CITY OF MIAMI BEACH

Sustainability Manager
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Chief of Community Planning & Sustainability Planning,
Rogelio Madan
2015 GHG INVENTORY

Emissions by Sector

- **50%** Commercial Energy 624,332 MT CO2e*
- **25%** Residential Energy 314,723 MT CO2e*
- **18%** Transportation & Mobile Sources Energy 220,379 MT CO2e*
- **7%** Solid Waste Energy 83,658 MT CO2e*
- **0.18%** Industrial Energy 2,249 MT CO2e*
- **0.15%** Water & Wastewater Energy 1,870 MT CO2e*

Total emissions in the community: 1,247,211 MT CO2e*

Emissions by Source

- **69%** Electricity 861,049 MT CO2e*
- **18%** Gasoline and Diesel 220,379 MT CO2e*
- **6%** Natural Gas 80,255 MT CO2e*
- **7%** Waste Water & Solid Waste 85,527 MT CO2e*

*MT CO2e = metric tons of CO2 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
• 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
• 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
# IMPLEMENTATION

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<th>Level of Certification Achieved</th>
<th>Sustainability Fee Reimbursement</th>
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<td>Failure to obtain Certification</td>
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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.

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**Sea Level Rise Projections (NGVD)**

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**Sea Level Rise Projections (NAVD)**

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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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