

MIAMI BEACH

Sustainability Resiliency Committee Meeting

Commission Chamber

July 11, 2018 - 1:00 PM

Commissioner Micky Steinberg, Chair

Commissioner John Elizabeth Aleman, Vice-Chair

Commissioner Ricky Arriola, Member

Commissioner Mark Samuelian, Alternate

Elizabeth Wheaton, Liaison

DISCUSSION ITEMS

1. DISCUSSION ON STORMWATER BEST MANAGEMENT PRACTICES
Commissioner Micky Steinberg
Margarita Wells, Environment and Sustainability Assistant Director
Item C4U - May 11, 2016 Commission Meeting
2. REQUESTING AN ORAL REPORT FROM THE ADMINISTRATION ON THE WATER QUALITY OF BISCAYNE BAY SURROUNDING THE CITY'S NEW PUMP SYSTEMS.
Commissioner Kristen Rosen-Gonzalez
Margarita Wells, Environment and Sustainability Assistant Director
Item R9M - March 7, 2018 Commission Meeting
3. REVIEW THE CITY'S ABILITY TO ENABLE UNDERGROUND ELECTRICAL POWER LINES.
Commissioner Mark Samuelian
Roy Coley, Public Works Director
Item C4 AB - April 11, 2018 Commission Meeting
4. DISCUSSION ON THE MARINA TRASH SKIMMER AND ITS POTENTIAL USE IN MIAMI BEACH.
Commissioner John Elizabeth Aleman
Stanley Kolosovskiy, Environmental Specialist
Item C4 AC - May 16, 2018 Commission Meeting
5. DISCUSSION ON THE STRONG METHANE ODOR EMANATING FROM STORM DRAINS WHEN THE PUMPS ARE OPERATING, AND THE IMPACT THIS IS HAVING TO SURROUNDING AREAS BOTH AESTHETICALLY AND TO THE UNDERGROUND STRUCTURAL FOUNDATION OF MIAMI BEACH.
Commissioner Kristen Rosen-Gonzalez
Roy Coley, Public Works Director
Item C4 AD - May 16, 2018 Commission Meeting
6. DISCUSSION ON POTENTIAL POLICY REGARDING SUSTAINABLY SOURCED WOOD.
Commissioner Micky Steinberg
Flavia Tonioli, Sustainability Manager and Carlos Markovich, Senior Planner
Item C4 AF - May 16, 2018 Commission Meeting
7. DISCUSS A TEMPORARY HYDROPONIC FARM AS AN INCUBATION PILOT IN NORTH BEACH.
Commissioner John Elizabeth Aleman
Michelle Huttenhoff, Tourism, Culture and Economic Development
Item C4 AE - May 16, 2018 Commission Meeting
8. DISCUSSION ON INCREASING THE CITY'S WATER BOTTLE REFILL STATIONS

Commissioner Michael Gongora
Flavia Tonioli, Sustainability Manager

Item C4J - June 6, 2018 Commission Meeting

9. DISCUSSION ON TRASH AND RECYCLING BINS EXPANSION CITYWIDE.

Commissioner Michael Gongora
Yanira Pineda, Sustainability Specialist

Item C4K - June 06, 2018 Commission Meeting

10. DISCUSSION PERTAINING TO LANDSCAPE AND SURFACE FINISH REQUIREMENTS, TREE MITIGATION, AND TIMEFRAMES FOR TEMPORARY PARKING LOTS.

Commissioner Micky Steinberg
Tom Mooney, Planning Director

Item C4N - June 06, 2018 Commission Meeting

REPORTS

11. SUSTAINABILITY COMMITTEE

Dave Doeblar, Committee Chair

12. REVIEW OF RESILIENCE STRATEGY WORKPLAN - PLANNED AND IN PROGRESS RESILIENCY PROJECTS

Susanne Torriente, Assistant City Manager/ Chief Resiliency Officer

MIAMI BEACH

Item 1.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: July 11, 2018

SUBJECT: **DISCUSSION ON STORMWATER BEST MANAGEMENT PRACTICES**

RESPONSIBLE DEPARTMENT:

Margarita Wells, Environment and Sustainability Assistant Director

LEGISLATIVE TRACKING:

Item C4U - May 11, 2016 Commission Meeting

SPONSORED:

Commissioner Micky Steinberg

Analysis

VERBAL REPORT AT THE COMMITTEE

ATTACHMENTS:

Description

Type

No Attachments Available

MIAMI BEACH

Item 2.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: July 11, 2018

SUBJECT: **REQUESTING AN ORAL REPORT FROM THE ADMINISTRATION ON THE WATER QUALITY OF BISCAYNE BAY SURROUNDING THE CITY'S NEW PUMP SYSTEMS.**

RESPONSIBLE DEPARTMENT:

Margarita Wells, Environment and Sustainability Assistant Director

LEGISLATIVE TRACKING:

Item R9M - March 7, 2018 Commission Meeting

SPONSORED:

Commissioner Kristen Rosen-Gonzalez

Analysis

VERBAL REPORT AT COMMITTEE MEETING

ATTACHMENTS:

Description

Type

No Attachments Available

MIAMI BEACH

Item 3.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: July 11, 2018

SUBJECT: **REVIEW THE CITY'S ABILITY TO ENABLE UNDERGROUND ELECTRICAL POWER LINES.**

RESPONSIBLE DEPARTMENT:

Roy Coley, Public Works Director

LEGISLATIVE TRACKING:

Item C4 AB - April 11, 2018 Commission Meeting

SPONSORED:

Commissioner Mark Samuelian

Analysis

VERBAL REPORT AT COMMITTEE MEETING

ATTACHMENTS:

Description

Type

No Attachments Available

MIAMI BEACH

Item 4. COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: July 11, 2018

SUBJECT: **DISCUSSION ON THE MARINA TRASH SKIMMER AND ITS POTENTIAL USE IN MIAMI BEACH.**

RESPONSIBLE DEPARTMENT:

Stanley Kolosovskiy, Environmental Specialist

LEGISLATIVE TRACKING:

Item C4 AC - May 16, 2018 Commission Meeting

SPONSORED:

Commissioner John Elizabeth Aleman

BACKGROUND:

At the City Commission meeting on May 16, 2018, the Mayor and City Commission referred a discussion to the Sustainability and Resiliency Committee on the Marina Trash Skimmer and its potential use in Miami Beach. This item was sponsored by Commissioner Aleman.

Analysis

The Marina Trash Skimmer is a product designed to clean waterways by skimming trash from the surface, as well as circulating and aerating water via a pump. An absorbent bilge pad can also be installed to absorb oil. The Marina Trash Skimmer can typically clean about 300 gallons of water a minute for 24 hours a day, or the equivalent of about 20 swimming pools of water. The most commonly collected items by these devices include styrofoam, glass bottles, cans and containers, plastic bags and wrappers, cardboard, free-floating organic material, fishing products, cigarettes, and oil (if an oil pad is included). The unit is 6' wide x 4' deep x 18" freeboard which gives it a 24 square foot area where all of the trash can be retained until it can be emptied.

The Marina Trash Skimmer is a technology that has been used in other cities. The Port of San Diego tested units at four San Diego Bay marinas outfitted with absorbent bilge pads and evaluated their effectiveness over an eight-month period. Each unit was regularly maintained by the marina staff to remove accumulated debris and replace the bilge pad, as needed. Based on their experience, the frequency of maintenance required was dependent on the rate of debris accumulation in each area.

According to their report, the Port was unable to evaluate the impact of the unit on chemical water quality due to an issue with their sampling program, but they did determine that the skimmers were successful in reducing debris at each of the four sites. The report did not specify the frequency of cleaning, the number of staff required for maintenance, or other operational details. However, the report did specify that the units are powered by electricity and use about 25 Kwh/day which translates to \$2 per

day in energy costs at commercial prices. One Marina Trash Skimmer costs approximately \$12,000 with a warranty provided on the molded parts (ten years), water pump (two years), and control panel (three years).

In June 2016, the City reached out to representatives of Seabin, a company that developed an automated trash bin to collect floating litter, oil and detergents from surface waters, regarding a potential pilot program to reduce litter debris from the waterways. The product, which was in development at the time, is similar to the Marina Trash Skimmer with a smaller cleaning capacity of approximately nine pounds of litter (under five gallons). Following several conversations, Seabin and the City did not reach an agreement and therefore a pilot program was not launched.

The proposed pilot program consisted of installing a Seabin at the south end of Lake Pancoast or at the marine slip in South Pointe Park to reduce high volumes of trash that accumulate at these two locations. For Lake Pancoast, The One Hotel and Aloft own the adjacent seawalls and submerged lands in the area and the City proposed reaching out to see if they would be willing to install this product on their property and provide the regular daily maintenance. For the location at South Pointe Park, existing Parks and Recreation Department staff was recommended to assist with daily maintenance. For both instances, the pilot program was proposed with an educational campaign focused on reducing litter.

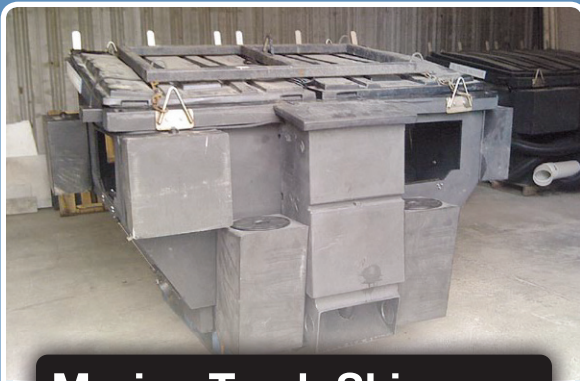
Clean waterways are critical for our local ecosystem, economy, and quality of life. To that end, the City utilizes a waterway maintenance contractor to remove floating litter and submerged debris three times per week from our 63 miles of waterways. In 2017, the waterway contractor removed nearly 114,000 pounds of trash.

CONCLUSION:

The following is presented to the members of the Sustainability and Resiliency Committee for discussion. The City is always willing to pilot new technology to improve or enhance current waterway cleanliness efforts. Should the Committee and Commission be interested in a pilot, at no cost to the City, staff can reach out to Marina Trash Skimmer to negotiate.

ATTACHMENTS:

Description	Type
Attachment: Marina Trash Skimmer Brochure	Other



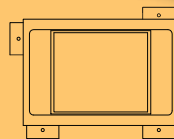
Marina Trash Skimmer

A Product Who's Time Has Come

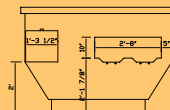
Is trash cluttering your marina? Do you notice oil sheen on your water's surface? Or do you have a lot of free floating organic material piling up or sinking to the water floor? The Marina Trash Skimmer was created to tackle these very problems.

The MTS is a stationary unit that is strategically placed at different points within marinas and harbors. Working with the natural flow of water, skimmers work round the clock to collect trash and oil sheen into one easy to access location.

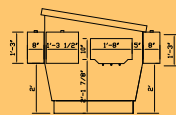
Operating on common 20 Amp 125 Volt power, Skimmers employ a patented technology of water displacement. Moving over 300 gallons of water a minute, the MTS retains all floating debris in its vicinity. With its relatively small footprint (6' wide x 4' deep x 18" freeboard) the skimmers fit comfortably into any area of a marina or water way, and their whisper quiet operation will not disturb the neighbors.



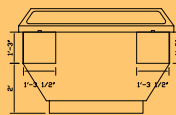
Top View



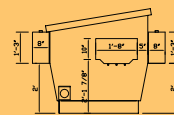
Back View



Side View



Front View



Side View



Marina Accessories Inc is an international supplier of accessories and equipment for marinas, contractors, and private dock owners. An affiliate of Bellingham Marine Industries, their offices are located at Bellingham Marine's headquarters in Bellingham, Washington, USA.

Marina Accessories, Inc.
1323 Lincoln Street
Bellingham, WA 98229

Telephone:
Toll-Free 1 (800) 585-6890
Intl 1 (360) 676-7500
Fax 1 (360) 734-2417

Email Address:
mai@marina-accessories.com

For more information:
www.marinatrashskimmer.com



TRASH: A Problem Of Global Dimensions



Marina Trash Skimmer



Debris Collected by Marina Trash Skimmers
Over 308,880 gallons in 2017

That's over
1,389,960 pounds!





TRASH:

A Problem Of Global Dimensions

If you're lucky enough to spend any time around our waterways, you've most likely witnessed the buildup of plastics, oil and other debris.

- Over 300 billion pounds of plastics are produced each year and large amounts reach our oceans. Most forms of plastic float, don't break down and are hard to catch.
- One teaspoon of fuel can extend oil sheen over a one-acre area, and the buildup of small drops can have adverse effects on water quality.
- FFOM (free-floating organic material) can clutter a marina and create eyesores for customers. If left alone, this material will sink to the bottom of your harbor resulting in expensive dredging costs.

Problems like these can be solved in an affordable and environmentally friendly way. Log on to www.MarinaTrashSkimmer.com to get more information on the MTS, and see what you can do to help protect our waterways.

"The trash skimmers on Aquidneck Island combined with hands-on experiential environmental education activities have generated an enormous island-wide wave of stewardship momentum. Everyone loves the technology & purpose of the skimmers, and each visit, social media post, outreach event, and discussion brings the community together with a common recognition that the global issue of plastic and marine debris in the ocean is a solvable problem and it starts with each of us making better decisions on land."

Dave McLaughlin, *Executive Director*
Clean Ocean Access • Middletown, Rhode Island

"...This program is deemed a success because of the sheer volume of debris removed from the marina water, the increased observable clarity of the water and the satisfaction of the marinas and their tenants has shown that the marine trash skimmers have been a valuable asset for each marina. Each marina manager has indicated how satisfied they are with their skimmer. Not only do they improve the aesthetics of their marina but the skimmers are easy to use, silent, and save the marina time and money by reducing the marina staff's workload."

AMEC Earth & Environmental, Inc.
Final Report • Marina Trash Skimmer Monitoring



Installation

- The Trash Skimmer can be mounted to any floating dock system using the mounting brackets provided.
- MAI will work with any customer to ensure there is a secure mounting system in any other situation.

Displacement

- 300 gallons of water per minute, 24 hours a day

Operating Cost Estimate

- The Trash Skimmer has used approximately 25Kwh/day. In the USA North West this works out to \$1.30/day.

Water Circulation Unit

- ¾ HP 120 Volt motor

Aeration System

- Vacuum Driven Aerator (VDA)

Warranty

- Roto-Molded Parts – 10 years
- Water Circulation Unit – 2 years
- Control Panel – 3 years



MIAMI BEACH

Item 5.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: July 11, 2018

SUBJECT: **DISCUSSION ON THE STRONG METHANE ODOR EMANATING FROM STORM DRAINS WHEN THE PUMPS ARE OPERATING, AND THE IMPACT THIS IS HAVING TO SURROUNDING AREAS BOTH AESTHETICALLY AND TO THE UNDERGROUND STRUCTURAL FOUNDATION OF MIAMI BEACH.**

RESPONSIBLE DEPARTMENT:

Roy Coley, Public Works Director

LEGISLATIVE TRACKING:

Item C4 AD - May 16, 2018 Commission Meeting

SPONSORED:

Commissioner Kristen Rosen-Gonzalez

Analysis

VERBAL REPORT AT COMMITTEE MEETING

ATTACHMENTS:

Description

Type

No Attachments Available

Item 6.
COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: July 11, 2018

SUBJECT: **DISCUSSION ON POTENTIAL POLICY REGARDING SUSTAINABLY SOURCED WOOD.**

RESPONSIBLE DEPARTMENT:

Flavia Tonioli, Sustainability Manager and Carlos Markovich, Senior Planner

LEGISLATIVE TRACKING:

Item C4 AF - May 16, 2018 Commission Meeting

SPONSORED:

Commissioner Micky Steinberg

BACKGROUND:

On May 16, 2018, the Mayor and City Commission referred a discussion to the Sustainability and Resiliency Committee (SRC) regarding potential policy for sustainably sourced wood. The item was sponsored by Commissioner Micky Steinberg.

Analysis

According to the World Wildlife Fund (WWF), about 31% of our planet's land area is covered by forests. However, The Nature Conservancy (TNC) states our forests are under threat, with over 32 million acres of natural forests around the world being logged illegally every year. Illegal logging occurs when timber is harvested, transported, processed, bought or sold in violation of national regulations. Illegal logging occurs due to the existing demand for timber, paper and derivative products.

The United States was the first country to ban on trade in illegally sourced wood products with the amendment of the Lacey Act. The Lacey Act, originally adopted in 1900 to ban trafficking in illegal wildlife, was amended in 2008 to include plants and plant products, such as timber and paper. However this policy is based on the premise that importing companies would ensure their supply chain meets the requirements of the Act, which is very difficult to verify in countries with different policies and enforcement capabilities.

In order to combat illegal logging, it is fundamental for local governments to develop and enforce public policies and incentives that encourage legal and sustainable forest management and transparent trade in forest products, across supply chains. In addition, it is essential for consumers to make responsible purchasing choices and shift demand for legal and sustainable forest products. There are few forest certification programs that validate forest management practices using a set of standards and assist the end user to identify wood that has been sustainably harvested throughout their supply chain.

In U.S., the most recognized voluntary programs are the Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (SFI). Internationally, FSC and the Programme for the Endorsement of Forest Certification (PEFC) are the two leading voluntary sustainability standards operational in the forestry sector. These programs provide certifications on sustainable harvesting wood by auditing the supply chain, and considering if it practices fiscal responsibility, provides equity, and environmental stewardship. The average cost for certified wood tends to be 10% to 25% higher compared to the non-certified wood. According to the World Bank and WWF, every year the global market loses US\$10 billion from illegal logging, with governments losing an additional \$5 USD billion in revenues.

Cities and counties are becoming more aware of their potential impact on the sustainable wood harvesting supply chain, and are developing policies to encourage legal and sustainable forest management and transparent trade in forest products.

As part of their environmentally preferable purchasing policy, the City of Oakland (CA) procures wood products such as lumber that originates from forests harvested in an environmentally sustainable manner and give preference to wood products that are certified to be sustainably harvested by a comprehensive, performance-based certification system. The certification system includes independent third-party audits, with standards equivalent to, or stricter than, those of the FSC certification. In addition, the City of Oakland encourages the purchase or use of previously used or salvaged wood whenever practicable. Also, as part of their internal sustainable purchasing practices, Multnomah County (OR) requests and specifies wood products from sustainable forests that have been independently audited and verified, and are certified by FSC.

In Europe, Belgium, France, Germany, the Netherlands and the United Kingdom of Great Britain and Northern Ireland adopted public procurement policies for timber, requiring public purchasers to demonstrate the timber is of legal and sustainable origin. At the local level, Barcelona (Spain) developed a Timber Policy in 2004, which requires municipal departments, districts and agencies to ensure that all wood products purchased stem from sustainable forestry. The Timber Policy specifies sustainable forest management procedures and requests the wood to be FSC certified or an equivalent certification.

In Miami Beach, there has been an increasing use of tropical hardwoods as design elements to finish walls, decks, and doors. Amongst these tropical hardwoods, Ipe wood has been highly used due to its resistance to weathering, including sea mist, termites, and sun. According to WWF and Interpol, illegal logging accounts for 50 to 90% of forestry activities in key producer tropical forests in Amazon Basin, Central Africa and Southeast Asia, presenting 15-30% of the global wood traded. Unfortunately today the supply for certified wood in some areas, like Southeast Florida, is still limited compared to the non-certified wood market. The first step would be to educate consumers about the importance of sustainably sourced wood so they start taking conscious decisions when purchasing wood and helping to shift demand to the sustainability sourced market. As the demand for certified wood increases, yard lumbers would then increase their supply to meet the market's demand.

Developing policies that supports sustainable harvest wood, would place Miami Beach at the forefront of sustainable purchasing practices and demonstrate our commitment to mitigating the causes and effects of climate change, as well as promote sustainable development. As part of the Sustainable and Resilient Procurement Policy, the city could pursue an internal policy supporting the use of only local reclaimed and virgin lumber that practices fiscal responsibility, provides equity, and environmental stewardship. In order to verify and ensure the sustainable forest management procedures, the wood purchased would need to follow the specifications standards and be certified by SFC or SFI or PEFC. If this policy was deemed successful, in the future the city could implement a policy requiring private construction to use responsibly sourced wood. The city would then work with the lumber yards to ensure the supply would be prepared for the upcoming demand for certified wood.

CONCLUSION:

The following is presented to the members of the Sustainability and Resiliency Committee for discussion and further direction. The Administration recommends that the SRC supports an internal policy for sustainability harvested wood.

ATTACHMENTS:**Description****Type**

No Attachments Available

MIAMI BEACH

Item 7.
COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: July 11, 2018

SUBJECT: **DISCUSS A TEMPORARY HYDROPONIC FARM AS AN INCUBATION PILOT IN NORTH BEACH.**

RESPONSIBLE DEPARTMENT:

Michelle Huttenhoff, Tourism, Culture and Economic Development

LEGISLATIVE TRACKING:

Item C4 AE - May 16, 2018 Commission Meeting

SPONSORED:

Commissioner John Elizabeth Aleman

BACKGROUND:

At the May 16, 2018 City Commission meeting this item was referred to the Sustainability and Resiliency Committee to further explore hydroponic farms as a potential pilot project in North Beach, and will be discussed at the July 11, 2018 meeting of the Committee.

Indoor farming is a method of growing crops or plants, usually on a large scale, entirely indoors. This method of farming often implements growing methods such as hydroponics and utilizes a mechanical system to provide plants with nutrients and light levels required for growth. A wide variety of plants can be grown indoors. However, fruits, vegetables, and herbs are often the most popular because they grow well indoors and can generate revenue.

One of the advantages of indoor farming is the control of necessary conditions to achieve optimal survival, growth, and maturation of any given crop, thereby ensuring maximum yield per square foot of growing space. The control of necessary conditions can demand a higher carbon footprint compared to outdoor farming, because of the amount of energy needed to operate the artificial system for indoor farming (lighting, heating/cooling, ventilation, air conditioning, nutrition, irrigation, software, and sensors for that particular growing environment). Nevertheless, indoor farming uses land and water more efficiently than conventional farming and could become a strategy for sustainable feeding the world's growing population, as long as its high energy demand can be met through efficiency measures and/or the use of cost-effective renewables. In addition, as more sophisticated control devices become available, the cost of maintaining the controlled environment may decrease. A full presentation outlining the concept of indoor farming is attached herein as Exhibit A.

Vacant buildings and unused spaces are being transformed into indoor farms using hydroponic, aquaponic, apiary and aeroponic systems, as well as space-saving strategies of "vertical farming" to grow fresh food, which is often in short supply in urban areas. Additionally, hydroponic and vertical farms can be produced in temporary, moveable equipment such as shipping containers.

The attached presentation provides a high level overview on indoor farming and provides examples of its economic and social impact within cities.

Analysis

The North Beach neighborhood provides an opportunity to test this new model of farming. This area currently has eight vacant government owned surface lots (West Lots) across the North Shore Oceanside Park that could offer as a test site. The City could adapt the shipping container model on one or more of these vacant lots. Concurrent to this memo, the City has been working with Dover, Kohl & Partners to examine the future use of the North Beach West Lots. Through community charrettes and meetings, residents have expressed interest and a need for having a community or hydroponic garden to increase their access to healthy food. At the June 27, 2018 Commission meeting, Dover Kohl presented initial conceptual design plans for the West Lots, and a hydroponic farm was recommended as part of the development of the lots. The recommended placement was on Lot 4, because that lot is being conceptualized as an active, open greenspace area. Commission direction was to include the proposed Dover Kohl conceptual plans in the GO Bond list currently under review by the GO Bond Committee for possible inclusion on the November ballot.

Any project related to indoor farming would require a zoning review. The City of Miami Beach land development regulations do not contain regulations for farming or agriculture uses. Further analysis would be necessary to determine if a hydroponic farm is an allowable use under currently zoning laws, or if code amendments would be necessary. However, for government-owned (GU zoned) properties, the City Commission has the ability to approve waivers of the Land Development Regulations under certain circumstances, which may be an alternative if the use is not one that is typically allowed. Any such projects would also require a building permit, as well as compliance with Florida Building Code requirements related to indoor system controls, such as lighting, heating, cooling, ventilation, and irrigation, among other requirements.

CONCLUSION:

Administration seeks further direction regarding the discussion of creating a hydroponic pilot project within North Beach.

ATTACHMENTS:

Description	Type
□ Hydroponic Farms presentation	Other

Hydroponic Farming



The Future of Agriculture



- Urban agriculture – by definition includes indoor farming, rooftop/backyard gardens, community plots and edible landscapes
- Today much of the food is engineered and transported, sometimes up to 1,500 miles - goal is to cut those food miles drastically and offer healthy, nutritious, highest-quality food to local communities
- Addresses climate change + resiliency through smart technology

Feeding the Future

Megatrends affecting traditional farming:

- **Volatility (weather conditions)**
- **Resource scarcity**
- **Urbanization**
- **Inequities in access to healthy foods**

(Stanford Social Innovation Review)



Average food prices have gone up by 2.6% annually

Food production must increase by 70% before the year 2050 to meet global food needs

(Food and Agriculture Organization of the United Nations)

PROS VS CONS

Pros	Cons
Increased plant productivity (optimal survival, growth, and maturation)	Higher need of monitoring & expertise
Focus on in-demand crops	Risk of system failure, affected by power outages
Growing plants despite seasonality or region or space	Risk of mass plant mortality and waterborne diseases can spread quickly
Uses land and water more efficiently	Energy needed to operate the artificial system for indoor farming (lighting, heating/cooling, ventilation, air conditioning, nutrition, irrigation, software, and sensors for that particular growing environment)
Cost-effective in the long-run	Upfront equipment costs
Potential increased economic	Altering Building Codes & Zoning

Food Economy & the Future of Agro-Tech

- Increased interest in the private market for funding vertical farming and agricultural technology
- “Inside-Out” Community Revitalization: Offers opportunities for social enterprise and supplemental income for low-income families and Seniors.
- Case Study Canada: Added \$1.3 billion in GDP, 34,000 jobs between 2013-2015
- Case Study Lexington, Kentucky: Food Chain



Transforming Public Spaces



- Temporary, moveable equipment (Shipping containers)
- Transform vacant building and warehouse spaces
- Provides community gathering points to increase social cohesion and connection
- Adaptable to the urban environment
- Case Study: Camden, New Jersey

MIAMI BEACH

Item 8.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: July 11, 2018

SUBJECT: **DISCUSSION ON INCREASING THE CITY'S WATER BOTTLE REFILL STATIONS**

RESPONSIBLE DEPARTMENT:

Flavia Tonioli, Sustainability Manager

LEGISLATIVE TRACKING:

Item C4J - June 6, 2018 Commission Meeting

SPONSORED:

Commissioner Michael Gongora

BACKGROUND:

On April 26, 2017, the Mayor and City Commission referred a discussion to the Sustainability and Resiliency Committee (SRC) regarding retrofitting water fountains with water bottle refill stations. This item was sponsored by Commissioner Kristen Rosen Gonzalez. At the June 14, 2017 SRC meeting, the Committee directed staff to estimate costs to retrofit water fountains at City Hall with water bottle refill stations. On October 30, 2017, SRC discussed costs related to retrofitting the existing water stations at City Hall and agreed to phase out older water fountains moving forward rather than retrofitting all existing units.

On June 6, 2018, the Mayor and City Commission referred a discussion to the Sustainability and Resiliency Committee (SRC) regarding increasing the city's water bottle refill stations. The item was sponsored by Commissioner Michael Gongora.

Analysis

According to the U.S. Environmental Protection Agency, plastics account for 75% of the waste in landfills. Using water bottle refill stations reduces the amount of imperishable, one-time-use plastic water bottles that contribute toward this waste. Furthermore, most water bottle refilling stations have sensor-activated and touchless dispensers with an automatic shutoff timer that reduces water waste and easily accommodates reusable drinking cups and larger containers.

Water bottle refill stations are becoming popular in municipal settings, especially in university campuses, parks, airports and buildings across the country. They allow users to fill reusable water bottles instead of drinking from plastic water bottles, thereby reducing single-use plastic consumption.

The City of New York has committed to install and repair 500 water fountains and water bottle refilling stations between 2015 and 2025. This effort will assist in reducing the use of single-use plastic bottles

and increase access to public drinking water.

The University of Maryland installed 103 electronic water bottle refill stations on its campus and over a three year period, they have prevented almost 3 million plastic bottles from disposal. They reported the use of the stations has increased by an average of 660% annually over the first three years since installation.

Several airports in Miami, Portland, Atlanta, Chicago, Denver, Philadelphia, San Francisco, amongst others, have installed water bottle refill stations which have helped saved the use of single-use plastic bottles, mainly after the 'liquids rule' (which allows people to carry liquids only in containers of 3.4 ounces or less in carry-on bags and through the checkpoint) was adopted.

The cost of water bottle refilling stations can vary between \$850 and \$6,500 per unit, depending on features and installation location. However, most water fountain models can be retrofitted with a water bottle filling kit for approximately \$700 to \$1,400 per unit, eliminating the need for a stand-alone refilling station. These values do not account for the installation cost of the kit. On average, the water bottle refill stations are able to fill bottles at a rate of 1.5+ gallons per minute. Most of the stations can digitally calculate the number of plastic bottles saved. Some brands have automatic sensors that stop the flow of water when the bottle is full, an additional tool for water conservation.

Currently, when the City's Parks & Recreation and Property Management Department replace old water fountains at their facilities, they replace them with a variety of different water bottle filling stations. To date 27 stations have been installed:

- 7 at Flamingo Park, three at the Scott Rakow Youth Center
- 1 at the Marjory Stoneman Douglas
- 1 at the Parks Maintenance Yard
- 1 at the Police Athletic League (PAL)
- 7 at the North Shore Park Youth and Tennis Center
- 2 at the Muss Park
- 1 at the Polo Park
- 1 at the Fisher Park
- 1 at the Indian Beach Park
- 1 at Allison Park
- 1 at the Bandshell
- 1 at the Normandy Shores
- 1 at the restrooms at 14th Street
- 1 at the Fleet building

The facilities above were selected due to their high volume of users that engage in exercise/fitness type of activities at these facilities (Picture 1 and 2). More stations will be installed at Parks facilities pending on funding availability.

In addition, both the Property Management and Capital Improvement Projects Departments have been considering water bottle filling stations for retrofits and new construction projects. In order to have more units within City's properties and facilities and retrofit existing units rather than phase out older water fountains, funds would have to be allocated. Based on the previous proposal from the Property Management Department, the materials required for installation would cost about \$2K for the stations and the labor is estimated at about \$1,200 per water bottle refill station. For Parks, the cost per station is higher at \$6,500 since they use the chilled multi-use water fountain with water bottle filling capabilities (picture 2) and installation cost would vary from \$3K to \$10K pending on existing infrastructure (plumbing, electrical, etc).

There are also 16 Woosh stations deployed across the city. Woosh is a network of smart water stations that provide ultra-purified and ice-cold water, that users pay a small fee to use it (on average \$0.50 per regular refill). Woosh has a pilot program with the city which includes the installation of 25 stations. Woosh will be implementing additional 9 stations throughout this year and over the next year the city will be able to evaluate the effectiveness of this program.

Free access to potable drinking water is fundamental to reduce incidents of heat exhaustion, as extreme heat events become more frequent and intense in the U.S. as a result of climate change. According to the Centers for Disease Control and Prevention, heat waves are associated with increased hospital admissions, with cardiovascular and respiratory diseases or well-known heat-related diseases, such as heat stroke or dehydration. Cities play a fundamental role to increase efforts to distribute fresh drinking water to the public and assist in mitigating the health effects of heat stress.

Several cities have also invested on 'iconic' water fountains that not only provide free access to potable drinking water but also become an attraction to the city. For example, the City of Rotorua (New Zealand) has installed iconic drinking water fountains at key community locations to provide free access to potable drinking water and encourage re-use of water bottles (picture 1). Several iconic water fountains in Europe are historic water fountains that also function as water bottle stations as well as attractions for visitors, such as the one shown in Picture 4 at Place Paul-Verlaine in Paris, France.

CONCLUSION:

The following is presented to the members of the Sustainability and Resiliency Committee for discussion and further direction. In order to have more water bottle refill stations within City's properties and facilities and retrofit existing units rather than phase out older water fountains, funds would have to be allocated. The Administration recommends that the SRC allocates funds if there is a desire to retrofit the existing fountains and further install additional fountains across the city.

ATTACHMENTS:

Description	Type
□ Attachment: Water Fountain Pictures	Other



Picture 1- Example of water bottle filling retrofit kit at a Parks facility water fountain (\$700- \$1,400).



Picture 2 – Example of multi-use water fountain with water bottle filling capabilities at Parks (\$6,500)



Picture 3: Iconic water fountains designed by artist Kereama Taepa (left) (<https://www.nzherald.co.nz/> <http://www.scoop.co.nz>).



Picture 4: An historic well at Place Paul-Verlaine that has been in operation since 1866 (www.eurocheapo.com)

MIAMI BEACH

Item 9.

COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: July 11, 2018

SUBJECT: **DISCUSSION ON TRASH AND RECYCLING BINS EXPANSION CITYWIDE.**

RESPONSIBLE DEPARTMENT:

Yanira Pineda, Sustainability Specialist

LEGISLATIVE TRACKING:

Item C4K - June 06, 2018 Commission Meeting

SPONSORED:

Commissioner Michael Gongora

BACKGROUND:

At the June 6, 2018 Commission meeting, Commissioner Gongora referred the subject for discussion to the Sustainability and Resiliency Committee.

Analysis

Recycling and sustainable waste management has been a long standing goal for the City of Miami Beach and many municipalities around the nation. The United States Environmental Protection Agency (EPA) estimates that Americans generate about 254 million tons of trash per year, of which only 87 million tons is recycled. This is equivalent to a 34.4% recycling rate that helps reduce approximately 186 million tons of carbon dioxide equivalent emissions annually and is comparable to removing 39 million cars off the road for a year. Moreover, increasing recycling rates helps reduce the amount of waste sent to landfills and incinerators; conserving natural resources such as timber, water, and minerals; preventing pollution by reducing the need to collect new raw materials; reducing energy consumption; sustaining the environment; and lowering greenhouse gas emissions.

The Environment and Sustainability Department recently completed the first city-wide recycling assessment. The assessment reviewed recycling within commercial and residential properties, government offices, special events, the public right of way, parks/parks facilities, as well as parking garages. In addition to addressing education, policy and interdepartmental issues, the assessment verified that there's an important need to improve upon current bin designs, messaging, and education throughout the city in order to reduce contamination and increase recycling rates. The assessment found that the city has over 2,500 recycling and trash bins in 23 different styles throughout public areas and the right of way. This demonstrates shows a need for collaborative effort when purchasing as well as choosing bins in future projects and initiatives. Studies carried out by organizations such as Keep America Beautiful suggest that there are guidelines that can be followed by municipalities to improve recycling rates within public areas. Attachment A provides an outline of how bin design and location is vital to this effort.

Moreover, understanding human behavior is an important part of establishing a successful recycling program for the public areas. Two factors that must be taken into consideration are the convenience and simplicity of a program. It is important to first design recycling options that are easily accessible to the recycler. This should be followed by providing adequate information that would help guide the public in understanding what is recyclable. Based on the observation of overall recycling practices within the public areas and research on what other organizations/cities have done, it is highly recommended that above guidelines be considered and applied to help improve recycling rates within Miami Beach.

The Sanitation Department recently conducted a one-time survey of select bins in high traffic areas of the city. This survey allowed for glimpse of the effectiveness and contamination rates of certain bins throughout the city. It was found that the bin with the lowest amount of contamination rates was the die cut dual bin design due to its ideal bin design. However, the rate of contamination was at 50% indicating that there is still sufficient room for improvement. Providing a consistent design and messaging will help to promote recycling and litter reduction.

The city is already working with the county to improve waste reduction and recycling on the beach. The city has launched a pilot program with the county and deployed special recycling bins with lids from Government Cut to 14th Street. The program has been a success thus far and city staff is now working with the county to expand the program to other areas of the beach while addressing challenges such as increasing the number of recycling containers, pick up frequency, and locating funding for additional bins and labor costs. At the June 6, 2018 Commission meeting, resolution 2018-30345 was adopted urging Miami-Dade County to expand the program in the upcoming fiscal year.

The recycling industry and market is constantly changing. For example, China has recently banned the importation of non-industrial plastic which created an additional obstacle for managing waste and recycling programs. As a result of this industry change, waste haulers have now lowered the allowable percentage of contamination within recycling containers and certain items may no longer be recyclable. Actions such as these demonstrate the importance of improving waste management programs at a local level through consistency, simplified messaging and outreach.

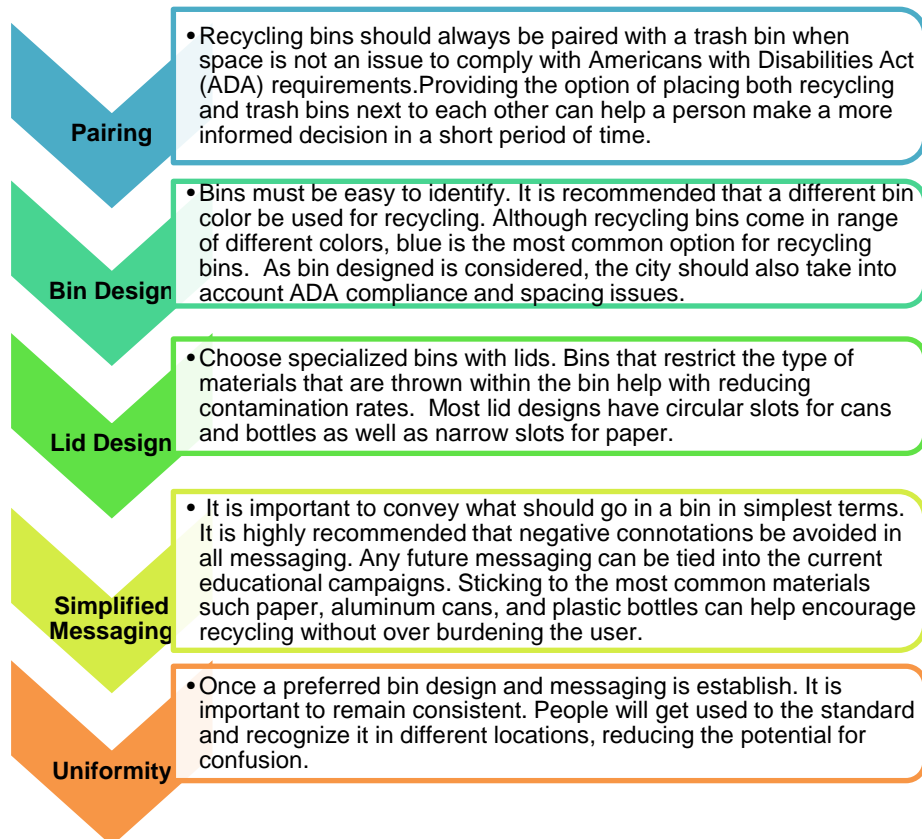
CONCLUSION:

The following is presented to the members of the Sustainability and Resiliency Committee for discussion and further direction. The administration recommends the committee to support an policy requiring consistent design in trash and recycling that work towards waste reduction, increasing recycling rates, and reducing contamination.

ATTACHMENTS:

Description	Type
□ Attachment A: Design Chart	Other
□ Attachment B: Dual Bin	Other

The chart below provides an outline of how bin design and location is vital to this effort:



Ideal Bin Design



MIAMI BEACH

Item 10.
COMMITTEE MEMORANDUM

TO: Sustainability Resiliency Committee Meeting

FROM: Jimmy L. Morales, City Manager

DATE: July 11, 2018

SUBJECT: **DISCUSSION PERTAINING TO LANDSCAPE AND SURFACE FINISH
REQUIREMENTS, TREE MITIGATION, AND TIMEFRAMES FOR TEMPORARY
PARKING LOTS.**

RESPONSIBLE DEPARTMENT:

Tom Mooney, Planning Director

LEGISLATIVE TRACKING:

Item C4N - June 06, 2018 Commission Meeting

SPONSORED:

Commissioner Micky Steinberg

Analysis

VERBAL REPORT AT COMMITTEE MEETING

ATTACHMENTS:

Description

Type

No Attachments Available

MIAMI BEACH

Item 11.
COMMITTEE MEMORANDUM

TO: Sustainability and Resiliency Committee

FROM: Jimmy L. Morales, City Manager

DATE: July 11, 2018

SUBJECT: **SUSTAINABILITY COMMITTEE**

RESPONSIBLE DEPARTMENT:

Dave Doeblen, Committee Chair

Analysis

VERBAL REPORT OF THE MAY 29, 2018 AND JUNE 26, 2018 SUSTAINABILITY COMMITTEE MEETINGS.

ATTACHMENTS:

Description		Type
<input type="checkbox"/>	Attachment A: May 29 2018 Minutes	Other
<input type="checkbox"/>	Attachment B: June 26 2018 Agenda	Other



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Sustainability Committee Chairperson

David Doeblner – Appointed by Commissioner Micky Steinberg

Members of the Sustainability Committee

Jeremy Waks- Appointed by Mayor Dan Gelber

David Doeblner – Appointed by Commissioner Micky Steinberg

Mohammed Islam - Appointed by Commissioner Mark Samuelian

Luiz Rodrigues- Appointed by Commissioner Michael Góngora

Richard Conlin – Appointed by Commissioner Kristen Rosen-Gonzalez

Mike Gibaldi - Appointed by Commissioner Ricky Arriola

Max Litt - Appointed by Commissioner John Elizabeth Alemán

DATE: May 29, 2018

SUBJECT: Meeting of the Sustainability Committee

A meeting of the Sustainability Committee was scheduled for Tuesday, May 29, 2018 at 3:00 p.m. in the City Manager's Large Conference Room, 4th Floor, City Hall.

The attendees were as follows: Dave Doeblner, Jeremy Waks, Luiz Rodrigues, Mike Gibaldi, Mohammed Islam, and Max Litt

City Staff: Elizabeth Wheaton, Director of Environment and Sustainability; Michelle Huttenhoff, Economic Development Manager; Flavia Tonioli, Sustainability Manager; Yanira Pineda, Sustainability Specialist; and Alyssia Berthoumieux, Sustainability Specialist.

Members Absent: Richard Conlin

MINUTES

1. Minutes

- a. **MOTION:** Motion to approve minutes of the April 24, 2018 Sustainability Committee meeting. Motion made by Max Litt, seconded by Mike Gibaldi.

2. Sustainability Committee Work Plan

a. **2018 Items**

- i. Plastic Free Campaign – Ms. Yanira Pineda presented the item. She explained to the committee that Mayor Gelber gave staff direction to develop a campaign and business program that would incentivize businesses to reduce the use of single-use plastic. The campaign would be created by an outside marketing and advertising company and staff would work with local non-profits to help spread the message. Ms. Pineda presented a mock-up of the plastic free Miami Beach webpage which would eventually serve as an information and registration hub for residents, visitors and businesses. Ms. Elizabeth Wheaton explained an ordinance regarding plastic straws was going to first reading at the June commission meeting and the policy implementation would be phased out similar to the polystyrene ban to help the city with building a case. Mr. Dave Doeblner inquired on the possibility of implementing an "auto straw"

initiative/policy which would require businesses to only serve straws upon request. Ms. Wheaton mentioned this effort could be incorporated into the campaign and during the outreach of the ordinance.

- ii. G.O. Bond Projects – Ms. Elizabeth Wheaton presented the item. She provided the committee an overview of the General Obligation (G.O. Bond) and how this process would help fund a series of projects in the city through a public vote in November. Projects could range from sea turtle lighting to installing water retention areas and smart meters in parks. She stressed the G.O. bond has been designed as a public process and the involvement of the community is essential in helping make these projects possible. Ms. Wheaton explained that residents could submit feedback online, at city hall, or during one of the community meetings. She added more information on the process and the projects which could be found on the G.O. bond website. Ms. Flavia Tonioli explained interest rates are low and it would be a great opportunity to get the bonds issued at the moment which would allow the city to save money over time. She added the city has a good credit rating and as climate change and sea level rise risks increase, the rating could potentially change.
- iii. West Lots Discussion – Mr. Max Litt, Committee Member, introduced the item. He expressed the importance of incorporating resiliency into the future West lots projects such as ecosystem services valuation into the economic analysis, increased transit options, increased active open spaces including green infrastructure and stormwater management features. Ms. Michelle Huttenhoff explained to the committee that the west lots project consists of eight city lots from 79-87 streets, parallel to North Shore Open Space Park. The city hired Dover, Kohl, and Partners for the Master Plan for the North beach neighborhood. Several neighborhood charrettes were held and it was determined that the goal for these properties was not typical. She added that Dover, Kohl, Partners has been tasked with compiling recommendations and presenting them at the upcoming June Commission meeting for further direction. She added resiliency has been a dominant topic within the conversation. Jason King with Dover, Kohl, and Partners presented the two different scenarios that were proposed for this area and added that they're working on integrating additional sustainability elements. Luiz Rodrigues, Committee Member, inquired on whether housing options have been considered. Mr. King explained there has been a lot of push back for affordable housing options because the lots are viewed as an opportunity for passive and active green space. Mr. Doeblinger suggested workforce or micro-housing options. Ms. Huttenhoff explained the lots could be a great way to showcase different projects such as blue and green infrastructure or even solar demonstration projects. Ms. Wheaton stressed resiliency should not just be one side component but a series of elements included throughout the entire process while considering different uses and how they could provide the maximum amount of benefits to the community. Mr. King concluded to Committee members the master plan is in planning phase and continues to be open for discussion and ideas.

3. Public Comment

- a. Members of the public addressed the committee.

4. Next Meeting

- a. June 26, 2018



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Sustainability Committee Chairperson

David Doebler – Appointed by Commissioner Micky Steinberg

Members of the Sustainability Committee

Jeremy Waks- Appointed by Mayor Dan Gelber

David Doebler – Appointed by Commissioner Micky Steinberg

Mohammed Islam - Appointed by Commissioner Mark Samuelian

Luiz Rodrigues- Appointed by Commissioner Michael Góngora

Richard Conlin – Appointed by Commissioner Kristen Rosen-Gonzalez

Mike Gibaldi - Appointed by Commissioner Ricky Arriola

Max Litt - Appointed by Commissioner John Elizabeth Alemán

DATE: June 26, 2018

SUBJECT: Meeting of the Sustainability Committee

A meeting of the Sustainability Committee has been scheduled for June 26, 2018 at 3:00 p.m. in the City Manager’s Large Conference Room, 4th Floor, City Hall.

AGENDA

1. Minutes

- a. Review the minutes of the May 29, 2018 Sustainability Committee meeting (5 minutes)

2. Sustainability Committee Work Plan

a. 2018 Items

- i. Plastic Bag and Straw Ordinances (15 Minutes)
- ii. Fleet Assessment (45 Minutes)
- iii. Recycling Assessment (45 Minutes)

3. Public Comment (10 minutes)

4. Next Meeting

- a. July 31, 2018

MIAMI BEACH

Item 12.
COMMITTEE MEMORANDUM

TO: Sustainability and Resiliency Committee

FROM: Jimmy L. Morales, City Manager

DATE: July 11, 2018

SUBJECT: **REVIEW OF RESILIENCE STRATEGY WORKPLAN - PLANNED AND IN
PROGRESS RESILIENCY PROJECTS**

RESPONSIBLE DEPARTMENT:

Susanne Torriente, Assistant City Manager/ Chief Resiliency Officer

Analysis

VERBAL REPORT AT COMMITTEE MEETING.

ATTACHMENTS:

Description

Type

No Attachments Available