

# CITY OF MIAMI BEACH

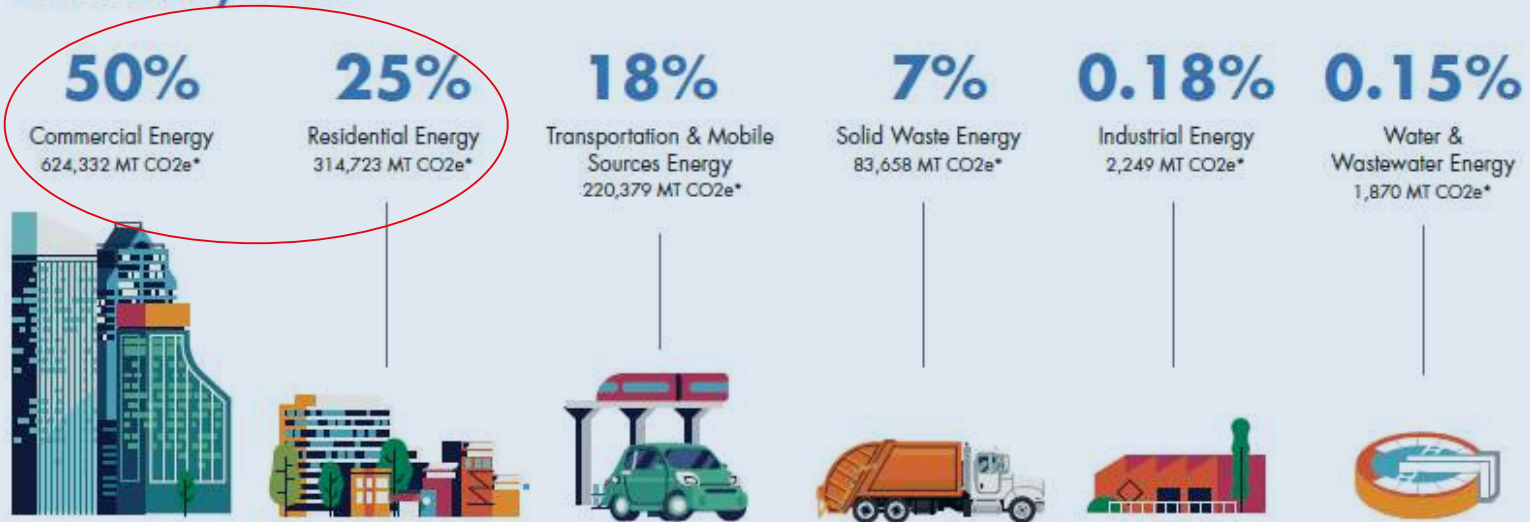
Sustainability Manager  
Flavia Tonioli

Chief of Community Planning  
& Sustainability Planning,  
Rogelio Madan



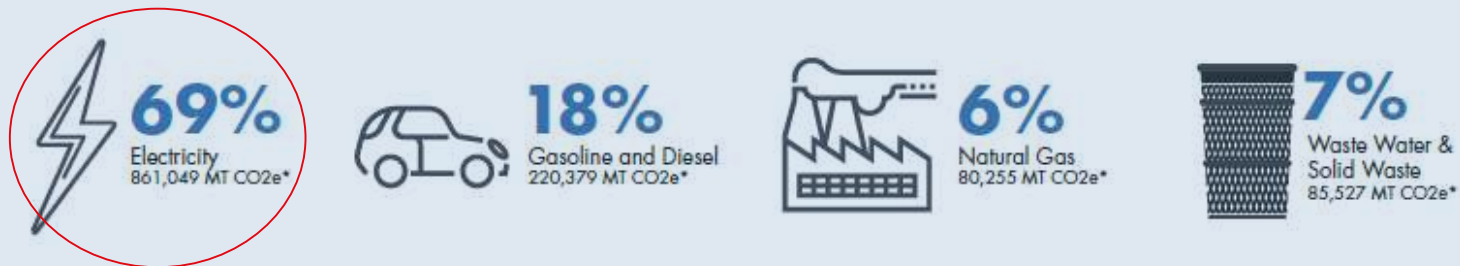
MIAMI BEACH  
RISING  
ABOVE

## Emissions by Sector



Total emissions in the community: 1,247,211 MT CO<sub>2</sub>e\*

## Emissions by Source



\*MT CO<sub>2</sub>e = metric tons of CO<sub>2</sub> equivalent

GHG Emissions = greenhouse gas emissions

Based on the most current data available.

# GREEN BUILDING

Design, build, and operate **a new generation of efficient, environmentally responsible, healthy and resilient buildings**

- **Improve energy efficiency**
- **Encourage water & resource conservation**
- **Reduce waste generated by construction**
- **Reduce long-term building operating & maintenance costs**
- **Improve indoor air quality & occupant health**



# POLICY DEVELOPMENT

## STAKEHOLDER ENGAGEMENT

- **Land use attorneys, developers, real estate professionals, planners, environmentalists, architects, green building professionals, and city's staff from several departments**
- **Sustainability and Resiliency Committee; Land Use and Development Committee; Miami Beach Chamber of Commerce's Real Estate Committee**



# POLICY DEVELOPMENT

- Single-family homes areas represented 47% of the City's developed area (yellow)
- Top 25% of proposed homes were above the threshold of 7,000 square feet



# GREEN BUILDING ORDINANCE

- **Buildings 7,000 SF+**
- **Alternative Fee of 5% of Construction Cost**
- **Creation of a Sustainability & Resiliency Fund**



**LIVING  
BUILDING  
CHALLENGE™**

# IMPLEMENTATION

<b>Level of Certification Achieved</b>	<b>Sustainability Fee Reimbursement</b>
<b>Failure to obtain Certification</b>	0%
<b>LEED Certified</b>	50%
<b>LEED Silver Certified</b>	66%
<b>LEED Gold Certified or International Living Future Institute Petals or Net Zero Energy Certified</b>	100%
<b>LEED Platinum Certified or International Living Future Institute Living Building Challenge Certified</b>	100%



**LIVING  
BUILDING  
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# IMPLEMENTATION

## **SUSTAINABILITY & RESILIENCY FUND**

- **Environmental restoration, remediation and monitoring projects**
- **Enhanced storm water quality and quantity improvements**
- **Green infrastructure**
- **Sustainability planning efforts**





# URBAN HEAT ISLAND ORDINANCE

- **Sustainable roofing**

- Solar Roof
- Blue Roof
- White Roof
- Cool Roof
- Green Roof
- Metal Roof
- Other Roof Recognize by a Green Building Certification Agency

- **Solar carports**

- **Cool/Porous Pavement**

- **Solar Panels**



# Adaptation Action Areas (AAA)

## Miami Beach Comprehensive Plan

### ▶ Future Land Use Element

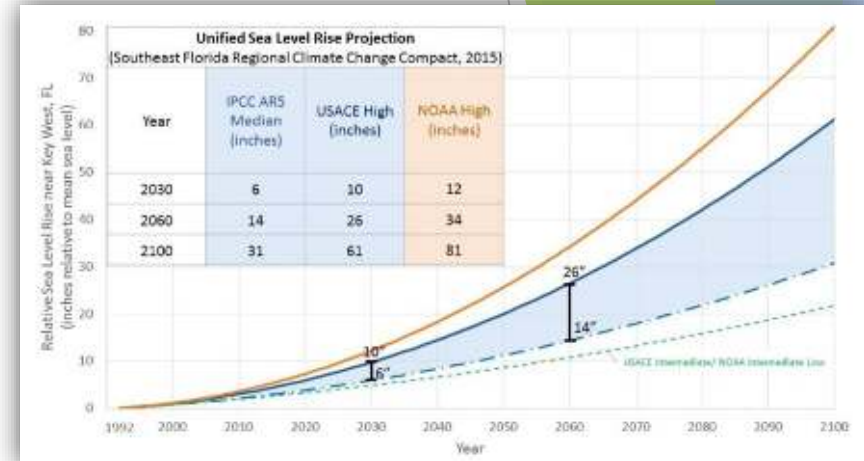
- ▶ Encourage the use of landscaping techniques that enhance stormwater management
- ▶ Modify the level of service for storm sewer capacity to be consistent with the City's Storm Water Master Plan.

### ▶ Infrastructure Element

- ▶ Require that the Land Development Regulations include a freeboard requirement that requires the raising of ground floors in new construction to reduce losses due to flooding.
- ▶ Modify the level of service for the drainage facilities design storm standard.

### ▶ Conservation/Coastal Zone Management Element

- ▶ Encourage the use of highly water-absorbent native and Florida friendly plants.
- ▶ Designate the City of Miami Beach as an AAA pursuant to section 163.3177(6)(g)(10), Florida Statutes and establish resiliency strategies.
- ▶ Sets basis for measuring Sea Level Rise - Southeast Florida Regional Climate Action Plan.



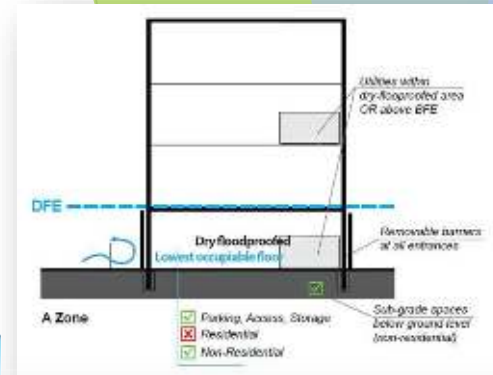
Sea Level Rise Projections (NGVD)				
	Low Prj.	High Prj.	Low Prj.	High Prj.
	Mean Sea Level		Mean High Water	
1992	0.60	0.60	1.81	1.81
2030	1.10	1.43	2.31	2.64
2060	1.77	2.77	2.98	3.98
2100	3.18	5.68	4.39	6.89

Sea Level Rise Projections (NAVD)				
	Low Prj.	High Prj.	Low Prj.	High Prj.
	Mean Sea Level		Mean High Water	
1992	-0.96	-0.96	0.25	0.25
2030	-0.46	-0.13	0.75	1.08
2060	0.21	1.21	1.42	2.42
2100	1.62	4.12	2.83	5.33

# FREEBOARD ORDINANCE

## Chapter 54 of City Code

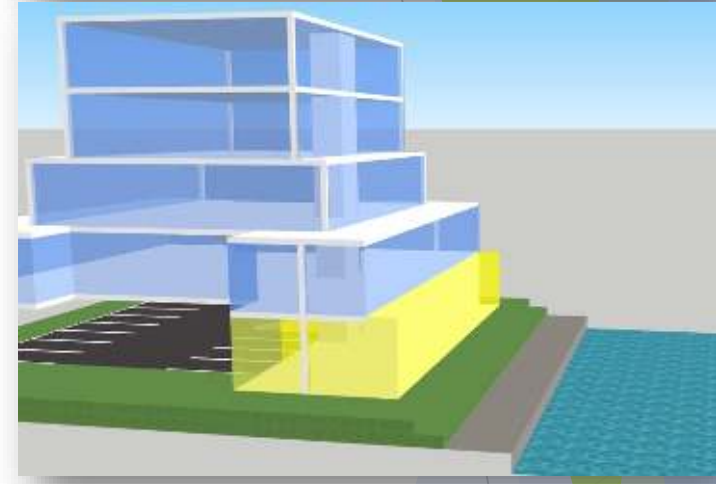
- ▶ **Minimum Base Flood Elevation (BFE):**
  - ▶ 8.0 ft. NGVD (6.44 ft. NAVD)
- ▶ **City of Miami Beach Freeboard:**
  - ▶ Minimum 1 ft.
  - ▶ Maximum 5 ft.
- ▶ **Adjusted Grade:**
  - ▶ Midpoint elevation between grade (sidewalk elevation) and the minimum required flood elevation.
- ▶ **New Residential Construction**
  - ▶ Finished floor must be above BFE + minimum Freeboard.
  - ▶ Garages constructed no lower than Adjusted Grade and must have sufficient height to accommodate being raised in the future.
- ▶ **New Nonresidential Construction**
  - ▶ Lowest floor, electric, and mechanical equipment must be located above BFE + minimum Freeboard.
  - ▶ Alternatively in A-zones, watertight floodproofing may be used, WITH up to the level of the Freeboard.
- ▶ **Seawall Elevation:**
  - ▶ Built to accommodate a height of 7.26 ft. NGVD (5.7 ft. NAVD)



# GRADE ORDINANCE

## Land Development Regulations:

- ▶ Height of Buildings measured from Base Flood Elevation plus Freeboard.
- ▶ For commercial properties, height shall be measured from the base flood elevation, plus freeboard
  - ▶ Height of the first floor shall be tall enough to allow the first floor to eventually be elevated to BFE + Freeboard, with a future minimum interior height of at least 12 ft. as measured from the height of the future elevated adjacent right-of-way elevation as provided under the city's public works manual.
  - ▶ Future Crown of Road: 5.26 NGVD (3.7 NAVD)
- ▶ Residential Districts Yard Elevations:
  - ▶ Minimum Yard Elevation: 6.56 ft. NGVD (5 ft. NAVD).
  - ▶ Maximum Yard Elevation: Greater of 30 inches above grade or Future Adjusted Grade (Adjusted Grade from Future Crown of Road).
  - ▶ Does not apply to driveways and walkways.
- ▶ Requires stormwater retention and retaining walls





THANK YOU!

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