

## MEMORANDUM

To: Mayor Dan Gelber and Members of the City Commission  
Joseph Centorino, Inspector General

From: Raul Aguila, Interim City Manager



Date: February 9, 2021

Subject: REVISED City's Written Responses/Explanation and Rebuttals to OIG Draft Report 20-07  
Palm and Hibiscus Island Neighborhood Improvement Project.

Pursuant to City Code Section 2-256 (h) entitled "Procedure for finalization of Reports and recommendations which make findings as to the person or entity being reviewed or inspected,"

**"... whenever the inspector general concludes a report or recommendation which contains findings as to the person or entity being reported on, or who is the subject of the recommendation, the inspector general shall provide the affected person a copy of the report or recommendation, and such person or entity shall have thirty working days to submit a written explanation or rebuttal of the findings before the report or recommendation is finalized, and such timely submitted written explanation or rebuttal shall be attached to the finalized report or recommendation...."**

This Memorandum is intended to serve as our opportunity to summarize the City Administration's position, as it relates to the above referenced OIG Report. A more detailed response, of the City's response to the OIG's report, can be found in the attached document.

Please let me begin by stating that, in my personal opinion, the report prepared by the Office of the Inspector General to look back at the Palm and Hibiscus Neighborhood Improvement Project is clearly written from the perspective of an individual or group of individuals that have only a cursory understanding of the contractual mechanism utilized; the permitting process as required by the South Florida Water Management District and Miami-Dade County Department of Regulatory and Environmental Resources(DERM); and the challenges associated with developing a program that was expected to deliver results outside of the status quo.

Further, and with all due respect to the OIG, there are portions of the report that attempt (whether intentionally or not) to sensationalize and manipulate the information provided by a few individuals, based upon their opinion of the situation. I hope in considering the totality of the OIG report, including the City's responses, these statements will not cloud the facts associated with this Project. The facts are as follows and they are indisputable

- 1) The City entered into a progressive design/build contract with Lanzo Construction that resulted in a Guaranteed Maximum Price authorization by the City Commission for \$38.5 Million. The addition of several scope changes directed by the City Commission has resulted in a final construction cost of \$40.9 Million.**
- 2) The contract required the Design/Builder to comply with all applicable laws and regulations.**
- 3) The nearly completed Project functions as it was intended.**

**4) The regulatory agencies have permitted the vast majority of the private property connections without any additional water treatment requirements.**

Despite the significant amount of conjecture, unsupported allegations, and innuendo in the OIG report, there are no facts to dispute any of these pillars of this Project. That is not to say that the Project, if it was to be done over, could not have been improved. There are multiple lessons learned from the Project, including the need to agree to the harmonization of the public and private properties **in advance of permitting and construction** (this is being done with the West Avenue Project, as a result of lessons learned on Palm and Hibiscus).

**I want to make absolutely clear that the contractual relationship between the City and the Design/Builder is clear that the permitting of the project falls completely within the responsibility of the Design/Build firm.**

Furthermore, documentation was provided to DERM in writing, clearly identifying the modifications of the Project over time. This letter was provided prior to the application for reauthorization of the Class II permit from DERM, not a request for extension of the existing permit, but a reapplication for a new permit.

The subsequent response from DERM stated that it needed a certification from the Engineer of Record that there were no changes to the drainage system. The reissuance of the Class II permit for the Project on May 27, 2018, appears to signify that either DERM was confident that the "private side yard drains" were not a significant modification, or they were comfortable with the information provided that these changes would be addressed as part of the permit close-out documentation.

If the City was truly trying to conceal information or keep these potential future private connections quiet, as the OIG alleges, why were these matters repeatedly discussed in public meetings; submitted in writing to DERM; and directed by the City Commission to the Administration (as well as approved in the backup documentation for the initial construction scope ratified by City Commission on December 9, 2015). Which is more likely: that there was some elaborate deception, or that there was a reasonable evolution of an emerging solution to sea level rise that was new and uncharted territory for all three entities (the City, the Design/Builder, and the regulatory agencies)?

The incorporation of the secondary drainage system on west Palm Island evolved over time in response to the needs of the residents and the public response to the partially completed Project. The initial modification was only the inclusion of stub out pipes from the existing primary drainage system that remained unchanged. Since these stub outs were only to provide for a future connection, with no additional water entering the system, they created no change to the resulting operation of the system. Subsequently the Design/Build team used some of these stub outs as temporary construction drains within the right of way during the construction activities.

Each and every one of these temporary inlets will be either removed or converted to a permanent inlet under a separate permit, **by the completion of the Project**. At this point, with only three or four months until the completion of the Project, almost all the temporary drains have been removed. Only 10 of the 70+ private connections remain to be permitted and, to date, there has been no need to modify the water treatment system originally approved in 2016.

We repeatedly requested that the OIG wait until the Project was completed to finalize its report. Unfortunately, the OIG was unwilling to give the appropriate time to conduct what we believe would have been a more comprehensive evaluation of the **completed** Project.

There were many decisions made that resulted in an evolution of the Palm and Hibiscus Project. All of those decisions were made with the best interest of the residents, and with the clear direction and approval of the appropriate authorities within the City. There was no ill intent, nor any intentional omissions (as can be demonstrated by the lack of clear evidence to the contrary, despite a year of investigation). Although the OIG has expended considerable effort and significant resources to investigate this Project, they are still left with only conjecture and the specter of malfeasance to justify their expenditures. What is troublesome to me is that conjecture and speculation, while they may make for a more tantalizing report, are contrary to the OIG's core mission; namely to objectively identify areas within the project that will result in staff being able to learn from and apply these corrective measures and efficiencies toward future projects. Instead, City staff endured over a year of frankly, hostile and aggressive interviews that gave the investigation an awkward, hostile feel, rather than a thoughtful fact finding inquiry as to what may have been some issues, so that they may be done better in future projects.

Notwithstanding what I believe to have been a flawed and misdirected process, the OIG's Report is what it is. In reviewing the report, the City Administration recognizes that there are lessons learned from this report, that could improve the process of handling many large-scale construction projects simultaneously.

**In addition to the improvements the Administration has already implemented, like the harmonization design and agreements being in place prior to commencement of construction, and the City taking the lead on the permitting of the private connections, we accept the OIG recommendations # 4, 6 and 7 in the report and will take the actions necessary to implement those measures moving forward.**

Again, a Copy of the City's full response to the OIG report, dated January 21, 22 and February 1 is attached as Exhibit "A" to this Memorandum.

# MIAMI BEACH

City of Miami Beach, 1700 Convention Center Drive, Miami Beach, FL 33139, [www.miamibeachfl.gov](http://www.miamibeachfl.gov)

## MEMORANDUM

To: Joseph Centorino, Inspector General

From: Eric Carpenter, Assistant City Manager

David Martinez, Capital Improvement Projects Director

Roy Coley, Public Works Director

Date: January 21, 2021

Subject: Response to Office of Inspector General (OIG) Draft Report 20-07

In addition to this collective report, each of the individuals above prepared their own response, which is also attached to this report for a complete response. In order to respond to this report, which looks back nearly eight years, the Administration of the City of Miami Beach (City), represented by those signatures above, believes that it is important to begin by providing some context.

The City is a low elevation barrier island surrounded by tidal waters; in most cases within a few feet of the existing ground elevation. As such, we find ourselves at the forefront of the battle against climate change and sea level rise. Through many years of study it has been determined that not only do the waters surrounding the island respond to the tides, but also the groundwater elevations mirror the surrounding tidal elevations. As a result the City is not only susceptible to the heavy rainfall and flash flood events that plague all of South Florida but also vulnerable to the problem of "sunny day" or tidal flooding.

Historically the City has relied upon gravity based drainage systems that only function when the coastal waters are lower in elevation than the water in the stormwater collection system. Unfortunately as tidal elevations have increased over the years, the existing gravity based systems became less and less effective at times of high tides; to the point that they experience reverse flow where groundwater or baywater flow backwards through the system and flood the streets and low lying yards. This situation has gotten progressively worse over time, as evidenced by not only the scientific data, but also resident surveys (such as the 2016 Citywide Resident survey by ETC Institute, where 76% of the residents have observed coastal water level increases).

The frequency of flooding events and the existential concerns surrounding them began to draw the attention of national media as well as the insurance industry. While media outlets like Rolling Stone were screaming out "Goodbye Miami" discussions were taking place in Washington DC surrounding the National Flood Insurance Program (NFIP) and the legislation (Biggert/Waters Act) that required a more risk based approach to rate setting, and which may significantly impact the ability of property owners to obtain flood insurance and, consequently,

federally backed mortgages. It became very clear that ignoring the issues and concerns was not a reasonable option.

The City began to take into account the clear changes in the stormwater/tide water dynamics by studying sea level rise in conjunction with the Southeast Florida Climate Compact, South Florida Water Management District, several universities, and our expert consultants. The findings were incorporated into all of our planning efforts, including adoption of the unified sea level rise projections (Attached as Exhibit 1).

Despite significant efforts to learn from other hydraulically challenged areas (sending a team to the Netherlands to find out how the Dutch have learned to live with water; studying the impacts of hurricane Katrina on the New Orleans area), it became clear that the speed with which water can move within the porous limestone subsurface in Miami Beach created a need to find a new approach. As a result, we began to look at other solutions beyond dykes and levees.

The City is an interesting situation as much of what is known today as Miami Beach was filled in with dredge spoils from the bay bottom or sand/limerock that was imported from areas of inland Miami. The island was literally elevated out of the sea in the early 1900s. As Miami Beach approached its 100<sup>th</sup> birthday, it was becoming increasingly evident that the only way it would still be around in another 100 years, was if it continued to elevate ahead of the sea levels through new, alternative, and soundly engineered solutions.

As a result of many discussions with outside experts, community stakeholders and City officials the legislative direction began to evolve with a sense of urgency, commensurate with a world class City; one that is home to \$40 Billion worth of real estate that was at risk of losing significant value due to the advancing seas. The City took bold and necessary steps that changed the approach of many communities in how they planned and implemented the inevitable adaptation to sea level rise. The significant changes in approach created many challenges, including but not limited to, the areas of engineering, public perception and regulatory compliance. This is to be expected with the development and evolution of any transformational change.

The City took great effort to bring the many different stakeholders along on the journey of creating a new playbook for vulnerable communities. As with all change, this was difficult and created situations where those that did not share the same level of concern, or were uncertain that the changes might not be worth the difficult transition, became frustrated and responded negatively. Please see an example of the level of public engagement, as described in the presentation for the Joint Workshop of the Neighborhood and Community Affairs Committee and Mayor's Blue Ribbon Panel on Sea Level Rise and Flooding (Exhibit 2).

The City enlisted the best available science and outside expertise, utilizing two of the top three global design firms (as ranked by Engineering News Record for the past seven years), AECOM and Jacobs Engineering, as the lead consultants during the evolution and reevaluation of this program. The City also solicited the services of a diversity of volunteer experts through the Urban Land Institute to evaluate the City's actions and provide critical feedback on what could be done better. The collective of these nationally and internationally renowned experts all concluded that the approach of the City was prudent and necessary (See attached AECOM, ULI and Jacobs study results attached as Exhibits 3, 4, and 5 respectively).

Potentially the greatest challenge of breaking out of the status quo was demonstrating to the regulatory agencies that the same approach that had continued to become less and less

effective due to changing conditions was not sufficient to overcome the evolving threat of sea level rise. This was further exacerbated by a prior employee of the City that significantly undervalued the role of the regulatory community and ultimately was removed from his position due to his cavalier approach to the need of following the requirements of those agencies. This difficult evolution created situations that allowed for individuals with political motivations to plant seeds of distrust in the minds of the regulatory agencies toward the City. Despite efforts at all levels of the City Administration (including monthly meetings beginning in October of 2016, to open the lines of communication with the regulatory agencies), the City was still unable to overcome the distrust that had been growing as a result of the efforts of those that intended to undermine the program.

The evolution of the stormwater program included the gradual increase in understanding of the impacts to those properties that had historically relied on the flow of water from private to public property. The building code of Florida is clear that private properties are responsible for managing all water that falls upon their property. That perspective did not address the moral obligation to leave all properties in a better position after completion of the work than before. The City underwent this evolution of thought that contemplated the entire City, both public and private. The understanding that both must raise to keep pace with the rising tides is a challenge, particularly during the transition period where one or the other of these processes may get ahead. As a result, and with the full transparency and direction of the City's Blue Ribbon Panel on Flooding and Sea Level Rise and City Commission, the scope of these projects included additional requirements, concepts such as maximum flood stages below the finished floor elevations of homes and the inclusion of private property drainage connections to facilitate the transition period.

The incorporation of the secondary drainage system on Palm and Hibiscus evolved as well. The initial modification was only the inclusion of stub out pipes from the existing primary drainage system that remained unchanged. Since these stub outs were not connected to anything there was no additional water entering the system. Subsequently the Design/Build team used some of these stub outs as temporary construction drains within the right of way during the construction activities (see attached photos Exhibit 6) and more recently properties went through a separate permitting process and received private property drains that will remain until these low lying properties redevelop and are required to elevate out of the floodplain. The impacts of this real time development of solutions created modifications to the Palm and Hibiscus Island Neighborhood Improvement project that could have been handled better, had there been unlimited time to evaluate. The City Administration acknowledged these shortcomings in it's presentation in the Commission Workshop on Resilience held January 27, 2020. A copy of the presentation is attached for clarity (Exhibit 7).

Interestingly, although the City acknowledged many of the findings of this report in a Commission workshop on January 27, 2020, it took nearly another 12 months for the Office of the Inspector General (OIG) to prepare a draft report which echoes the same thoughts. Notwithstanding, the OIG's report includes, in our opinion, a significant amount of innuendo and editorializing which, in our opinion, serves no purpose other than insinuate wrongdoing where none has occurred. Furthermore, after over a year spent on generating this report, despite several requests from the Administration for extensions beyond the 30 business day response time, which happened to fall during the holidays and a global pandemic, those requests were rejected by the OIG. Why are the facts from staff that were involved from the beginning less

important than the conjecture of those who are trying to decipher a very complex issue after the fact?

Finally, the real truth is that there were many decisions made that created an evolution of the Palm and Hibiscus Neighborhood Improvement project. All of those decisions were made with the best interest of the City, and with the clear direction and approval of the appropriate authorities within the City. There were decisions made by the contracted Design/Build firm that are now being questioned by the regulatory authorities, that are open to debate. However, there was no ill intent, nor any intentional omissions, as can be demonstrated by the lack of clear evidence to the contrary; despite a year of investigation.

Furthermore, there was a level of communication at both the macro and micro levels with the regulators, including documentation via letter from Wade Trim on May 10, 2018 (attached as Exhibit 8), clearly identifying the modifications of the project over time. Even though the importance of this letter was brought up in an email from City Manager Jimmy Morales (attached as Exhibit 9) it was limited to an excerpt from the letter buried on page 99 of the OIG's report and glossed over preferring to continue to use words like deception and misrepresentation. This letter, along with the signed application submitted by the City via email on May 15, 2018 was before the response from DERM, stating that it needed a certification from the Engineer of Record stating there were no changes, and well before the September 19, 2018 email from the alleged whistleblower.

There was no information hidden from the regulators, it was provided to them in writing prior to permit renewal being applied for in May 2018 including the reference to the secondary drainage system connections. Furthermore, it has recently been confirmed by the South Florida Water Management District that the introduction of the secondary drainage system will not require any additional documentation or a permit modification.

It appears that individuals from the Design/Build firm, after being intimidated by the approach and the actions of the OIG, (which were extremely aggressive and led to an overall feeling of persecution and degradation of morale for all involved) may have made statements that they thought would insulate them from any responsibility but they are not based in fact, merely opinion.

The reality is the project is nearly complete, the systems in place function as intended, as can be seen by the attached before and after photos of the Coconut Lanes (Exhibit 10), and the regulatory agencies have at this point agreed and permitted almost all of the proposed connections. Those that do not receive permits will not be connected as was originally contemplated.

This entire exercise felt from the start that it was determined to find some issue where none exists, other than what was acknowledged already a year ago. This begs the question of what is the real motivation and intent here? In the end, the OIG's draft report has clearly omitted or manipulated facts to substantiate some objective that we are not privy to, but which, in our opinion, is intended to be punitive and not instructive.

Below please see the responses to the individual findings. The City Administration hopes that the information included herein can help to clarify some if not all of the misguided conclusions in the report.

***Response to Finding # 1.*** *The City and Lanzo, having failed to disclose to DERM and SFWMD the plans they intended to use to build the drainage system, obtained two permits from the regulatory agencies based on false and misleading information.*

This finding speculates, and erroneously concludes, that the City and Lanzo conspired to obtain a permit from DERM and SFWMD utilizing false and misleading information. This finding demonstrates a fundamental misunderstanding of the standard procedures and practices surrounding drainage permits. Unlike a typical building permit process, which requires progressive inspections by State certified inspectors, drainage permits issued by DERM do not follow that procedure. DERM reviews engineered drawings and calculations, and issues permits based on those documents. Once the project is completed, the engineer of record submits signed and sealed as-built drawings, certifies the installation, and requests closure of the permit. At the time of permit closure, changes to the plans, whether resulting from unforeseen field conditions, design changes or owner directed changes, are recorded and documented. It is common and customary for close-out documents to “clean-up” those discrepancies between the permit drawings and the as-built conditions.

When comparing the two plans referenced in this finding, it is evident that the primary differences equate to the proposed roadway elevations and the addition of underground stub outs. The stub-outs, implemented in a proactive response to the evolving strategies to mitigate sea level rise, were included to provide the opportunity for future private projects to have a connection point. As a result, future private projects, which would be required to obtain their own permits, would be able to complete their installation without having to interfere with the main trunk lines or damage above ground installations.

The documents prepared by Wade Trim did not add inlets. This is not a material change, nor does it make the permit documents false or misleading. The DCP and early meetings with DERM clearly established the tributary area of the stormwater collection system for this project to include the entire right-of-way, the entire private, non-waterfront lots, and ½ the private waterfront lots. This did not change between the two sets of documents; is not a material change to the permit; and does not make the permit documents “false or misleading.” Simply stated, the Wade Trim drawings did not alter the functionality, effectiveness, or ability of the project to protect the Bay, and comply with Code. This finding attempts to equate normal and common project evolution to the nefarious presentation of false or misleading permit plans.

In the management of a majority of City projects, the City relies heavily on the experience and expertise of its professional consultants and State certified general contractors, to meet and comply with all regulatory requirements. Under the design-build delivery model for this contract, the design-builder, Lanzo, is responsible for the project development and permit management. This includes, through their sub-consultant(s), not only the preparation of permit drawings, but the management of permit revisions, renewals and closures. This is not limited to the pursuit of a drainage permit from DERM, but includes the design and permitting of water main replacement, sanitary sewer rehabilitation/lining, replacement of street lighting, landscape improvements, paving, signage and striping, and utility undergrounding. In short, this project is much more than a drainage project; it is a neighborhood enhancement project.

Given the above (and the importance of this project), the City, through its procurement processes, endeavored to obtain the services of the most qualified, experienced and capable professionals. Those efforts resulted in the engagement of Stantec, as the City’s design criteria



professional and resident project representative, and Lanzo, as the design-builder. Stantec, formerly known as Corzo, Costello, Carballo, Thompson and Salman (C3TS), was selected through the procurement process to serve as the City's design criteria professional and resident project representative. At the time of selection, as indicated in their response to the Request for Qualifications, C3TS was a local firm that had provided a broad array of services throughout South Florida for more than 24 years. The procurement process for design-builders endeavors to evaluate proposers and select the most qualified team. As evidenced in the response to the Request for Qualifications, Lanzo and Wade Trim, at that time, had more than 20 years of experience working together. In addition, both firms provided proof of meeting all of the Miami-Dade County pre-qualification requirements in the RFQ and accompanying addenda. Wade Trim, founded in 1926, demonstrated experience with design-build projects, and touted the benefits of a regional firm with local offices. In combination, the qualifications, experience, professionalism and contractual requirements for these firms establishes a balance and creates redundant measures to ensure proper project development and compliance with the contract.

In addition to the contractual oversight measures established for the project, the City also relies on State regulations which detail the responsibilities of professional engineers and general contractors. In addition to licensing and statutory requirements, the City's contracts explicitly also require compliance with regulatory agencies.

***Response to Finding #2. The City awarded Lanzo a contract for the project's pre-construction design phase without a finished DCP.***

As defined in Florida Statutes 287.055 "Acquisition of professional architectural, engineering, landscape architectural or mapping services", the purpose of a design criteria package is to furnish sufficient information to permit design-build firms to prepare a bid or an agency's request for proposal or to permit an agency to enter into a negotiated design-build contract. The scope of services for the development of the Palm & Hibiscus Project DCP included landscaping /irrigation, street lighting, replacement of existing watermain infrastructure, improved storm water drainage collection and disposal infrastructure , including swale restoration , curb and gutter, lining of the existing sewer system and other facilities; street resurfacing /pavement markings, repair and/or extension of existing sidewalks to comply with ADA requirements; incorporation of traffic calming features, consistent with community preferences; and the incorporation and coordination of the undergrounding of franchise utilities on Hibiscus Island.

The Design-Builder was selected using the progressive design-build methodology, where the Design-Builder was to initiate the design period, encompassing the completion of the design to the level needed to define the actual construction costs and begin construction activities in the field. This included collaboration with the City during the design process to ensure that design solutions reflected the most efficient construction means and methods, and that the project was to meet the schedule, quality, permitting, and safety requirements; and procurement of long-lead items, conduct field investigations, and early release construction packages. Once the Design-Builder advanced the design to a sufficient level of detail necessary to produce a reliable estimate with well-understood risks and contingencies, the process would culminate in the submittal of a cost of construction (Guaranteed Maximum Price Proposal), to be approved by the City Commission, and fully executed GMP amendment.

Design Build Contracts transfer certain risks from the City to the Design-Builder. The D-B is responsible for data collection, utility coordination, regulatory permitting and compliance, development of construction documents which meet the requirements of the DCP, responsible for design errors and omissions, and ultimately responsible for the full coordination during the design and construction of the project.

The Design Criteria Package and the design completed by the D-B, which was the basis of the GMP included all the components in the scope of work; which, as stated, included more than just the drainage system. The project also included, but was not limited to, water main replacement, sanitary sewer rehabilitation/lining, replacement of street lighting, landscape improvement, paving, signage and striping, and utility undergrounding.

The DCP was completed and provided to the D-B with the best information available at that time and a GMP contract was awarded to Lanzo for all the scope of work included in the project. Concurrently, the City's Storm Water Master Plan was being reviewed and updated to ensure a greater level of service for the residents. The City is steward to community desires and Commission direction. Subsequently, at the beginning of 2014, the City embarked to address sea level rise in order to reduce flooding associated with storms and seasonal king tides and to counter the effects of climate change. It is not uncommon for City projects to introduce changes in direction and policy during the entire development of a project.

***Response to Finding #3.*** *The City overrode the role of the project's Design Criteria Professional and adopted a DCP that did not provide Lanzo with clear guidance for raising road elevations on west Palm Island.*

The original Design Criteria Package (DCP) for the Palm and Hibiscus Islands Neighborhood Improvement project did not take into account the rapidly advancing science surrounding climate change and sea level rise. The original DCP for this project was actually created contemporaneously with the completion in 2012 of the very first Stormwater Master Plan that even took into account the existence of sea level rise. As the King Tide events unfolded during the early stages of the project, it became abundantly clear that the construction activities proposed would not solve even the flooding concerns at the time, not to mention the 30 year planning horizon worth of sea level rise that this project was to mitigate.

The legislative decision to change the tailwater elevation criteria to 2.7 feet NAVD, in February of 2014, would have meant that the roadway elevation of 2.2 feet NAVD, originally proposed for Palm and Hibiscus, would be regularly flooded within the useful life of the improvements. Additionally, the legislative direction to raise streets in February of 2015, gave direction to the Administration to update the goals of the project. Furthermore, the King Tides of September and October of 2015 resulted in significant flooding of the project area and the elevation of the tides (approximately 2.1 feet NAVD) made it clear that the project was being under designed on the sea level rise mitigation component.

It is worth noting that the DCP has many other elements including water, sewer, lighting, landscaping, striping, signage and overhead to underground utility conversion. The stormwater component is just a portion of the overall DCP. In addition, the OIG report clearly identifies that the Final DCP was issued by Stantec on November 5, 2014, with requirements regarding inlet elevations and maximum flood stages, which are clearly measurable criteria for success of the stormwater system consistent with statutory requirements of a Design/Build contractual

mechanism. Any future modifications of the scope once the final DCP is issued can be accomplished by change order as was utilized in this project.

***Response to Finding #4.*** *After deciding to change the project's elevation criteria, the City failed to provide sufficient time and resources for Wade Trim to prepare construction plans for a drainage system designed to connect to private-side yard drains and verify its expected performance.*

It is important to understand the basic premise and genesis of the direction to raise roads. Numerous examples of sunny day flooding throughout the City demonstrated the urgency to address both the short term and long-term effects of climate change and sea-level rise. This was not a matter of nuisance ponding, but a matter of life safety and protection of property. The City needed to take action and the Commission, rightly so, tasked the Administration with developing a solution. This direction put the City on the front line of the battle against climate change and sea-level rise, and garnered world-wide acclaim. Unfortunately, there is no simple solution to this challenge, and in the early stages of the project there were no precedents to follow or case studies to review. The approach to mitigating sea level rise was an evolving process, and resulted in the Palm and Hibiscus project's evolution. Every decision and strategy required innovative, "outside the box," thinking, including changes to policies and ordinances. Everything was on the table. Arguably the single most important and impactful strategy to adapt to sea level rise was raising the roads, and eventually private properties, above the level where tidal changes cause flooding. Raising private properties is a long-term strategy and is being addressed through City legislation requiring new developments to build at higher elevations.

Roadways were/are a different matter that required a more immediate solution. In order to ensure that roads remained accessible to residents, and even more importantly, to emergency vehicles, they needed to be raised. The longer the City delayed the implementation of these mitigation strategies, the greater the risk to life and property. Delays, at a minimum, would impact basic City services and the quality of life of our residents. Recognizing the challenges and urgency, the City Commission took steps to implement the mitigation strategies. Between January of 2013 and July of 2020, the City Commission has heard/discussed more than 200 items related to storm drainage and sea-level rise. It is not insignificant to consider that the Commission's decision to change policy and allow private properties to connect to the public drainage system contradicts countless years of standard practice throughout the County, requiring all projects to manage drainage within their property limits. This was groundbreaking and recognized, as early as June of 2015, that the City would have to make some accommodations for those low-lying properties that had historically shed their rainfall onto the right-of-way. It is worth noting, that this policy establishes the parameters under which a private property is allowed to connect. Over time, as properties develop or re-develop at higher elevations, they will no longer meet those conditions, and the connections will be removed, returning to the long-established policy that each property will be responsible for their own storm water management.

The City approaches all changes to projects in the same manner: determine and verify the validity of the claim for additional compensation and time, and only then evaluate the fairness and equity to the City. It is not uncommon to receive requests for change orders, only to determine that the scope of the requested change falls within the contract requirements,

resulting in a rejection of the request. In this particular case, it is apparent that the project team did not support additional design fees. The rejection was not refuted by the design builder.

While the direction to raise roads represented a change to the design-build contract, it was not a material change to the design and construction of the stormwater collection, treatment and pumping systems. The original DCP established the tributary area of the stormwater collection system and included the entire right-of-way, the entire private, non-waterfront lots, and ½ the private waterfront lots. This criteria did not change with the elevation of the roadway. The system was still required to collect and process the same exact volume of rainfall.

***Response to Finding #5.*** *The City awarded Lanzo a \$38.5 million contract for the build or construction phase of the project without finished construction plans for the stormwater and hardscape sections of the project and no reliable basis for estimating costs.*

In order to understand how a contract could be awarded “without finished construction plans,” the OIG must first understand the project delivery model. As stated previously, the Palm and Hibiscus Islands Project is a ***design-build*** project, where the awarded firm is responsible for the design of the project, among other things. In the design-build delivery model, construction plans are usually incomplete and, with no known exception, never fully completed prior to execution of the contract for construction (GMP). In fact, there are many examples where design-build contracts are awarded for “turn-key” delivery, including all phases of project development and construction, utilizing only a design criteria and concept. Despite the complexity of this project, Design-Build contractors are well versed in this delivery method, and adept at preparing cost estimates and project schedules with limited information.

Again, it is important to emphasize that this project is not a stormwater project, but a multi-faceted neighborhood enhancement project. In addition to stormwater collection, treatment and pumping systems, the project drawings and scope included, watermain replacement, sanitary sewer rehabilitation, streetlight upgrades and replacement, undergrounding of overhead utilities, new roadway curbs, paving, signage and striping. One of the key advantages of the design-build delivery model is the compressed project delivery and acceleration of the timing of the project, with some construction activities taking place prior to the construction plans being completed. For example, in this case the contractor was able to commence water and sanitary sewer scope while the stormwater drawings and permitting were being completed. This is a significant timesaving strategy employed by most design-build firms, reducing overall project duration. The OIG’s assumption that construction plans must first be completed prior to award completely negates this benefit and demonstrates the office’s unfamiliarity with the delivery model.

In contrast to a conventional design-bid-build contract, where the owner is responsible for the design and engineering documents, design-build transfers a great deal of risk from the owner to the design build firm. The transferred risk includes constructability, design development, and permitting, among other items. The design builder knowingly and willingly accepts these risks, based on their level of comfort, experience and ability to estimate the construction costs. In this case, the design-builder obviously felt it had enough information to provide a cost estimate and schedule, or it would not have assumed those risks by providing a GMP proposal. The OIG’s report, again, fails to understand the nuances of this project delivery model.

It is also apparent that the OIG does not fully understand the processes or efforts employed by the City in the pursuit of fulfilling the fiduciary responsibility entrusted by the residents and City Commission. Again, the City establishes redundant measures to inform and guide the project. In the case of this project, the City relied on two different sources to verify the fairness and equity of the design builder's GMP proposal. Concurrent to the contractor's preparation of the GMP, the City contracted US Cost, Inc., a third-party cost estimating consultant, to prepare an estimate using the exact same documents available to the design builder. US Cost was engaged through the City's RFQ 30-10/11, Constructability, Cost and Value Engineering Review Services contract. US Cost, in their response to the RFQ, demonstrated 28 years of worldwide experience providing estimating and construction management services. At no time did the design builder or US Cost indicate that the information available was insufficient to provide a reliable cost proposal.

As a second source of verification, the City's design criteria professional, after reviewing both cost estimates, prepared its professional recommendation. Following the receipt of the GMP, the estimate from US Cost and the DCP's recommendation, the City presented the GMP to the City Commission, which authorized the City to negotiate with the design builder. As with all projects, the City endeavors to ensure the best possible negotiations including contractual terms for the City and its residents. The same is true here, as the design-builder's initial GMP proposal exceeded \$43M. Utilizing the estimate from US Cost and the professional recommendation of the DCP, \$34.9M and \$34.5M respectively, the City negotiated a \$38.5M construction cost, inclusive of owner's project contingency.

As a result of following the proper protocols, the City was able to ensure that negotiations were conducted in the best interest of the City and its residents. The GMP was a negotiated proposal, under the authorization of the City Commission, based on best information available.

***Response to Finding #6.*** *The City used CAS Engineer of Record Rubio and his 100% Final Design plans to obtain permits from SFWMD and DERM after deciding to discard those plans; after the permits were issued, the City used a distinctly different set of construction plans prepared by former Wade Trim Vice President Holly Kremers to build the stormwater drainage system on west Palm Island.*

Through the award of a design-build contract, the City transfers certain responsibilities and risk from the City and its consultants to the design-builder. Among those are design development and permit management. Through the City's procurement process, the City entered into a design-build contract with Lanzo Construction. Articles of the Agreement read as follows:

*Article 1.9- The design builder will be responsible for the professional services, design, supply, provision, construction, installation and performance of all equipment, materials and systems offered, and shall in no way be relieved of the responsibility for the performance of the project*

*Article 2.1- The Design-Builder shall perform the design and construction of the Project, as defined in the City's Request for Qualifications No. 251-2013TC including, without limitation, the Design Criteria Package...In summary, the Services include, but are not limited to, providing all resources and professional services to perform the design and construction of the Project such as planning,*

*technical investigations, engineering, design, permitting...testing and commissioning..."*

*Article 2.3- The Project includes furnishing all planning, engineering, design and permitting services... It will be the sole responsibility of the Design-Builder to secure all permits not provided by the City, and to provide signed and sealed design documents for construction and installation which comply with all regulatory requirements, Applicable Laws, and the Contract Documents.*

As a result of the Agreement, Lanzo entered into a contract with Wade Trim. The City has no contractual relationship with Wade Trim or any of Lanzo's sub-consultants or sub-contractors. How Lanzo proceeded to get this project designed, permitted and completed is entirely a means and methods concern. As long as they meet the requirements of the RFP and the DCP, they are in compliance with the contract. This includes the preparation and pursuit of permits.

Given that the City is not in contractual privity with Lanzo's subconsultants or subcontractors, it is erroneous to conclude that the City had the ability to dictate permit strategy or manage Lanzo's consultants, nor was it the City's responsibility to do so. The undeniable truth is that design-builders and engineers alike are in business to earn a living and make a profit. At the end of the day, their ability to cover their overhead and sustain their operation is a management concern, and how they do that is not a condition of the contract. In this case, it appears that Lanzo's prime consultant, Wade Trim, felt that it was necessary to reduce the overhead of an evolving and developing project by employing their own internal forces rather than continuing to pay additional fees to their sub-consultant. The City did not, at any point, **decide** to discard the Rubio plans. This was simply a change of sub-consultant by Lanzo and Wade Trim. For this project, in their capacity as the Prime Professional exercised and managed their option to sub-consult portions of their work to a Delegated Engineer. Under the Florida Administrative Code, 61G15-30, it is the Prime Professional's responsibility to retain and coordinate the services of such other professionals as needed to complete the services contracted for the project.

Further, this finding assumes that construction projects of this nature occur in a vacuum, where changes in an evolving sea-rise mitigation strategy do not impact ongoing project activities. If that were the case, all project activities would stop while strategies and policies are developed and finalized. The reality of construction projects, for a variety of reasons, is that projects are often fluid, changing and evolving. The project owner's priorities and parameters, as occurred in the Palm and Hibiscus project, often change during the design development phase. The City's contract clearly places the responsibility of design development, permit management, and code compliance on the design-builder.

To that end, the City relies heavily on the experience and expertise of the professional consultants involved in the project. The City, through its procurement processes, endeavored to obtain the services of the most qualified, experienced and capable professionals. Those efforts resulted in the engagement of Stantec, as the City's design criteria professional and resident project representative, and Lanzo, as the design-builder. In combination, with a combined experience of more than 150 years, the qualifications, experience, professionalism and contractual requirements for these firms establishes a balance and creates redundant measures to ensure proper project development and compliance with the contract.

**Response to Finding #7.** *The April 2017 resolution authorizing the City staff to develop an “engineering solution” and policy allowing the connection of private-side yard drains to the public drainage system was developed by the responsible City officials to provide after-the-fact legal justification for construction of a drainage system with unpermitted right-of-way drainpipes that were intended to provide future connections for privately owned drains.*

City Resolution R-2017-29840, approved on April 26, 2017 was not the first legislative direction that addresses a private stormwater connection. The first direction was at the June 10, 2015 City Commission meeting (Agenda Item R7Q) allowing the connection of the private stormwater system for the Marriott Residence Inn at 17<sup>th</sup> Street and West Ave, to the City stormwater system along 17<sup>th</sup> Street. The direction during this meeting was to provide a private stormwater connection for a single property and, as quoted from the City Commission Meeting “After Action Report”; “Until The City Approves Code Modifications To A Citywide Storm Water Connection Fee Program”. This, combined with the direction to size the stormwater systems to account for all of the inland lots and half of the waterfront lots, clearly demonstrates the direction if not the intent of the City Commission to include private properties in the adaptation plans, and not as an after the fact approval of modifications to the program. This is also refuted by the language in Resolution R-2017-29840 that it was intended to be a reaffirmation of the direction previously provided by the Commission.

**Response to Finding #8.** *The City began the large scale installation of private-side yard drains on west Palm Island and decided not to disclose the new phase of construction to the SFWMD and DERM, turn over an updated version of the Kremers plans, or obtain modification of the existing Class II permit to install private-side yard drains.*

First and foremost, this finding is demonstrably prejudice, stretching facts to achieve the needed confirmation bias for this report. There was no “large scale installation of private-side yard drains”. In fact, there were only eight building permits authorized for drainage connections from private properties. To provide perspective, this was eight connections out of approximately 300 properties in the Palm and Hibiscus project – less than 3% of the properties received private-side yard drains.

Assuming that the report was referring to all temporary construction drains, the finding essentially makes one fundamental claim – that the construction of the drains was purposely concealed from regulators. Setting aside, for a moment, all other issues, this finding exemplifies the most fundamental flaw in the OIG report – the finding is patently speculative.

**The OIG cannot substantiate a claim that any error in judgment was deliberate, or to use the OIG’s own words: “knowing, considered, and intentional”.** Not only can this claim not be substantiated, but it is unfounded.

The report fails to mention that immaterial project changes are ordinarily reconciled through permit modifications at project close out. While the significance of the yard drains may be arguable, the professionals working on the project clearly arrived at the consensus that these drains were immaterial.

The total project cost is \$40,956,000. The permanent right of way drains and private side inlets, including associated harmonization, were \$1,615,000 or less than 5% of the total project cost. Any large public infrastructure project as complex as Palm and Hibiscus incurs a 5% change in scope.

Moreover, Palm and Hibiscus was a design build project, where, by definition, the plans were not fully developed. It is not only reasonable, but expected, that a professional would deem a 5% change immaterial.

The temporary construction inlets were part of the contractors means and methods. Contractor means or methods are within the discretion of the contractor to implement in order to achieve a contract objective. Using the Palm and Hibiscus project as an example, the contractor could not adversely impact the level of service of the stormwater system while working on the system. The contractor decided that the best way to ensure that properties did not flood during construction was to construct temporary construction inlets. Means and methods are not dictated by the owner of a project and doing so could expose the owner to undue liability. In fact, as noted in the summary judgment of *Juno Indus. v. Heery Int'l*, 646 So. 2d 818, 822 (Fla. 5th DCA 1994), "The Contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures, and for all safety precautions and programs, in connection with the Work as well as for coordinating all portions of the Work."

From a technical perspective, the original permit application, and the plans enclosed therein, defined the tributary area. An example of the tributary area is shown in Exhibit 11. The addition of the yard drains did not change the tributary area. Thus, not only was the change immaterial it was nonexistent from a runoff perspective. **The same amount of water was being captured by the system – if the original plans collected a drop of water, so would the revised set.**

It therefore stands to reason that the lack of permit revisions are not indicative of willful deception, but rather representative of ordinary project management decisions.

Perhaps more important is the myriad testimony from City Staff, the Engineer of Record, and the Licensed Contractor that the drains were considered a temporary condition.

In Mr. Carpenter's own words:

"As we were going through the process, we realized that raising the roads up could potentially put some of these properties in a little bit different situation during construction activity. So we installed approximately 88 temporary construction drains while we were out there."

In the OIG's own words:

Referring to Mr. Carpenter – "On August 5, 2019, he signed a letter to Spadafina that said the 85 unpermitted right-of-way drain connections were temporary construction drains that were never intended to be part of the drainage system"

In the Engineer of Records (Kremer's) own words:

"88 drains that you've been hearing about, these are temporary construction drains, there was one installed in the right-of-way in front of each property on North and South Coconut."

These are just a few of numerous examples provided by OIG



Whether these drains should have been permitted or not is another issue. However, it is evident that all parties believed these drains to be immaterial or temporary and therefore not need a permit.

In addition to the above, should this finding be discussing the eight yard drains that were placed on private property, these drains did not receive a City permit for the construction of stormwater drainage systems. Instead, building permits were issued for the construction occurring on private property.

Over the course of normal business, Public Works reviews building permits that affect its infrastructure. Approval was granted to construct piping on private property, which falls under the purview of the Building Department, and to connect to the City's stormwater system in a manner acceptable by the systems owner – in this case, a system that is wholly owned by the City of Miami Beach.

This in no way eliminated the need for the owners to meet other regulatory requirements. In fact it is common practice for a utility to issue permits prior to obtaining DERM permits. For example Sanitary Sewer Permits are approved by the Owner prior to DERM issuing the Sanitary Sewer Extension Permit. The City and County regularly approve sanitary sewer plans ahead of DERM for private developers.

Therefore, independent of DERM's approval to construct a drainage system it is the City's sole right to allow connections to its public stormwater system. Without DERM's approval a drainage system cannot be constructed and without the City's approval, a connection cannot be established.

Statements that insinuate the contrary, such as the one below, are misleading and, if not intentionally malicious, exemplify the fundamental lack of understanding by the authors of the OIG report.

"No municipality in Miami-Dade County has the legal authority to issue permits for the construction of stormwater drainage systems, temporary or otherwise, that empty into a body of water such as Biscayne Bay.

Finally, to paraphrase the OIG, Lanzo neglected its contractual duty to obtain permits, Stantec neglected its contractual responsibility to monitor permits, Wade Trim neglected its responsibilities under Florida law and rules that apply to licensed professional engineers, former City Engineer Mowry exhibited a poor attitude toward permitting agencies, and engineers in DERM's Water Control Section failed to notice discrepancies in information they received from the City. These are all professional and licensed staff; no direction would supersede their requirement under State or County Code to properly permit their work. To imply that there was a coordinated conspiracy to the contrary is outlandish, lazy, and unbecoming of a professional tasked with improving the City of Miami Beach.

***Response to Finding #9.*** *In applying for a renewal of the Class II permit, the City again decided not to give DERM recently updated As-Built plans and new drainage studies. Instead, the City obtained a permit based on the serious misrepresentation that the City and Lanzo had used Rubio's plans to build the drainage system and that no significant changes had been made since 2016.*

This finding misrepresents the contractual relationships and responsibilities of the project team and does not appear to consider the ordinary drainage permitting and installation protocols.

The City did not **decide**, as the finding indicates, “not to give DERM recently updated As-Built plans and new drainage studies.” The truth is that the permit management activities and regulatory compliance lie with the design-builder and their engineer of record. Both of which have considerable experience in designing, permitting and constructing drainage systems. In its capacity as the engineer of record, and given their extensive experience, Wade Trim served as the project’s “code and regulatory expert.”

The Class II permit renewal application package was prepared and submitted by the project’s engineer of record, Wade Trim. The OIG’s report cites that submittal as a “serious misrepresentation,” or, as speculated in other sections, a “knowing, considered and intentional” attempt to conceal project information from regulators. The glaring omission in this finding, and indeed the report, is that it fails to consider that immaterial changes are ordinarily reconciled through permit modifications at project close-out. Most notably, this finding relies on the Wade Trim letter, dated May 17, 2018, indicating that no significant changes had taken place. However, it fails to provide even a cursory examination of the second paragraph of that same letter, which reads:

*The City of Miami Beach has recently revised the project’s stormwater design criteria, which we are currently evaluating. Should the new criteria result in any significant changes, as they relate to the original signed and sealed plans and drainage calculations, they will be reflected in the project permit certification documents.*

This paragraph clearly indicates an evolving project, in response to the City’s efforts to combat sea-level rise. More importantly, this letter openly indicates the engineer of record’s estimation that changes incurred to date were immaterial to the permit, as well as their intention to reconcile any changes as part of the project close out. DERM took no exception with the stated intent and issued the permit because, as indicated previously, this approach is part of the ordinary protocol for drainage system design, permitting, and close-out.

Irresponsibly, the author of the Report decided to omit additional communication between the engineer of record and DERM, related to the issuance of this permit, and in fact uses the term “misconduct,” to describe the application for this permit as an act of “commission and omission.” The reality, omitted by this report for unknown reasons, is that the permit application to DERM included a letter dated May 10, 2018, from the engineer of record, providing a narrative whose purpose was to assist DERM in their review of the permit. The EOR’s third paragraph reads:

*City provided a change in directive requiring installation of private-side yard drains for properties that have finished floor elevations below the adjacent crown of road. The original stormwater design criteria required that the drainage area be sized to account for and reflect the actual contributory area at a minimum all road rights-of-way, 100% of interior (landlocked) lots and 50% of waterfront lots. Thusly there is enough capacity in the system to account for this additional stormwater load, particularly in light of the fact that few of the properties fall within this new City criteria.*

*Additional City-directed changes will be submitted via revised plans for Palm Island and Hibiscus Islands during permit certification submittals; these mainly relate to change of pipe alignments to reduce impact to existing vegetation, addition of a secondary drainage system to reduce potential flooding in isolated*

*areas, and lowering of proposed elevation of roads to reduce harmonization impacts to private properties.*

Changes to the plans were disclosed, documented to be immaterial to the parameters of the permit, and proposed to be fully captured during permit certification submittals.

The OIG's report erroneously concludes that the installation of drainage inlets not reflected in the permit documents, is a significant and material change to the design. Further review and understanding of the project's evolution refute that conclusion. Former Wade Trim vice president Holly Kremers explained to the City Commission on October 30, 2019, that "88 drains...are temporary construction drains...installed in the right-of-way in front of each property on North and South Coconut Lane." Lanzo installed these additional inlets as a temporary and interim condition to manage water during construction activities, and before the system was placed into service. Given the complexity of the project, implementing these temporary measures was reasonable.

In an executive summary dated October 22, 2019, the Lanzo/Wade Trim team further explain:

*One construction challenge was ensuring that properties were not made susceptible to increased flooding during construction of the elevated streets before the new drainage system was complete and placed into service. The design-build team's solution for this was to place a temporary construction drain within the ROW in front of each property on North and South Coconut Lane to convey stormwater away from the property as needed during construction. The drainage system was not connected to the pump station and in service during the period of intended use of these temporary construction drains, and each drain was intended to be abandoned in place prior to project completion. Though these temporary construction drains were not shown on the design drawings, it was not the intent of the City or the design-build team to deliberately violate any Class II permit agreements or policies, as the drains would have been removed prior to start-up of the pump station and conveyance of stormwater to the Bay*

Again, it is apparent that the project's code expert did not consider these inlets to be a significant, material change to the design. The reason for that estimation is simple: these additional inlets did not alter the tributary area nor the volume of water to be collected and treated. From a technical perspective, there was no change. It should be noted that the report erroneously refers to additional inlets as "**private side yard drains.**" **Additional inlets were installed within the right-of-way, and not on private property.**

As has been stated previously, City officials and the Commission were aware that as the City developed its policies to combat sea-level rise, some accommodations would have to be made to protect low-lying properties. What was not certain, and remains under discussion even to this day, is the exact manner in which those accommodations would take form. An examination of the project's evolution shows the progressive responses to the developing stormwater drainage criteria; from proactive installation of underground connection points, to additional inlets within the right-of-way, to the eventual design and permitting of inlets within private property.

As was always intended, following ordinary and customary protocols, the project has commenced the process of closing the drainage permit. As of the date of this writing, January 8, 2021, the Engineer of Record has submitted the permit closure for Hibiscus Island, which has

been reviewed, inspected and accepted by DERM. Permit modification for Palm Island has also been submitted and is currently under review by DERM. Once the permit modification is accepted, the permit closure will follow, and the City's public stormwater drainage system will be complete.

Following the direction received from the City Commission, the project team has evaluated 112 properties and determined that 85 properties qualify for connection to the City's drainage system, 23 of which have declined the installation of an inlet. The engineer of record has completed the design for 62 additional inlets; 11 within the right-of-way and 51 on private property. Of these, DERM has issued permits for 59. Following the receipt of permits, Lanzo commenced the installation of those inlets, and as of this date, has completed the installation of 45 inlets, and has abandoned/removed 24 of the temporary inlets.

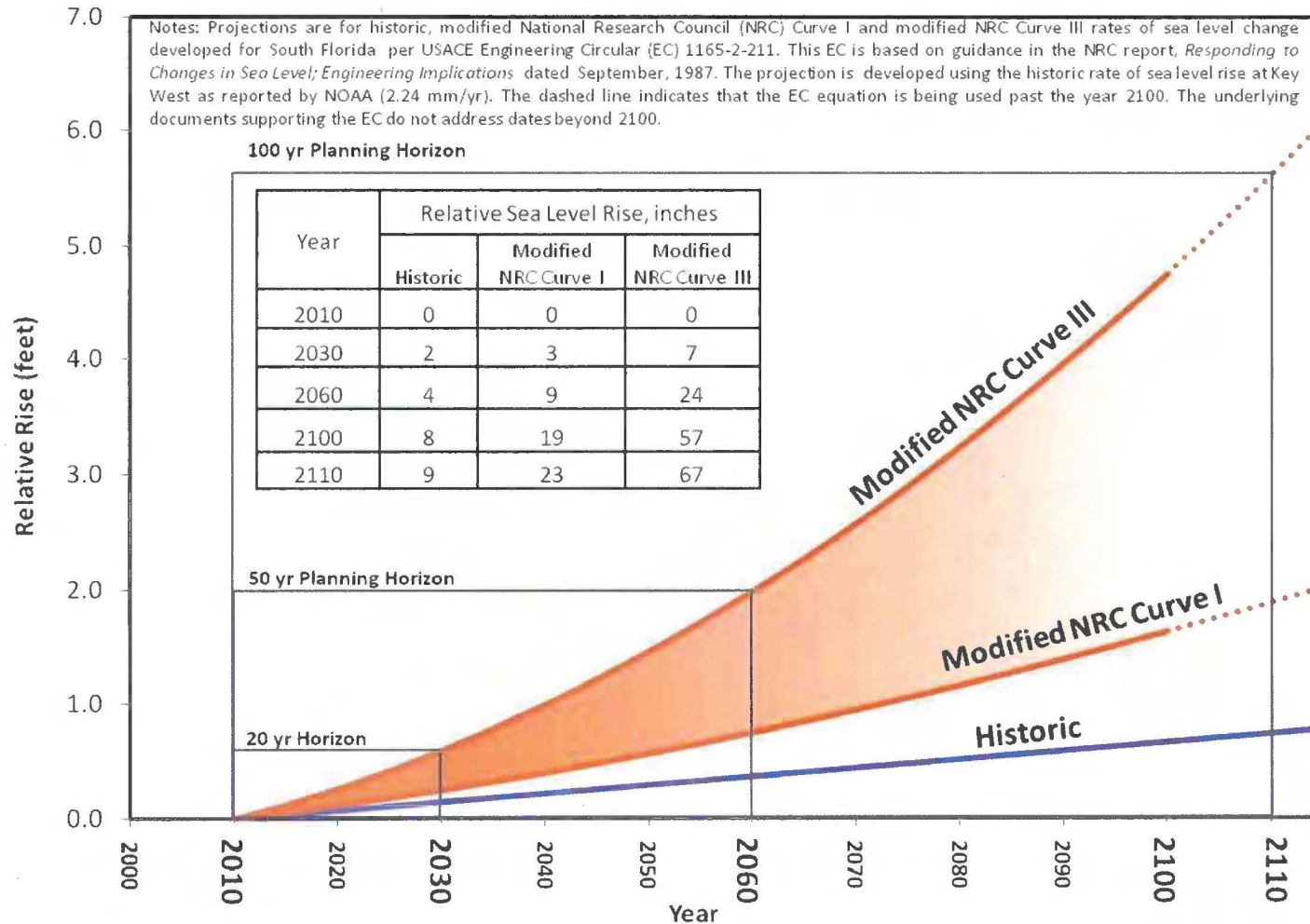


Exhibit 1



**Figure 3. USACE Sea Level Rise Projection for the South Florida Region through 2110.** Unlike the SE FL unified sea level rise projection developed by the Work Group shown in Figure 2, this graphic is developed directly according to the USACE Guidance document and illustrates the projection beyond 2100. With time, the projection increasingly diverges from the historic rate of rise.

## Relative Sea Level Rise Scenarios for South Florida







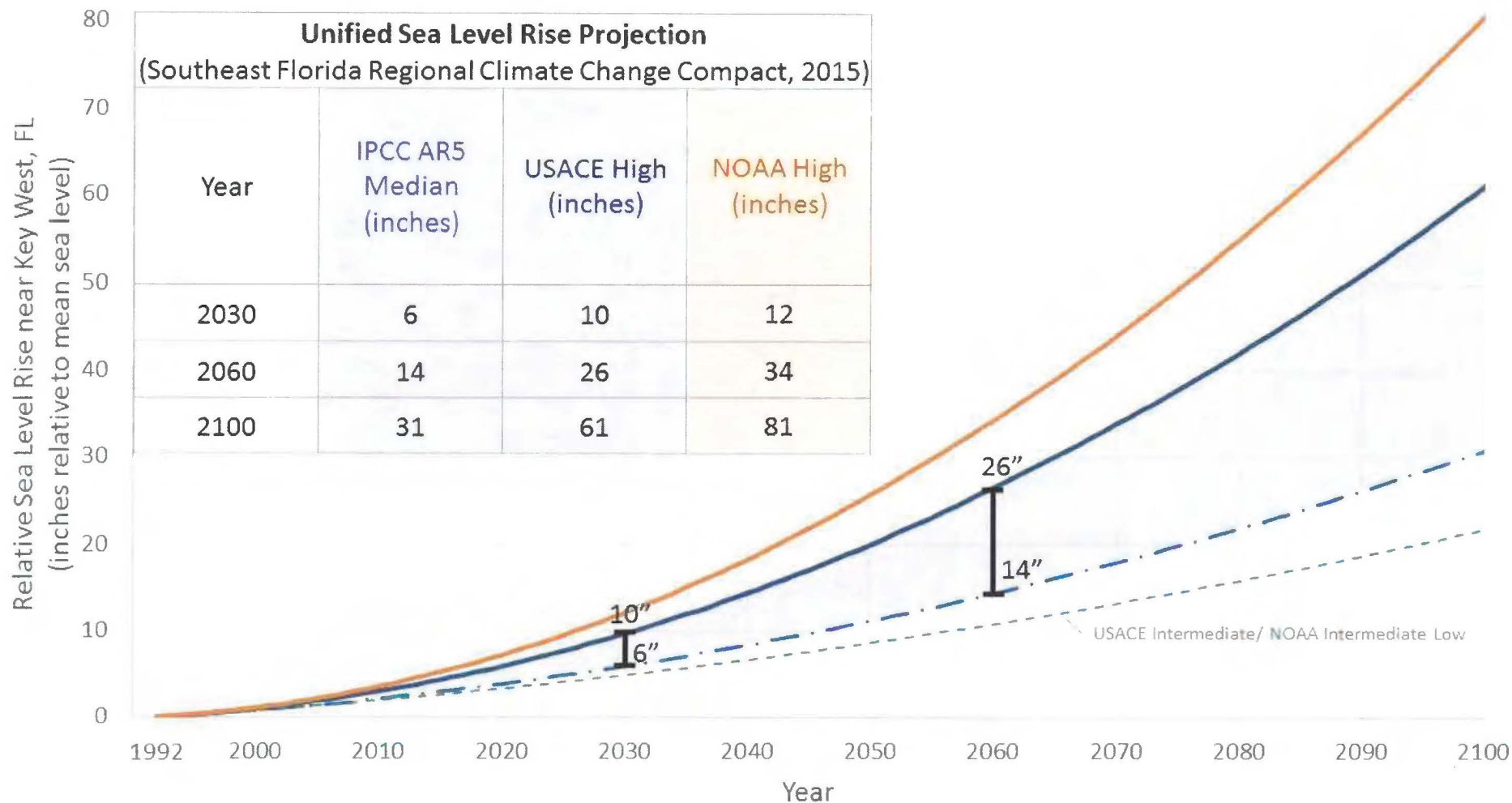
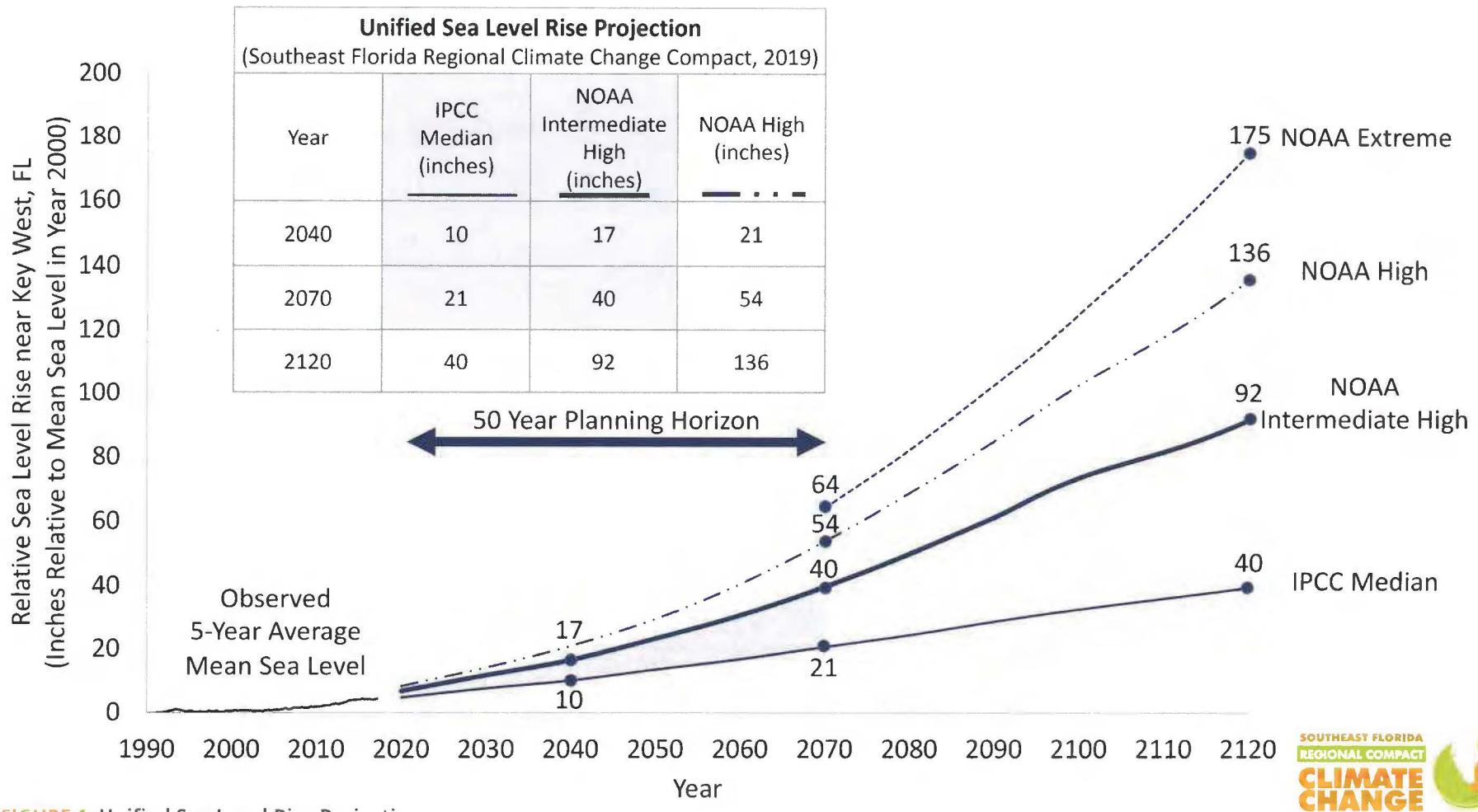


Figure 1: Unified Sea Level Rise Projection. These projections are referenced to mean sea level at the Key West tide gauge. The projection includes three global curves adapted for regional application: the median of the IPCC AR5 RCP8.5 scenario as the lowest boundary (blue dashed curve), the USACE High curve as the upper boundary for the short term for use until 2060 (solid blue line), and the NOAA High curve as the uppermost boundary for medium and long term use (orange solid curve). The incorporated table lists the projection values at years 2030, 2060 and 2100. The USACE Intermediate or NOAA Intermediate Low curve is displayed on the figure for reference (green dashed curve). This scenario would require significant reductions in greenhouse gas emissions in order to be plausible and does not reflect current emissions trends.





**FIGURE 1: Unified Sea Level Rise Projection**

These projections start from zero in year 2000 and are referenced to mean sea level at the Key West tide gauge. Based on the 5-year average of mean sea level, approximately 3.9 inches of sea level rise has occurred from 2000 to 2017 (see historic sea level section of guidance document). The projection includes global curves adapted for regional application: the median of the IPCC AR5 RCP 8.5 scenario (Growing Emissions Scenario) as the lowest boundary (solid thin curve), the NOAA Intermediate High curve as the upper boundary for short-term use until 2070 (solid thick line), the NOAA High curve as the upper boundary for medium and long-term use (dash-dot curve). The shaded zone between the IPCC AR5 RCP 8.5 median curve and the NOAA Intermediate High is recommended to be generally applied to most projects within a short-term planning horizon. Beyond 2070, the adaptability, interdependencies, and costs of the infrastructure should be weighed to select a projection value between the IPCC Median and the NOAA High curves. The NOAA Extreme curve (dash curve) brackets the published upper range of possible sea level rise under an accelerated ice melt scenario. Emissions reductions could reduce the rate of sea level rise significantly.



Exhibit 2



# JOINT WORKSHOP

NEIGHBORHOOD AND COMMUNITY AFFAIRS COMMITTEE AND  
BLUE RIBBON PANEL ON SEA LEVEL RISE AND FLOODING



CITYWIDE NEIGHBORHOOD IMPROVEMENTS AND  
STORMWATER PROGRAM

July 12, 2017



- & RESIDENT PERCEPTION- OUTREACH AND ENGAGEMENT RESULTS
- & FEEDBACK LOOP AND OUTREACH TOOLS
- & FLOODING HISTORY
- & STORMWATER PROGRAM TIMELINE
- & PROJECT TIMING DISCUSSION

# WORKSHOP OUTLINE

To continue the stormwater, water, wastewater, and road infrastructure investments for flood risk reduction, climate adaptation, and overall improved services in a manner that ensures resident collaboration, mobility, livability, and quality of life for today and our resilient and sustainable future.

# GOAL



# RESIDENT PERCEPTION

WATER MANAGEMENT  
FLOOD PROTECTION

66  
436

HOUSING SAFE AND  
AFFORDABLE

73  
447

ENVIRONMENT

94  
708

URBAN MOBILITY

107  
737

CLIMATE CHANGE RISK  
ASSESSMENT AND ACTIONS

130  
986

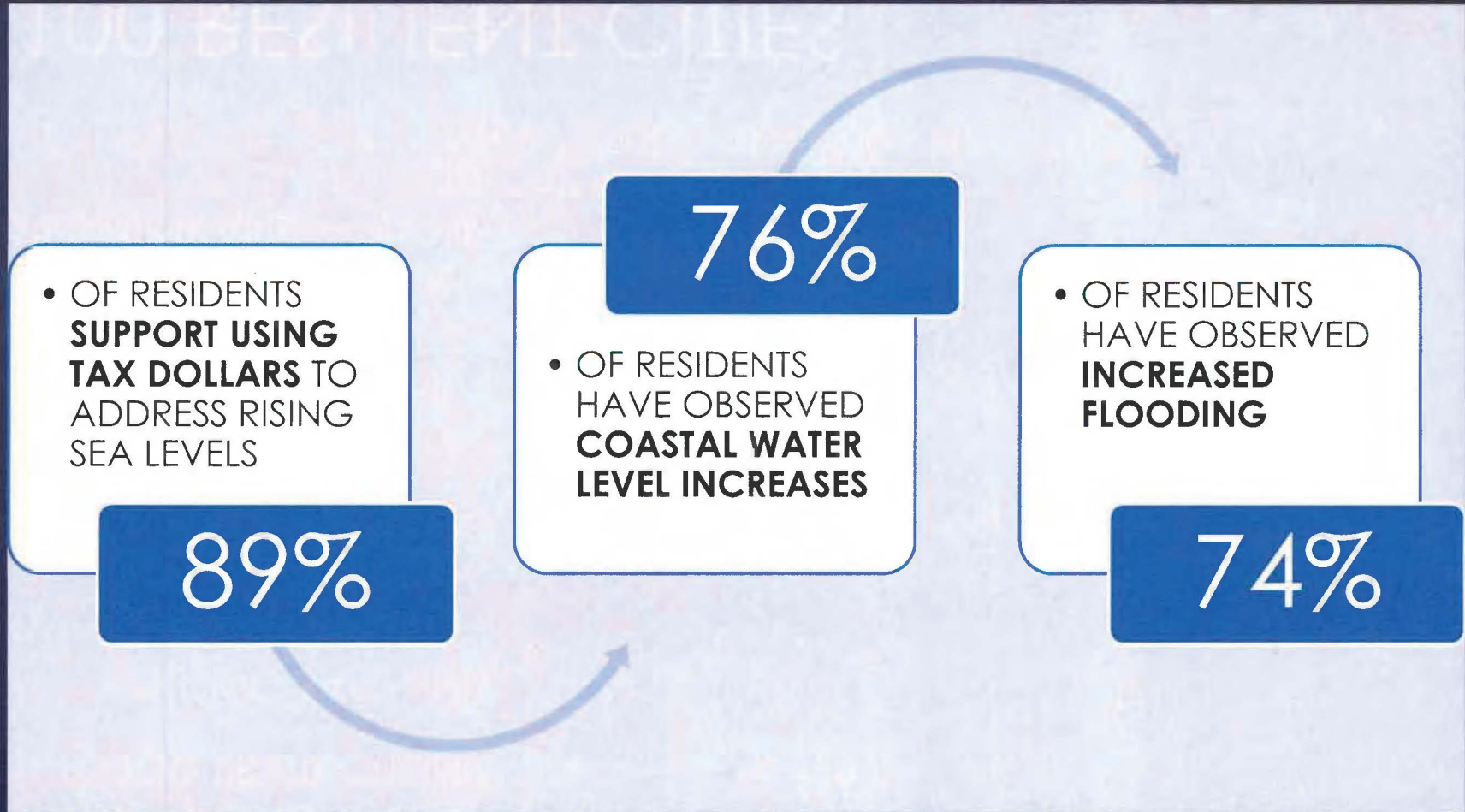
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MIAMI BEACH  
GM&B

# 100 RESILIENT CITIES QUESTIONNAIRE- TOP 3 PRIORITIES

MIAMI BEACH 342 PARTICIPANTS  
GREATER MIAMI AND THE BEACHES (GM&B) 2031 PARTICIPANTS

# RESIDENT PERCEPTIONS SEA LEVEL RISE AND FLOODING STATISTICALLY VALID SURVEY

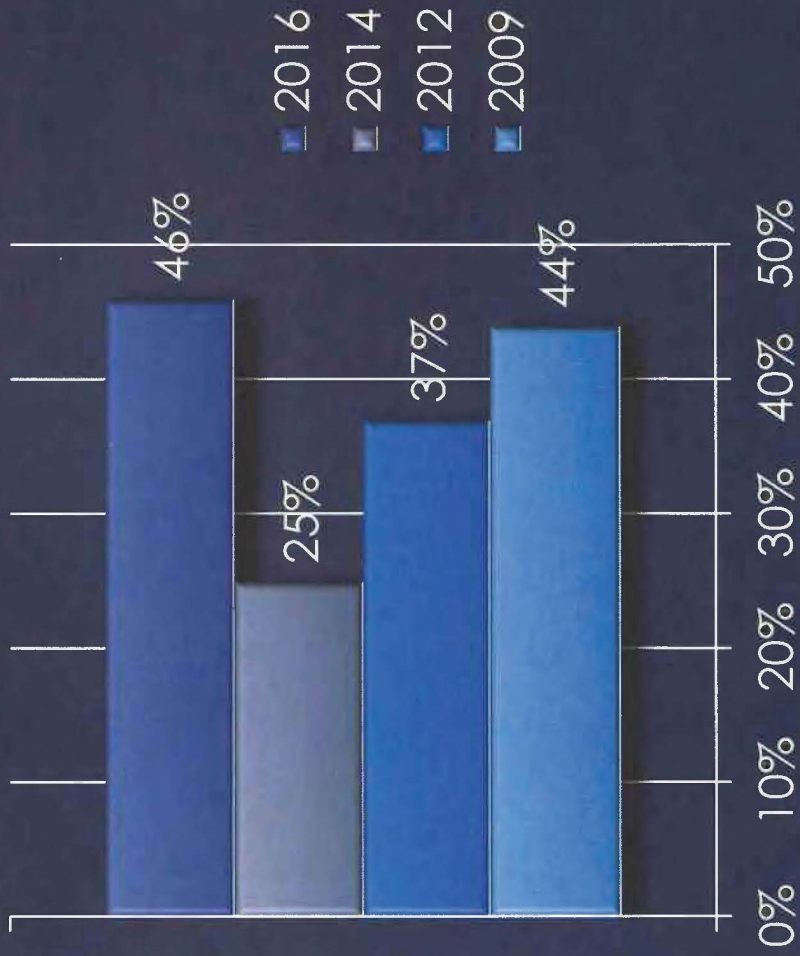


2016 CITY OF MIAMI BEACH RESIDENT SURVEY  
ETC INSTITUTE

# #1

STORMWATER AND DRAINAGE IS THE MOST IMPORTANT CAPITAL IMPROVEMENT PROJECT FOR RESIDENTS

RESIDENT SATISFACTION WITH EFFORTS TO MANAGE STORMWATER DRAINAGE/ FLOODING



2016 CITY OF MIAMI BEACH RESIDENT SURVEY  
ETC INSTITUTE

# HIGHEST PRIORITIES FOR RESIDENTS

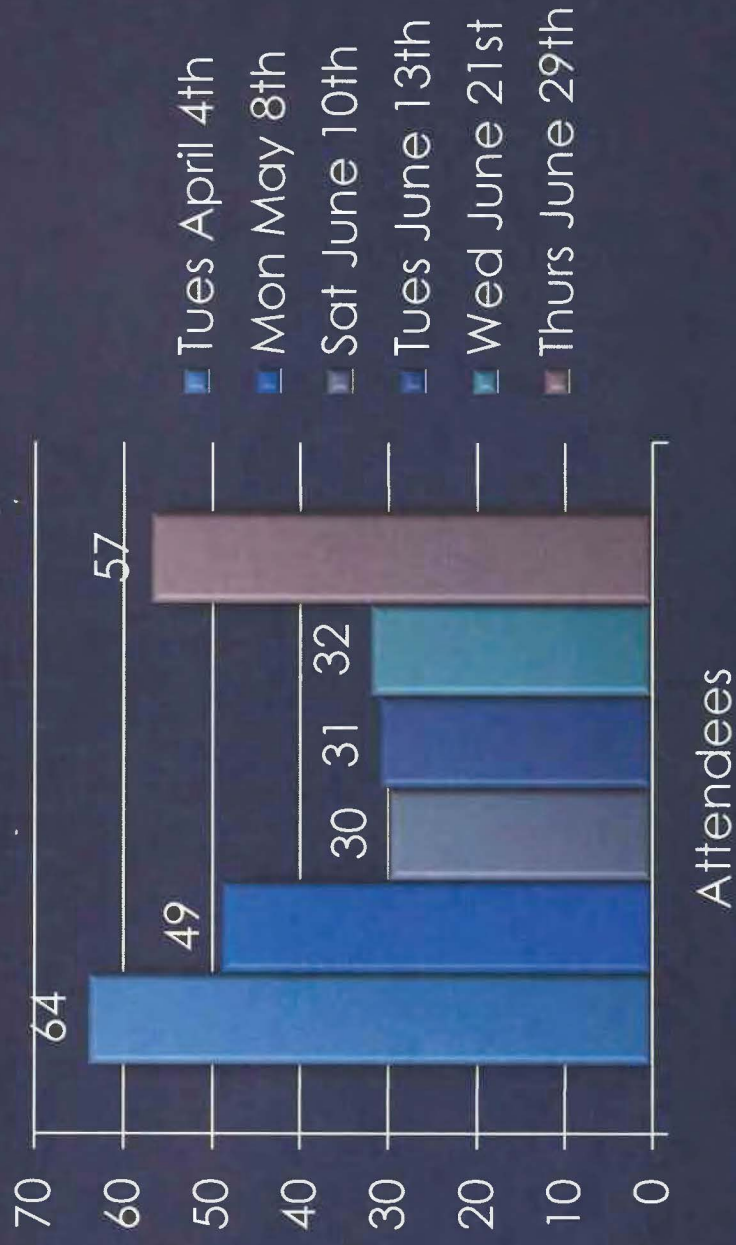
STATISTICALLY VALID SURVEY

1. THE JOB THE CITY IS DOING TO ADDRESS  
HOMELESSNESS
2. CLEANLINESS OF NEIGHBORHOOD  
STREETS
3. EFFORTS TO MANAGE STORMWATER  
DRAINAGE/ FLOODING
4. CLEANLINESS OF CANALS/ WATERWAYS
5. PERFORMANCE IN ADDRESSING NEEDS OF  
RESIDENTS
6. QUALITY OF POLICE SERVICES

2016 CITY OF MIAMI BEACH RESIDENT SURVEY  
ETC INSTITUTE

# RESILIENCE OPEN HOUSE

## 263 ATTENDEES

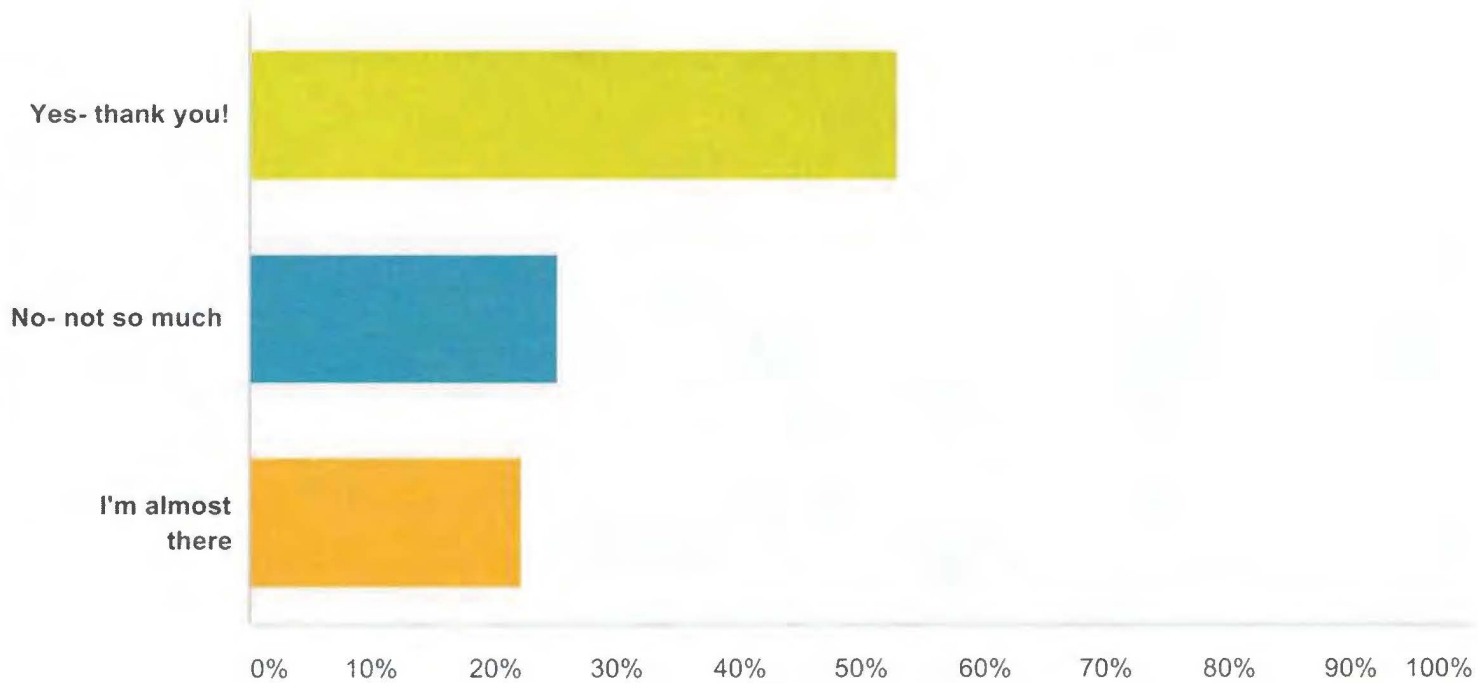




## Miami Beach Open House Exit Survey

### Q1 Was enough information provided tonight for you? (select one)

Answered: 36 Skipped: 0



## RESIDENT QUESTIONS

## STAFF ANALYSIS

## ACTION

1 FLOOD INSURANCE IMPACT

FEMA CONTACT  
AND RESEARCH

FLOOD INSURANCE  
FACT SHEET  
CONGRESSIONAL  
HEARINGS

2 FLOODING IMPACT ON  
PRIVATE PROPERTY

ENGINEERING  
REVIEW

ADDITIONAL DRAINAGE  
INLET DESIGNED

3 ROADWAY ELEVATION

RESILIENCE & GIS  
PROJECT

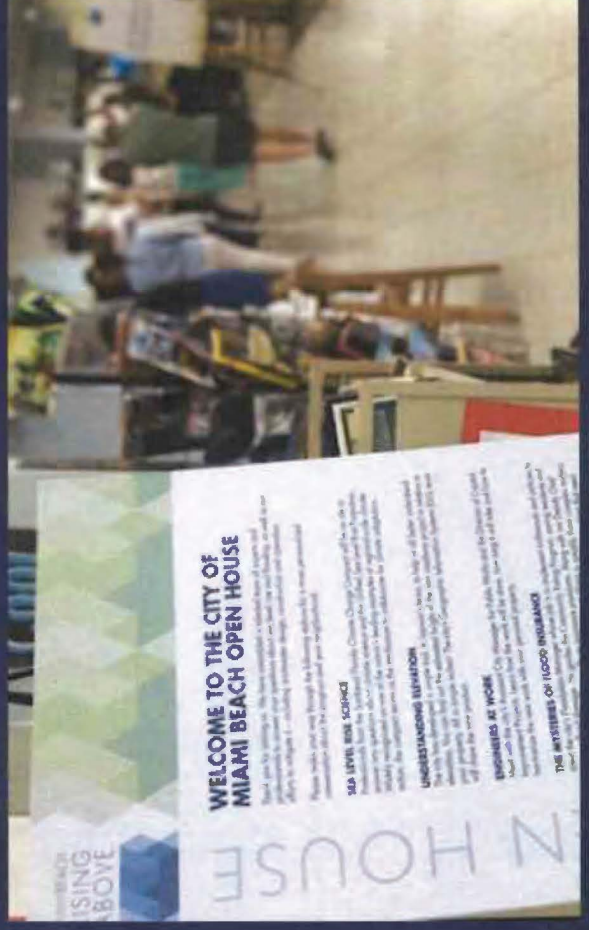
ADAPTATION  
CALCULATOR

# PUBLIC FEEDBACK LOOP



RESIDENT QUESTIONS	STAFF ANALYSIS	ACTION
4 FLOODING IMPACT ON PRIVATE PROPERTY	ENGINEERING REVIEW	DRAINAGE CAPACITY FOR PRIVATE PROPERTY
5 FLOODING IMPACT ON PRIVATE PROPERTY	ENGINEERING REVIEW	COMMISSION RESOLUTION
6 INDIVIDUAL AND NEIGHBORHOOD CONCERNS	IMPROVE PUBLIC ENGAGEMENT METHODS	RESILIENCE OPEN HOUSES AND FAQs
7 HARMONIZATION WITH PRIVATE PROPERTY	INDIVIDUAL ON-SITE CONSULTATION	INDIVIDUAL HARMONIZATION DESIGN

# PUBLIC FEEDBACK LOOP





# NEW OUTREACH TOOLS

Sample 1



FEEDBACK LOOP  
OUTREACH TOOL EXAMPLE

Sample 2

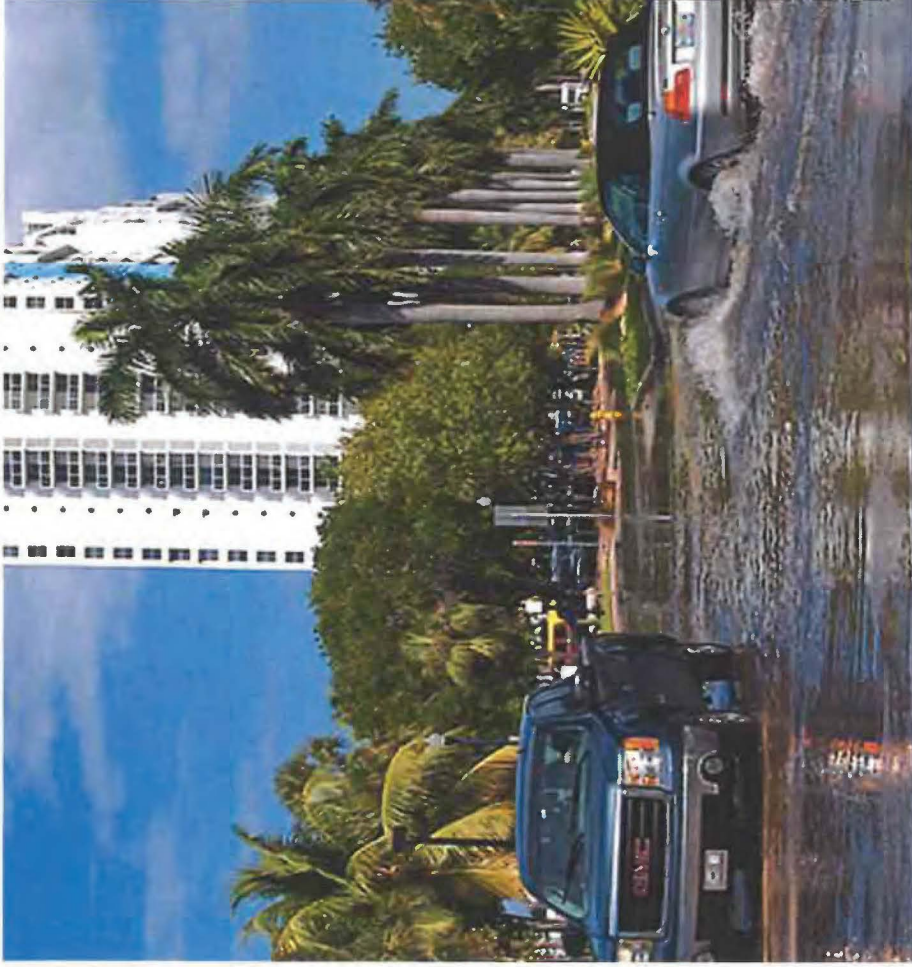


# FEEDBACK LOOP OUTREACH TOOL EXAMPLE

ADAPTATION  
CALCULATOR



FEEDBACK LOOP  
OUTREACH TOOL EXAMPLE



# HISTORY OF FLOODING

## PRIOR TO INFRASTRUCTURE UPGRADES





# HISTORY OF FLOODING PRIOR TO INFRASTRUCTURE UPGRADES

FEB  
2014

FEB  
2015

SEPT  
2015

MAY  
2016

JUNE  
2016

OCT  
2016

R 2014-28499

0.5 Ft-NAVD to 2.7 Ft-NAVD for all tidal boundary conditions.

Based on highest tidal events non-storm 1.7 Ft-NAVD

R 2015-28921

Minimum elevation for crown of roads 1' higher (3.7 Ft-NAVD) than the tail water

elevation of 2.7 Ft-NAVD For specific projects

Virginia Key

Tidal station records highest king tide elevation of 2.07 Ft-NAVD

O 2016-4009

Establishes min 1Ft and max 5 Ft freeboard above FEMA Base Flood Elevation

LDR for building height, min elevations yards single family

R 2016-29454

Future crown of road, back of sidewalk elevations 3.7 Ft-NAVD

New seawalls min 5.7 Ft-NAVD, Replaced/ repaired seawalls min 4.0 Ft-NAVD

Virginia Key

Tidal station records highest king tide elevation of 2.1 Ft-NAVD

# TIMELINE OF ELEVATION- SCIENCE AND ENGINEERING DESIGN CRITERIA