



**MIAMI
WATERKEEPER®**

DEFENDING, PROTECTING, AND PRESERVING
MIAMI AND THE SURROUNDING WATERS
THROUGH CITIZENS INVOLVEMENT AND
COMMUNITY ACTION. MIAMI WATERKEEPER
WORKS TO ENSURE SWIMMABLE, DRINKABLE,
FISHABLE WATER FOR ALL.

Dear Chair Bagué,

We are writing to express our deep gratitude to you and to the entire Biscayne Bay Task Force for your time, attention, and hard work in assessing solutions for the troubles that afflict our Bay. The Bay is a key feature in our community, providing for real estate values, jobs, tourism, recreation, and fisheries -- as well as for culture, wildlife, and the environment. Miami Waterkeeper feels that many of the Task Force recommendations are long overdue and their implementation is critical to the correcting condition of Biscayne Bay.

Many of the issues facing Biscayne Bay are entrenched, complex, decades-long problems, and as such, they have difficult solutions that are often expensive and, at times, politically unpalatable. But we know the ills and we know the fixes. It is our fervent hope that this Report can pave the way toward garnering more political will and prioritization of Biscayne Bay. We urge the County to adopt and fulfill these draft recommendations.

While the report is still in draft form, we have made some comments and suggestions for additional recommendations that we hope may be helpful towards the Task Force's overall goal. We thank you for your time and consideration of these comments.

Thank you again.

Best wishes,

Rachel Silverstein, Ph.D.
Executive Director & Waterkeeper



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A New Vision for a Healthy & Resilient Biscayne Bay

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Biscayne Bay Task Force Report

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June 2020

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43 Land Acknowledgement:

44 Our proceedings took place and these natural resources occur on the ancestral and traditional
45 lands of the Seminole, Miccosukee, and Tequesta people.

46 **Biscayne Bay Task Force Mission & Activity**

47 On February 5, 2019, the Miami-Dade Board of County Commissioners (BCC) adopted
48 Resolution No. R-165-19 (appendix _), establishing the Biscayne Bay Task Force (Task Force).
49 The Task Force was established as a nine-member advisory board consisting of appointed
50 professionals representing civil engineers, coastal real estate developers, water quality and
51 ecology experts, coastal managers, environmental regulators, resilience experts, and the
52 community at-large. The Task Force was charged to meet at least four times over a six-month
53 period to review prior studies, relevant data, and evaluations related to Biscayne Bay (Bay) as
54 well as to receive recommendations related to the health and management of the Bay. The
55 Task Force met 16 times and received approximately 35 presentations related to the health and
56 management of Biscayne Bay from local and state regulatory agencies, municipalities,
57 academia, community-based organizations and other key stakeholders (appendix _).

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60 Letter from the Chair

61
62 *"Whatever the universe is, I believe it is all one. And this fragile shoreline, with its mangroves, coastal*
63 *hammocks and ancient reef, is a precious part of very little that still survives of our unique environment."*
64 *- Marjory Stoneman Douglas*
65

66 Many efforts have been undertaken to protect and restore Biscayne Bay. In 1974, the
67 Florida Legislature passed the Biscayne Bay Aquatic Preserve Act. Later, in 1981, Miami-Dade
68 County approved the Biscayne Bay Management Plan. In 1987, the Florida Legislature included
69 Biscayne Bay in the Surface Water Improvement and Management Act. In 1999, the Florida
70 Legislature created the Biscayne Bay Partnership Initiative. In 2019, the Greater Miami and the
71 Beaches Resilient305 Strategy listed restoration of the Bay as a principle action. Although these
72 previous plans have helped to protect and restore parts of Biscayne Bay, the watershed continues
73 to be threatened by a lack of freshwater, nutrient pollution from storm-water runoff, sewage
74 pipe breaks, compromised septic tanks, plastic pollution, and other contaminants.

75 When the members of the Biscayne Bay Task Force convened in June 2019, we had no
76 idea that our Report would coincide with the impacts of the worst global pandemic in recent
77 history. Curiously, due to Miami Dade County’s “stay at home” order, the temporary closings of
78 our beaches and marinas, and the practice of social distancing, Biscayne Bay received a much-
79 needed respite from human activity. Despite the unusual break, the damage to the Bay was
80 already present before the crisis, and there is no question that the health of our Bay remains still
81 at a tipping point.

82 The problems facing the Bay are serious and complex: most will require financial
83 investments and a unified and collaborative approach to restoration and recovery. Within this
84 report, the Task Force recommends an overarching administrative structure to implement
85 recommendations under seven policy themes: water quality, governance, infrastructure,
86 watershed habitat restoration and natural infrastructure, marine debris, education and outreach,
87 and funding. The Task Force acknowledges that based on the current available water quality data
88 and resources, there are policies and projects that can be implemented immediately to address
89 the areas within the watershed with the most significant water quality issues. We also hope that
90 some of the recommendations in this report will help stabilize the ecosystem in the short-term
91 and set a path toward comprehensive recovery and permanent, consistent oversight.

92 **We recommend including two additional policy themes: Human Health and Environmental**
93 **Justice/Equity.**
94

95 Biscayne Bay is Miami-Dade County’s most vital quality of life asset and the mainstay of
96 our economy. This Task Force Report is an urgent and final call to make Biscayne Bay a county-
wide priority. We call for a unified and committed effort by Miami-Dade County to work with all
municipalities, state and federal agencies, and the public to chart a long-term course towards a
healthy and resilient Biscayne Bay.

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97 The members of the Biscayne Bay Task Force are grateful for the opportunity to present
98 this Report. We are confident that the Board of County Commissioners and the Mayor will take
99 the bold and necessary actions to restore and protect Biscayne Bay for all and forever.

100

101

- Irela Bagué, Task Force Chair

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103 State of the Bay

104 Of local, regional, national, and international importance, Biscayne Bay is a sub-tropical shallow
105 estuary that is home to two state aquatic preserves, a critical wildlife area, a national park and
106 national marine sanctuary, and is designated an aquatic park and conservation area by Miami-
107 Dade County. Cradled by the mainland to the west and barrier islands to the east, its 428 square
108 miles continue to be a source of sustenance, economic vitality, and provide for countless
109 recreational opportunities enjoyed by residents and visitors alike. Its spectacular natural beauty
110 is widely recognized and enjoyed, with nearly 2.8 million residents and millions of visitors every
111 year.

112 Historically, Biscayne Bay received freshwater along its shoreline as water traveled south and
113 east, mixing with water from the Atlantic Ocean. Today, natural freshwater flows have been
114 replaced by pulsed, point source discharges from dredged canals, intended to offer flood
115 protection and move water away from inland areas. Canals can intercept groundwater, and more
116 than half of the freshwater received by the bay enters via the northernmost canals where the
117 most notable seagrass die loses have occurred. Runoff from the land, impacted by the activities
118 taking place on land, degrade the quality of the water entering canals and Biscayne Bay. The
119 timing, source, and quality of freshwater delivered to the bay can and has influenced the health,
120 diversity, and distribution of the flora and fauna that comprise the Biscayne Bay ecosystem.
121 Hydrological changes, water management practices, upland development, and aged
122 infrastructure have contributed to degraded water quality, seagrass die-offs and algal blooms as
123 determined in part through data collected via the County's surface water quality and benthic
124 habitat monitoring programs and those data from other agencies and institutions.

125 Biscayne Bay is in trouble. The County's water quality and seagrass survey data, as well as review
126 of scientific literature and academic studies presented as part of the Task Force's work indicate
127 that chronic, low-level nutrient loading and/or acute, pulsed nutrient loading is likely linked to
128 seagrass loss in Biscayne Bay. Excess nutrients can lead to a shift from a seagrass dominated
129 habitat with clear water, low turbidity, and low levels of algae in the water column, to an algae-
130 based ecosystem that is turbid and reduces habitat essential for fish, birds, marine mammals,
131 and other marine species. Sources of nutrients can include pet waste, fertilizers, and yard
132 clippings and can be conveyed by stormwater outfalls. Other sources may include leaky sewer
133 infrastructure and septic tank effluent. Unique challenges presented by storms and sea level rise
134 compound and complicate these known existing issues.

135 Seagrass, the foundation of all life in Biscayne Bay, has declined significantly in several basins.
136 Seagrasses provide habitat for ecologically and economically important fisheries such as shrimp,
137 lobster, and various fish species and provide services such as stabilizing sediments and
138 attenuating wave energy from storms. Within the last decade, the scientific community began
139 to better understand and quantify the role that coastal and submerged plants such as
140 seagrasses, mangroves and other tidal wetlands play in sequestering and storing carbon,
141 surpassing the capacity of their upland tree counterparts. The seagrass losses identified over the

142 past decade span the north, central, and southern regions of the Bay. In the South, Barnes Sound
143 and Manatee Bay basins have experienced a decrease in seagrass of approximately 93 percent.
144 In the central portion of the Bay near Coral Gables there has been a decrease in seagrass of
145 approximately 85 percent. And in the basins north of the Rickenbacker Causeway, seagrasses
146 losses range from approximately 66 percent to 89 percent.

147 Even still, it is important to know that water quality improvement and seagrass recovery is
148 possible. In Tampa Bay, there was a 90 percent decline in seagrass between 1948 and 1982.
149 Decisive measures were taken, including the formation of a technical team to expressly
150 investigate how to reduce nutrient loading. Following a 57 percent reduction in nitrogen loading
151 between the 1980s and 2002, there was a marked decrease in microscopic algae clouding the
152 water column leading to improved water clarity, helping to exceeding the seagrass recovery goal
153 in Tampa Bay. A similar effort was undertaken in Sarasota Bay which led to a 46 percent reduction
154 in nitrogen loading and subsequent resurgence of seagrass habitat. Thinking beyond restoration
155 of Biscayne Bay to building resilience and long-term health is particularly critical in the face of
156 potential impacts from climate change and sea level rise.

157 Scientists have studied Biscayne Bay’s fragile ecosystem and the most recent call to action came
158 from NOAA in 2019, with a warning of a “regime change” occurring in Biscayne Bay’s ecosystem.
159 We, the 2.8 million people who live in and call Miami-Dade County home, must answer that call.
160 But what is different this time than any of the past planning or restoration efforts to protect
161 Biscayne Bay? Numerous efforts have focused on restoring the health and economic value of
162 Biscayne Bay. Each of these efforts have been united by three common elements. First, the
163 efforts have been collaborative in that their development involved several relevant agencies,
164 organizations, scientific institutions, and community members contributing their knowledge and
165 fervent support for a healthy Biscayne Bay. Second, they tell a story of Biscayne Bay and its
166 associated watershed’s past and set a plan in motion for the future. Third, they are predicated
167 on the same or similar issues imperative to address in order to maintain and enhance Biscayne
168 Bay and outline similar hurdles to addressing these issues. But today, many previously identified
169 threats remain unabated.

170 Biscayne Bay’s resilience—its capacity to withstand future changes in land use, climate shocks
171 and stressors, and infrastructure failures--will continue to be at risk without bold action focused
172 on watershed restoration through a permanent, unified and transparent approach to manage its
173 recovery. That is why our new vision for a healthy and resilient bay builds on and expands the
174 knowledge and efforts of the past with bold, brave ideas while centering the following core ideas
175 in order to be successful in bringing Biscayne Bay back from the brink: **Water Quality** is the focus
176 of the initiatives laid out in this vision. Municipal, County, State and Federal agencies along with
177 community organizations must commit to this work, the fruits of which may take years to be
178 realized. **Leadership** is central to implement the bold changes we need and to hold ourselves

179 accountable over time to bring about the change we are working toward and know we can
180 achieve. **Education** is the tool by which our communities and our leaders will remain invested in
181 this work and each other as we gain a clearer understanding of what projects and initiatives must
182 be accomplished to restore Biscayne Bay. It is the hope and the mission of the Task Force that
183 this unified and collaborative vision, overseen by a body of agencies and stakeholders and under
184 the County's leadership, will be effective in bringing about tangible and lasting change for the
185 health of our Bay, for quality of life of our residents and visitors, and the future of our region's
186 economy.

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190 **Recommendations**

191 The following section outlines recommendations the County should take to restore water quality
192 in Biscayne Bay. The Task Force recommends the establishment of an overarching administrative
193 structure to implement recommendations under seven policy themes.

194

195 **Overarching recommendation**

196

197 A unified and collaborative approach to watershed restoration is urgently needed. To improve
198 the water quality and the health of Biscayne Bay, the Task Force recommends:

- 199 • Miami-Dade County’s Board of County Commissioners (BCC) should create a new
200 intergovernmental body called the Biscayne Bay Watershed Management Board (WMB).
201
- 202 • The WMB should be supported by the creation of a new position called the Chief Bay
203 Officer (CBO) in the Office of the Mayor. The WMB and the CBO should be supported by
204 County staff, appropriate technical experts and community input to improve water
205 quality in the Biscayne Bay watershed.
206
- 207 • The WMB will be responsible to develop and, upon approval by the BCC, implement the
208 Biscayne Bay Watershed Restoration Plan (WRP). The WMB, working with the CBO,
209 should ensure that the following recommendations by the Task Force are implemented.

210

211

212 **1. Water Quality**

213 Many actions are urgently needed to restore the Biscayne Bay watershed. Actions include
214 pollutant load reduction goals; additional monitoring implemented to measure progress against
215 those goals; enforcement as local authority; an open, centralized information data repository;
216 demonstration projects – implemented and monitored; integrated flood risk reduction and water
217 quality planning, policies, and management; a climate change vulnerability assessment; specific
218 studies that fill key knowledge gaps; fertilizer ordinance; and capitalizing on existing County
219 entities to increase enforcement.

220 The Task Force recommends that the County:

- 221 **1A. Establish science-based, pollutant load reduction goals and interim targets to achieve deep**
222 **reduction in pollutant loads for restoration of seagrass meadows to historic coverages**
223 **consistent with a healthy Biscayne Bay ecosystem as part of a Biscayne Bay Watershed**

224 **Restoration Plan.** Pollutant load targets should consider future scenarios of land-use, population,
225 existing and future development, local and South Florida water management infrastructure, and
226 climate shocks and stressors. Nutrient load reduction targets should be based on meeting, at a
227 minimum, the chlorophyll-a based criteria, or “protective” criteria for total nitrogen (TN) and
228 total phosphorus (TP). The County should implement similar strategies for other pollutants of
229 concern, including fecal indicator bacteria (FIB), metals, and petroleum-based pollutants, where
230 impairments and other hotspots have been identified, to ensure consistent standards that
231 protect public health and our economy. **Recommend incorporating into compliance with TMDLs.**

232 **1B. Develop, implement and continuously monitor and demonstrate progress toward meeting**
233 **1A’s pollutant load reduction targets and linked biological recovery.** Updates should be
234 reported to and reviewed by the WMB on a regular basis. Pollutant loads and biological goals
235 toward meeting targets should be updated. Goals should be based on actual land-use,
236 population, development, local and South Florida water management infrastructure and the
237 Comprehensive Everglades Restoration Plan, and climate shocks and stressors. Monitoring
238 should leverage coastal information and observation system approaches with remote monitoring
239 as necessary, to demonstrate progress and meet goals. Progress should be assessed based on
240 measurements made by individual stations or subsets of stations based on their proximity to the
241 shoreline.

242 **1C. Leverage the Department of Regulatory and Economic Resources’ (RER) role as regulatory**
243 **agency to activate additional resource management functions.** Permits requested from and
244 authorized by County divisions (all divisions in RER and the Water and Sewer Department
245 (WASD)) should be coordinated, rigorously documented and archived for continuous review and
246 evaluation against pollutant load reduction goals (1A). This should include:

247 a) Evaluation of permit applications against pollutant load reduction goals for issuance of
248 future water pollution control, dredge & fill, and wetland permits for allowable
249 discharges, Bay and shoreline dredge & fill, and wetland modification and filling activities.
250 This information should be quantitative, quality-assured, transparent, documented,
251 archived, and made publicly accessible (1E; data library).

252 b) Inclusion of water quality monitoring of permitted activities to ensure water quality
253 specifications are maintained and Best Management Practices (BMP) are performing as
254 specified to verify that pollutant load reductions goals are being met.

255 c) Exercising role as municipal separate stormwater sewer system (MS4) permit-holder to
256 collect MS4 co-permittee information on types and implementation of all forms of BMPs,
257 maps and detail of the sizing of stormwater infrastructure, and additional information as
258 needed, to evaluate MS4 activities based on pollutant load reduction goals.

259 d) Coordination with and application of this information alongside the same information
260 produced and documented by other MS4 permit-holders and the SFWMD to achieve Bay-
261 wide pollutant load reduction goals.

262 The County should use this information to conduct an immediate assessment of land-based
263 hotspot areas prioritized based on existing, known impairments.

264
265 **1D. Review, develop (as needed), implement and enforce local ordinances and policies to attain**
266 **pollution load reduction goals set forth in the Watershed Restoration Plan.** Policies and
267 enforcement should emphasize known and emerging sources of pollution including septic
268 systems, exfiltration trenches, and other sources of stormwater pollution regulated through
269 permits and managed via Best Management Practices (BMPs). The County should seek support
270 as needed, and review, utilize and strengthen enforcement of Chapter 24 to enforce these
271 pollution load reduction goals and measures of the Watershed Restoration Plan.

272 **1E. Coordinate, staff and provide an annual budget for comprehensive, centralized Biscayne**
273 **Bay Watershed data and research coordination and data management infrastructure** (e.g.,
274 searchable data library), including a GIS-based repository integrating groundwater, surface
275 water, external agency datasets, documentation required from MS4 co-permittees following
276 recommendation 1C. Include information about city, agency, and university ongoing research
277 and monitoring activities, existing and planned BMPs, watershed restoration, natural
278 infrastructure projects, and infrastructure projects. Update regularly.

279 **1F. Undertake and secure funding for new pilot projects and research projects focused on**
280 **reducing pollutant loads.** Projects should include specific, focused monitoring of areas that
281 implement: conversions of septic to sewer and alternative decentralized wastewater systems,
282 stormwater systems based on alternative design criteria and features, living shorelines and
283 seawalls, stormwater easements (e.g. bioswales), and retention ponds, to generate the project-
284 specific information needed to implement and improve effectiveness of pollutant load reduction
285 strategies and assess changes in pollutant loads. This should include a new program of monitoring
286 the effectiveness of BMPs and monitoring of significant stormwater outfalls, with funding sources
287 identified and secured.

288 **1G. Elevate and further amend the Comprehensive Develop Master Plan (CDMP) to further**
289 **include Biscayne Bay watershed management planning elements,** including as part of
290 adaptation action area planning and other sea level rise planning efforts. Planning efforts should
291 consider alternative design and development criteria in sensitive areas in order to reduce
292 discharge, reduce watershed pollutant loads, and increase watershed pollutant treatment
293 efficiency. The WRP produced by the WMB should include recommended criteria to improve
294 water quality to incorporate into the CDMP and other related planning efforts, including higher
295 standards for projects in the County such as requiring more stormwater retention through
296 installation of permeable surfaces, green infrastructure, or other appropriate strategies to allow
297 less pollutants to run-off into the Bay. **Recommend enforcement of current stormwater regulations and**
298 **retention requirements. Address the use of stormwater pumps.**

299 **1H. Conduct a climate change vulnerability assessment for Biscayne Bay.** The WMB, working with
300 the BCC and County departments, should determine the scope and the issues that would go into a
301 vulnerability assessment for Biscayne Bay, including land-use and population, local and regional water
302 management systems scenarios, and CERP scenarios. Federal, state, and local funds should be
303 leveraged to conduct this assessment.

Recommend including human health and equity/inclusion considerations.

304 **1I. Initiate and fund studies that illuminate specific knowledge gaps for application toward**
305 **watershed restoration.** Specific studies include:

- 306 • Reassess the north to south and source (canal, stormwater and groundwater) distribution of
307 discharge entering Biscayne Bay and work with SFWMD and other agencies to identify
308 strategies for implementing wetland rehydration projects (e.g. Deering Estate) in other areas
309 of the watershed to improve distribution, timing and magnitude of flows
- 310 • Regenerate the circulation modeling output for the Bay, gap-fill monitoring data for robust
311 calibration and validation, and expand domain to northern Biscayne Bay
- 312 • Institute source tracking in hot spot areas (bacteria, pharmaceuticals, nutrients, petroleum-
313 based pollutants)
- 314 • Update and apportion pollutant loading of primary watershed and Bay sources, incorporating
315 contributions from episodic loadings from natural hazards and infrastructure failures
- 316 • Apply *in-situ* studies to evaluate: a) water quality-based performance of alternative
317 decentralized wastewater and stormwater infrastructure treatment approaches over
318 traditional approaches and b) influence on load contributions to stormwater and
319 groundwater
- 320 • Reevaluate “protective” nutrient criteria based on pollutant loads and load reduction goals
- 321 • Increase the number of permanent seagrass monitoring sites and allocate additional funding,
322 as needed
- 323 • Increase the spatial and temporal frequency of water quality sampling in hot spot areas, areas
324 that have experienced significant increase in pollutant loads, including areas defined as
325 impaired waters, and areas that improve the management of benthic resources
- 326 • Evaluate the relationship between recreational and commercial fishing activities, food web
327 structure, and Biscayne Bay water quality
- 328 • Evaluate facility-level pollutant loading contributions against existing permitted discharges

329 **1J. Pass a countywide ordinance to prevent the negative secondary and cumulative effects of**
330 **excess nutrients in Biscayne Bay and other water bodies caused by fertilizer runoff.** The
331 ordinance should include: public, commercial and non-commercial property; a mandate that
332 fertilizer can only be applied to actively growing turf; a mandate that fertilizer cannot be applied
333 during the rainy season; a designation of a fertilizer-free zone of 15 feet from waterways; a focus
334 on the regulation of nitrogen-releasing fertilizer in most forms; and a more rigorous regulation
335 of phosphorus. A multi-lingual educational program and multi-media campaign should be
336 developed for residents and the landscaping industry to increase awareness of water quality
337 impacts from fertilizer use. Additional model ordinances should be developed and codified to
338 reduce use and application of pesticides and herbicides. The County should work with
339 municipalities to adopt the same ordinances. **In 2011, the County committed to adopting a fertilizer**

340 **1K. Increase inspections of all marinas and commercial operations along waterways.** Such
341 operations must have containment structures to eliminate direct runoff into waterways. Such
342 containment structures must have treatment equipment especially for oils, grease, and wash

Recommend 0% phosphorous and at least 50% slow release nitrogen application in fertilizer.

343 DRAFT water from boat maintenance operations. Impose fines and shut- down if non-compliance is
344 discovered. **Recommend including specific enforcement goals.**

345 **1L. Continue to monitor the progress of the October 7th, 2015 Consent Agreement between**
346 **FP&L and Miami-Dade County** to address impacts associated with the plant, including addressing
the hypersaline ground water plume and elevated levels of chloride found in ground water
outside property boundaries. The Task Force recommends the County continue to monitor water
quality in the areas surrounding the Turkey Point facility and take appropriate actions to ensure
347 the environment is protected.

348 **Recommend following the County’s resolution R-722-16, which supports the County Mayor in efforts to seek a commitment from Florida**
349 **Power and Light Company to discontinue the use of the cooling canal system at the Turkey Point Plant. Recommend that the County**
350 **pursue policies that would lead to the elimination of the cooling canal system. Recommend a prioritization of sustainable energy such as**
351 **solar power. Recommend that the County require FPL to follow the Compact's sea level rise projections and to plan for the highest**
projection curves and plan accordingly to protect the public and Biscayne Bay. Recommend pursuing policies that encourage FPL find a
less-vulnerable location to store spent fuel than immediately adjacent to Biscayne Bay. Recommend that FPL maintain water levels in
their mitigation bank that benefit the County’s Model Lands ecosystem, per the Consent agreement.

353 352 **2. Governance**

354 In order to establish a permanent and unified approach to the recovery of water quality in
355 Biscayne Bay and future management of the watershed, the Task Force recommends the County:

356 **2A. Establish by ordinance a Biscayne Bay Watershed Management Board (WMB).** The Task
357 Force recommends the selection and appointment of participants with diverse backgrounds to
358 the WMB and its committees. It is recommended that the WMB shall be comprised of a total of
(11) members as follows:

- 359 • (3) members of the Board of County Commissioners;
- 360 • (3) designees of the League of Cities;
- 361 • South Florida Water Management District Governing Board (member who resides in
362 Miami-Dade County);
- 363 • Florida Department of Environmental Protection;
- 364 • U.S. Department of Interior;
- 365 • Florida Fish and Game Commission; and
- 366 • Florida Inland Navigational District.

**How will this body coordinate with the
Biscayne Bay Regional Restoration
Coordination Team?**

**Recommend including NOAA, which has
significant interest, resources, funding, and local
investment in the region. Biscayne Bay is also one
of their "Habitat Focus Areas".**

368 Members will have experience with issues related to Biscayne Bay and are expected to leverage
369 the professional and financial resources of their respective organizations to effect goals of the
370 Watershed Restoration Plan.

371 **2B. The Mayor should appoint a Chief Bay Officer (CBO) and request funding for the position.**

372 The CBO will advise the Miami-Dade County Mayor and the BCC and manage the WMB and its
373 committees. The CBO will also act as liaison with County departments, County boards, external
374 agencies, stakeholder groups, and local, state and federal governments on water quality issues,
375 policies and appropriations related to the health and recovery of Biscayne Bay.

376 **2C. The WMB will, with technical and community recommendations, review, recommend**

377 **funding for and implement the Watershed Restoration Plan (WRP) to the BCC in order to**
378 **achieve time-bound and measurable progress (e.g., X% by XXXX) towards WRP goals to achieve**
379 **water quality and seagrass restoration and meet its mandate of Bay health, recovery, and**

380 resilience. **The WRP should be developed by the end of 2021.** While developing the plan, the
381 WMB can concurrently work to implement recommendations in this Task Force report. The WMB
382 will be responsible for recommending the Miami-Dade County departments and to the Office of
383 Management and Budget to prioritize water quality restoration in the annual budget cycle.

384 The WMB will work to make recommendations and develop funding strategies for projects **to be**
385 **reviewed and approved by the BCC**, incorporate relevant policies in SB712: Clean Waterways
386 Act¹, develop and execute the Biscayne Bay Watershed Restoration Plan, inform the **BCC** on a
387 regular basis, secure funding for meeting the timeline for pollutant load reduction goals, and
388 update the Biscayne Bay SWIM Plan², as mandated by the SWIM Act (Chapter 87-97 Florida
389 Statutes)³. The WMB shall conduct a biennial Biscayne Bay Marine Health Summit. ⁴.

390 The WMB should establish and appoint committees to address specific Bay issues to advise and
391 make recommendations on policies, restoration projects, public information campaigns and
392 water quality monitoring and targets. The Task Force recommends establishing the following
393 committees: the Technical Advisory Committee, the Community Advisory Committee, and the
394 Nutrient Reduction Committee. **Recommend enabling all relevant County boards to address Biscayne Bay**
395 **water quality, sea level rise, resiliency, habitat protection, and environmental**
396 **justice.**

396 The proposed organizational structure below highlights the working relationship between the
BCC, CBO, Office of the Mayor, WMB, and the committees⁵:

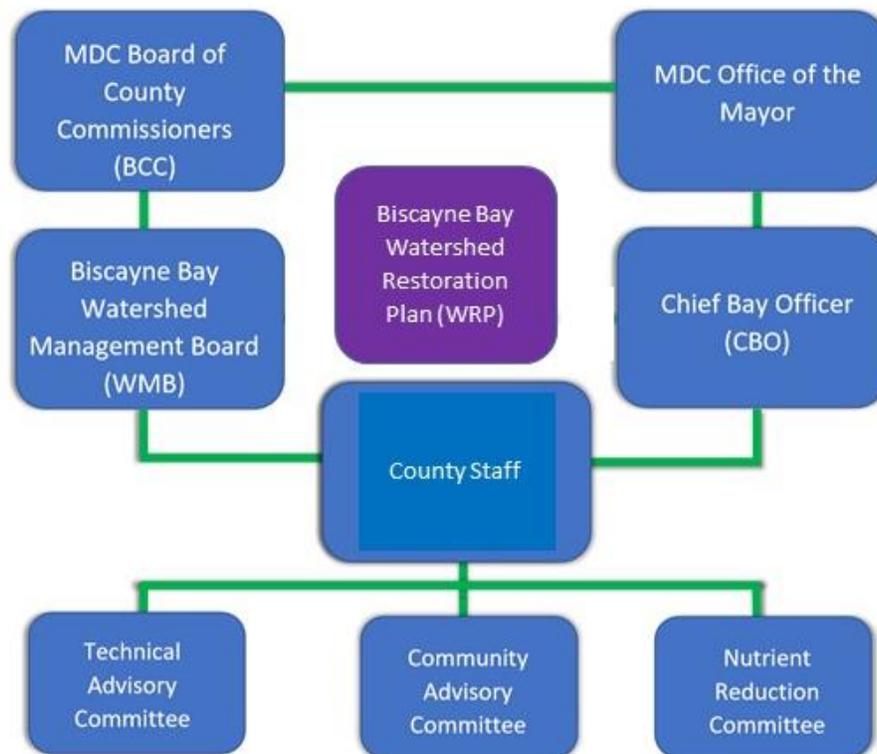
¹ SB712: Clean Waterways Act

² Biscayne Bay SWIM Plan

³ SWIM Act

⁴ Biscayne Bay Marine Health Summit

⁵ For more information on the committees, refer to Appendix A.



397
398 Figure X. Proposed organizational structure illustrating the relationships between entities

399 **2D. Develop a formal partnership in the form of an MOU with the SFWMD to create an**
 400 **internal staff working group in addition to their participation on the (WMB).** The CBO will lead
 401 this effort. The group will work collaboratively to implement the Biscayne Bay Watershed
 402 Restoration Plan and manage and fund activities to meet pollutant load reduction goals,
 403 determine redundancies and data gaps, focus on canals that show high nutrient loads and trash
 404 pollution, develop BMPs and Outstanding Waters standards and regulations, and enhance
 405 adaptation efforts to improve the resilience of the regional water management system to
 406 manage saltwater intrusion.

407 **2E. Enable the alignment and coordination of County departments that takes a holistic,**
 408 **comprehensive approach to Biscayne Bay recovery and resilience.** Resilient305 directs Greater
 409 Miami and the Beaches to Restore and Preserve Biscayne Bay (Action 1), Employ a One Water
 410 Approach (Action 54), and Share Bold Integrated Water Models (Action 53) to align County
 411 departments in their work on issues facing the Bay.⁶ Direct departments to prioritize Biscayne
 412 Bay recovery and resilience in their budgets and develop performance metrics to assess the

⁶ Greater Miami and the Beaches, Resilient305 Strategy. 31 May 2019. <<https://resilient305.com/>>

413 effectiveness of this effort and funding. Report progress in quarterly updates to the
414 Science/Technical Advisory committee and, as needed, to the full WMB.

415

416 3. Infrastructure

417 To ensure countywide infrastructure is working as intended and not contributing pollution to the
418 Bay, design, standards, construction inspection requirements, and operation and maintenance
419 requirements of wastewater collection, including septic systems, water and wastewater, and
420 stormwater collection and drainage systems should be reviewed and updated in Chapter 24 of
421 the Code of Miami-Dade County as needed. 422 *For Septic Systems:*

Recommend a goal of elimination of conventional septic tanks in Miami-Dade County, as suggested in the 1970 Federal Water Quality Administration (DOI) report, "Pollution of the Waters of Dade County, Florida", which led to the construction of our three waste treatment plants. The report states, "Septic tanks, widely used in Dade County, are public health hazards and contribute to over-fertilization and algal nuisances in adjacent waterways." (page 3) This goal was set 50 years ago but has still not been fulfilled.

423 424 The State's Blue-Green Algae Task Force Consensus Document⁷ recommended "a septic system
425 inspection and monitoring program" to identify "improperly functioning and/or failing systems
426 so that corrective action can be taken to reduce nutrient pollution, negative environmental
427 impacts and preserve human health." The Task Force also noted that "current regulations
428 prohibit permitting of new septic systems on lots of one acre or less...within an Outstanding
429 Florida Spring watershed unless the system includes enhanced treatment." The County released
430 a report indicating the occurrence of improperly functioning and/or failing systems based on
431 current and future Miami-Dade groundwater levels. Recommend lobbying to expand this legislation to estuarine
432 watersheds.

433 Florida Senate Bill 712 (SB:712) takes effect July 1, 2020 and transfers duties and powers from
434 the Department of Health to the Department of Environmental Protection, including to "develop
435 a comprehensive program to ensure that onsite sewage treatment and disposal systems
436 regulated by the department are sized, designed, constructed, installed, sited, repaired,
437 modified, abandoned, used, operated, and maintained in compliance with this section and rules
438 adopted under this section to prevent groundwater contamination, including impacts from
439 nutrient pollution, and surface water contamination and to preserve the public health."⁸

439 The Task Force recommends the County:

440 **3A. Increase compliance with existing laws on septic systems so that they be fully enforced,**
441 resulting in the connection of ~12,000 properties to the sewer system and reducing the number
442 of new septic systems in coastal/waterfront areas.

443 Recommend citing the ordinance (Section 24.43.1) which prohibits the use of septic systems and requires properties to connect to the
444 public sewer system when they are within a "feasible distance" to a public sanitary sewer and recommend cessation of future
exemptions granted to this ordinance.

Recommend adoption of the Global Opportunity for Abutting Sewer Tie-In (GOFAST) program for expedited connections, coordination of public laterals with all departments, removal of burdens from property owners, reduced construction disruption, and cost savings.

445 **3B. Initiate a mandatory septic system registration and inspection program** that will first
446 prioritize those systems identified as vulnerable to shallow groundwater levels, those near
447 (1000ft) Biscayne Bay and canals, and for new and substantially improved (50% of market value)
448 developments. The program should then be expanded countywide. Also, utilize alternative

Recommend setting a goal of a moratorium on new permits for conventional septic tanks in the urban development boundary, as called for in the October 1970 Federal Water Quality Administration report, "Pollution of the Waters of Dade County, Florida". The report states, "No permits should be granted for future construction of septic tank systems." (page 28) This is particularly relevant to small parcels, near waterways, and in low elevation areas -- particularly in areas where the County has already determined high numbers of impaired tanks due to sea level rise. This goal is also 50 years old and has not yet been implemented.

449 treatment technologies or conversion to sewer, and identify, create and secure new funding
450 sources.

451 Efforts should build on the State's Task Force recommendations and State's SB:712 - Clean
452 waterways provisions. All data and records pertaining to such recommendations should reviewed
453 by County staff, WMB advisory committees, and presented for review by WMB.

454 *Recommend a study on funding mechanisms and feasibility for septic to sewer conversion.*

455 *For Water and Wastewater Systems:*

456 One Sanitary Sewer Overflow (SSO) is one too many; these are preventable with appropriate
457 policies and enforcement. Therefore, the County must be proactive and have reliable
458 information on all its underground assets. For water and wastewater systems in Miami-Dade
459 County, the County is the primary system for all jurisdictions. Though some municipalities own
460 and operate their own infrastructure, the main system receiving the effluent is managed by the
461 County. Additionally, all design, operation, and maintenance requirements must include
462 effluent standards for pollutants. *Recommend referencing WASD consent order and funding to meet targets
on time and completely.*

463 The Task Force recommends that the County:

464 **3D. Undertake immediate efforts to identify and eliminate all root causes of Sanitary Sewer**
465 **Overflows (SSO) including inflow and infiltration. Accelerate sewer infrastructure maintenance**
466 **and upgrades, locate, inspect and eliminate where possible all wastewater sewers that**
467 **discharge within 2,000 linear feet from Biscayne Bay shorelines and further West (inland) near**
468 **Canals, Creeks, Rivers and Lakes**. All plans are to be certified by letter/report, signed, and sealed
469 by a Florida Registered Professional Engineer. Ensure the County institutes its authority to
470 implement proactive management and have reliable information on all underground assets.
471 Ensure adequate funding is authorized to accelerate these activities. Use the County's authority
472 to institute stiffer penalties for SSOs, understanding that SSOs harm the economic prosperity,
473 health and quality of life of its residents and businesses – referencing SB712 and increasing fines
474 for unpermitted activities over SB712 (Sanitary sewers, maintenance, etc.).

475 **3E. Develop and expedite a Condition Assessment and Asset Management Action Plan to**
476 **document the condition of the County's wastewater system assets and certify all historical "As**
477 **Built" and/or those not already certified with a focus on identifying horizontal and vertical**
478 **locations of main wastewater transmission lines.** As-builts must be certified, signed and sealed
479 by a Florida Professional Surveyor and Mapper qualified and registered to do work in Miami-
480 Dade County. In addition, a Florida Professional Engineer, qualified and registered to do work in
481 Miami-Dade County shall inspect and document the condition of these assets, to prioritize their
482 condition based on risk of failure and expedite rehabilitation and/or replacement or lining
483 following mandates in the MDWASD consent decree.

Recommend fully funding system upgrades and inspections. Recommend updating all infrastructure that is beyond its planned lifespan.

484

485 *For Stormwater System:*

486 Actions to improve the stormwater system should leverage cost- and maintenance-effectiveness
487 of technologies and should be “holistic” in order to address stormwater quality concerns at all
488 system levels, both for public and private systems county-wide. It is important to note that
489 stormwater systems in Miami-Dade County are controlled by jurisdictions. The County only has
490 control over the stormwater system in the Unincorporated Municipal Service Area (UMSA), so
491 working with municipalities to coordinate improvements is critical.

492 The Task Force recommends that the County:

493 **3F. Enforce the existing code and update the stormwater design criteria to include advances**
494 **in stormwater treatment technologies** such as stormwater catch basins, stormwater filtering
495 systems and smart stormwater system technology that can also take into account future
496 hydrologic conditions related to CERP and climate change. Existing Code should be updated to
497 establish an annual operating permit for all municipal and private stormwater systems.
498 Updated criteria should also consider the multitude of impacts that sediment erosion, leaves,
499 litter and other items have on stormwater systems. These can include costs of cleanups, floods
500 caused by clogged stormwater catch basins and pipes, and groundwater and surface water
501 pollution caused by stormwater runoff. Evaluation of technologies should be holistic in order to
502 address stormwater runoff concerns at all points, from the street level through the outfalls. All
503 design, operation, and maintenance requirements must include effluent standards for
504 pollutants. Develop and implement guidelines for stormwater dry retention ponds and swales
505 that maximize watershed pollutant retention. Allocate funding for pollutant monitoring to
506 improve design of dry and wet retention ponds for Miami-Dade County and areas within the
507 SFWMD regional system.

508 **3G. Develop a plan to prioritize the retrofitting of stormwater infrastructure within basins**
509 **with the most substantial water quality and/or habitat degradation issues.** All stormwater
510 systems should be upgraded to maximize protection of water quality and municipalities should
511 be urged to provide updates of storm water improvements to the County for inventory.

512 **3H. Eliminate direct stormwater discharges to Biscayne Bay** through a combination of
513 infrastructure modifications (e.g., treatment technologies), retaining more stormwater at the
514 property-level, via increased stormwater management in retention and infiltration, conduct
515 monitoring to verify, as well as identify and secure funding through community based and/or
516 public private partnerships to implement these types of improvements while leveraging private
517 working capital. Eliminate discharge of untreated stormwater into canals, creeks, rivers and lakes,
518 and conduct monitoring to verify, and identify and secure funding to implement. Ensure basic
519 design criteria for stormwater system management are met and documented, such as: 1) grates
520 to block debris from entering the storm drains and smart water sensors, 2) more regular
521 maintenance of stormwater systems to prevent discharge of debris and sediment, 3) more

Recommend addressing use of stormwater pumps and Bay protections during their use. Currently, these pumps can directly discharge water into the Bay.

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Recommend including updated monitoring to assess stormwater influence on water quality.

522 regular cleaning of storm drainage system, and 4) standards that account for higher groundwater
523 levels and the reduced efficacy of exfiltration systems, and specify a minimum stormwater
524 system management schedule for MS4 co-permittees, for stormwater discharged into canals,
525 creeks, rivers and lakes, conduct monitoring to verify, and identify and secure funding to
526 implement. Implement a regular review process to update design criteria to take future
527 conditions into account.

528 **3I. Develop a review process with Public Works Department that evaluates the impact of**
529 **stormwater management reviewed, authorized or actions implemented by County**
530 **departments against pollutant load reduction goals and seagrass recovery targets for Biscayne**
531 **Bay recovery and resilience.**

532 Recommend including human health and equity considerations in this section.

533 *For Design and Construction Methods:*

534 **3J. Set policy that all As-Built/Record Drawings are done and certified by a Florida Professional**
535 **Surveyor and Mapper qualified and registered to do work in Miami-Dade County.**

536 **3K. Set policy to require during the design phase of future construction that all existing utilities**
537 **are designated and located vertically and horizontally** based on American Society of Civil
538 Engineers (ASCE) Standard 38-02⁹ utilizing non-destructive subsurface utility engineering
539 methods such as soft digs and 3D ground penetrating radar. Survey grade Mobile or Static LIDAR
540 shall be used for mapping above ground features and utilities conducted by a Florida Professional
541 Surveyor and Mapper qualified and registered to do work in Miami-Dade County. During plans
542 review process, Miami-Dade County shall ensure design is in compliance with the policy prior to
543 final approval or issuance of any construction permit.

544
545

546 **4. Watershed Habitat Restoration and Natural Infrastructure**

547 Biscayne Bay's health is dependent on the activities that happen within its watershed. Improving
548 and restoring habitat has multiple benefits, including diversifying plant and animal species,
549 providing habitat for fisheries, and increasing green spaces that absorb and filter water before it
550 reaches our waterways and the Bay. Depending on the project, natural infrastructure is just as
551 beneficial: it can provide additional water filtration services, can act as habitat for fisheries and
552 other wildlife that help support our economy, and can protect the shoreline from coastal erosion
553 and storm surge. To utilize watershed habitat restoration and natural infrastructure to improve
554 the health of the Bay, the Task Force recommends the County:

555 **4A. Develop ecologically acceptable living shoreline design options that are consistent with the**
556 **existing Biscayne Bay Aquatic Preserve Act.** The County shall create "A Living Shoreline Guide"

⁹ <https://www.flhwa.dot.gov/programadmin/asce.cfm>

Recommend a report on updating seawall guidelines and permitting to be more ecologically friendly and resilient. Possible tie-in with living shorelines.

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Recommend working with the Biscayne Bay Shoreline Development Review Board to develop new guidelines that address resiliency and habitat benefits.

557 and conduct workshops with municipalities, developers, coastal engineers and other industry
558 experts to provide the appropriate guidance on design and regulations. The County should
559 develop incentives for living shoreline installation.

560 **4B. Raise awareness of the value of mangroves through a homeowner education campaign.**
561 Mangroves are the first line of coastal defense and a natural barrier protecting coastal
562 communities from storm surge, flooding and sea level rise and provides carbon storage helping
563 to lower carbon emissions.

564 **4C. Increase enforcement of existing rules for protecting existing mangroves and mangrove**
565 **shorelines** to improve their future health and maintain the appropriate amount of canopy.
566 Existing culverts that provide water to existing mangroves must be inspected and repaired.

567 **4D. Identify vulnerable properties along the coastline and partner with municipalities to focus**
568 **on public properties and private property owners to create a voluntary Mangrove Protection**
569 **and Restoration Zone Program** (e.g., mangrove planter box initiative) in flood-prone coastal
570 communities to designate protection zones, plant mangroves based on the “Living Shoreline
571 guide,” and monitor and report progress post-storm events. This should be extended to data
572 collection, review and consideration of opportunities for converting flood-damaged properties
573 for willing sellers participating in current and future buy-out programs, increasing buffer areas
574 via vegetated easements, or as projects for listing in the Miami-Dade County Local Mitigation
575 Strategy.

576 **4E. Prioritize existing and identify new watershed and green infrastructure approaches and**
577 **restoration projects**, including projects identified in existing plans like the Miami-Dade County
578 Department of Parks, Recreation, and Open Spaces “Parks and Open Space System Master
579 Plan,”¹⁰ using data to help inform projects with significant potential for improving water quality.
580 Retain a pool of environmental engineering firms with qualifications that include green
581 infrastructure projects to assist staff in designing and implementing these projects, and create
582 mechanisms for extending research and monitoring capacity by local universities to include
583 adequate research and monitoring funds as a proportion of project funding to monitor water
584 quality improvements. Increase incentives for green infrastructure, such as green walls and roofs,
585 for new development, substantially improved/damaged structures, and retrofitting projects to
586 decrease pollutant runoff. Specifically, the Task Force recommends that each new seawall permit
587 application be evaluated for natural and hybrid alternatives.

588 **4F. Continue to advocate for funding and support the Biscayne Bay Southern Everglades**
589 **Ecosystem Restoration (BBSEER) project (BBCW / C-111).** The County to actively participate and
590 coordinate as part of the Project Delivery Team during the planning process with the BBRRCT,
591 USACE and SFWMD to ensure that the quantity, quality and distribution of water are adequate
592 for Biscayne Bay restoration.

¹⁰ Miami-Dade County Department of Parks, Recreation, and Open Spaces “Parks and Open Space System Master Plan.” December 2007. <http://www.miamidadegov/parksmasterplan/library/osmp_final_report_entiredocument.pdf>

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Encourage projects that connect the Baywalk. Make the Baywalk more resilient, improve stormwater runoff and retention, habitat and recreation.

593 **4G. Establish seagrass growth and maintenance requirements** based on pollutant loading and
594 reduction goals (nutrients, sediments/turbidity), influence of temperature and dissolved oxygen,
595 carbon dioxide, changes in food web structure, Bay recreational use, and resulting influence on
596 water clarity and seagrass health.

597 **4H. Accelerate green infrastructure solutions for flooding, resiliency and water quality** that
598 include a review of watershed habitat restoration opportunities in repetitive loss areas and
599 future flood hazard areas. Evaluate and allocate cost savings of Community Rating Systems (CRS)
600 benefits into the Biscayne Bay watershed water quality restoration plan.

Recommend setting a firm seagrass restoration target. Commission a follow up seagrass report annually until targets are met.

601 Include equity/inclusion and human health considerations in this section.

602 Recommend improved access to Biscayne Bay for diverse communities, abilities, and age groups, including waived boat ramp fees and parking fees several times a year.

603 **5. Marine Debris**

604 Marine debris is one of the most widespread problems facing the world's oceans, waterways
605 and coastlines: it can travel long distances and traverse territorial borders, and there are many
606 difficulties in identifying its sources. There are two common sources of marine debris: the
607 actions that take place on land (land-based sources), and the actions that take place in
608 waterways and the marine environment (water-based sources). It is estimated that 80% of
609 marine debris is land based. To reduce marine debris and its impacts to the stormwater system,
610 the Task Force recommends the County:

611 **5A. Direct the administration to create a comprehensive marine debris prevention, reduction,**
612 **and removal program within DERM and to adequately fund and staff the program.** The primary
613 goal of the program would be to prevent, reduce, and remove the amount of marine debris
614 entering Biscayne Bay and its tidal tributaries, thereby reducing the impact of marine debris on
615 the bay's flora and fauna while enhancing the quality of life for the County's residents and
616 visitors. To accomplish this goal, program activities should include, at a minimum, marine debris
617 related project planning, implementation and obtaining funding; public outreach & education;
618 and enforcement action when necessary and appropriate. The program should establish annual
619 targets for the prevention, reduction, and removal of marine debris entering the Bay.

620 **5B. Establish a marine debris working group to promote collaboration on ways to reduce**
621 **marine debris.** The working group may include, but not necessarily be limited to, representatives
622 of county, state and municipal resource agencies, including the SFWMD, law enforcement
623 agencies, stormwater utilities, solid waste and public works departments, recreational and
624 commercial boaters and fishers, and NGOs. Among the purposes of the working group should be
625 to share information, coordinate efforts, and develop a plan to prevent, reduce, and remove
626 marine debris. The plan should address marine debris emergency response and define annual
627 targets for the prevention, reduction, and removal of marine debris entering the Bay. The marine
628 debris working group could also make recommendations to the County and Municipalities
629 regarding policy and legislation for the prevention and reduction of marine debris.

630

631 **5C. Through the Miami-Dade County Police Department, direct their Marine Patrol Unit to**
632 **prioritize its commitment to the enforcement of all applicable laws having a nexus to the**
633 **environmental health of the Bay and its tributaries**, including but not limited to those related to
634 fisheries, derelict and at-risk vessels, vessel marine sanitation devices, vessel speed zones, vessel
635 groundings and mooring restrictions. Furthermore, the Task Force recommends that the County
636 Commission urge state and municipal marine law enforcement agencies to do the same. *Include wildlife law enforcement.*

637 **5D. Conduct an analysis of marine debris in Biscayne Bay** to identify primary sources of marine
638 debris, the routes by which it is introduced into the bay, and the areas of most significant
639 accumulations, including within stormwater catchment basins, in order to guide prevention
640 efforts and target removal.

641 **5E. Adopt a voluntary maximum input level policy for trash.** Work with municipalities to
642 decrease the amount of trash pollution entering Biscayne Bay from land-based trash sources and
643 stormwater systems.

644 **5F. Evaluate the various existing stormwater outfall systems throughout the county to**
645 **determine their effectiveness at preventing debris from entering Biscayne Bay.** This evaluation
646 should include any recommendations for alternative designs and maintenance, any changes in
647 policy or regulations regarding installation of stormwater outfall systems. *Require grates to be mandatory and outfall filtration.*

648 **5G. Identify and establish dedicated and recurring funding sources to pay for marine debris**
649 **prevention and removal activities** and to use as matching funds for supplemental grant
650 opportunities. Such sources may include, but not be limited to, vessel registration fees and
651 stormwater utility fees, etc. *Can this be made more concrete? Is the Task Force asking for a report?*

652 *Recommend banning styrofoam and plastic bags from County buildings and vendors.*

653 **6. Education and Outreach**

654 Every citizen and visitor must be informed and educated about water quality impacts related to
655 littering and pollution. They must be given ample opportunities to create a personal connection
656 to, and responsibility for, the health Biscayne Bay. To educate citizens and visitors, the Task Force
657 recommends the County:

658 **6A. Create a multi-lingual, multi-media campaign and educational outreach program** to
659 promote and improve awareness of the economic, commercial and recreational opportunities of
660 Biscayne Bay. The campaign should include projects such as signage on stormwater drainage as
661 well as educational programs such as education on the vulnerability of aquifer and watershed to
662 pollutants, among others. *Including environmental justice.*

663 **6B. Leverage the funding in the Community Based Organization grant program to create a**
664 **special focus on Biscayne Bay education.** Encourage greater coordination with the
665 Environmental Education Providers and work together with related NGOs, municipalities,
666 agencies, public/private schools, academic institutions, environmental organizations, business

667 organizations, and marine and tourism industry to increase impact and avoid
668 organizations duplication of efforts. **Include environmental
justice and equity.**

669 **6C. Conduct an educational campaign to inform the public on the proper and improper ways**
670 **to dispose of trash and the impacts of littering and marine debris to the health and**
671 **management of Biscayne Bay** as recommended by the Grand Jury Report (August 8th 2019)¹¹,
672 and instructed by Resolution R-1260-19¹² adopted on November 11th 2019. As part of the
673 campaign, increase signage in public areas adopted in Resolution R-1335-19.¹³

674 **6D. Implement policies to reduce the amount of locally generated plastic marine debris** by
675 restricting or banning the use and/or sale of single-use plastic items at County buildings, parks,
676 beaches, and other facilities, and at County-sponsored events.

677 **6E. Build upon and increase volunteer clean-up activities countywide** to support the “Keep
678 Miami-Dade County Beautiful” initiative with the Departments of Solid Waste Management and
679 Parks, Recreation and Open Spaces, through “Neat Streets Miami.”

680 **6F. Develop environmental sustainability and “plastic free” best practices** for commercial
681 businesses and all public events and county-owned properties. Incorporate “leave no trace”
682 guidelines in public education campaign.

683 **6G. Support a “Living Laboratory for Bay Health”** in conjunction with local universities, NGOs,
684 and private sector partners to train and inspire the next generation of scientists, eco-engineers
685 and environmental stewards through sustainable/resilient policies, business practices, and
686 develop partnerships with academic, business and industry associations.

687 **6H. Develop and implement a contractor and lawn care industry training program** for
688 contractors that do business with the County and all MS4 co-permittees, including county and
689 city staff. **Create a public fertilizer campaign. Create a commercial landscaper registry.**

690 **6I. Expand the scope of Baynanza** to add year-round activities and host the Biscayne Bay Marine
691 Health Summit. Use funding from the Biscayne Bay Trust Fund.

692

693 7. Funding

694 Since all governmental levels have a role in the management of the Bay, funding needs to come
695 from all levels: federal, state, and local. Adequate external funding will be necessary to preserve,
696 protect and revitalize the habitat and watershed for long-term, meaningful results. To ensure
697 funding for projects and programs, the Task Force recommends the County make water quality
698 restoration of Biscayne Bay an annual budget priority:

¹¹ Grand Jury Report (August 8th 2019)

¹² Resolution R-1260-19

¹³ Resolution R-1335-19

699 **7A. Work with the Miami-Dade Legislative Delegation to appropriate funds and enable the**
700 **Congressional delegation to support Biscayne Bay Watershed Restoration**, possibly through
701 mechanisms such as legislative budget requests that may include support for a National Estuary
702 Program and other programs that support the Biscayne Bay-based economy and quality of life in
703 Southeast Florida.

704 **7B. Engage in the legislative process to designate a Biscayne Bay License Plate** drawing from
705 regional examples of related, successful specialty plates for Indian River Lagoon and the Tampa
706 Bay Estuary. Funds from the sale of the license plate should benefit habitat restoration, pollution
707 prevention and environmental education initiatives.

708 **7C. Enter a cost-share partnership with SFWMD** who has allocated funds to update the 2005
709 Biscayne Bay Economic Study. The purpose of the Biscayne Bay Economic Study 2019 Update is
710 to estimate the economic contribution of the Bay from 2005 to 2019 as it is used for recreation,
711 shipping, cruising, and commercial fishing and also update the recreational uses and intensity
712 of Biscayne Bay. The study will employ the same methodology as was used in the original 2005
713 Biscayne Bay Economic Study that evaluated the Bay's economic contribution from 1980 to 2004
714 so that comparisons may be made.

715 **7D. Request a comprehensive review of the following potential funding sources** by the Office
716 of Management and Budget with a report and work with the Office of Intergovernmental Affairs
717 to develop Biscayne Bay-focused legislative appropriation requests for every session:

- 718 • All Stormwater utilities - fees for stormwater infrastructure. The County should consider
719 working with the cities to agree to adopt the BBMP;
- 720 • Evaluate existing revenues to determine if they are adequate to update their stormwater
721 infrastructure to improve water quality;
- 722 • Evaluate and engage in community-based partnerships and public-private partnerships
- 723 • Senate Bill 712 – analyze the matching grant program to upgrade septic systems or hook
724 a septic tank to a municipal sewage system;
- 725 • Explore other grant programs to help upgrade outdated municipal sewage treatment
726 plants;
- 727 • NOAA marine debris grant funding;
- 728 • Bond program for Biscayne Bay funding;
- 729 • EPA urban water program;
- 730 • Future FDEP funding for septic system upgrades and/or conversion to sewer;
- 731 • PACE program funding;
- 732 • Water quality trading;
- 733 • Mitigation credits

734 **7D. Work with the Miami-Dade Legislative Delegation to appropriate funds and enable the**
735 **Congressional delegation to support Biscayne Bay Watershed Restoration**, possibly through
736 mechanisms such as legislative budget requests that may include support for a National Estuary

737 Program and other programs that support the Biscayne Bay-based economy and quality of life in
738 Southeast Florida.

739 **7E. Engage in the legislative process to designate a Biscayne Bay License Plate** drawing from
740 regional examples of related, successful specialty plates for Indian River Lagoon and the Tampa
741 Bay Estuary. Funds from the sale of the license plate should benefit habitat restoration, pollution
742 prevention and environmental education initiatives.

743 **7E. Capitalize on municipal resources** to allow municipalities to supplement County programs
744 (i.e. deputize) to meet their communities' needs.

745
746

747 The Future of the Bay

748 Today, there are diverse, complex problems impacting the water quality of Biscayne Bay. As
749 water quality declines and we lose our seagrasses, the health and resilience of the Bay will
750 continue to decline. Recreational and commercial fishing, boating and other water-related
751 activities, and general tourism related to the Bay will be impacted. Losing the jewel that is
752 Biscayne Bay could severely affect our tourism-driven economy. However, we have hope that
753 through short- and long-term water quality improvements, we can recover and preserve Biscayne
754 Bay for its ecological functions, its economic importance, and its natural splendor.

755 As our region continues to grow and welcome new residents and visitors, pollution prevention
756 will be critical to improve water quality in the watershed and Biscayne Bay. The Task Force
757 believes many of the long-term solutions to improve and manage water quality reside in the
758 upland watershed. Local and regional canals drain into Biscayne Bay, bringing nutrient pollution
759 from storm-water runoff, sewage pipe breaks, compromised septic tanks, plastic and other
760 debris, and other contaminants. Furthermore, the channelization of our waterways has led to a
761 lack of historic freshwater flows which has contributed to changes in the ecosystem of the Bay.

762 Through land use changes, behavioral changes, and infrastructure improvements, we can be
763 proactive and prevent pollution from reaching our waterways in the first place. To implement
764 these changes and improvements, we must prioritize Biscayne Bay and the watershed in our
765 County and municipal budgets and by advocating for funding at the state and federal levels.
766 Sustained funding sources will be critical to implement the recommendations in this report and
767 to advance future recommendations from the WMB.

768 The creation of the governing entity, the WMB, recommended in this report will be the
769 mechanism for addressing the short- and long-term issues that lay in front of us. Future
770 recommendations will surely be made and implemented by the WMB as better technology and
771 data becomes available. By providing additional staff, resources and expertise now - and making
772 the health of the Bay a county-wide priority - we can take the appropriate actions today to

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773 increase the long-term resilience of Biscayne Bay for our families, visitors and future generations
774 living, working, and playing in Miami-Dade County.

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776 Appendices

777 Appendix A

778 The proposed organizational structure illustrating the relationships between
779 entities is outlined below:

- 780 • MDC Board of County Commissioners (BCC): Receives reports from WMB for progress updates,
781 requests for funding through contracts, grants and disbursements, requests to collaborate, etc.
- 782 • Biscayne Bay Watershed Management Board (WMB): Comprised of 11 members outlined in
783 **Figure X**, the WMB will serve as a clearinghouse for the technical and community outreach work.
784 Members will have experience with issues related to Biscayne Bay and are expected to leverage
785 the professional and financial resources of their respective organizations to effect goals of the
786 Watershed Restoration Plan.
- 787 • Chief Bay Officer (CBO): The CBO will advise the Miami-Dade County Mayor and the BCC and
788 manage the WMB and its committees. The CBO will also act as liaison with County departments,
789 County boards, external agencies, stakeholder groups, and local, state and federal governments
790 on water quality issues, policies and appropriations related to the health and recovery of Biscayne
791 Bay.
- 792 • Biscayne Bay Watershed Restoration Plan (WRP): WMB will, with technical and community
793 recommendations, review, recommend funding for and implement the Watershed Restoration
794 Plan (WRP) to achieve time-bound and measurable progress (**e.g., X% by XXXX**) towards WRP goals
795 to achieve water quality and seagrass restoration and meet its mandate of Bay health, recovery,
796 and resilience.

797
798 *The WMB should establish and appoint committees to address specific Bay issues to advise*
799 *and make recommendations on policies, restoration projects, public information*
800 *campaigns and water quality monitoring and targets:*

- 801
802 • Technical Advisory Committee: Will serve as the technical experts to address those issues outlined
803 in the restoration plan and are expected to conduct work that will include but not be limited to
804 engaging with outside experts as needed, design and implement special studies, research and
805 propose innovative designs, standards, and best management practices. Sub-committees may be
806 created and chaired as designated by the Chief Bay Officer or County leadership. This committee
807 communicates with other committees and sub-committees as needed.
- 808 • Community Advisory Committee: Will serve to implement the education and outreach restoration
809 goals and objectives and will be comprised of members of the community as designated by the
810 WMB or Chief Bay Officer. This committee communicates with other committees and sub-
811 committees as needed.
- 812 • Nutrient Reduction Committee: Will serve as the technical experts whose mission is specific to
813 the identification (i.e., load, fate and transport) and reduction of pollutant loading into surface
814 waters of the County. This committee communicates with other committees and sub-committees
815 as needed.

816