NAPLES BEACH RESTORATION AND WATER QUALITY IMPROVEMENT PROJECT

QUESTIONS FROM CITY COUNCIL
SUBMITTED FEBRUARY 2020

CITY OF NAPLES

STREETS & STORMWATER DEPARTMENT

295 RIVERSIDE CIRCLE
NAPLES, FL 34102

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WATER QUALITY

- **What we did not hear discussed were the plans for the storm water system to be installed after so many years. We are left with doubts about whether the engineering recommendation is simply to shoot the water farther out in the Gulf. If so, how is it to be treated? One *rumor* (among so many) circulating is that it will be treated by ultraviolet before sending it to sea. That may be effective against animal and human waste, but does it have any effect on nitrogen, phosphorus, herbicides, insecticides? If that is not to be the treatment of choice, what is? (Council Member McLeod)**

RESPONSE: Improving the water quality has been one of the primary goals of this project from the very beginning. Many of the water quality components to this project have been communicated at the June 2016 and December 2018 City Council Workshops. The design for this project integrates several water quality improvement techniques including:

1. *The replacement of Alligator Lake's overflow weir, which will allow the lake to store up to 3 million more gallons of stormwater in the lake. Stormwater lakes are considered to be one of the best treatment options for removing dissolved pollutants such as nitrogen and phosphorus, as well as suspended solids that cause turbidity.*
2. *Dozens of inlet filter baskets will be installed in the drainage catch basins which are designed to capture debris prior to conveyance to the proposed pump station.*
3. *Infiltration trenches/bio-swales will be installed on 2 of the avenues which will capture stormwater runoff from the east and allow for percolation into the soil prior to entering the Gulf Shore Blvd drainage area.*
4. *Pretreatment structures installed within the piping network are designed to trap additional sediment and grit prior to conveyance further downstream.*
5. *At the site of the future pump station, a Nutrient Separating Baffle Box is being designed that will capture any remaining debris including leaves, organic matter, trash, grit, sand and other debris prior to discharge to the pumps.*
6. *The pump station will be designed to accommodate an ultraviolet light treatment device that kills bacteria and viruses that may be contained within stormwater. A City Council decision to integrate the UV treatment system will be made after staff presentation and a bid is received for construction.*
7. *Additional operating staff is being considered to maintain this new infrastructure without reducing the level of service in other areas of the City. Considerations include additional manpower to inspect and maintain/clean the various filtering devices, monitor the UV system and replace bulbs as necessary, increasing the City Street Sweeping program in and around the project limits, provide additional inspection and maintenance of Alligator Lake and more.*

It is important to point out that the greatest impact in reducing stormwater pollution is made by responsible individuals, not public agencies.

- **It has been suggested by some that the project in its current form does not address the real objective because it does not adequately "treat" the pollutants in the water to be discharged but only "filters" it. I have been told that the Sarasota project on which our approach is supposedly modeled, does in fact provide some higher level of treatment. Is it feasible to upgrade this project to provide a higher level of treatment? What level of treatment can be achieved? What would that cost and what would it entail from an engineering and construction standpoint that goes beyond the current proposed project? (Council Member Christman)**

RESPONSE: This is a false assertion. Improving water quality has been one of the primary goals of this project from the very beginning. Water quality components to this project have been communicated multiple times at the June 2016 and December 2018 City Council Workshops, as well as online at the project webpage. The design for this project integrates several water quality improvement techniques including:

- *The replacement of Alligator Lake's overflow weir, which will allow the lake to store up to 3 million more gallons of stormwater in the lake. Stormwater lakes are considered to be one of the best treatment options for removing dissolved pollutants such as nitrogen and phosphorus, as well as suspended solids that cause turbidity.*
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It is important to point out that the greatest positive impact to environmental preservation is made by responsible individuals at the source. The downstream treatment by public agencies is costly and requires significant public infrastructure that may be considered intrusive and uncharacteristic of a community's vision. For this project, the design team has spent

considerable time and effort to minimize impacts of infrastructure while achieving long-term safety, flood protection and resiliency.

- **Shown as an attachment above is a presentation of the Sarasota Project as designed by Erickson Engineering. The filtration system for the Sarasota Project looks much more sophisticated than the grate inlet boxes Naples will be using which require continued maintenance. Also, Sarasota uses UV treatment. UV is still optional for Naples and I recall Karyn responding at one of her presentations that UV was not necessary because "the bacteria will die once it encounters the saline water". Nevertheless, why is UV used in Sarasota and only optional for Naples? (Council Member Seigel)**

RESPONSE: Throughout their City, Sarasota has several of the same nutrient separating baffle boxes that we are proposing at the pump station site. Regarding the UV treatment system, the state permitting agencies required the UV Treatment for bacteria reduction. As a side note, the original goal of the Sarasota project was to reduce bacteria in their runoff due to the beach closures they were experiencing.

Regarding the Naples Outfall project first, it is important that the project in its current form is preparing to accommodate the UV Treatment system should the City of Naples decide it is justified. The system is quite expensive (upwards of $750,000) and will only treat a portion of the stormwater flows (approximately 10%). However, the permitting agencies have not made UV Treatment a requirement.

- **The paper by Erickson, Perkinson and Strakaluse entitled "Sustainable Stormwater Infrastructure Improvements for Improved Coastal Resiliency," states that by replacing aging infrastructure (outfalls and stormwater pipes along GSB), the target level for bacteria is expected to be reduced up to 200% for compliance with FL standards. However, the stormwater pipes along the avenues that will discharge to the new infrastructure will not be replaced. . Furthermore, slide 13 presented to Council at a Workshop on December 17, 2018 (attached) indicates Fecal Coliform exceeded FL standards (400 cfu/100 ml) by two- and three-fold in 2017 near Alligator Lake, which isn't near the outfalls. Have you monitored the discharge from the pipes along the avenues and the weir structure at Alligator Lake and determined they are bacteria free, or contain such low levels of bacteria that the City can demonstrate the basis for the expected compliance for bacteria? (Council Member Seigel)**

RESPONSE: The paper referenced was prepared in April 2019 prior to our 90% design effort. It contained generalizations by using terms of "up to" and similar. Shortly thereafter in July/August 2019 we conducted a project specific, detailed load reduction assessment in accordance with SFWMD and FDEP guidelines using the BMP Trains 2020 model. The results of this assessment were described in our Big Cypress Grant application. They were also presented at the International Conference on Sustainable Infrastructure (ICSI) in November 2019 for which the

referenced paper was prepared. In short, the following improvements to water quality are estimated.

- *Reduce Bacteria (92%) - Replace aging (>50yrs) Infrastructure, Pump Station for Continuous Flushing, and Potential UV Treatment*
- *Reduce Debris, TSS (70%), TP (50%), and TN (29%) – Catch Basin Inserts, Floating Debris Collection at Alligator Lake, In-Line Hydrodynamic Separators, and Swale Improvements*
- *Improvements to 3-Lake System – Increase Wet Detention, Floating Islands and Aquatic Vegetation Harvesting*

Water quality in the pipes along the avenues have not been monitored. Replacing this pipe network would add substantial cost to this already very expensive project, but admittedly, would likely improve water quality.

- **The City's Stormwater Construction Standards (Sec. 16-115) state that any new development, redevelopment or substantial improvement of platted properties shall meet a presumed pollutant removal of 85% percent Total Suspended Solids, Total Nitrogen (TN), and Total Phosphorus (TP). Yet, according to the attached paper on the Suntree skimmer boxes, reported test results on the pollutant removal efficiency of the boxes at the Downtown Disney complex were 74% TSS, 56% TN and 57% TP. How does the City plan to achieve the extra pollutant removal needed to achieve compliance with the presumed 85% removal standards? (Council Member Seigel)**

RESPONSE: The skimmer boxes are not the only water quality improvement treatment technique being implemented in this project. Reference responses to previous water quality questions where the list of improvements have been outlined.

- **Is the City planning to use the ingeniously simple device fabricated by Suntree to sample the influent and effluent from the skimmer boxes to confirm that the hoped-for level of pollutant removal is achieved? (Council Member Seigel)**

RESPONSE: The City has been in discussion with the consultant and their team about a monitoring and maintenance program. At this time, staff is unaware of the specific device mentioned above, but surely it is part of the ideally cost-effective monitoring program being discussed.

- **Alum injection systems, with a reported pollutant removal of 90% TP and 50% TN, are included in the State's draft compendium of BMPs for Nonpoint Source Management of Surface Waters (see attached Draft, July 2018). Has the City considered adding this, or some other form of adsorption media, to the stormwater treatment train (skimmer boxes, UV treatment, etc.) for the portion of the stormwater diverted to Alligator Lake to help achieve the City's Stormwater Construction Standards? (Council Member Seigel)**

RESPONSE: Alum injection systems are better suited for standing water situations such as lakes and retention/detention areas. It is possible this can be added at the Alligator Lake site, but it has not been discussed up to this point. What is being planned for implementation is the same type of "skimmer box" treatment mentioned in the question. These are absorbent booms or other media that are designed to "soak up" various nutrients as water passes through them.

- **Aside from the prohibition on using fertilizers in the wet season, what other treatment technologies targeted for TP and TN did City staff evaluate, and what were their costs? (Council Member Seigel)**

RESPONSE: The intent on all the water quality benefits that have been discussed in earlier responses is to reduce the overall pollutant load that gets to the pump station. By capturing leaves, grass clippings in the inlet filter baskets and nutrient separating baffle box prior to discharge, the overall water quality will be greatly improved.

- **Sampling of outfalls in 2017 was conducted for fecal coliform and nutrients (nitrate/nitrite). Will future monitoring of the stormwater include TP. If not, why not? Where will the samples be obtained, and at what frequency will they be sampled? (Council Member Seigel)**

RESPONSE: Yes, it is anticipated that there will be a water quality monitoring program implemented after construction completion specifically related to this beach outfall project. Samples in the lake as well as in the Gulf of Mexico will be taken at least quarterly. The exact details of this program including frequency and costs are subject to discussion with City Council.

- **ECE's April 2018 presentation included a slide entitled "Project Overview: Pre-Treatment Inlet Inserts," which provides removal efficiencies for the Grate Inlet Skimmer Boxes (GISBs) for various pollutants, including phosphorous and nitrogen. Please provide the data demonstrating these removal efficiencies. Also, will the City be monitoring the influent to the GISBs and discharges to the Gulf to determine if these removal efficiencies are being achieved. (Council Member Seigel 1/20/20)**

RESPONSE: Please see the Reedy Creek Improvement District (RCID) Study attached. RCID is mostly the Walt Disney World Parks and Resorts area in FL.

ROADWAY RAISING/SEA LEVEL RISE/RESILIENCY

- **Furthermore, we heard nothing about whether the alternation of the roadway would make it sufficiently resistant to anticipated flooding from sea level rise? Other communities around the state are looking at projects like these from a 50 perspective. Are we? (Council Member McLeod)**

RESPONSE: The public presentations in December 2018, June 2019, and February 2020 all touched upon this. *The current restoration plan for Gulf Shore Boulevard within the project limits (2nd Avenue South to South Golf Drive) is to raise the roadway by an average amount of 6" at the curbline. During the design process, consideration was given to raising as much as 2' (or 24") but this was not feasible because doing so would flood several of the existing properties along the corridor that have relatively low-lying elevations. Also, several of the avenues were originally constructed at lower elevations than others. 7th Avenue North is particularly low and flat to the east of Gulf Shore Blvd N and it would be challenging or much more costly to raise the road higher than what we have currently designed. NOAA's 2017 data for projected sea level rise (low projection, medium projection and high projection) was considered for time periods including 2030, 2060 and 2100 and in the end the decision to raise the road 6" was based on the roadway transition to adjacent streets, concerns of negatively impacting private property, and the physical limitations of working within the 60' wide public right-of-way.*

For perspective, it is important to note the following:

1. *State legislation has been proposed to require a sea level rise analysis for projects within the coastal zone. This has not been made law at this time.*
2. *The northern limits of GSB will merge into that section of GSB fronting the Naples Hotel and Golf Resort redevelopment project. City Council has approved development entitlements that allow for raising the segment of GSB fronting the hotel property approximately 4-foot.*
3. *Other coastal communities, such as Miami Beach and Ft. Lauderdale, have constructed coastal resiliency projects that include raising roadway elevations.*

Action has certainly been delayed a very long time on the storm water remediation, but to move into action mode without solid answers to these and many other questions would seem to compound our imprudence.

- **What are the options for raising the roadway? What is the incremental cost of doing so? What are the storm water management benefits of doing this? Are there any downsides in terms of storm water drainage/flooding on nearby properties? (Council Member Christman)**

RESPONSE: The current (90% level) design plans elevate the road on average 6" at the curbline. During the design process, elevating the roadway approximately 24" was considered but because a few private properties along the corridor have relatively low-lying elevations, the new roadway cannot adversely impact those private properties. Increasing the roadway elevation above 6-inches can be accomplished by investing in private property improvements, but this would result in a significant cost increase to the City and not be consistent with other stormwater projects previously performed by the City. The current road restoration costs are $1,367,634 which includes the cost estimates for raising 6".

By comparison, the Athens Group has proposed raising Gulf Shore Boulevard as much as 4-feet (48") in front of the Naples Beach Hotel & Golf Club property. The benefits to raising the road are that the road is less prone to flooding and it becomes more resilient to the effects of sea level rise.

- **If city staff will be advising to raise the road elevation, will there be detailed presentations providing the science which supports how high we should raise the road and, how long such elevation increases will serve our needs? (Council Member Hutchison)**

RESPONSE: Staff's response to a previous questions that addresses the reasoning behind the elevation increase the design team arrived at for GSB. It is important to note that projections for sea level rise continue to change as new and more accurate data is collected. At the 60% phase of this project, staff utilized the work produced by the team made up of Florida Gulf Coast University (FGCU), the National Oceanic & Atmospheric Administration (NOAA), as led by Dr. Michael Savarese which produced a low estimate of ½-foot sea level rise by 2060.

- **Should the community have a master plan which addresses a phased-in approach to raising our road elevations? To be clear, I realize the answer to this question is yes therefore, please provide clear guidance as to how our community will raise the road elevations across our area of responsibility in a way which will be timely and provide resiliency before rising sea levels endanger property and life. (Council Member Hutchison)**

RESPONSE: The Natural Resources is preparing to present the first Phase of the new Climate Adaptation Plan to City Council. The first phase is called the Vulnerability Assessment and will outline what City infrastructure is vulnerable to the world's changing climate and how at-risk it is.

The second phase will be the Climate Adaptation Plan itself and will make recommendations about how to adapt to or overcome the vulnerabilities.

- **As a follow-up to No. 13, please provide the complete financial impact of executing work related to raising the elevation of our roads. This should be broken down by fiscal year and with narrative which explains where we begin and where we end. (Council Member Hutchison)**

RESPONSE: This would require an extensive amount of data. There is no such financial impact report or narrative that currently exists for the City of Naples.

- **If city staff will not be recommending raising the road elevations, please explain why and, provide narrative as to when road elevation will be addressed within our community. (Council Member Hutchison)**

RESPONSE: Staff is recommending raising Gulf Shore Blvd in the Outfall project limits. For additional information, see response to Question 15.

- **Please provide the various alternatives which address the underground utility infrastructure associated with GSB. I would like the critical thinking to include assumptions of a future state where we are dealing with higher sea levels and challenges associated with increasingly higher road elevations. Given these assumptions, consider the staggered longevity as to how long it will take for residential redevelopment to eventually raise floor elevations accordingly. I am requesting engineering guidance which stipulates how the underground utilities will need to be positioned and why. This includes analysis of center-of-road placement as well as either side of GSB. (Council Member Hutchison)**

RESPONSE: Local governments cannot control residential redevelopment. Even when residential development occurs, the Naples Historical Society is encouraging participation where they can apply for variances to keep their existing finished floor elevations. It is unlikely that major changes to the roadway elevation of Gulf Shore Blvd can occur (and subsequently, the utility infrastructure) until the majority of the properties are elevated to FEMA standards.

- **Please provide best practice examples which city staff has identified with similar road projects in communities similar to Naples and, those dealing with rising sea levels. (Council Member Hutchison)**

RESPONSE: Coastal communities across the world are facing difficult decisions about their infrastructure. Staff feels the current proposal of raising Gulf Shore Blvd 6" is a fair compromise when considering all factors including constructability, costs and most importantly, potential negative impacts private property. In researching other communities, Miami has raised roads as much as 24" which has resulted in flooding of private properties (or more accurately described as preventing private property from draining to the public street & drainage system). Areas in the Florida Keys are considering abandoning their roadways due to the extreme costs associated with raising the road. Specifically, Sugarloaf Key recently considered a $128,000,000 cost estimate for raising a <3-mile stretch of Old State Road 4A.

- **Please provide narrative which explains how coastal communities in and around Florida are positioning underground utilities near the coast. For instance, are they**

taking measures to not run utility lines parallel to the coast in recognition of future complications in doing so? Is it better advised to redesign major infrastructure piping to intersect at ninety-degree angles as opposed to huge lines running parallel to the coast? Discuss both alternatives. (Council Member Hutchison)

RESPONSE: Underground utilities will be necessary as long as there are large populations near the coast. The placement of underground utilities begins with the placement of private properties which are usually built a certain height above the roadway/stormwater system. From there, most underground utilities have a minimum cover or depth below the roadway. Until all private properties are raised, the road cannot be raised, and underground utilities cannot be raised.

- **The design plans propose to raise the roadway, which would require reconstruction of the roadway (curb, pavement, base, etc.). If City Council approves the decision to reconstruct the roadway, why not construct the stormwater trunkline under the pavement, principally under the curb line, so inlets can pick up roadway drainage and also serve as maintenance access points for the storm sewer? Also, why not have the trunkline under the west curbline, so the existing trunkline can continue to function on the east side? Where a double trunkline is needed, can the 2nd trunkline go under/adjacent to the east curbline in order to minimize impacts to the desired vegetation? (Council Member Hutchison)**

RESPONSE: Each individual drainage inlet picks up only a fraction of the amount of flow necessary to convey the large flows associated with the trunk line(s). The maintenance access points will occur in what is identified as "Vaults" on the 90% design plans. These vaults are extremely large, expensive, underground structures which not only serve as access/inspection/maintenance points, but also allow the trunk line to increase in diameter where necessary.

Placing the stormwater line under the west curb line is not feasible whether or not the water main is replaced. The stormwater trunk line is very large, dual 42" pipes in some locations. If a pipe that large were placed under the west curb line, the water main would need to be relocated to the east side of the right-of-way (road or greenspace).

There is no existing "trunkline". Each beach outfall is served by a series of small pipes.

Separating the trunk lines would double the amount of the large, expensive vaults necessary.

GENERAL UTILITY/PUMP STATION/MINIMUM PROJECT/UTILITY PLACEMENT/OTHER UTILITIES

- **If the project goes forward in its current form, but with only the stormwater trunk line, pumping station, and new outfall pipes included, what would be the cost? Where would the line be positioned under GSB (in what location – curb side, middle of road, etc.)? Does adding bike lanes affect location of trunk line and water main? What would be the impact if any to sidewalks and to ROW landscaping under this scenario? (Council Member Christman)**

RESPONSE: To answer these questions, we first must identify the items and forward-thinking opportunities that are included in the project that would be removed:

1. *Removing the City's preparedness for the redevelopment of the Naples Beach Hotel would eliminate 1200-feet of project between South Golf Drive and 6th Ave North where an additional link of pipe and drain inlets would be placed to connect to a future Phase II North Outfall Removal project.*
2. *Removing the roadway elevation increase makes GSB considerably more susceptible to extended periods of flooding from sea level rise, storm surges, extreme high tide events and more intense and frequent rainfall events. The duty of and the load to the pump station becomes more significant. Maintaining the roadway's elevation would also make is considerably more susceptible to minor puddles and ponding over time, which are problematic to the Naples community. The resiliency of the roadway to future climate conditions is greatly diminished. The likelihood of property damage (autos and landscaping) increase.*
3. *Removing the new water main installation assigns a higher level of risk for water service reliability and increases the potential of service disruptions, property impacts, and traffic impacts from breaks in the existing 50-year old asbestos concrete main.*
4. *Removing bike lanes from the project and returning the roadway to a share the road condition prevents the City from creating a safer and more comfortable environment for bicyclists for the foreseeable future. It also eliminates the logical opportunity to develop a reasonable connection between two existing roadways with bike lanes (GSBN and Central Ave.).*

As with all City construction projects, the exact costs of construction are not known until bids are received. Even then, costs can change during construction whether that is due to cost saving opportunities the contractor or the City may see, or cost increases due to unknown utility conflicts and other unforeseen conditions. The 90% cost estimate for this project are available on the project webpage www.naplesgov.com/beachoutfalls Note the following cost estimates by line item:

Table #1

COST ITEM	***90% COST ESTIMATE***	***% REDUCTION FOR REDUCED PROJECT****	***COST EST. FOR REDUCED PROJECT***
Directional Drill to Gulf	*$3,109,920*	*0%*	*$3,109,920*
Mobilization	*$1,008,032*	*20%*	*$806,426*
Pump Station & Generator	*$4,509,931*	*0*	*$4,509,931*
Stormwater Consolidation	*$1,426,221*	*0*	*$1,426,221*
Diffuser	*$336,900*	*0*	*$336,900*
Demolition of ex. outfalls	*$40,500*	*0*	*$40,500*
Roadway Drainage System	*$836,117*	*7%*	*$777,589*
Landscaping	*$240,631*	*25%*	*$180,473*
Utility relocation & conflicts	*$100,000*	*3%*	*$97,000*
Road Restoration	*$1,367,634*	*45%*	*$752,199*
UV-Treatment - Optional	*$554,865*	*0%*	*$554,865*
Contingency	*$807,000*	*15%*	*$685,950*
Water Main Replacement with Contingency	*$666,400*	*45%***	*$366,520*
90% TOTAL ESTIMATE	***$15,004,151***		***$13,644,494***

**Percentages are based on staff's analysis of those project components and detailed work requirements that are removed when compared to the whole project, as well as staff's opinion of anticipated additional work necessary to complete the project.*

***Full water main replacement is based on recent construction projects in the City that establish replacement costs at approximately $1 million per mile. For this scenario, replacing the watermain is eliminated, but 27-deflections are still required and repairs to anticipated breaks in the existing AC main from stormwater construction are included. Under this scenario, potable*

water customers are likely to be impacted more with temporary service disruptions as a result of the numerous deflections that are necessary. Lastly, an eventual water main replacement will become necessary in the near future and the cost to do this is estimated at $1,000,000 per mile plus inflation, plus construction disruption to the community.

REDESIGN & PERMITTING MODIFICATIONS

Not reflected in the above construction cost estimates is the estimated cost for the engineer of record to redesign the changes and modify SFWMD and FDEP permits. These additional costs are estimated at $175,000 and increase the adjusted estimated cost reduction to ***$13,721,994.***

TRUNK LINE LOCATION

The location of the stormwater truck line is generally fixed for any build scenario because its location was determined by avoiding conflicts with existing underground utilities that are within the roadway, as well as protecting surface features such as well-established trees and privacy hedges.

SIDEWALK LOCATION

With the changes proposed in this scenario, only portions of the existing sidewalk would need to be removed and replaced to accommodate stormwater pipe crossings and curb replacement.

- **If we put in a new water main in addition to the trunk line, what would be the cost of the project? Where would the water line be located (curbside, middle of street, etc.)? What would be incremental impact on sidewalks and ROW due to inclusion of water line? Is putting in a new water main justified? I am told that according to current city assessments, GSB is not high priority for water line replacement. (Council Member Christman)**

RESPONSE: Please see the response to the previous question. The City's Utilities Department is currently undertaking the design of the watermain project. The Utilities Department's current plan is to install a new water main under the existing sidewalk on the west side of GSB and abandon the old water main (located under the curb). It is more economical to replace the water main in conjunction with the stormwater project because the stormwater project will cover right-of-way restoration costs. If the City waited 5 or 10 years and hired a separate contractor, the Utilities Department would pay for all right-of-way restoration costs and there would be additional construction disruption to the adjacent property owners and users of the ROW. Completing infrastructure improvements concurrently will minimize construction related impacts to the neighborhood. Should the potable water main <u>not</u> be replaced as a part of this project, there will still be substantial costs associated with water main deflections that will be required with the installation of the large stormwater infrastructure. The existing water main is currently in conflict with approximately 27 proposed stormwater structures on the west side of GSB. The water main will need to be deflected horizontally around each structure, causing water service interruptions and precautionary boil water notices. Additionally, the water main

will need to be deflected vertically under the proposed stormwater trunk line on the east side of GSB, again causing water service interruptions and precautionary boil water notices. Inevitably, the old water services that run across GSB will be broken as a result of the stormwater construction activities. These will need to be replaced if they are broken. Not only will this have a substantial cost involved, it will likely delay the schedule of the stormwater construction. This is another reason why the infrastructure should be replaced in conjunction with the stormwater project.

Although this water main is functioning suitably at this time, the existing AC water main has exceeded its useful life and should be replaced. Other factors triggering replacement are the shallow depth at which it currently exists (does not meet FDEP requirements) and the location of the existing main under the curb (not an ideal location for a water main with respect to repairs, new taps, etc.). Additionally, the water main on GSB is a transmission main that feeds all of the water mains at the intersecting avenues; replacing it will provide a core improvement for the City of Naples and it will facilitate water main replacements on the adjacent avenues. This improvement will provide a skeleton for larger diameter water mains to accommodate the City's growth (i.e. bigger homes replacing smaller homes) and ensure adequate fire protection for the next 30 to 50 years. In addition to upsizing and replacing the existing water main, the City will also replace the water service lines, install new fire hydrants, and install reliable valves at strategic locations to minimize water service disruptions to residents should a portion of the distribution system need to be shut down.

- **Will city staff be able to discuss the outfall project using the lens of completing "only" the removal of outfall pipes and installation of the replacement infrastructure? This includes returning the roads/sidewalks and other surfaces as close to original state as possible with consideration given toward environmentally friendly improvements to the same surfaces. (Council Member Hutchison)**

RESPONSE: Staff has been looking at this project through the lens that City Council has provided. That lens is defined by Resolutions for Complete Streets and Blue Zones, consensus and direction received at multiple City Council workshops, and multiple City Council actions approving Agreements that move the project forward. At this time public input has clouded the lens and may create the need for a different prescription with a different focus. Staff is prepared to use any lens by which City Council directs.

- **Given that the outfall project is the primary objective, please provide narrative which informs the residents as to how long we will need to operate the new outfall system before we can be confident that it is performing exactly as planned. (Council Member Hutchison)**

RESPONSE: The confidence in knowing that this new system will operate as designed can be achieved by acknowledging the tremendous success in recent stormwater projects in Lake Park,

Eagle Oak Ridge, and other areas of Old Naples. On the first day that this new system is placed into operation, staff will be confident of its capabilities. There will be clear and obvious indications of the new system's ability to outperform the existing drainage system during the first heavy rainfalls of the rainy season. To know if the system will perform to its maximum design capabilities, the system must undergo a maximum loading scenario. The new system is designed for a 25-year, 3-day storm event or 10.3 inches of rainfall over 3-days. It may take years to see the new system operate at its design peak since these storms happen about once every 25-years. Accelerated climate changes could shorten this wait.

- **Is it advisable to layer on numerous other improvements (survey versions one and two) until such time as we are assured that the primary objective of effectively installing and operating a new outfall system has been verified? (Council Member Hutchison)**

RESPONSE: Yes, staff has been advising the City to consider forward-thinking opportunities provided by this project and, where practical, take advantage of tremendous cost savings opportunities and the ability to minimize construction disruption for the future through this project. The new drainage system is basic and rudimentary in that it involves pipes, a pump station, and water quality components. The City has had three similar systems working well for many years now. Sarasota County has the same type of deep ocean outfall discharge system. This would be the City's first deep ocean outfall but it is very doubtful that State and Federal permitting agencies would allow such a project to move forward without knowing the benefits that such a system provides to long-term flood protection and the environment.

- **The new outfall system will fail at some point or, it will require downtime for maintenance. Failures might be attributed to damage from storms, motor vehicle accidents or, even from watercraft. Will city staff be able to provide details about the outfall backup plan for when the new outfall system encounters failure during such events? (Council Member Hutchison)**

RESPONSE: The project is being designed with built-in redundancy in the event of a failure. For instance, 4 pumps are being designed for the pump station, where only 3 are required to keep up with the stormwater flow from the design storm-event. In other words, if 1 pump fails, the pump station will still be fully operational. The emergency back-up generator is also an indication that failure of the electrical system is being considered during the design process. Recognition of potential failure has also been built into the diffuser system and nutrient separating baffle box. Lastly, by converting Outfall#5 to an under-sand, emergency overflow structure, the stormwater system still has a way to flow should all the pump station components fail.

Maintenance of this pump station and outfall system has been an integral part of its design. From simple physical details such as providing access for maintenance vehicles, to technical

details such as requiring the pump and equipment suppliers to provide their recommend operation and maintenance schedules.

- **If an outfall backup plan is not developed, explain why. (Council Member Hutchison)**

RESPONSE: See previous response.

- **If an outfall backup plan is developed and deployed, please provide the complete financials associated with such plan. Include all expenses such as planning, purchases, maintenance, replacement costs, personnel costs, etc. (Council Member Hutchison)**

RESPONSE: All costs associated with the backup details explained in the previous responses have been included in the 90% cost estimate. Staff is evaluating the possibility of adding a full-time employee (FTE) with the responsibility of monitoring and maintaining the debris in the water quality components of this project. This FTE would also be responsible for additional duties during times when there are no inspection or maintenance duties related to this system are needed.

- **If the primary outfall experiences failure, please provide narrative as to the plan to address various elements of the outfall which are subject to failure and how they will be addressed. For instance, failure on the suction side, failure on the pressure side, failure on the mechanical apparatus. (Council Member Hutchison)**

RESPONSE: The Stormwater Division is assisted by all the resources of the Utilities Maintenance Division whose staff maintain the 120+/- lift stations and raw water wells. Their staff has the expertise to diagnose and troubleshoot all electrical and mechanical issues and determine whether outside (contract work) help is necessary. If a failure of the pump station site occurs, whether generator, electrical, control, pump or other issue, a joint investigation would begin involving both divisions. If a failure occurs upstream of the pump station, the Stormwater Division would respond with their equipment including the vacuum truck and/or video inspection equipment to inspect and rectify any issue. Should the repairs warrant outside, contracted work assistance, the City has the mechanism to pursue that on an emergency basis.

- **If the primary outfall experiences failure, please provide narrative which describes worst-case scenario as to when the system will be back online. Consider demand on suppliers in a catastrophic event encompassing an area larger than the City of Naples. (Council Member Hutchison)**

RESPONSE: While it is not anticipated and has not occurred in the City's other 3 stormwater pump stations (even in Hurricanes Irma or Wilma) the worst-case scenario is a total failure of the system. Should such a catastrophic event occur, the pump station would no longer flow, and all runoff would be diverted to Alligator Lake. Once the level of Alligator Lake reaches a certain point, the emergency outfall will open and discharge into the Gulf of Mexico. Repairs of the pump stations after severe weather is a top priority of the City. Once the necessary repairs are complete, the pump station would resume normal operation and the emergency overflow and any erosion on the beach would be restored.

- **What was the life expectancy of the underground utility pipes which are currently serving the community along Gulf Shore Boulevard? Please provide for each type of pipe. (Council Member Hutchison)**

RESPOSNE: The life expectancy of pipes can vary significantly depending on the material, the installation method, the soil and groundwater condition and most importantly, the type of material the pipe conveys. For instance, sewer gasses may contain corrosive materials which can degrade pipes faster than potable drinking water or stormwater runoff. Additionally, many of the underground are simply conduit that contain wire for power or telecommunication. Fortunately, sewer pipes that are not expected to see an increase in flows can be lined, and the sewer pipes on Gulf Shore Blvd have been lined. The section of Gulf Shore Between Central and 4th Avenue South was replaced because a liner was not feasible. It is commonly accepted that these pipe lining products should last approximately 50 years. There are many types of plastic pipes with life expectancies in in the ranges of 50-100 years. Concrete pipe life expectancy has been found to be 50-70 years.

- **What would be the life expectancy of any new underground utility pipes which are proposed to serve the community along Gulf Shore Boulevard? Please provide for each type of pipe. (Council Member Hutchison)**

RESPONSE: The current stormwater project is being bid with options for the contractor to bid on plastic pipe or concrete pipe. This will allow the City to evaluate the costs associated with those options prior to awarding the contract. The Utilities Dept will be recommending replacing the asbestos concrete water main with a pvc plastic water main which has a life expectancy of 75 years.

- **Please provide a cost estimate for completing only the beach outfall project in order to comply with federal/state directives? A breakout of the various elements of the project is requested as part of the cost estimate. (Council Member Hutchison)**

RESPOSNE: See response to Councilman Christman question above.

- **Please explain the way in which underground utility service will be maintained while the outfall removal project and/or an expanded version of the outfall/GSB project is underway. (Council Member Hutchison)**

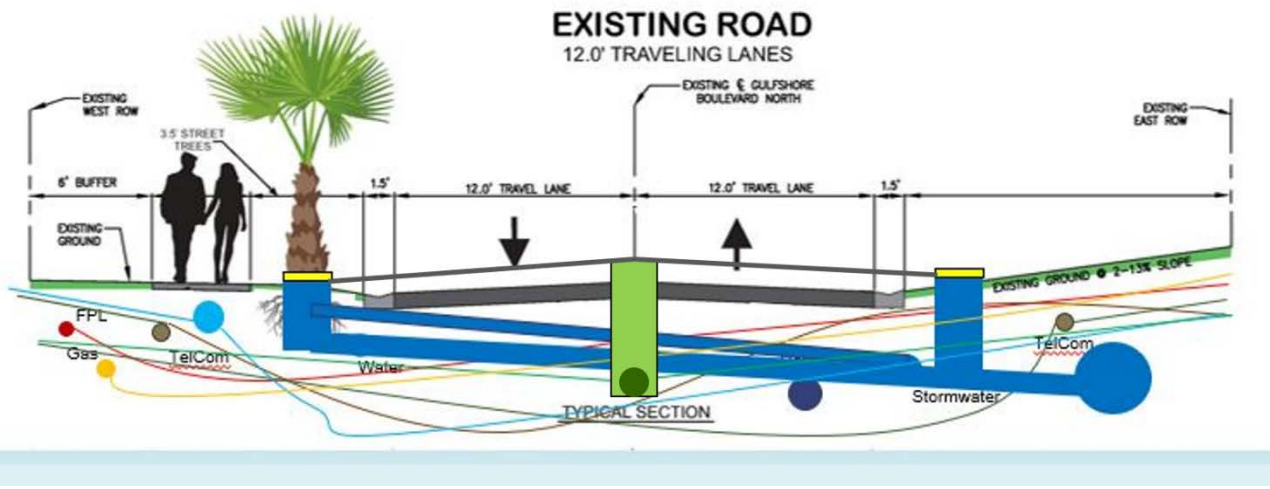
RESPONSE: No major utility interruptions are anticipated as a result of this project. A thorough subsurface utility exploration project was accomplished to better understand the exact location and depth of several major utilities. The results of that activity are reflected in the 90% plans. Similar to all construction projects, the contractor will be responsible (by state law) to call in utility locates which notifies all utility companies (City water, City sewer, TECO gas, FPL, comcast, century link) that underground excavation is anticipated and they are required (by state law) to locate their facilities in the excavation area. After that, the contractor is responsible (by state law) to carefully dig around those locates. With all major underground construction projects, unforeseen utility conflicts appear and occasionally, utility companies may not be aware of all facilities – when this occurs, safety is the top priority and restoring utility service as soon as safely possible is also high priority.

- **Please provide a complete analysis of cost related to placing underground utilities separately on the east, west and center of road on Gulf Shore Blvd. (Council Member Hutchison)**

RESPONSE: All utilities must share the same 60' wide public right-of-way. It would not be physically possible to put the utilities in the same space (east, west or center) The sanitary sewer system and stormwater system are both constructed using manholes or drainage structures which extend to the surface. Florida Department of Environmental Protection provides pipe separation regulations (https://floridadep.gov/water/domestic-wastewater/documents/separations-diagram-required-distances-public-water-mains-0)

- **Please provide a detailed rendering showing where all underground utilities are currently located along the Gulf Shore Blvd. corridor including ROW. (Council Member Hutchison)**

RESPONSE: Please reference the cross section provided in the presentation at the February 18 City Council workshop. This was provided in the PowerPoint to visualize what utilities currently exist in the roadway along with the proposed stormwater trunk line.



- **Please explain the logic used in placing the new stormwater pipe under ROW greenspace as opposed to placing it under the road guttering. (Council Member Hutchison)**

RESPONSE: The location of the trunk line was based on the location of existing utilities. The sewer main is in the Center of the road and the water main is on the west side of the road. This led to the logical placement of the trunk line on the east side of the road. The individual curb inlets and drainage boxes are typically smaller boxes that are placed in the gutter line. The trunk line is a large diameter pipe and wouldn't be economically feasible to be placed in line with the drainage inlets – therefore it was designed to the east of the curb line.

- **Why is replacing the waterline on the west side of GSB "essential?" Although installation of the curb and the new stormwater catch basins will be in conflict with 27 locations with the waterline, in 2015, replacement of the sewer main involved 4 conflicts with the water main, and water flow and pressure were not adversely affected by these activities. Furthermore, when the reclaim waterline was installed several years ago under the northbound lane of GSB from Central Avenue to S. Golf Drive and beyond, the existing water main had to be crossed many, many times to make the connections to all of the homes on the west side of GSB, and this was done without incident. (Council Member Hutchison)**

RESPONSE: The City's Utilities Department is currently undertaking the design of the watermain project. The Utilities Department's current plan is to install a new water main under the existing sidewalk on the west side of GSB and abandon the old water main (located under the curb). It is more economical to replace the water main in conjunction with the stormwater project because the stormwater project will cover right-of-way restoration costs. If the City waited 5 or 10 years and hired a separate contractor, the Utilities Department would pay for all right-of-way restoration costs and there would be additional construction disruption to the adjacent property owners and users of the ROW. Completing infrastructure improvements

concurrently will minimize construction related impacts to the neighborhood. Should the potable water main not be replaced as a part of this project, there will still be substantial costs associated with water main deflections that will be required with the installation of the large stormwater infrastructure. The existing water main is currently in conflict with approximately 27 proposed stormwater structures on the west side of GSB. The water main will need to be deflected horizontally around each structure, causing water service interruptions and precautionary boil water notices. Additionally, the water main will need to be deflected vertically under the proposed stormwater trunk line on the east side of GSB, again causing water service interruptions and precautionary boil water notices. Inevitably, the old water services that run across GSB will be broken as a result of the stormwater construction activities. These will need to be replaced if they are broken. Not only will this have a substantial cost involved, it will likely delay the schedule of the stormwater construction. This is another reason why the infrastructure should be replaced in conjunction with the stormwater project.

Although this water main is functioning suitably at this time, the existing AC water main has exceeded its useful life and should be replaced. Other factors triggering replacement are the shallow depth at which it currently exists (does not meet FDEP requirements) and the location of the existing main under the curb (not an ideal location for a water main with respect to repairs, new taps, etc.). Additionally, the water main on GSB is a transmission main that feeds all of the water mains at the intersecting avenues; replacing it will provide a core improvement for the City of Naples and it will facilitate water main replacements on the adjacent avenues. This improvement will provide a skeleton for larger diameter water mains to accommodate the City's growth (i.e. bigger homes replacing smaller homes) and ensure adequate fire protection for the next 30 to 50 years. In addition to upsizing and replacing the existing water main, the City will also replace the water service lines, install new fire hydrants, and install reliable valves at strategic locations to minimize water service disruptions to residents should a portion of the distribution system need to be shut down.

The reclaimed water services were installed underneath the existing the water main by directionally drilling them below the water main which avoided unnecessary digging of Gulf Shore Blvd and work around the fragile water main. This is a very common method of installing small utility services.

- **If the waterline is "essential," instead of placing it under the sidewalk, why not place it under the southbound travelway and have an adequate separation from the proposed storm sewer (i.e. under the curbline) and sanitary sewer (i.e. under the centerline of the roadway) per FDEP minimum allowable separation criteria? (Council Member Hutchison)**

RESPONSE: If the water main were to be placed in the roadway, any work on that main would require closure of the roadway. It would also cause damage to the roadway through a trench to access the road. The trench patch results in a bump in the road. Work on the roadway include installation of new meters and upsizing service lines as new, larger homes are constructed. Drivability of Naples roadways is consistently important to residents, businesses and visitors.

Naples residents have a wide array of automobile types with a notable percentage of high-end and exotic autos. A poor pavement index rating (potholes and cracking) lends itself to higher vehicular maintenance.

- **The city has asserted that replacing the waterline is sensible because heavy construction equipment may damage the waterline because it is 2' below grade, whereas current code requires it to be 3' below grade. But importantly, virtually all of the stormwater project occurs on the opposite side of GSB. And for the limited activities occurring in the intersections, wouldn't the City's successful replacement of the sewer line involving 4 waterline conflicts on GSB in 2015 offer reasonable confidence that water flow and pressure problems will not arise with the 27 waterline conflicts inherent in the stormwater project? (Council Member Hutchison)**

RESPONSE: Comparing the 2015 sewer project with this beach outfall project is misguided and inherently flawed. The sewer project replaced 4 blocks of 10" sewer pipe that is in the center of the road. This project encompasses approximately 12 blocks and will completely reconstruct all the stormwater system with very large stormwater pipes. It is suspected that the Naples Beach Hotel construction will replace the watermain to the north of this project limits and replacing the water main in the project limits of this Beach Outfall project is and economical, common sense approach to public infrastructure. The age of the existing water main is between 50 and 75 years and will be in need of replacement at some point in the near future. Separating it from this project will lead to another lengthy and disruptive construction project and road closure of this iconic, heavily traveled roadway.

- **What is the cost of placing the waterline under the road vs. under the sidewalk? (Council Member Hutchison)**

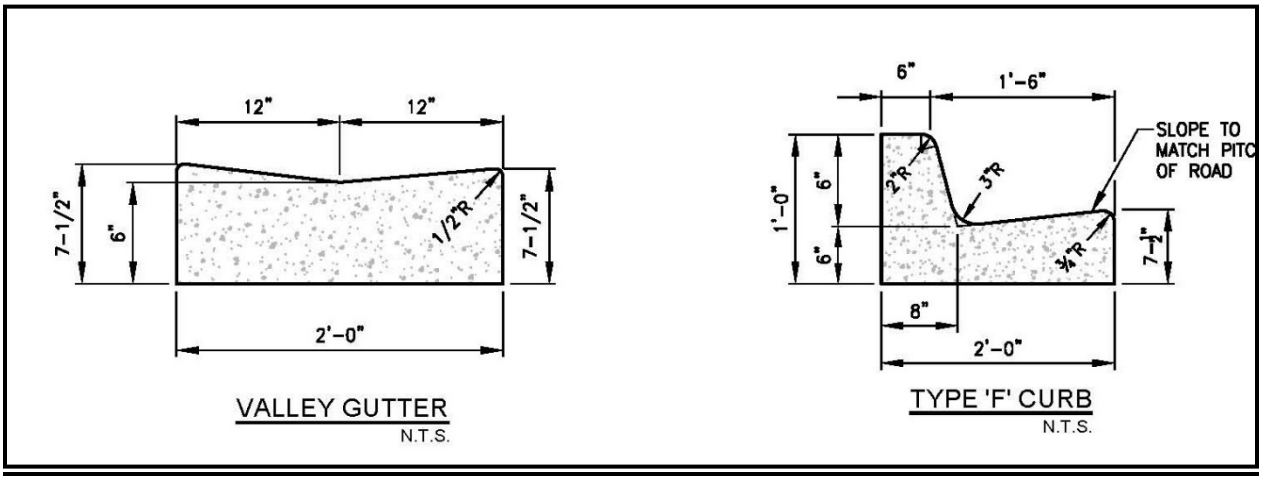
RESPONSE: As a "stand-alone project" the cost would be roughly equivalent. However, the shared mobilization, restoration and community impact costs would be obviously reduced by completing both much needed utility improvement projects conjointly.

- **Why not bury all of the overhead electric lines along and crossing GSB to improve the area's resiliency? There are a few locations with overhead power poles that would make sense to bury, especially around the alley ways. (Council Member Hutchison)**

RESPONSE: This proposal along with cost estimates are being discussed with FPL.

- **Will the project typical sections be updated to illustrate accommodation of all infrastructure (buried electric, water, sewer, reuse water/effluent, buried telephone, buried cable television, gas, drainage/stormwater, street lighting, sidewalk, bicycle accommodation, curb, pavement, and landscaping)? The constrained conditions become clearer. (Council Member Hutchison)**

Figure 1: Depiction of a double valley gutter inlet directly over a 36-inch diameter storm sewer pipe.



RESPONSE: Yes, the cross sections will be updated. The cross sections will show the utility information that is pertinent to the project and available to the City.

- **Please clarify how the width of the stormwater pipes vary along each section of Gulf Shore Blvd. (Council Member Seigel)**

RESPONSE: As the stormwater pipes progress closer to the pump station, the system will collect more and more water. In order to maintain the flow, the pipe sizes will need to increase. The pipes will increase in size as follows:

South of the pump station

The Pipe starts as a 30" diameter pipe at 2nd Avenue South. At 1st Avenue South it upsizes to a single 42" pipe. The stormwater runoff will flow through the pipe and enter a stormwater structure (also known as a drainage box) as a 30" pipe on one side. The flow will go through the box and exit into a 42" pipe on the other side of the box. At Central Avenue the pipe upsizes to a 48" pipe. At 2nd Avenue North the pipe upsizes to dual (side-by-side) 42" pipes (which is the equivalent size as a single 60" pipe but due to constructability near the coast in sandy soils is estimated to be more expensive).

North of the pump station

Stormwater will flow from Alligator Lake to the pump station through a 36" pipe. Regarding the intersection drainage north of the pump station, pipe sizes vary from 12" to 24".

- **Please explain why the stormwater pipes could not be located under Gulf Shore Blvd. (Council Member Seigel)**

RESPONSE: There is an existing sanitary sewer main in the middle of Gulf Shore Blvd and an existing reclaimed water main near the middle of the northbound travel lane. The existing water main is located near the edge of the southbound travel lane and the Utilities Department is planning on constructing the new water main under the sidewalk on the west side.

- **Please detail the entire topic of the trenches: width; staging of dirt; settling tanks; dewatering; noise of pumps; etc. (Council Member Seigel)**

RESPONSE: During the resident's presentation at the February 18th, 2020 City Council Workshop, a slide stating that trench widths would vary was provided which lacked a lot of the context of the actual conversation that occurred. During the on-site meetings with residents in October & November 2019, when trench width was discussed, the answer was that the width would vary depending on pipe size, pipe depth, groundwater conditions, geotechnical conditions, contractor methodologies, utility conflicts and other factors. Generally speaking, the larger the pipe diameter, the larger the trench width requirements. Additionally, the deeper the pipe, the larger the trench width. Contractors can use various methods including trench boxes, steel plates and dewatering using well-points. The exact trench width in front of individual properties

can only be estimated at this time. Dewatering pumps, settling tanks, spoil piles (dirt piles) all can be adjusted in the field based on field conditions and the final plans.

- **Why is it necessary to locate the new water line under the sidewalk? Will the sidewalk be returned to its current location and width? (Council Member Seigel)**

RESPONSE: In order to continually provide potable water and fire protection to the residents, a new water main must be installed first (in other words, it cannot be replaced in its current location.

- **Please provide the contemporaneous meeting notes summarizing these consultations as required by the contract. The date of this was June 2018, however, City Council was not asked to consider bike lanes until 12/17/18. Also, the footnote suggests that the water main replacement would fund the cost of the street widening. (Council Member Seigel 1/20/20)**

RESPONSE: All ECE meeting notes have been provided in Karyn's January 9, 2020 email. Respectfully, the question-maker seems to be incorrectly assuming that there was more strategy to the inclusion of bike lanes prior to December 2018, when in fact, there wasn't. Based on experience and history, staff thoroughly understands the sensitivity of certain topics such as the rights-of-way. I can honestly say that bike lanes came up initially as an idea when construction details were being discussed.

Throughout this project the focus has been flood protection, water quality and removing the pipes from the beach as directed by City Council and FDEP. During the design process, the team considers the City's Comprehensive Plan and adopted policies and Resolutions such as the Complete Streets and Blue Zones Resolution that requires staff to consider opportunities such as this. The brainstorming that was done in 2017 and 2018 generated creative ideas that were intended to produce a better project in hopes of achieving the City's vision and a higher quality of life for its residents. But staff doesn't make the decisions about City vision and quality of life. It is the community through City Council that decides. Staff is, however, obligated to bring awareness of opportunities while always ensuring public health and safety standards.

The value-engineering process also considers ways to achieve a more cost- effective project that can be constructed with minimal impact to the community. In its duty, staff presented the idea for relocating the generator station, integrating bike lanes, and raising the roadway elevation to City Council in December 2018 and again in June of 2019, where it was supported and encouraged both times. Staff is responsive to City Council direction and if direction were to change, staff will always be responsive to that change.

The footnote clearly says the opposite of the question-maker's statement. The watermain project would avoid expensive road restoration costs since the stormwater project is the fundamental reason for the need to rebuild the roadway. This would be, by far, one of the least expensive water main upgrades for the City and an opportunity rate payers would enjoy.

- **Slide title: 2017.03.02 ECE-KE Internal. This seems to be the meeting (3/2/17) where the decision was made to locate the S/W on the east side. Please confirm that no one from the Utilities Dept. participated in this meeting. There is a table comparing east and west with low, medium, high ratings.**

RESPONSE: We cannot confirm that the Utilities Department did or did not participate in this meeting almost 3-years ago. Both Departments and the Consultant can confirm that the Utilities Department has actively participated in the design process and has been well informed throughout the project. Andy Holland is the Project Manager for the stormwater project. Allyson Holland, Andy's wife, is the Deputy Director of Utilities. Communications between these two individuals is, let's say, better than average for most employees.

- **Were these decisions made for bike lanes on 1 side or 2 sides of the road?**

RESPONSE: Again, assuming that staff made decisions is incorrect and misleading. Staff recommendations have been made to City Council throughout this project's long history. Bike lanes have been discussed for both sides of the roadway and one sidewalk along the west side.

- **Why would there be a high probability of delay 6-12 months if the West side was selected?**

RESPONSE: There are multiple existing utilities within the ROW. Many represent conflicts and would require relocation (TECO, FPL, communications) and significant time to coordinate such relocation. For most projects, it is in the best interest of the City to design the project around existing utilities rather than require relocation.

- **Please show a block by block visual of the existing lines under Gulf Shore Blvd for the project area. (Council Member Seigel 1/20/20)**

RESPONSE: Please refer to the Subsurface Utility Exploration mapping attached to this response.

- **All indications suggest that Utilities wanted the S/W pipes on the West ROW.**

True or False: (Council Member Seigel 1/20/20)

RESPONSE: False.

- **Decision to locate S/W pipes on East ROW was to allow for bikelanes? True or False: (Council Member Seigel 1/20/20)**

RESPONSE: False.

- **For City Staff: Why wasn't the water main replaced in 2015 from south of Central Avenue to 4th Avenue South, when the sewer main was replaced? (Council Member Seigel 1/20/20)**

RESPONSE: In 2015, the gravity sewer main along Gulf Shore Boulevard South (GSBS) between Central Avenue and 4th Avenue South was replaced. The sewer main is located in the middle of GSBS with sewer laterals to each property. The 6-inch water main is located on the west side of GSBS. There were only four (4) conflicts with the replacement sewer main and the existing water main (there are many more for the Beach Outfall Removal project). The conflicts existed where the water main crossed GSBS. As part of the sewer main replacement, the four water mains crossing GSBS were replaced with 6-inch PVC pipe.

The stormwater project is a much larger project expanding from South Golf Drive to 2nd Avenue South. Installation of new curb and the stormwater catch basins on the west side of Gulf Shore Boulevard will be in conflict at 27 locations with the existing water main on the west side of Gulf Shore Boulevard. It's possible to deflect only the sections of the water main that are in conflict, however flow and pressure of the main will be affected with the offset configuration. Not to mention the multiple water service interruptions to the residents that will be required to deflect the water main around the new stormwater catch basins.

The current scope of work of the Stormwater project includes widening the road and raising the elevation of the road. This work will jeopardize the old, brittle water main to constant breaks due at its current depth and location. To reduce the inconvenience of water service interruptions to the residents, the Utilities

Department recommends the installation of a new, upgraded water main in close proximity to the location of the existing water main.

To summarize, the water main was not replaced as part of the 2015 gravity sewer replacement project because the sewer work was far enough away from the water main to not cause damage to the old existing water main through vibration and excavation, except where there were direct crossing conflicts. Also, there were no road modifications as part of the

road restoration that interfered the current location of the water main. The scope of the stormwater project is much more impactful to the old, existing water main. Finally, there was not much to be gained by replacing a relatively short section of water main.

- **How deep are the trenches? ["It depends" is not responsive.] (Council Member Seigel 1/20/20)**

RESPONSE: Please check the grading plan that will be provided in the 90% submittal. Depth will be indicated by invert elevation. All work will be done within the ROW.

BIKE LANES/SIDEWALK/BICYCLE & PEDESTRIAN MASTER PLAN/TRAFFIC

- **If 4-foot bike lanes are also added to the project along with the new water main, what would be the cost of the project? What is the incremental impact on the sidewalks and ROW landscaping by also installing the bike lanes? Please be specific as to the amount of ROW landscaping that would be lost due to installing bike lanes in addition to the trunk and water line. (Council Member Christman)**

RESPONSE: A new watermain adds approximately $300,000 to the cost of the project (see Table #1 above). 4-foot bike lanes add approximately $100,000 to the cost of the project (see Table #2 that was presented at the February 18, 2020 City Council Workshop).

Table #2

Additional Cost Estimates…

ESTIMATE ONLY (+/- 20%)	ESTIMATE ONLY (+/- 20%)
• 4-ft. Bike Lanes:	• 6-ft. Buffered Bike Lanes:
○ 2nd Ave S–Central:	○ 2nd Ave S – Central:
➢ +$25,600 - $38,400	➢ +$51,200 - $76,800
○ Central – S. Golf Dr.:	○ Central – S. Golf Dr.:
➢ +$57,600 - $86,400	➢ $115,200 - $121,200
▪ Total Length: $83,200 - $124,800	▪ Total Length: $166,400 - $198,000

NOTE: Incorporates average costs for sub-base prep, compacted base installation, and 2-lifts of 1.5" asphalt surface.

The incremental impact on the sidewalk and landscaping within the ROW due to the installation of 4-foot bike lanes is a general shift of the sidewalk location 2-feet to further to the west. There may be times where the sidewalk meanders around existing landscaping to avoid impacting it. Also affected would be a net loss of a 2-foot strip of sod along both curblines. Lastly, 161 Alexandra Palms (City street trees) are currently located along the curblines within the project limits. The project would replace these trees during restoration in a location within the ROW as determined by Parks & Parkways (we expect that replacement trees would be similar in size and species with location close to the new curb line again).

There are other project impacts such as stormwater pipe installation, water main installation and raising the roadway elevation that also affects some existing landscape within the public ROW. But for general purposes, most landscaping on or near the property line is unlikely to be impacted much. The degree to which landscaping is impacted is directly related to specific pipe installation and roadway elevation increases at a specific location.

Several meetings have occurred with individual property owners interested in reviewing the specific details of the design as it relates to the segment fronting their specific homes.

Beyond the 161 City street trees within the public right-of-way, there are an additional 46 trees of varying size and species within the Gulf Shore Blvd right-of-way between South Golf Drive and 2nd Avenue South. None of these 46-trees are designated as City trees and may have been planted or installed by a current or past property owner. Out of the 46-trees, nine are in clear conflict with the stormwater pipe installation and are identified for removal. The remaining 37-trees have been marked for protection by the Contractor. At the time of construction, however, conditions may require additional tree removal on a case-by-case basis due to unforeseen conditions.

- **The Pedestrian and Bicycle Master Plan (2013 update) identifies seven projects to be carried out over a five-year period (including GSB). What is status of these projects? Which have been implemented? (Council Member Christman)**

RESPONSE: The 2013 Update of the City's Pedestrian & Bicycle Master Plan identifies seven areas where improvements are focused. Within the plan there are about $7 million worth of projects that have been identified over 6+ years. Over $3.5 million in projects contained within the 2013 have been completed, this includes FDOT funded projects and does not include the Gordon River Pedestrian Bridge or pathways within Baker Park and the Gordon River Greenway.

For Gulf Shore Boulevard specifically,

<u>Gulf Shore Blvd – Mooring Line to 20th Ave S – Sharrow:</u>

Gulf Shore Blvd. between 8th Avenue North and 20th Avenue South had "Sharrows" applied as part of the annual resurfacing program.

- **Similarly, the same Plan identifies seven specific intersection improvement projects to be carried out over same time period. What is status and which have been implemented? (Council Member Christman)**
-

RESPONSE:

Various Intersections	*Integrate Audible Devices for Visually Impaired*	*Complete*
Various Intersections	*Evaluate the Installation of a Color Box on Pavement for Bicyclist*	*Evaluation complete and not recommended.*
Mooring Line Dr. @ Crayton Rd.	*Wheelchair Ramps, Truncated Domes, Ped Crossing Signals*	*Complete*
Broad Avenue S @ 8th St. South	*Wheelchair Ramps, Truncated Domes, Ped Crossing Signals*	*Not complete*
Crayton Rd. @ Harbour Drive	*Wheelchair Ramps, Truncated Domes, Ped Crossing Signals*	*Complete*
9th St. South @ 10th Ave South	*Wheelchair Ramps, Truncated Domes, Ped Crossing Signals*	*Not complete*
Goodlette-Frank Rd @ 14th Ave N	*Monitor Pedestrian & Bicycle Movements*	*Ongoing*
Fleischmann Blvd @ Goodlette-Frank Rd	*Coordinate with Collier County on Intersection Improvements*	*Design complete, construction ongoing*
Goodlette-Frank Rd @ 5th Ave North	*Add Street Lighting & Advanced X-ing Signage*	*Complete*

- **The same plan identifies GSB from Mooring Line to 20th Avenue South as a Sharrow designation. What is staff justification for installing bicycle lanes in the part of GSB affected by project if the Master Plan does not call for this? In the same vein, if bicycle lanes were to be installed in the project area (Golf Drive to 3rd avenue south), would staff then be recommending that this eventually be continued along GSB to 20th avenue South? (Council Member Christman)**

RESPONSE: The addition of bike lanes along GSB was an improvement identified in the City's 2007 Pedestrian & Bicycle Master Plan. However, it also carried a 2007 price tag of $2,359,511 (adjusted for inflation today that would be $2,943,704). As a result of beach outfall removal project, there is a rare and unique opportunity to take advantage of substantial cost savings for added bike lanes during roadway restoration construction. Staff's presentation during the February 18th Council Workshop provided an estimate of roughly $200,000 to add bicycle lanes. The 2013 Bike/Ped Master Plan realized the more realistic option at the time was to provide a sharrow designation. In 2014, City Council adopted Resolution 14-13549 supporting the Blue Zones Project, a community-wide well-being improvement initiative. In 2015, City Council adopted the Complete Streets Resolution (#15-13719) which guides staff to implement practical, context based multi-modal transportation facilities (including bike lanes) during City projects in the public ROW. During the 60% project update to City Council in December 2018, the concepts of adding bike lanes and raising the road were presented to Council and staff received unanimous consensus to move forward with supplementing design

efforts to include bicycle lanes. In June 2019, City Council was presented a contract amendment to design these improvements and the amendment was unanimously approved.

It is believed by numerous transportation professionals, medical professionals, and bicycle users that bicycle lanes create a safer and more comfortable environment for bicyclists and this project is an opportunity to provide these desirable conditions for what is expected to be an increase in healthy bicycle activity well into the foreseeable future. The creation of a bike lane along this segment of GSB also provides a logical opportunity to connect two existing bike lanes on GSBN and Central Avenue.

Currently, there are no plans to extend bike lanes outside the limits of this project or on GSB south of 2nd Avenue South. The community, however, will have an opportunity to provide guidance to City Council on Citywide pedestrian and bicycle facilities as part of the 2020 Pedestrian & Bicycle Master Plan update.

- **Concerning improving safety for the various users of Gulf Shore Boulevard, please provide guidance as to the prioritized effectiveness of executing the following: (Council Member Hutchison)**
    - **Installing additional stop signs along the length of GSB**

Background for Establishment of 4-Way Stop @ Gulf Shore Blvd. between 2nd Ave. S. and S. Golf Dr.

Analysis of subject intersections are to be in accordance with applicable State Laws (Ref: Florida Statue 316) and the U.S. Department of Transportation 'Manual on Uniform Traffic Control Devices' (MUTCD) as adopted by the Florida Department of Transportation and Florida Administrative Code. The MUTCD requires warrant studies to establish multi-way stops. The criteria are listed below as a reference. The referenced locations are subject to annual monitoring of vehicle crash statistics as part of an on-going statutory warrant analysis. The Streets Department has not received any heightened actual or potential problem areas along this stretch or road to investigate further review of safety improvements (including additional stop signs) to meet the minimum 5 or more crashes in a 12-month period. Reviewing the criteria, I have looked at the Quarterly Traffic Data which includes data from station 48 closest to the area in question. For 2019, the Average Daily Traffic (ADT) ranged from 3,012 vehicles to 7,775 vehicles. This might meet the minimum volume requirement of 300 vph for any 8 hours of an average day for the major street; however, in obtaining data in other nearby locations for the avenues, staff has not observed the volumes required for a minor-street approach requiring an average minimum of 200 combined vehicular, pedestrian and bike traffic per hour in the same 8 hour period as the major-street. There is a misconception that adding unwarranted stop signs can slow down traffic and improve safety. Attached is an informational document that is a very good resource for why warrants are necessary and how increasing stop signs along a corridor can decrease public safety. In short, especially where the crossroad has lower traffic volumes than the main road, the drivers on the main corridor tend to pay less attention over time to the cross-street traffic which can lead to traffic accidents. Drivers also

tend to make up time and drive higher speeds in between signs for losing time at a stop location.

Section 2B.07 Multi-Way Stop Applications

Support:
01 Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.

02 The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

Guidance:
03 The decision to install multi-way stop control should be based on an engineering study.

04 The following criteria should be considered in the engineering study for a multi-way STOP sign installation:

A. *Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*

B. *Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*

C. *Minimum volumes:*

    1. *The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*

    2. *The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but*

    3. *If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.*

D. *Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*

Option:
05 Other criteria that may be considered in an engineering study include:

A. *The need to control left-turn conflicts;*

B. *The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;*

C. *Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and*

D. *An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.*

Below is the web link for the attached pdf:

https://safety.fhwa.dot.gov/intersection/other_topics/fhwasa09027/resources/Iowa%20Traffic%20and%20Safety%20FS-%20Unsignalized%20Intersections.pdf

- **Reducing speed limits to 25 miles per hour**
  - *RESPONSE: The proposed project modifies the physical geometry of the road by reducing travel lane widths from 12-feet to 10-feet. This is known to reduce average vehicle speeds between 2-to-5 MPH and more substantially reduce the speed of motorist that regularly exceed the posted speed limits. Therefore, speed reduction is expected to be realized by the proposed geometric design. Reducing the posted speed limit to 25 MPH is a practical option for policy makers as it would fall in line with the design speed for the roadway with narrowed travel lanes.*
  - *Reducing the speed limit while maintaining 12-foot travel lanes (which are the same size as freeway lanes), will not ensure reduced speeds and will likely take added enforcement and signage. Motorists tend to travel at speeds for which roadways are designed. The level of comfort a driver has in traveling at a higher rate of speed on a wider travel lane is higher than on a road with narrower lanes or traffic calming devices such as speed tables or chicanes.*
- **Reducing speed limits to 20 miles per hour**
  - *RESPONSE: See previous response.*
- **Adding speed tables near intersections where we know pedestrian traffic is much higher than other areas of GSB. This includes near the pier, near the Naples Beach Hotel and other areas which have been verified by visually-verified pedestrian counts during peak season.**
  - *RESPOSNE: This raises another potential opportunity to consider in the reconstruction of the roadway in our project limits. Speed Tables are one of many traffic calming devices that can be implemented. However, they are typically implemented after data collection, public outreach and design. There are both pro's and con's associated with speed tables.*

Speed tables reduce speeds in select areas, but they can also cause motorists to aggressively speed up after passing over. Distracted motorist may not observe a speed hump or table causing them to travel over one at a high rate of speed, thereby causing noise and sometimes vehicle or property damage. The locations where speed humps and tables exist are sometime controversial, particularly for the property owner where the speed table is to be placed in the street or by a driveway. Note: The Pier is outside the project limits and the Naples Beach Hotel is planning on installing a speed table.

- **Adding cameras (with signage) at appropriate intersections.**
  - *RESPOSNE: Cameras can monitor crime and potentially deter crimes or bad behavior from happening. Technology Services Department has requested fiber optic cable be installed in the project limits for the purposes of adding cameras at the beach ends.*
- **Signage informing pedestrians of the risks involved with crossing in front of cyclists.**
  - *RESPONSE: Truncated dome mats that are placed at the transition from sidewalk to street, and are intended for the visually disabled, can be used by all pedestrians as an indication of the transition from sidewalk to street where bicyclists and vehicles are passing. Additional signage would seem unnecessary for the sole purpose of protecting pedestrians from bicyclists. Those using the public rights-of-way should always be aware of their surroundings and particularly a transition from a sidewalk to a street.*

- **Please provide traffic impact forecasts for Gulf Shore Boulevard over the next twenty years or, for the same length of time as traditionally acceptable for planning purposes. (Council Member Hutchison)**

RESPONSE: In 2019, Gulf Shore Blvd saw a peak season average, 2-way daily traffic volume of between 5,377 – to – 7,775 vehicles. These two numbers were obtained from one count station on GSB near 6th Avenue South and one count station just north of the Naples Beach Hotel. In February and March of 2020, staff conducted a speed and volume study on GSB near 4th Avenue North and determined that the average daily 2-way traffic volume in this segment of GSB was 6,704 vehicles.

*Staff has coordinated with the Metropolitan Planning Organization (MPO) to obtain Collier County's Long-Range Transportation Plan which models traffic out to 2040. Mr. Jeff Perry of Stantec is the Transportation Planner charged with developing this model and working with the MPO, County and cities for planning future transportation improvements. Mr. Perry states: "**...using a regional model like this for local street volumes can be very unreliable. Often, when building the models, the modelers do not spend a lot of time and effort validating the model output volumes on non-collector/arterial roadways. I would recommend looking at the***

historical trends…and simply apply a minimum growth rate to the current volumes for the next 20-years."

If we consider the Naples Beach Hotel redevelopment project and the Traffic Impact Study that was performed, reviewed and accepted for that project, a 1% traffic growth rate was applied. Applying this same approach for this segment of GSB, we arrive at a 2040 average daily traffic volume of 7,978 vehicles.

Considering that future traffic volumes along GSB within the project limits may approximate 8,000 vehicles per day (or 19% more than today's 6,700 vehicles/day), we see that a 2-lane road continues to be sufficient to serve the volume demand. However, the increased traffic represents more activity and higher statistical probability for conflicts (crashes). Decisions today to make investments that would improve public safety for a greater number of users into the future can be supported rationally and logically.

- **Can city staff provide guidance and renderings as to the pros/cons of making GSB a one-way street? (Council Member Hutchison)**

RESPONSE: The potential of converting Gulf Shore Blvd to a one-way street was last discussed by City Council at the November 13, 2006 City Council Workshop after at least 1 public meeting. Minutes and presentation are available by request.

The concept was not recommended by staff "due to operational issues" and subsequently City Council did not speak much about it for the remainder of the meeting. – Staff is currently not clear on the specifics of what exact "operational issues" were raised in 2006. Pros would include traffic reduction (on Gulf Shore Blvd), lane/impervious area reduction. Cons would include safety issues related to wrong-way drivers, driver confusion for beach access, increasing traffic on other City roads such as 2nd Street and 3rd Street. Another consideration and likely a con given the City's attitude toward "sign pollution" is the large number of one-way, do not enter and wrong way signs that would be recommended by MUTCD.

- **Why install the Type "F" curb vs. reinstalling valley gutter? Valley gutters would seem preferable with tying things back into adjacent site grades and is more in character with the residential area. Type "F" curb is more of an urban design element, typically found on arterial roadways. Furthermore, valley gutters allow bicyclists to make evasive maneuvers (i.e., ride off into the grass). Also, why not use grated valley inlets (doubles) in lieu of more intrusive open throat drainage structures? (Council Member Hutchison)**

RESPONSE: Valley gutters are an optional treatment for the restoration of the roadway. The proposal to install Type F curbing was to avoid reconstructing several driveways with a very steep slope. Particularly on the east side of Gulf Shore Blvd, there are several driveways and properties that are steep in their current condition. Staff would not recommend valley gutter

inlets due to clogging and flooding concerns. The existing roadway does not have valley gutter inlets.

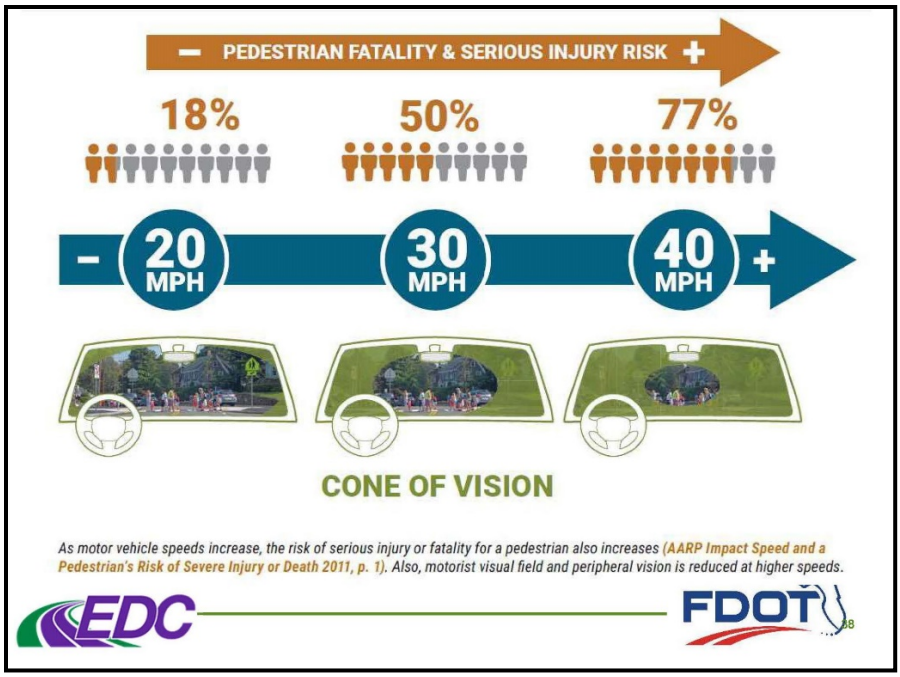
- **Wouldn't widening of the roadway increase vehicle operating speeds and inhibit safety for pedestrians? As stated in the FL Green book, "It is important to recognize that the addition of bike lanes does increase roadway widths and can increase the tendency for drivers to speed."—(E.8.a Bicycle Facilities; MUMS April 2016, page 19-20) (Council Member Hutchison)**

RESPONSE: While the roadway width does increase with the proposed plan, the plan also proposes to reduce the lane widths which staff believe will decrease the tendency for drivers to speed.

- **Doesn't the existing vegetation have a positive effect on calming traffic (i.e. encourage lower speeds)? As described in the FDOT Design Manual (January 1, 2019--paragraph 202.3.6 Street Trees). "To be most effective as speed management tools, street trees should be close to the roadway and should form a continuous "wall" effect. When used this way, the street trees reinforce a sense of enclosure. As with most of these tools, street trees along the roadway will be more effective when used in conjunction with other tools. For speed management purposes, designers are encouraged to use street trees whenever possible." Thus, shouldn't any changes to GSB contain the underground infrastructure under the roadway to the maximum extent possible? (Council Member Hutchison)**

RESPONSE: Removing the vegetation is not a goal of this project – it is, however, a necessary part of installing large utility infrastructure where space is constrained. The proposed cost estimate includes costs associated with protecting, relocating and/or replacing much of the existing landscaping.

- **Shouldn't maintaining, or even lowering the vehicle operating speeds be of paramount importance? Isn't pedestrian fatality and serious injury risk directly related to vehicle operating speeds per the illustration below from the FDOT? For the context of Old Naples as a unique Traditional Neighborhood, won't the widening of the road with bike lanes and increasing turning radii (discussed below) have an unintended negative impact of increasing vehicle speeds and make conditions less safe for pedestrians?**



(Council Member Hutchison)

RESPONSE: The question of reducing the posted speed limit has been addressed in a previous response. The proposal to widen Gulf Shore Blvd by a few feet on each side and adding bike lanes is intended to improve safety for bicycles and pedestrians. Currently, many bicyclists who do not feel comfortable "sharing the road" are choosing to ride on the sidewalk which creates conflicts with pedestrians.

- **Why increase the intersection radii to 35 ft.? Won't it encourage higher vehicle operating speeds? Aren't the current radii more in keeping with a Traditional Neighborhood Design, which is the character of the very unique Old Naples area? Would having a raised curb (i.e. Type "A", or Type "F") in the intersection radii help with vehicle tracking and then transition back to Valley Gutter in the tangent segments of the roadway? (Council Member Hutchison)**

RESPONSE: Existing turning radii in the corridor vary between 25' and 30'. There is evidence that trucks with large turning radii including landscape trucks/trailers, large construction related trucks, garbage trucks and fire engines are rutting the grass at the intersections. The goal was to standardize the radii and increase in an effort to avoid damage to greenspace. An additional benefit includes increased intersection site distance making turning movements safer.

- **Would using an asphaltic base help with expediting construction and help with resiliency in high water table conditions (i.e., the proposed lime rock and stabilization is susceptible to dissolution with a high-water table)? (Council Member Hutchison)**

RESPONSE: City staff is not aware of high-water table conditions affecting the roadway base of Gulf Shore Boulevard. (reference current pavement conditions as compared to 2017 pavement restoration project).

- **Is there a timeline for revising the Pedestrian and Bicycle Master Plan? If yes, when will the first stakeholder meeting be scheduled? (Council Member Seigel)**

RESPONSE: Staff was preparing to begin the public meetings to gather input from the community in March. When the COVID-19 pandemic caused the need to practice social distance, all public meetings were cancelled. Consideration is being given to possibly move forward using online surveys and social media in lieu of in-person group meetings.

- **Also, please provide the calculations for 2 scenarios: (1) bike lanes extend to 2nd Ave South, and (2) bike lanes extend to Central Avenue. (Council Member Seigel 1/20/20)**

RESPONSE: Staff requires more time to perform this detailed analysis.

- **The draft trifold indicates the proposed bike lanes will stop at Central Avenue. Please confirm. (Council Member Seigel 1/20/20)**

RESPONSE: The draft trifold is being reworded to reflect the October 22, 2019 progress meeting that maximized public safety aspects of the buffered bike lane design by carrying them to the intersection of 2nd Ave South and GSBS. The transition essentially occurs through the intersection of 2nd Ave South and GSBS, similar to other transitions Citywide. Final tri-fold wording will reflect this more accurately. Again, City Council may redirect staff in this approach based solely on routing bicyclists to Central to get to Baker Park and the Gordon River Greenway.

- **For City Staff: Please show calculations for the amount of additional impervious square footage that would result from Option A (4 feet additional width) vs. Option B (8 feet additional width with the buffered bike lanes- which is currently the design being used by ECE). (Council Member Seigel 1/20/20)**

RESPONSE: Please see attached Table #1
It's important to point out that there is an unfair emphasis being placed on the City to maximize pervious area of its limited ROW area when the better opportunity for pervious area is on private property. There is a great need for the ROW to provide public services in very limited space. We suggest that light impact design and best management practices be emphasized for private property.

- **It would be necessary to subtract the existing square footage of each of the resident driveways as this is already impervious so it's not a simple multiplication problem.**

- **Also, please provide the calculations for 2 scenarios: (1) bike lanes extend to 2nd Ave. South, and (2) bike lanes extend to Central Avenue.**

- **For City Staff: At a City Council Workshop on 10/19/15, in a discussion about a Complete Street Resolution, Andy Holland referred to a recently completed 4 block sewer replacement project on Gulf Shore Blvd (completed during the summer of 2015) at a cost of $500K. Andy stated that "we ran the numbers" and it would have cost an additional $400K to implement Complete Streets (presumably to add bike lanes). Since the City performed such an analysis for the 2015 sewer replacement on GSB, I would appreciate a copy of that cost analysis to implement Complete Streets for a 4-block section of GSB. (Council Member Seigel 1/20/20)**

RESPONSE: The sewer project in 2015 that was completed by the Utilities Dept was a project that is very different in scope from the proposed Beach Outfall project. The sewer in the center of Gulf Shore Blvd between Central Avenue and 4th Avenue South required replacement. The pipe only required a trench down the center of Gulf Shore Blvd. As such, the water main, sewer system and other utilities were mostly out of the way of the work. The costing that Mr. Holland did for the Complete Streets presentation was just to gather an estimate for the hypothetical work to replace all the curbing, relocate the existing stormwater system and install the additional road base and asphalt for bike lanes. The Beach Outfall Removal project calls for replacing all curbing. The sewer project did not. Adding bike lanes to that 4-block section of GSB would not make practical sense because it wouldn't connect to any existing bike lanes to the north or to the south.

LANDSCAPING & RESTORATION

- **Whatever option is ultimately selected (Trunk line only, Trunk line + water line, trunk line+ water line+bike lanes), is the City prepared to bring any private property and public ROW back to existing condition? Will it pay for these repairs? (Council Member Christman)**
-

RESPONSE: The project does not include any work being done on private property. It all occurs within the existing 60-foot ROW. If the contractor does damage or impact private property by mistake, it will be up to the contractor to repair at their expense and the City would make sure the issue is resolved satisfactorily. The City is planning to replace driveways, mailboxes, irrigation systems and sod. The project will also replace the City Trees (approximately 161 Alexander Palms). This is not the first stormwater project in the City nor is

it the first stormwater project on GSB. In 2012, the City replaced over 3,000 linear feet of stormsewer pipe within the GSB right-of-way from Broad Avenue South to 6th Ave South, some of it greater than 48" in diameter. Today this area, along with the many other areas of Old Naples, Lake Park and Eagle Oak Ridge where stormwater projects were completed, clearly demonstrates the City's ability to restore the public ROW to the expectations of the community at the highest possible quality.

- **Regardless of the road modifications being considered, will city staff be able to provide professional landscape renderings which effectively depict the Gulf Shore Boulevard experience in a post-construction environment? (Council Member Hutchison)**

RESPONSE: The 90% plans and cost estimate for the Beach Outfall Project include an extensive landscape plan for the pump station and generator site. The current cost estimates and future bid documents include line items for replacement of 161 City trees (Alexander Palms), a specified quantity of private trees planted in the ROW, tree protection, all sod/turf, and irrigation system restoration. The 2019 public involvement process for the project revealed that the residents may prefer a different landscape plan. The Community Services Department has been engaged and in conjunction with the Streets & Stormwater Department will be recommending to Council that a streetscape public involvement program be developed specific to Gulf Shore Boulevard in the Beach Outfall Project limits.

- **Please provide a cost analysis of the various landscape design options being considered which includes removal and replacement.(Council Member Hutchison)**

RESPONSE:

The 90% cost estimate includes the following line items:

Item# 1.7.1 $5,400 – Tree Protection (30 private trees in the Public ROW)

Item#1.7.2 $20,000 – Tree Relocation (20 private trees in Public ROW)

Item# 2.8 $37,300 – Landscaping and irrigation at Pump Station/Generator site

Item#9.1 $15,456.50 – Performance Turf, sod, zoysia

Item#9.2 $34,174.00 – Performance Turf, sod, St. Augustine

Item#9.3 $161,000 Landscape Trees replace in-kind

Item#9.3 $30,000 – Irrigation System restoration

$303,330.50 TOTAL COST ESTIMATE OF LANDSCAPING

- **Please provide a comprehensive analysis related to the deconstruction and reconstruction of all residential driveways associated with the GSB Outfall Project. (Council Member Hutchison)**

RESPONSE: Some driveways will need to be excavated for stormwater pipe installation while others will only need to be adjusted for the proposed roadway raising. In both cases, the driveway will be restored to as close to existing condition as possible (please note that the driveway slope may be different because of the elevation change). Similar to other construction projects the City has successfully accomplished, including on Gulf Shore Blvd, there will be a pre-construction video and photos to document the pre-existing condition of virtually everything in the project limits. Different driveway materials will require different techniques to ensure proper restoration. For instance, gravel, asphalt and concrete driveways will be removed at the necessary limit and restored with like material. Brick paver driveways, however, will require that the bricks be sorted and stacked on pallets so that a brick paver sub-contractor can re-install to pre-construction conditions. If the roadway is widened, there will likely be a surplus of bricks after reconstruction. In those cases, close coordination between the City/Contractor and each individual property owner or property manager will occur to determine whether those bricks are staked at the property owner's requested location or properly disposed of.

- **60% Cost Estimate: Paving and Grading (Slide title is: Attachment A Naples Beach 60%) (Council Member Seigel 1/20/20)**

    - ECE costed out concrete driveways (only $16,500). However, more recent City staff responses have assured residents that their costly paver driveways would be replaced. Will paver driveways be replaced?

RESPONSE: This is a slight mischaracterization of staff statements. Staff has assured property owners that the project will be bid to require the contractor to adjust all driveway grades and connections to the roadway. For whatever roadway cross- section that is approved by City Council, driveways will need to be adjusted to match the reconstructed curb and roadway. The contractor shall be required to use care for removing and storing existing brick pavers and replace with the same brick and pattern. If bricks are broken during construction, the contractor shall be required to purchase new bricks to most closely match existing driveway materials, color and pattern. Driveways with asphalt or concrete will be adjusted to replace the portion of driveway necessary to create a smooth transition from existing driveway to the roadway.

The average brick driveway area to be adjusted is approximately 15 square yards. There are 46 driveways along GSB. There are approximately 20 more brick driveways that will likely be affected at side-streets, resulting in a bid quantity estimate of 70 brick driveway adjustments (4-extra in case new development with new driveways occur prior to the project completion). A standard unit price for brick paver driveway adjustment is about $85 per square-yard

(based on average City-contractor unit prices), resulting in an estimated cost of $90,000. The final bid price will be dependent upon the road x-section selected by Council (that may change the adjustment area) and a competitive bid process. All quantities are being finalized as plans move to 100% completion.

- **Are there any details of how this rather low amount was derived? Also, will want to discuss the footnotes of this email: "Assumes 4 ft widening with limited impacts. Additional cost funded by waterline replacement. Allowance amount in consultation with City staff." (Council Member Seigel 1/20/20)**

RESPONSE: As previously indicated, the $250,000 was an allowance item for discussion purposes early in the design process. In preparing for the December 2018 City Council Workshop, staff believed it was important to be prepared with a rough cost estimate if City Council was to have an informed discussion. The number itself is based on ranges of unit prices applied to estimated quantities of work to achieve the potential widening. Standard unit prices for excavation, road base, compaction and asphalt were provided to ECE by the City and ECE also reviewed standard FDOT unit prices and unit prices for similar projects they've done.

Staff is curious as to why the question-maker writes that this number is rather low. What data or facts lead the question-maker to conclude that this is a "low cost estimate"? Such a leading statement should be reinforced by citing research and references.

- **Where is the cost of restoration of ROW landscaping to pre-project status? (Council Member Seigel 1/20/20)**

RESPONSE: It is included in the $903,770 contingency (page 1 of the detailed 60% cost estimate). It has not been broken out but will be when the bid tab is created.

- **Who pays for restoration of irrigation lines, utility poles? The City's draft tri-fold states that unless the City Council directs differently, the Contractor will replace the sod, driveways, mailboxes and irrigation systems. In order for City Council to give such direction, please provide the cost of each. (Council Member Seigel 1/20/20)**

RESPONSE: Staff is proposing that the project pay for repair to irrigation lines, as is common with other projects performed in the past. If utility poles require relocation, FPL will do this at their cost. Staff agrees that City Council must have an opportunity to see actual costs for all bid tabulation items when a construction contract is awarded. As mentioned previously, for large construction projects like this, it is common for the contractor to cap and repair irrigation systems that are broken as a result of the project.

- **As Gregg explained at our meeting on December 24, ECE has been instructed to design with 6-ft buffered bike lanes. Have you costed out restoring the driveways with pavers under the three scenarios under consideration: no bike lanes, 4-foot bike lanes, and 6-ft buffered bike lanes? If not, I would encourage you to do so in preparation for the City Council Workshop on February 3. (Council Member Seigel 1/20/20)**

RESPONSE: Staff agrees.

- **Although the survey supplement we received provides data on driveways in the GSB right of way (ROW), it does not locate trees having a diameter greater than 6 inches. Task A.3 of Amendment #2 of ECE's contract requires the Contractor to include this data on the Survey Supplement. Has an inventory been prepared? If yes, please provide. If not, when will it be available? (Council Member Seigel 1/20/20)**

RESPONSE: Yes, 17 trees with greater than 6" caliper have been located within the ROW, along with 55 trees with greater than 6" caliper within the beach end ROW. Please do not assume that all trees will be impacted by this project. Note will be included on the plans that requires the contractor to protect trees near construction and to use caution and seek to preserve trees in close proximity to construction. Please note that there are additional trees greater than 6" caliper that are located on private property or right on the property line. These may not have been surveyed because there is no need to access or impact private property for this project. Therefore, trees on private property that play a tremendous role in defining the beautiful corridor will not be impacted, but rather protected. Again, notes will be provided on the final plans that will require the contractor to protect and preserve all large trees that we know need not be impacted by construction.

- **Will the City coordinate with homeowners to locate the tanks to minimize the adverse impact on vegetation? (Council Member Seigel 1/20/20)**

RESPONSE: If the tanks become necessary, yes. But in the many stormwater projects completed in Naples in the last 10 years, settling tanks were not used, but rather well points or sump pumps.

PROJECT SCHEDULE

- **What is the timeline for the project? How long will it take to complete? What is the estimated amount of time each residence will be impacted by construction in front of their house assuming there will be some level of phasing? (Council Member Christman)**

RESPONSE: The original intent was to begin construction of the directional drill to the Gulf this summer then begin the pump station construction and finally construction of the water main and stormwater infrastructure on Gulf Shore Blvd. However, the project has been temporarily suspended pending City Council direction on the restoration components.

An operational phasing plan will be developed between City staff, the engineer of record and the construction contractor. This plan will guide the contractor by identifying specific work scope, work phasing areas, and maintenance of traffic requirements. Completion dates for work phases will be determined between the 90% and 100% design deliverable, along with liquidated damages and recommendations for financial incentives for accelerated performance. Generally, the deeper and larger the stormwater infrastructure, the more time consuming the installation can be. The pipes are the largest and deepest around the pump station site at 3rd Avenue North. Additional considerations include possible weather delays or unforeseen utility conflicts which typically add time to construction projects.

- **Please provide an anticipated calendar of key events related to the Gulf Shore Blvd, Beach Outfall Project. Inclusive in the calendar should be events such as anticipated posting of Beach Outfall Questions/Answers, additional follow-up workshop dates on the subject, council meetings in which the topic would be added to the agenda, design completion stages (%), posting of complete financials breaking out each element, initial construction dates by block, etc. (Council Member Hutchison)**

RESPONSE: Responses to the questions received from City Council are anticipated to be complete the week of March 30th. Staff is preparing to provide City Council with an update of the 90% level design at a Council meeting on April 13th. Based on direction from Council at that meeting, the project timeline could change immensely. A contract amendment would be necessary to redesign any major changes to Gulf Shore Blvd which would require scope and fee negotiations and possible another Council meeting. It is possible the drill component (which was intended to be under construction this summer) could still happen in the fall. The construction of the pump station is intended to start after the drill and the stormwater work on Gulf Shore Blvd can only occur after the pump station is operable. Exact construction dates won't be known until Council awards construction contracts.

- **What are the construction blackout periods which will need to be observed during the project? Where and when will such blackout periods be in effect? (Council Member Hutchison)**

RESPONSE: Typically, in the City of Naples, large capital improvement projects are deferred to the off-season (roughly post-Easter to pre-Thanksgiving). Restricting the contractor to only work during this time is being discussed but does come with several consequences such as higher mobilization costs and a longer overall construction timeline.

- **Please provide the timing of the construction plan by street block and time period. (Council Member Hutchison)**

RESPONSE: The construction sequence is still being evaluated and will be a large part of the discussion with City Council during the upcoming 90% progress report presentation. Staff's recommendation will likely be that once the pump station is operational, stormwater trunk line construction proceed to the north to Alligator Lake, with possible one closure between 3rd Ave N and the lake located near 6th Avenue N. Once complete, the work between 3rd Avenue North and Central would be complete. Then the 2 southern most blocks between Central Ave and 2nd Ave S. Lastly, the blocks between 6th Avenue N and 8th Avenue N/S. Golf Dr would be complete.

Michelle had drafted a series of Questions and Answers that would be of most concern to the impacted residents along Gulf Shore Boulevard.

Please provide answers to Michelle Seeger's questions and supply the narrative she requested in her December 18, 2019 e-mail to Charles Chapman: as set forth below:

Narrative Describing the Construction Schedule:

RESPONSE: We anticipate the project will begin in May 2020 and will take approximately two years. Attached is a calendar of the main components of the project, starting with the construction of the pumping station at 3rd Ave. North, followed by the construction of the stormwater lines, etc. I suggest using a different format for the Project Schedule than that used in the October 24, 2019 presentation to the SFWMD. Using terminology like sequence 2A, 2B, etc. and providing the duration of each sequence is unclear. Instead, I would identify for each month what's going on (which may be a couple of things). Also, refrain from using terminology unfamiliar to residents not closely following the project (e.g., most residents don't know the location of Vaults 1 through 3, and vaults 4 and 5; instead identify these areas by the segments of GSB that are affected)

It would be premature to represent construction means, methods and scheduling of tasks and milestones without first having a contractor on board. We do agree that communication with property owners and the general public is critical, but at the right time.

- **Once the excavation begins, when and approximately how long will it take to complete the construction in front of each residence? (Council Member Seigel 1/20/20)**

RESPONSE: 'When' is dependent upon many milestones including City Council approval of the project. At this time, duration per home cannot be provided. However, the larger the pipe size, the more time it will take to install.

- **When will the excavation commence, and what is the sequence & duration of the excavation as the pipelines are installed along GSB? (Council Member Seigel 1/20/20)**

RESPONSE: Activities and schedule is determined with the Contractor, then coordinated with property owners. Sequencing will begin at the most downstream end working upstream (larger pipe to smaller pipe size).

MAINTENANCE OF TRAFFIC

- **Has a plan for routing traffic off of GSB during construction been developed yet? If so, what is it? (Council Member Christman)**

RESPONSE: A MOT (maintenance of traffic) plan will be a required submittal from the contractor as the phasing plan evolves and prior to construction. The public should expect segments of Gulf Shore Blvd to be closed for periods of time for the installation of the large infrastructure. Traffic will be detoured as appropriate. Property owner access will be maintained to and from their properties.

MISCELLANEOUS SUBJECTS

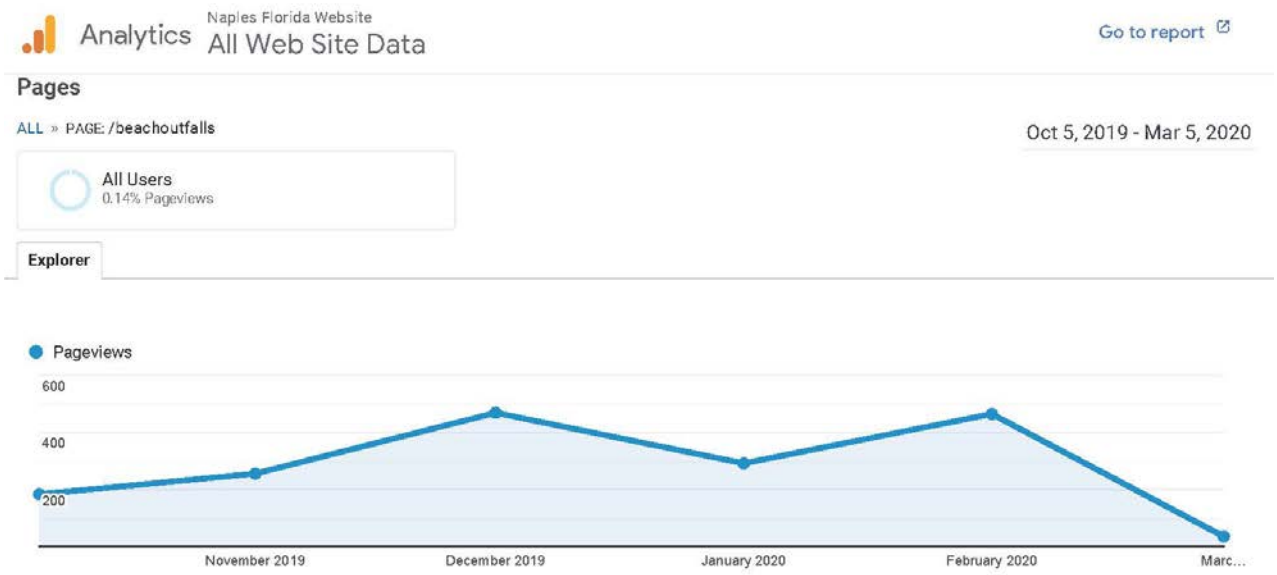
- **Will staff provide minutes related to the city council workshop which was associated with the Gulf Shore Blvd. Outfall Project on February 18, 2020? (Council Member Hutchison)**

RESPONSE: The City Clerk's office will provide minutes for the meeting as they typically do. The video can be watched at any time at www.naplesgov.com

- **Are there any obstacles to creating a webpage related specifically to this project as a primary source of information to the community? Please explain. (Council Member Hutchison)**

RESPONSE: There are many technical obstacles associated to creating a project website; but, with the understanding that such a website is critical for providing the public with accurate information, City staff overcame all obstacles in 2015 and established a dedicated webpage for this project that is accessible by anyone with internet access. This webpage can be accessed by navigating to www.naplesgov.com/beachoutfalls. This page contains an abundance of information including the 60% and 90% plans, engineers estimates of probable costs, alternatives assessments, multiple presentations, six permits from federal and state agencies, submerged lands lease/easement, multiple geotechnical reports and more.

Hits on the website since October of 2019 are as follows:



Page	Pageviews	Unique Pageviews	Avg. Time on Page	Entrances	Bounce Rate	% Exit	Page Value
	1,702 % of Total: 0.14% (1,223,995)	1,521 % of Total: 0.17% (891,367)	00:04:21 Avg for View: 00:01:24 (210.04%)	553 % of Total: 0.13% (438,446)	38.66% Avg for View: 38.17% (1.27%)	55.46% Avg for View: 35.82% (54.84%)	$0.00 % of Total: 0.00% ($0.00)
1. /beachoutfalls	1,702 (100.00%)	1,521 (100.00%)	00:04:21	553 (100.00%)	38.66%	55.46%	$0.00 (0.00%)

- **Please identify the individual funding sources which will finance this project and when such funds will be accessed. (Council Member Hutchison)**

RESPONSE: There are many proposed funding sources for this project within the City's adopted budget including the Stormwater Enterprise Fund, Water/Sewer Enterprise Fund, and possibly the Community Services Tree fund. Additional funding sources include the County's 1 percent Sales Tax revenue and potentially the proposed State Legislative Delegation funding that was requested. A $875,000 grant from the South Florida Water Management District was approved but is in jeopardy due to the recent delays.

- **When will the 90% design be available for public viewing? (Council Member Seigel)**

RESPONSE: The 90% plans for the project are available on the City's website at www.naplesgov.com/beachoutfalls

- **Please provide the tree survey showing the exact location of the 17 trees with the ROW and the 55 trees "within the beach end ROW" which will need to be removed. Karyn indicated that her numbers might be slightly different now. (Council Member Seigel)**

RESPONSE: An updated survey with mark-ups for tree impacts and tree protection notes is being provided with this response.

- **Slide Title: Naples-April 2017. This is the agenda for the 4/27/17 meeting. Page 2 shows: Utility Conflicts & Decisions (Bike Lane & RWM); Page 10 shows concern regarding neighborhood impacts "include if possible, amenity improvements"; Page 28 shows planning underway for future bike lane. Again, City Council was not asked to consider bike lanes until 12/17/18. (Council Member Seigel 1/20/20)**

RESPONSE: Slide #10 is strictly related to citing the generator station at the pocket park along Alligator Lake. The design team was concerned about noise and aesthetics related to a generator structure, as well as the impact of a new structure to a quaint City pocket park. This option was eventually eliminated due to deed restrictions at the park.

The slide clearly indicates "allowance" for future bike lane with further explanation for a bike lane standard. The design team thought the idea of bike lanes should be discussed in light of discussing excavation and reconstruction details for various aspects of the project. As previously indicated, City staff would be neglectful if it didn't consider City Council policies

and resolutions requiring staff to look at opportunities to move in the direction City Council leads. Indicating staff was "planning bike lanes" long before City Council was aware of staff actions clearly misrepresents City staff's intentions and lends itself to a strong emotional response. The truth is that options are provided often and early by City staff to City Council. Another truth is that most members of the public aren't involved in the details of early design or in the day-to-day business of the City to completely understand the site-specific impacts of a project or the guiding policies, resolutions or engineering standards by which to design. But staff works through a public involvement process, seeking to communicate as much project information as we can and receive resident feedback with the goal of successfully accomplishing a project that improves quality of life. In most cases staff develops a friendly, long lasting rapport with residents, thereby providing them with a meaningful connection to City government.

- **Slide titled Naples Beach Council. There is a table comparing Alternative 3. North System Phase 1 and South System Phase II. Outfalls Consolidation is priced at**
  $2,507,300 for the South System (Phase II). Please provide a back-up for that number. (Council Member Seigel 1/20/20)

RESPONSE: Please refer to Section 5.6 on page 5-29 of the Naples Beach Restoration & Water Quality Improvement Project 30% Design Technical Report, as well as Appendix F of the report. This information sufficiently explains the level of detail and assumptions that went into developing this conceptual 30% cost estimate.

- **Please supply the meeting notes for the April 27, 2017 meeting. Of particular interest is any discussion regarding slide 28 "GSB S/W Line Consolidation/Utility Conflict and Decisions". This was not a one bullet point discussion. (Council Member Seigel 1/20/20)**

RESPONSE: Understandably, the question-maker has interest in gathering documentation on how bike lanes were integrated into the design, but the focus of the April 27, 2017 meeting is summarized best by slides 38-41. They provide a clear indication of intent, action items, and schedule that the team was completely focused on. Nowhere in the presentation, or in the meeting conversation was there ever a discussion to consolidate or relocate utilities for the sake of integrating bike lanes. Rather, the idea of complete streets was raised, and bike lanes were one product of that idea. A sidewalk on the east side of GSB was also mentioned but that idea didn't go far since the history of the west side sidewalk along GSB was a notable point of discussion along with the recent beach end sidewalk outcome. Furthermore, City Council had not raised any questions or comments that would direct staff to consider an additional sidewalk on the east side.

While the east side sidewalk didn't get traction, an alternative was discussed. That alternative

proposed widening the existing sidewalk on the west side to better accommodate a popular pedestrian route. This idea was shared with the community and most of the feedback indicated that there is no need to do any widening to the existing sidewalk.

Additionally, staff sought out feedback on the potential need for additional crosswalks across GSB. To date, feedback is that two additional marked crosswalks is desired.

- **Re: Karyn's Cost Estimate Comparison (Outfall Consolidation Cost Items 30% vs. 60%). Karyn's Email 1/13/20.**

- **Given the specificity of the 30% numbers (Total = $2.51M), please provide the back-up to support your numbers as we have for the 60% numbers. (Council Member Seigel 1/20/20)**

RESPONSE: The 60% cost estimate is a result of a higher level of detailed design and engineering that is not available between 0-30%. Therefore, more general categories are used at the 30% level and usually with a higher level of contingency related to broad assumptions. As more data is collected, more modeling performed, more engineering applied, the task and cost breakdown is much more detailed. As previously mentioned, please refer to Section 5.6 on page 5-29 of the Naples Beach Restoration & Water Quality Improvement Project 30% Design Technical Report, as well as Appendix F of the report. This information sufficiently explains the level of detail that went into developing the conceptual 30% cost estimate.

- **Why would there be a "75% increase in pipe to convey flow from east to west" in order to locate pipes on the East side? Isn't it the same quantity of water ? (Council Member Seigel 1/20/20)**

RESPONSE: Staff is not clear on this question, but if it is related to cost changes from 30% to 60%, the following explanation is provided. The increase is not in length of pipe but rather size (diameter). Additional stormwater modeling that used site specific data collected over 2-years was used to understand site specific conditions.
Using standard and generalized data available from the State agency was NOT good enough for the design team. This effort occurred between 30-60% design. Also, the network of piping was designed with much more accuracy in terms of location, capacity and connections to drainage inlets. The 60% plans also begin to integrate resiliency. These are the primary reasons attributed to the increased cost.

- **Am I interpreting your notes correctly when you explain the savings in demolition and paving/grading of $1.557 million ($623,233 + $933,778) in the 60% estimate as attributable to removing the cost of the sidewalk demolition and sidewalk replacement from your 30% estimate? i.e. at 30%, you estimated the cost of**

demolishing the sidewalk and replacing the sidewalk to be $1.557 million ? As requested in 2.a. above, please provide the back up for the demolition and paving/grading line items. (Council Member Seigel 1/20/20)

RESPOSNE: The above is not interpreted correctly. Please see the previous response.

- **How are things going in Sarasota? (Council Member Seigel 1/20/20)**

RESPONSE: If this is in reference to the deep ocean outfall system that was design and constructed at Siesta Key, the answer is exceptionally well.

- **What measures will be taken to reduce noise during the dewatering operation? Will the well pumps run 24/7, or just during the 10-hour workday? What is the decibel level? Does the RFP specify a maximum level? (Council Member Seigel 1/20/20)**

RESPONSE: Noise levels are well below that of a leaf blower. Pumps may need to run overnight in the rainy season, but work will progressively move down the street. Dewatering is a very short duration process and mostly done in the summertime.

- **When will the Request for Bid, and final design drawings for the project be available? (Council Member Seigel 1/20/20)**

RESPONSE: 90% Plans are available now. The availability of final documents is dependent upon authorization of a design restart (as it was put on hold in February) and additional public involvement process.

- **The dewatering permit expires in Jan. 28, 2021. Will you be seeking a modification to the permit to extend it? Are other aspects of the project contemplated that would require a permit modification? (Council Member Seigel 1/20/20)**

RESPONSE: The contractor may need to extend the dewatering permit. This is common while in construction. No other aspects of the project, beyond what we have been discussing, are anticipated to require permit modifications; but, there's always a possibility.

- **Will the contractor be instructed to stage the exhumed dirt from the trenches in the street? (Council Member Seigel 1/20/20)**

RESPONSE: The City does not dictate means and methods, however this is a reasonable

assumption. As previously stated, private property is not necessary for this project. All work will be completed within the ROW (and easements at Alligator Lake outfall).

- **What size are the settling tanks? Will the size vary (i.e., address the fact that far less groundwater will be withdrawn in the southern stretches of the project)? (Council Member Seigel 1/20/20)**

RESPONSE: Settling tanks are unlikely, even though they are shown on the engineer's plan for purposes of a dewatering permit. There are many alternative dewatering methods that are accepted by the permitting agency that will likely be considered by the contractor. If the method employed is different from the one shown on the plans, it would first need to be approved by City staff and then the permitting agency through a simple modification.