ATTACHMENT 5: Cumulative Impacts of Proposed Fill of Wetlands and Open Water in Coral Bay Harbor

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1. Introduction

The Army Corps is required to evaluate the cumulative impacts of the proposed action on the aquatic environment. Cumulative impacts are defined in 40 CFR 230.11(g) which reads:

(g) Determination of cumulative effects on the aquatic ecosystem.

(1) Cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems.

(2) Cumulative effects attributable to the discharge of dredged or fill material in waters of the United States should be predicted to the extent reasonable and practical. The permitting authority shall collect information and solicit information from other sources about the cumulative impacts on the aquatic ecosystem. This information shall be documented and considered during the decision-making process concerning the evaluation of individual permit applications, the issuance of a General permit, and monitoring and enforcement of existing permits.

In this note we review the impacts to the portion of northeast Coral Bay Harbor locally known as "the creek." This is the site where the applicant requests permission to dredge, install bulkheads seaward of the current shoreline, backfill the bulkheads with dredge material, and cap with a concrete apron.

Based on our knowledge of the natural conditions of the creek prior to late 20th century development, the impact of activities during the 20th century, and the proposed impacts stemming from this project, we believe that the cumulative impact is far greater than the incremental impact from this one project, and must therefore be taken into consideration by the Corps.

2. Proposed Activity – Direct Impacts

The detailed analysis of the proposed construction in the creek for the Sirius Marina has been documented elsewhere in these comments. Briefly, the applicant proposes to dredge approximately 1 acre to a depth of -6 feet, install approximately 800 feet of steel sheet bulkhead, partially seaward of the current shoreline and partially in a mangrove wetlands, discharge dredged materials into the open water and wetlands behind the bulkhead, and cap with a concrete apron, approximately 1 acre in size. These component activities are illustrated below:



Figure 1: Proposed Development in the Creek

The key volumetric figures which quantify this development (according to the PN) are the following:

Project Component	Area or Volume
Dredge Area	40,510 sq ft (0.93 acre)
Dredge Depth	-6 ft
Dredge Material Removed	3,890 cubic yards
Bulkhead Length	800 ft
Bulkhead Distance from Current Shoreline	30'-50' (varies)
New Filled Land Area (Open Water)	15,000 sq ft (0.34 acre)
Filled Land Area (Mangrove Wetlands)	6,490 sq ft (0.15 acre)
Concrete Apron Area	50,226 sq ft (1.15 acre)

3. Condition of the Creek Prior to Development Impacts

We have assembled an archive of aerial and terrestrial photographs of Coral Bay, dating from the mid 20th century through the present. These photographs are our best primary evidence of the original shoreline location on the northern edge of the Creek prior to the fill operations of the 1970's. The next two pages show aerial photographs of the northern shore of Coral Bay and the creek from 1946 and 1954. For each photograph we show the original image beside the same photograph with the open water of the creek outlined in turquoise and our best estimate of the fringing mangrove upland extent outlined in green.

1946 Aerial Photograph of the Creek in Coral Bay Harbor



Figure 2: 1946 Aerial Image with Open Water and Fringing Mangroves Delineated

1954 Aerial Photograph of the Creek in Coral Bay Harbor



Figure 3: 1954 Aerial Image with Open Water and Fringing Mangroves Delineated

One additional photograph, taken from Bordeaux Mountain and looking into the creek, clearly shows the contour of the shoreline and the blue water which extends to the north beginning just east of the town dock, forming a small cove on the shoreline. This photograph was dated 1955.



Figure 4: 1955 Photograph of North Coral Bay Harbor and the Creek



Figure 5: 1955 Detail Showing Shoreline and Open Water

4. Illegal Filling of the Creek During Between 1955 and 1973

Between the time the previous photographs were taken (1955 and prior) and the present day (2015), a series of at least two non-permitted fill operations took place in the Coral Bay creek. We have documented the extent of this fill with a series of photographs comparing the present shoreline with the shoreline from the earlier photographs. We have also documented the local and federal response to the 1973 illegal fill in a series of newspaper articles from that time.

The first photograph is a modern aerial (2008) of the creek and in particular the northern shoreline (behind Coral Bay Marine and Skinny Legs Restaurant).



Figure 6: Coral Bay Creek – 2008

The next image is the same as the 2008 aerial photograph, however the boats in the water and two small floating docks have been removed to make the shoreline comparison easier to see.



Figure 7: Coral Bay Creek - 2008 - Boats Removed for Clarity of Shoreline

The next image is an enlargement of the 1954 aerial depicted earlier, covering the same region as the 2008 image, so that they can be overlaid for comparison.



Figure 8: 1954 Enlarged - Coral Bay Creek

Using the previous image as the base, we have highlighted the apparent shoreline with a yellow line, and the open water shaded in blue. The original fringing mangrove wetlands extended landward of the yellow line as shown below, highlighted in green.



Figure 9: 1954 Photo With Water and Shoreline and Wetlands Highlighted

The next image takes the 1954 shoreline, open water and wetlands and superimposes these features on the 2006 photograph. It should be apparent that the easternmost extent of the creek has not changed over this period of time. The mangroves have grown, but the open water is in the same location and extent. The same is true of the open water to the west of the town dock – it hasn't changed during this time period.

What has clearly changed is the shoreline and open water directly east of the town dock. The land has clearly been extended into the creek the full distance of the town dock (90 feet in length) and for a distance east of the dock of approximately 200 feet. All of the fast land beneath the blue shading and south of the yellow shoreline is filled land, where previously open water existed. Similarly, all of the green shaded area which was previously fringing mangrove wetlands is now filled land. The mangroves east of the green shaded area remain as they were in the earlier photographs.



Figure 10: 2015 Photograph With 1954 Shoreline and Water Superimposed

The red shaded area in the photograph below highlights the filled land where there previously was open water. The area of this filled land is approximately 16,400 square feet (0.4 acre). Adding to this the roughly 7,000 square feet of filled mangrove wetlands (green shaded area) results in an estimate of the filled open water and wetlands of approximately 23,400 square feet, or 0.54 acre.



Figure 11: Filled Land Highlight

5. Contemporaneous Accounts of Illegal Fill Operations – 1973

We have also researched the archives of the Virgin Islands Daily News and located several news accounts of the illegal fill operation in 1973 and the government response in 1974. These articles identify the location, estimate the quantity of fill, identify the area as prime bird habitat, and indicate that the US Army Corps of Engineers was informed of the violation and involved in the response.

It should be readily apparent from the photographic evidence, the contemporaneous news accounts, and visual inspection of the materials in the fill location, that a substantial illegal fill of open waters and wetlands, amounting to a minimum of 0.5 acre of the creek, took place in 1973.

THE DAILY NEWS, WEDNESDAY SEPTEMBER 19, 1973

Charge Road Builders With Illegal Dumping

CRUZ BAY-At the request of members of the St. John branch of the Virgin Islands Conservation Society last Thursday, the Department of Conservation and Cultural Affairs investigated alleged illegal dumping of road construction spoils materials in the salt water tidal marsh area east of the Benjamin Franklin School in Coral Bay.

Dr. Arthur Dammann, fish and wildlife biologist for the Department of Conservation and Cultural Affairs made an on-site inspection over the weekend and reported to Commissioner Hortense M. Rowe violations of both federal and local laws by Pizzagalli Construction Company in dumping its spoils in the salt water marsh.

According to Dr. Dammann, Commissioner Rowe has issued a stop order to halt further dumping. It was learned that stop orders on construction work normally are processed through the Department of Property and Procurement.

However, Commissioner Alphonse Holder told The Daily News that he had "received nothing from Mrs. Rowe's office nor would be expect to receive anything from her office."

He explained that his office would issue stop orders only after receiving a report from an inspector, engineer or the Commissioner of Public Works. Commissioner Rowe was unavailable for comment, and Commissioner John Harding of Public Works is off island.

The Daily News contacted Federal Highway Administrator Frank Porter, whose office oversees federally funded highway projects hor the Office of Emergency Preparedness. Porter is authorized to recommend final payment or witholding of federal funds for such projects.

Porter told The Daily News "We do what we can to make sure the contractor lives up to the specifications and requirements of his contract. He noted that 'excess materials cannot be dumped in salt water anywhere without a permit "

The unauthorized dump fill activity by Porter reportedly not only violates federal law but is in violation of the Earth Change Law which took effect Oct. 1, 1972 and Act 3404, the Shoreline Alteration Bill, which was introduced by Sen. Wirdin Brown and co-sponsored by Sen. Noble Samuel and signed by Governor Evans March 20.

Pizzagalli is subject under provisions of Act 3402 to a fine of not less than \$10,000. Each day such violation occurs, constitutes a separate violation.

The three to four acre marsh area in Coral Bay has previously been cited by members of the Audubon Society as a unique observation point on St. John for local students as well as tourists to observe some 38 species of land and water birds.

According to observers, the dumping has been going on for several weeks.

This reported violation is the record time Pizzagalli has been a cited for violations of their federally funded road construction project.

THE DAILY NEWS, MONDAY OCTOBER 1, 1973

Conservation Probes Violation Of Statue

By DORIS JADAN

CORAL BAY - According to observers in the Coral Bay area of St. John, the Pizzagalli Construction Company has been dumping fill on the property of Fred Smith over the past 3 months with the consent of the owner, but reportedly in violation of Act 3402.

The act specifically prohibits filling of any marsh swamp, pond or shoreline areas without a permit. No permit has been applied for or granted either to Smith or the Pizzagalli Co., Dept. of Conservation and Cultural Affairs officials told the Daily News.

According to Marc Buchanan, former president of the V.I. Conservation Society whose home overlooks Centerline Road near Coral Bay, "One or two trucks, the last trucks of the day, were all we noticed at first, beginning the end of May or early June. We were actively aware of this since the big trucks with the dirt use air brakes." Buchanan explained that later the number of loads

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private land was a violation of Act 3402, the Pizzagalli official told The Daily News, "I know all about the laws. Don't tell me anything about the V.I. code." Alexander terminated the interview abruptly by hanging up.

Members of the St. John Branch of the V.I. Conservation Society first reported the dumping of fill on the waterfront property Sept.13 to James Francis of the Department of Conservation. An 'on-site inspection was made for Mrs. Rowe by Dr. Arthur Dammann two days later.

Red mangrove trees in the tidal marsh area have been knocked down on the eastern end of the property according to several increased. He agreed with other estimates that 1,000 cubic yards of fill, more or less, have been dumped illegally in the swamp and mangrove area on the Smith property over the past three months. One truck load is 10 cubic yds.

Contract for the Centerline Road reconstruction work was Pizzagalli awarded to the Construction Company, low project at bidder on the \$1,966,182. The Office of Emergency Preparedness pays for approximately 75 per cent of the total amount.

Commissioner of Conservation and Cultural Affairs Hortense Rowe told The Daily News she is in the process now of bringing the various legal aspects of the case into perspective. The commissioner indicated that her department will take appropriate action to enforce the law.

It states that "no person shall clear, grade, fill, alter modify...waters and shorelines of the Virgin Islands unless a written permit has been obtained."

Permits are obtained through the Department of Conservation. The law defines "person" to mean any "individual, firm, partnership, association, corporation or other entity, the government of the United States, the government of the Virgin Islands or any department, agency, or authority of such governments, and includes any officer of the foregoing." Paragraph 410 of the law states that any person who violates any provisions of the law shall be fined not less than \$10,000 nor more than \$20,000. Each day upon which a violation occurs constitutes a separate violation.

The Daily News contacted Clarence Alexander, Pizzagalli foreman on St. John, by telephone. Alexander said that Pizzagalli had been dumping on the Fred Smith property behind Franklin School, but said there had been no dumping there for the past month. (Other reports note that dirt had been dumped on the Smith property earlier this month.) "Someone wants 2 big story," Alexander said. "The owner wanted fill. It's private land, a swamp that needed filling." When Alexander was asked if he was aware that filling any swamp or marsh on public or

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Coral Harbor. According to information from the Soil and Water Conservation District on St. Croix, any damage to any mangrove trees is subject to legal action by the Army Corps of Deputy Engineers. District Engineer Lluch of the San Juan area has been notified, according to V.I. Conservation members on St. John. Ted Johnson of the Soil and water Conservation District will meet Monday on St. John with V.I. Conservation Society president Charles Tilton and St. John mer ibers of the organization along with a representative of the Department of Conservation.

Pizzagalli Ordered To Cease Fill Operation

CRUZ BAY — A cease and desist order from Commissioner of Conservation Hortense M. Rowe was hand delivered late Monday afternoon to Clarence Alexander, foreman for the Pinnagalli Corporation in order to halt dumping of fill on submerged lands and mangroves fringing Coral Harbor.

Pizzagalli has the contract with Public Works for reconstruction of Centerline Road on St. John. Public Works, according to the contract, is charged with designating dump sites for the road fill and the contractor is paid on a mileage basis for hauling fill to the approved sites, according

Ordered (Continued from Page 1)

Until PWD locates fill areas and Change permits are Earth approved, Saalman told The Daily News that dumping by Pizzagalli on submerged lands, or on land belonging to private individuals and land belonging to Emmaus Moravian Church will be stopped. Submerged lands belong to the federal government, but title is expected to be transferred to the local government, bringing such areas under the Shoreline Alteration Act, Saalman added. He will return to St. John next Wednesday to reinspect the areas involved.

Commissioner of Public Works Harding told The Daily News late Thursday while foreman Clarence Alexander was in his office that "something will be worked out" to halt the destructive dumping practices of Pizzagalli. A letter from Elton Chongassing on Monday to Harding requested that the PWD Commissioner take action to see that Pizzagalli lived to the Office of the Legislature on St. John.

However, no applications for permits have to date been made by Public Works; Pizzagalli, or individual residents desiring to have this fill on their land, according to officials in the Dept. of Conservation. Two local laws, the Shoreline Alteration Act and the Earth Change Law, require that permits be approved before any area is filled.

Thursday morning Elton Chongassing of the Dept, of Conservation and Bill Saalman from the Soil and Water Conservation District in St. Croix met in St. Thomas with Clarence

up to the terms of their contract for disposing of fill in accordance with the law.

The * repeated violations by Pizzagalli of the Earth Change Law and Shoreline Alteration Act are under review by Assistant Attorney General Henry Feuerzeig of the Department of Law.

V.I. Conservation Society president Charles Tilton told The Daily News that he had discussed the federal violations involved in filling submerged lands and destroying mangroves with District Engineer of the Army Corps of Engineers R.S. Lluch in San Juan by phone Thursday. Gumbs' and Orlando Cancel of Public Works Road Division. Public Works must now designate fill areas, Saalam explained, that do not violate the Shoreline Alteration Act or Earth Change Law. Saalam and Chongassing later visited both Enighed Pond where PWD is fillig some 10 acres and Coral Bay.

In a question about fill dumped by Pizzagalli recently on private property near Sea Breeze, Saalman said that this fill which blocks the natural drainage of a gut will be removed so that the gut can continue to drain properly.

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Rosemary Galiber of the Environmental Studies Program announced that in order to increase awareness of government employees in all department as well as teachers that a special-on-site discussion of the values of mangroves to Virgin Islanders and ways to protect. remaining mangrove areas will be held this Sunday at Annaberg at a.m. "before 11:00 the demonstration Bake-In at noon. "Many persons do not understand why mangroves, marshes, guts are available to them now and for years to come," the environmental education teacher noted.

6. Cumulative Impact of Proposal by Sirius Marina to Fill Open Water and Wetlands

We now turn to the question of cumulative impacts. The proposed action by T-Rex St John would, according to the applicant, fill 14955 square feet of land below mean high water and an additional 6490 square feet of mangrove wetlands. The total acreage of filled aquatic resources amounts to 0.49 acre.

The previous fill operations directly landward of the proposed Sirius fill operation removed 0.54 acre of open water and mangrove wetlands from the creek.

Illustrated below are the original extent of wetlands (pre 1970), the current shoreline and wetland boundary, and the proposed shoreline and wetland boundary based on the fill operation requested for the Sirius Marina.



Figure 12: Cumulative Loss of Wetlands in the Creek

The proposal by T-Rex St John removes almost half the remaining open water of the creek, as can be readily seen in the illustration above. The easternmost portion is reduced to an extremely narrow waterway, and the mouth of the creek is a fraction of its original extent. This cumulative degradation of aquatic resource will have dire consequences on the entire ecosystem of the creek, impacting juvenile

shark habitat, shoreline bird habitat, and mangrove wetland habitat. The secondary and indirect impacts have been discussed elsewhere, including cutting the primary seawater exchange channel with the adjacent salt pond and wetlands.

7. Conclusion

Although we believe we have demonstrated that the direct impacts of the proposed dredging and filling of the creek in Coral Bay are sufficiently extensive to require denial of the permit under NEPA, and the availability of practicable alternatives with substantially less damage to aquatic resources require denial of the Section 404 permit, we also believe that the cumulative impact of filling the creek, as demonstrated in this analysis, would warrant denial of the permit by itself. We believe this evidence is conclusive that the proposed activity would have significant, irreversible impacts to a critical aquatic feature of Coral Bay, which is itself an aquatic resource of national importance.

David Silverman, President, Save Coral Bay, Inc.

22 January 2016