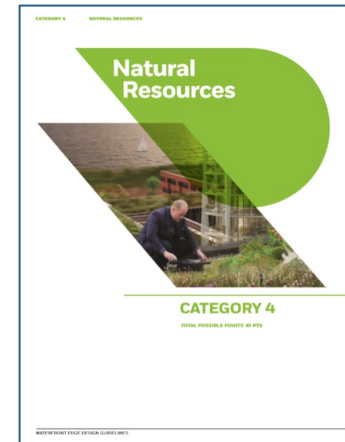
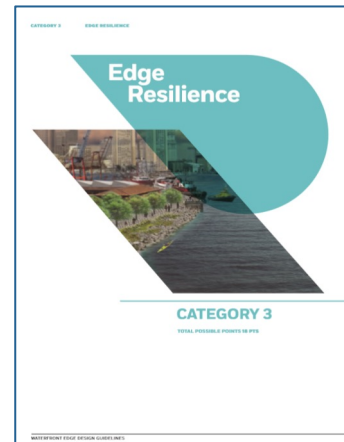
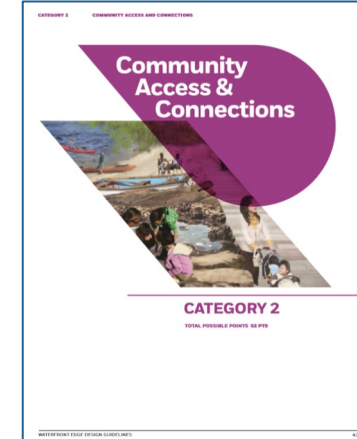
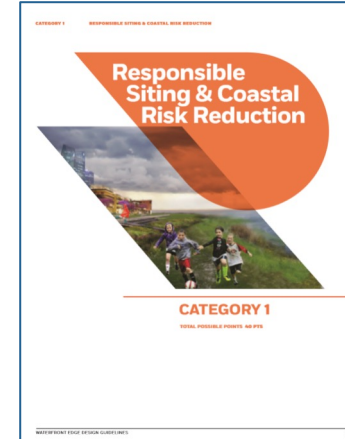
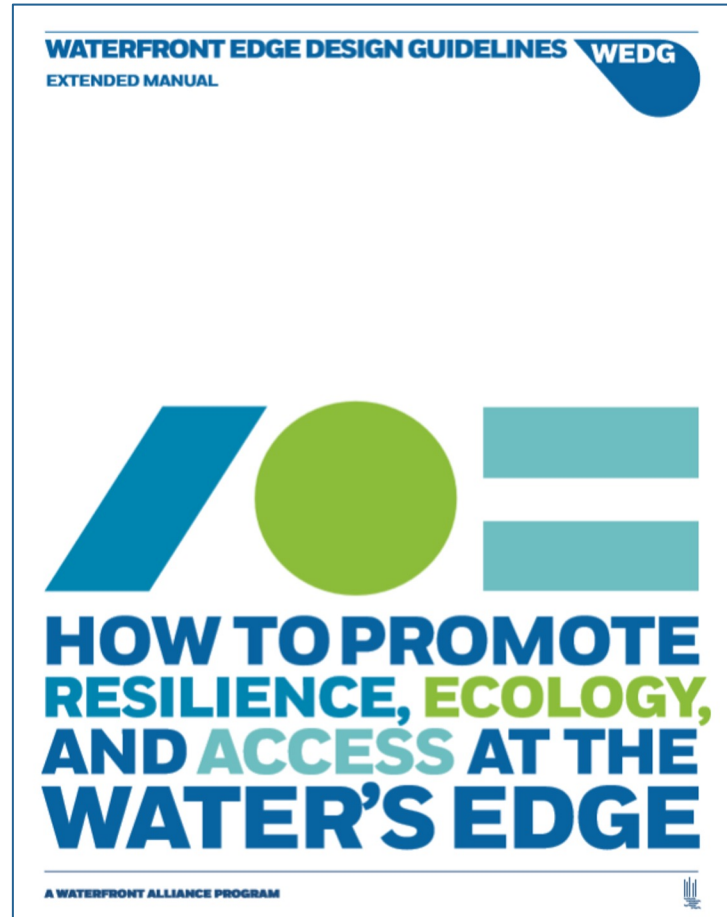
WEDG facilitates productive community engagement

WEDG shows the world you are a leader in design excellence

WEDG Standards

THE GOLD STANDARD FOR RESILIENT, ECOLOGICALLY-
SOUND, AND ACCESSIBLE PROJECTS THAT TOUCH THE
WATER'S EDGE

WEDG Categories





Site Assessment & Planning

28 POINTS POSSIBLE

Develop a multi-disciplinary design team

Assess site-wide social and ecological context and vulnerabilities

Develop and implement an equitable plan for community engagement

Create a maintenance and adaptive management plan



NYS OGS



Site Assessment & Planning

28 POINTS POSSIBLE

Develop a multi-disciplinary design team

Assess site-wide social and ecological context and **vulnerabilities**

Develop and implement an equitable plan for community engagement

Create a maintenance and adaptive management plan

Climate Resilience Vulnerabilities

- Do not solely rely on FEMA FIRMs
- Utilize local/regional climate projections
- Use *at least* a moderate-high sea-level rise projection
- Assess risk for all the ways that water can enter the property



Responsible Siting & Coastal Risk Reduction

40 POINTS POSSIBLE

Avoid or reduce risk from coastal hazards

Site with ecological sensitivity

Site or design structures to improve visual and other sensory connections to the water

Support industrial water-dependent uses

Provide an emergency preparedness and response plan





Responsible Siting & Coastal Risk Reduction

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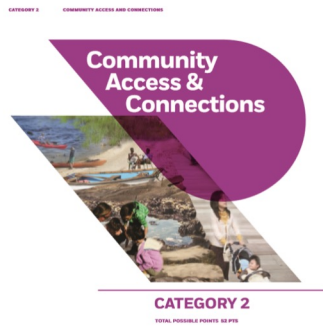
Provide an emergency preparedness and response plan

Coastal Risk Reduction

1. Move the building footprint away from the water (setbacks)
2. Elevate the building* and critical assets
3. Create landscape-based flood control features
4. Wet or Dry Floodproof the building
5. Install deployable flood protections

Particularly for deployables, ensure that building staff know what to do.

*You cannot always do this in a riverine environment



Community Access & Connections

52 POINTS POSSIBLE

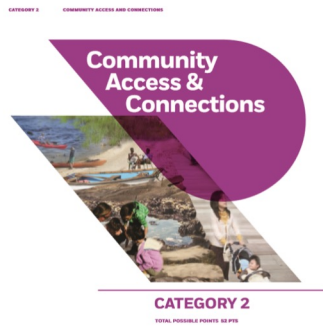
Provide quality public access areas on the waterfront

Reduce industrial impacts to human health and wellbeing

Provide diverse programming and passive educational features

Increase transportation access to the waterfront





Community Access & Connections

52 POINTS POSSIBLE

Create maritime-related employment opportunities

Increase waterfront pathway and greenway connectivity

Provide direct connections to the waterfront for people and boats

Support diverse and sustainable maritime activity



Kate Boicourt



Edge Resilience

18 POINTS POSSIBLE

Choose an appropriate edge strategy
for the context and intended use

Maintain or emulate natural shoreline
shape

Protect the working edge

Ecologically enhance structural
components





Edge Resilience

18 POINTS POSSIBLE

**Choose an appropriate edge strategy
for the context and intended use**

**Maintain or emulate natural shoreline
shape**

Protect the working edge

Ecologically enhance structural
components

Edge Resilience Strategies

- Bulkhead walls offer little resilience protections
- Nature-based features can be used to reduce waves and retain/detain stormwater
- Use climate projections to ensure that you are protecting your buildings from erosion risk



Natural Resources

61 POINTS POSSIBLE

Maintain and restore biodiversity and ecosystem services

Restore/increase ecosystem connectivity

Support native habitat complexity and biodiversity

Avoid human disturbance to natural resources

Redevelop and clean-up contaminated sites

Sustainable fill and soil management





Natural Resources

61 POINTS POSSIBLE

Resilient energy sources

Practice environmentally-responsible construction

Reduce and manage stormwater quantity

Improve stormwater discharge quality

Reduce water use

Reduce contribution to urban heat

Partner with academic and scientific institutes to study or monitor the site

Stormwater & Pluvial Flooding

- Account for future precipitation changes in stormwater planning
- Utilize green infrastructure to retain/detain/evapotranspire stormwater
- Assess risk of sea-level rise on outfalls and other drainage systems



Innovation

16 POINTS POSSIBLE

Inventive Design

Exemplary Performance



WEDG Verification

Preliminary Review
(50% Design Documents)

Final Review
(100% Construction Documents)

WEDG Engages Technical Experts in Review

- Structural/Civil Engineers
- Landscape Architects
- Architects
- Flood Modeling Experts
- Environmental Professionals
- Urban Planners

WEDG Professionals Network



Not Pictured:

- Canada
- Spain
- Washington D.C.
- Puerto Rico

www.wedgprofessionals.org



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WEDG is a Resource for You

CONTACT US



wedg.waterfrontalliance.org

Joseph Sutkowi

Chief Waterfront Design Officer

jsutkowi@waterfrontalliance.org