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Ann Hodgson: This is Ann Hodgson. I'm here with Dr. Bill Fehring with the Tampa Port Authority, former environmental director with the Tampa Port Authority. And we're here today with the Tampa Bay Environmental Oral History Project, talking about Bill's experiences as he became involved in environmental issues in Tampa Bay. Bill, I'd like to start the questions this morning by, our interview, by asking: How did you get interested, as a child, in the natural world, and can you tell us how that transitioned into your professional career?

William Fehring: Well, I was born in New York and grew up on Long Island, on the shore of the Great South Bay, which is, like Tampa Bay, an important estuary and one that has undergone, over the years, a lot of restoration. So, I grew up on the bay and on the shore of Long Island, out at Fire Island and so forth. So, I spent my entire life on the coast. And so, my work in Tampa Bay was a natural outgrowth of where my interests and my history was.

I went to school in Connecticut, at a school called Wesleyan University, a liberal arts school and from there went on to Cornell, where I got my PhD in behavioral biology. The—while I was at Cornell, one of the professors, by the name of Dr. Perry Gilbert, left Cornell and retired at about the time I was completing my on-campus work, and took a position as the director of the Mote Marine Lab¹, which, at that time, was at the south end of Siesta Key in Sarasota; and he replaced a woman, the former, the founder of the lab, Genie Clark², known as the lady with the—and the shark.

¹Mote Marine Laboratory and Aquarium is an independent marine research institute. The 10.5 acre base campus, aquaculture campus, and 3 field stations employ renowned marine scientists to fulfill their mission of research, conservation, education, and sustainable use of our oceans.

And so, I came south with Perry. For about six months, he had an ONR [Office of Naval Research] grant to study porpoises and sharks, and that's what brought me to Florida. At the end of that program, the grant ran out and there I was, "becalmed in the mullet latitudes"³, so I took a position as the pollution control director for Sarasota County. There was a new program there, and I was in charge of the monitoring program on the tidal streams and the sewer plants and all those kind of things. And I did that for about three years while I was finishing my thesis and getting my PhD.

At the point that I finally achieved that, in 1974, I left Sarasota County and took a new position with the port authority as what was, at the time, the second environmental manager for a port in the United States or in the world, for that matter. And it was a new program, so it had a lot of new challenges and allowed me to get into a whole variety of things associated with Tampa Bay. The big driver of that position was the harbor deepening project; the port was involved, right at that point, in trying to get the environmental impact statement for the Tampa harbor project completed and through the process. And the, many of the players, some of whom are still around today in Tampa Bay, were involved in the opposition to the harbor project.

And so, my job was to neutralize all of those people and, of course, what happened over the years, they've become probably my, all my best friends, and they're people I'm still associated with in the corps, and all those people are all moved on to other things or passed away. So, that's what got me into Tampa Bay. I came down with a degree in biology, started out at Sarasota at the marine lab, and so, I've been involved with Sarasota Bay, Tampa Bay, the coast, since 1971. So, I've kind of gotten becalmed in the mullet latitudes.

So, the port authority position was, as I said, focused initially on the harbor deepening project, but the port had some other roles around the bay that were also in need of help. They were the permitting agency for all marine construction, including in the two biggest lakes: Thonotosassa and Keystone, which they own the bottoms of, and they own the bottom of Tampa Bay, the sovereign lands. And had no program, at that point, to manage it in a full manner, a set of rules that you could go by, it was all done by the seat of the pants.

So, as I became engaged in the port—of course, for several years, the harbor project was the big process, to get that done, and much of the early portion, much of the evolution of

²Dr. Eugenie "Genie" Clark (1922-2015), was known as the "The Shark Lady" due to her prolific research, education, and outreach on the subject. Dr. Clark founded Mote Marine Laboratory in 1955.

³*Becalmed in the Mullet Latitudes* is the title of a classic book on Florida history, written by Al Burt and published in 1983. The "mullet latitudes" refers to the places in Florida's past that are disappearing.

Tampa Bay happened in the context of that project being completed. It was a key component in, kind of, a way they didn't expect in the restoration. But at the same time, we established a permitting program, which got me involved with a lot of other agencies and Roger Stewart, who was reviewing them; and so, we had kind of a love-hate relationship with EPC⁴, what is now EPC, in that they reviewed permits at the port with issue, but also they had enforcement on some things that went down at the port. We got involved very deeply with the city, with Dale Twachtmann⁵ in the mid-seventies.

A few years after I came here, they opened the new sewer treatment plant. So, when I first came to Tampa Bay, the bottom of Hillsborough Bay was six feet of muck. The paint on the houses along Bayshore [Boulevard] was being peeled, but in the Spring, as soon as the first rains came, right this time of the year, when the Gracilaria⁶ would all die, float to the surface, the east wind would blow it against the sea wall and it would rot, and you couldn't walk on the bay shore. It was just horrid. And, of course, the sewer treatment plant kept sitting there, pumping out nitrogen and other things.

So, during of the course of the little over ten years that I was at the port authority, the harbor project got approved and constructed, the sovereign lands program⁷ was established and changed, entirely, the way dredge and fill was being done in this bay, in some ways that a lot of people think it was the environmental regulations, it was another thing that did it, really did it. And the permitting got much more refined and a lot of the rules came together and so, at the end of that process, it had shifted. The harbor project was doing, was pretty much done. It was doing what it was supposed to, in terms of deeper channels, bigger ships, and so forth; and so, the activities at the port authority transitioned over more in terms of the broader management of the bay.

And about that point, a group at the port authority, which had been meeting in terms of the harbor project, began to change its focus, and that group included Robin Lewis⁸, and Joe Simon, and Ernie Estevez, and Sally Thompson with the Environmental Coalition, Bill Taft, here at USF for a while, and Carl Goodwin with the USGS; all of who are people who had major early roles in the restoration of this bay. They had a Committee on Bay Management, which about the time I left the port authority in early '85 became the

4[Hillsborough County] Environmental Protection Commission, created in 1967 by a Florida legislative act, is charged with regulating activities that may lead to air, water, or soil pollution or excessive noise.

5Dale Twachtmann was the executive director of SWFWMD from 1962 to 1972, was the third employee to ever be hired into the district, and was the second executive director to be appointed.

6Gracilaria is a genus [Rhodophyta] of red algae that is a food source for both humans and herbivorous fish and shellfish.

7The Sovereign Lands Management Initiatives Program is administered through the Tampa Port Authority. It provides funding for projects that provide for restoration and preservation of sovereignty areas of Hillsborough County: Tampa Bay, the Alafia, Hillsborough and Little Manatee Rivers, and Keystone and Thonotosassa Lakes.

8Roy "Robin" Lewis III was interviewed as part of the Tampa Bay Oral History Program on June 15, 2015.

Agency on Bay Management⁹; and even though I had left the port, they asked me to be their representative on the Agency on Bay Management in the early years, because I continued as a consultant to the port for, oh, 15 years, pretty much.

So, during that period, a lot of what we're now seeing in Tampa Bay come to fruition, in terms of what the estuary program has recently been announcing, the restoration of the sea grasses, the incredible restoration of the water quality in the bay, all really got their start in those early years. You know, one of the first mitigation programs we talk about, you know, now we do them all the time, they're running out of places to do it, we've restored so much of the bay.

But one of the very earliest mangrove restoration was where the shrimp docks are. Port wanted to take it out; Roger Stewart, you know, wanted those mangroves that were out there, those little baby mangroves; they had to be replaced, so we dug 'em up. We had a group of students from the maritime program down there, there was, like, a correctional thing for children, I forget the exact name of it. Maritime Institute! Yeah, the Marine Institute.

AH: Um-hm.

WF: Took 'em out in boats, we dug 'em up, and took 'em out to 2D¹⁰, which had just newly been completed, and had, on the east side, had protected shoreline, and we planted them. We don't do that anymore, it was highly labor intensive; but I have some wonderful pictures of the kids with their posthole diggers digging these things up and taking them out there. Those trees are now 35 feet high and have spawned an incredible number of seeds in the rest of the bay.

Another project we did early on, really, it was after I left the port but was consulting to the port; we designed what is the Pendola Point mitigation, which was, at the time, the most advanced thing anybody had tried to do, where we went in and created tidal channels and snook holes and things; and it worked very perfectly, worked beautifully. But there isn't a single bit of *Spartina*¹¹ that we planted in there anymore. That's all 20 foot high mangroves, and the seeds for those mangroves came from off the island. So,

⁹The Agency on Bay Management is the natural resources committee of the Tampa Bay Regional Council and was instituted in 1985 as the primary community organization focusing on the protection of the Tampa Bay estuary. The ABM's accomplishments include the SWIM program, and the designation of the Sarasota and Tampa Bays into the National Estuary Program.

¹⁰Islands 2D and 3D are two artificial spoil islands created in Hillsborough Bay during the dredging of the main shipping channel to the Port of Tampa. They are owned by the Tampa Port Authority.

¹¹*Spartina alterniflora* (saltmarsh cordgrass) is a type of deciduous grass found in intertidal wetlands and saltmarsh estuaries.

we've created—and that process, you know, about that point, SWIM¹² got their program started, and their restoration, and a whole slew of players came in with ELAPP¹³ and the county and the Swiftmud [SWFWMD]¹⁴ and the state acquired, basically, the whole east shoreline of Tampa Bay.

And now, we're running out of places to restore. We don't have really have any more coast to restore, we're restoring just inland and so forth. So, I've had the opportunity to be a proponent in terms of a permit applicant at the beginning, and then, as a consultant on a good number of those projects; and now that I'm retired, I'm on the estuary program's technical advisory committee, I attend the Agency on Bay Management, I'm not formally representing anybody there, which gives me the chance to embarrass everybody but to stay involved. And so that's, kind of, in a snapshot, the transition over what is now 40 years.

AH: That's a, just a tremendous overview of your history. I wonder if we can, sort of, start back at the beginning, as you became the port director, environmental director, and tell us in a little bit more detail, you know, what were the issues the port was facing, what were the attitudes, you know, how difficult was it to get a new environmental program really implemented at the port?

WF: It—well, the port director, who was a fellow by the name of Guy Berger was an ex-Air Force Colonel and a gentleman, and he knew he had a problem with the harbor project; and so, in concert, and I'm sure with the corps of engineers who were sitting there. The corps was doing their thing, doing their study and the personalities that were involved; he wanted to have a player in that argument. The port, being the proponent, normally turns all that over to the corps; and there were a number of board members on the port at the time, the most memorable to me is a guy by the name of Delmar Groddy, who, nice gentleman, and he—a good, environmental conscience, and he was very, very supportive in the early years, when he was on the board, of setting up a program.

He also recognized that there were other things the port was doing, and remember, this is 1974, NEPA¹⁵ is beginning to really take hold; you know, it comes from the late '60s,

¹²SWIM is the Tampa Bay Surface Water Improvement and Management Plan, initiated through Florida 1987 legislation that dictates water management districts protect the ecological, aesthetic, recreational and economic value of the state's surface water.

¹³ELAPP or Environmental Land Acquisition and Protection Program was established for the purpose of identifying, acquiring, preserving, and protecting environmentally-sensitive land in Hillsborough County.

¹⁴Southwest Florida Water Management District manages water and other related natural resources for their continued and sustainable use.

¹⁵The National Environmental Policy Act of 1969 was one of the first laws to create a nation-wide framework for protecting our environment. Its basic mission is to ensure that all branches of

1971. The city was moving forward. They had gotten their funding for the advance waste treatment plant, I think about '71 or '72 initially, and it was finished in '78. So, there were things happening around the port, and they needed to have an environmental person. But when I came into the job, the key proponent, the key issue was the harbor project.

But it was also an open pallet for whatever you wanted that program to be, which was a unique opportunity. It really was. There weren't a lot of firm expectations, except getting the harbor project done, of where it would go. And so, I had a unique opportunity to step in and work. Now, as far as the environmental community went in getting these people together, there was a lot of interest in having the port authority be more involved as a local political entity, rather than just fighting with the corps of engineers, because the sponsor has some influence. It's not real strong, but they do have influence with the corps.

So, you know, they were looking to me, in a lot of ways, to convey their message and to explain the message of the environmental people to the board of the port authority and, in turn, politically up the line to the colonel of the corps, who became the port director a few years later: Emmett Lee. It was also on his watch they were doing a cross-Florida barge canal. So, Emmett was a rather important colonel within the corps of engineers; he had two of the biggest projects the corps has ever done or tried to do.

And so, it became, it really wasn't, I would say, hard like you were overcoming it. There was a lot of interest and so we were able to create a forum using the port as a focal point to get a discussion between the corps environmental staff, the USGS—who became very important players in doing the modeling of the bay and setting up the model of the bay that drove the design of the harbor—the Robin Lewis's, the Sally Casper, who was head of Save Our Bays at that time. A little later, Sally Thompson¹⁶, kind of, came into that fold. She was not in the—she wasn't quite as involved in the same role that she ultimately became. But we had Joe Simon¹⁷, Ernie Estevez¹⁸ and so forth out of USF here, all of whom had an interest in the bay.

And so, by providing that venue for discussion, we were able to address a whole lot of issues and, you know, we could as a group, explain something and get more support for it, politically and so forth. And it was that function which ultimately led—not directly,

government consider the environment before taking any action to significantly alter it.

16Sally Thompson is a Tampa Bay area conservationist involved with the Florida Audubon Society, the Tampa Bay Regional Planning Council's Tampa Bay Study Commission and the Agency on Bay Management. In 1990 she was appointed to the SWFWMD governing board where she served for 11 years.

17Dr. Joseph L. Simon (1937-2004) was a biologist at the University of South Florida. He was known as "Mr. Tampa Bay."

18Dr. Ernest Estevez received his PhD in biology at the University of South Florida. He joined Mote Marine Laboratory in 1979 and became their director of the Center for Coastal Ecology. His research is focused on invertebrate zoology and benthic ecology.

but it was all the same players who were on the bay management committee that then became the Agency on Bay Management, when Jan Platt, who was, of course, a city council person for (inaudible) county commissioner, was not in it originally, she was working politically at a different, somewhat different level, but ultimately, they came together.

And so, it really—you know, there were other issues besides the harbor project. There was just the issue of mitigation, which was evolving at that time. There was—no one had ever tried to do a lot of that stuff, so we experimented. But there were issues with the port, just pollution type stuff. You know, at that point, we didn't have CERCLA¹⁹ and RCRA²⁰ and that kind of stuff, but stuff was getting up in the bay. We had oil spills. There was a lot of filling going on at Hooker's Point, with material that ultimately became real difficult to deal with, because they always did. They had always, they had—Hooker's Point was formed, there was nothing; the middle was all mud, which is where there are all facilities now, including the expanded sewer treatment plant and all kinds of stuff.

The material that went in there, which was being done by our engineering department, finally they got called on it; and so, I had to help negotiate and get settlement, get some programs, which got me involved with Tampa Ship and some of their interesting characters, like George Steinbrenner, around the bay. So, it was a, you know, it evolved over the ten years, and the position down at the port has evolved further. What they're doing today is far more involved with land acquisition and clearing land and so forth.

When I started, it was a complete open palette. So, you kind of, if you got bored one day, create an issue and take it on. I mean, it was, you had that kind of freedom in the early days. But the whole the structure of the environmental program and the interests became far more structured while I was there and certainly in the decades since I left that position and have worked in other roles around the bay.

AH: You mentioned that one of the key things you initiated was firming up or solidifying the approach to permitting throughout the bay, because the port authority, of course, was granted the right to manage the bay itself, the bay bottom lands, sovereign lands.

¹⁹CERCLA, the Comprehensive Environmental Response, Compensation, and Liability Act, also known as Superfund, is a 1980 law that authorizes the EPA to respond to releases of hazardous substances that are a threat to humans and the environment.

²⁰RCRA, the Resource Conservation and Recovery Act, was enacted in 1976 to govern the disposal of solid and hazardous waste.

WF: Um-hm.

AH: Plus the two major lakes. As you moved forward in devising the permit structure, and program, what was the reaction of the local political party or political representatives? You know, how did the community view and come to understand the need for permitting?

WF: That was more easily done, and they understood it more clearly, when the permits involved around the bay.

AH: Um-hm.

WF: You know, when the salt water were kind of, “What’s the port authority doing here? They’re with big ships.” That was—it was the public that kind of had a problem explaining, understanding it. EPC was evolving at that point, and was pretty controversial to start to get into their own permitting program. So, the port authority program kind of was like a safe, “Well, we have a little more control over those guys. You know, they’re not environmentalists; they’ll be fairer about this.”

AH: Um-hm.

WF: But what we did, recognizing the need for input, is we put in the rules early on that any permit had to be reviewed by the planning commission and by the EPC. Planning commission in terms of the land use, was there an appropriate location to put the dock and so forth. And along the bays, that was fairly—you know, and the canals. You know, we were issuing permits for docks and canals, and so, you got into, “Yeah, somebody has to not keep this guy from building his dock all the way across the canal and blocking everybody else.” He got into issues of riparian rights²¹ and so forth.

When you got up into the rivers, it was a little harder for people to understand why the port authority was doing it. And when you got into the lakes, and at that time, the port authority was issuing permits in little lakes, small lakes, in addition to Thonotosassa and Keystone, because the original instructions to surveyors was to survey all lakes over 25 acres and the bottoms of those was supposed to be sovereign lands. Well, they never surveyed them, and so people had deeds running out into the middle of these little lakes; and, “I don’t want his dock out there. I don’t like this guy. His cat—” you know, anyhow, he’d got into all kinds of issues; and Terrell Sessums²² finally, you know, came to our

²¹Riparian rights is a system for allocating water among the people who own land along its path.

rescue and changed the, had the enabling act²³ changed to divest the port authority from the lakes other than the two lakes, that was done legislatively.

And so, that took a whole big bunch of distraction away from that program. Which, then, in turn, it was DEP that had to do it; ultimately, EPC picked it up as their program evolved and people became more used to it. EPC now does the program, the permitting on that lakes and, in fact, does all of the permitting in all of the lakes, including Thonotosassa and Keystone, unless it's something very large and they still have to get like a letter from the port authority on the sovereign lands. They reversed it; and that was a more appropriate program, because they're more on the police, that's a police power action.

But down in the marine areas, the port authority still issues the permits, and that has to do with protecting, politically, their ownership. There's always been a question as to why the port authority in Tampa is the only port in the state that owns the sovereign lands. And so, one of the drivers was, there has always been political pressure by other ports to have that reversed. It's because the port doesn't have to pay rent, on the bottom of the berth, to the state, which other ports do. Port Manatee is an example.

AH: Um-hm.

WF: The sovereign lands there are owned by the State of Florida; and so, they have to get their leases from the—which the Port of Tampa doesn't. So, that was a driver, in terms of developing the program and what a useful tool to use when trying to convince people we needed a better program, is the outside pressure that was always there to take that away from them. So, there was an economic pressure. And it still, their rules need to be updated. I've recently been asked by the port management to participate on a committee to advise them on updating their sovereign lands rules, which haven't been done in a couple decades.

They've been revised since I was there, but we had lunch the other day and talking about maybe doing some advising over at the port, in terms of their program, because I've got some history; not only with that, but with the bay management, more broadly. But it was, you know, there were lots of challenges. There were lots of short term challenges, but a lot of great relationships were developed that exist still today among, I suspect, the

²²Thomas Terrell Sessums was a Florida Representative from 1963-1974 and Speaker of the Florida House of Representatives from 1972-1974. In 1967 he introduced legislation that created the Hillsborough County Environmental Protection Commission.

²³The Tampa Port Authority enabling act is the legislation that authorizes its existence and governs its jurisdiction and influence.

people that you're, many of whom you're interviewing for this program; and most of those people are still involved, to some extent, in the, those that are living are still involved in the bay, in one way or another.

AH: The Tampa Bay Oral History Project was fortunate to receive the archives from the City of Tampa Bay Study Group²⁴ when that program was closed a couple of years ago. I know you had quite a bit of interaction, of course, with Roger Johansson²⁵ and his staff. How did you guys coordinate and communicate about some of the water quality issues that were relevant to port operations as well as city operations?

WF: In the early days, we really didn't coordinate, but what happened, the port authority instituted a water quality monitoring program of its own and it was one of the very first ones, and then, EPC had theirs; but the port was doing its monitoring in the deep channels around its own, more for its own protection than anything else, but there was a lot of good data collected on stratification in the channels and so forth, the fact that, you know, the deeper waters would go completely anoxic²⁶ during the summer time.

But it was restricted to the port areas; we didn't try to go out and monitor the whole bay, because the EPC, you know, at the time, DEP was beginning their program. EPC had started to establish a much broader program, and so, the port program stayed focused in a more intensive program on the stratification in the harbor. After several years, it became clear that EPC's program was going to the same places, doing the same monitoring, so the port stopped it.

Now, Roger was, for the city, was doing much the same thing; but he got involved with the seagrasses, which the port authority never got involved in. We never got involved in trying to map seagrasses; the city was already doing that. And so, you know, it was through the advisory committee at the port or, that a lot of that early coordination happened. I mean, we were all sitting on, the same group of people were on a whole bunch of committees, and, ultimately, you know, the Agency on Bay Management became—although it is for reviewing things, it's the subsets underneath it are where people get together and talk about their results; the recent seagrass recovery program, you know, first came out in a joint meeting of the estuary program, and the ABM natural resource committee.

²⁴The City of Tampa Bay Studies Group, also called the Bay Study Group collection can be found on the University of South Florida website under Special Collections in the Tampa Bay Environmental Collections <http://digital.lib.usf.edu/?u29.262-b43-ead> or at http://scholarcommons.usf.edu/basgp_report/ .

²⁵J. O. Roger Johansson, Supervisor of the City of Tampa Bay Studies Group for over 25 years, was also interviewed as part of the Tampa Bay Oral History Program, on June 29, 2015. See DOI T43-00006.

²⁶Anoxic waters refer to sea water, fresh water or groundwater that are depleted of oxygen, i.e. those with an oxygen concentration of less than .5 milligrams per liter.

It was a lot of fun, but it was those kinds of monthly meetings that we were having where a lot of that coordination would happen, and then it's one on one. I mean, Roger's folks were doing their things; the port authority backed out of a lot of that, because there was no reason for three of us to be out there, sampling at the same time; but we were able to share the data. And so, a lot of that became personal relationships between Roger's staff, you know, if they had a problem and so forth—or programs here at USF.

When we were doing the harbor project, we had set up the committee and they were in the middle of discussion; and there was a big hiccup in Hillsborough Bay one evening, and Joe Simon called me in the middle of the night, and some of his students had come back and said, "You guys have covered the bottom of Hillsborough Bay with slime, and it's three feet deep." Well, off we went down and met with him, and sure enough, the Western Condor, which was building the disposal islands, it was the biggest dredge in the world at the time, may still be the biggest one that's ever operated, was trying to build the dykes, and, you know, they were pumping material up on the dyke, and it's supposed to flow down.

Well, they hit some very soft limestone, which smaller dredges would stop. Condor went right through it. Take limestone and you grind it up very, very fine; it becomes mush. Well, it blew about a million yards of mush between what is now the Mosaic plant and the island. That whole area of the bay was, instead of being black slime six feet deep, it was black and white slime nine feet deep; and because Joe's folks were out there taking samples, and so, we ran in, called the corps, got their response people down, had the big meetings and this kind of stuff; and to their credit, the corps quickly signed a contract for a little dredge, so you've got the big dredge out here pumping and the little dredge cleaning up after them.

Spent four million dollars pumping all that stuff back up in the island, and when they got it done, Joe called me in the middle of the night again to let me know they'd cleaned it up. It was really kind of neat. I mean, he said, "I called you in the middle of the night the first time, I want to call you in the middle of the night the second time. They cleaned it up." He said, "My folks just came back and said it's all gone." So, you know, they were able to do it. Interesting thing came out of that incident, is they realized they didn't have enough material to complete those two islands.

So, the reason that that north island has that funny shape, it comes north and then bevels out, is they took the material that was supposed to be the middle dyke, formed outer dykes, made it larger to get more volume, and they got that material by dredging a channel north, between Pendola Point and there, and that was a midnight modeling run

that I and Robin [Lewis] and Carl Goodwin²⁷ did to see what would happen. So, GS ran that model, looked good, changed the contract, traded the shape that it is today and changed the hydrology of the bay. It improved the circulation of the north end of Hillsborough.

But those were the kind of things that, challenges you got to play at, and some of them are pretty significant in terms of their environmental impact; and particularly, in retrospect, many of today's players don't realize how many of those decisions were made on the fly, seat of the pants, but using the best science that was available in modeling at the time, and USF was doing a lot of modeling. Barney Ross was out here with his model, and he and Carl would argue about formulas and things, but at the end of the day, their models were dead on to each other.

So, you know, the bay gained a lot of, we gained a lot of knowledge of how the bay worked, and so that we understood, for instance, how the change in the sewer treatment plant discharge was likely to affect the bay. One of the things—all of the seagrass gain that we have in Hillsborough Bay, which is very, very substantial now, was not just the clean up. We've already had slime all over the bay. You had to get rid of it and the way that worked is that every time we have a storm it gets disturbed. It works to the deepest part of the bay, which is the channel. The corps comes through, and maintenance dredges the channel and instead of throwing it off to the side, that they had done for decades and decades, they put it in the island.

And so, over time the dredging removed the slime and the sewer plant cleanup, and the clean up of the storm water around the bay and all the things we've done for storm water treatment and so forth, took the source away. We learned about nitrogen. We learned to cut it off to improve the air quality. Did all the things in the nitrogen management program to slow the growth of algae and so forth, and the maintenance dredging took the old stuff away; and before you know it, you can go out in that same part of Hillsborough Bay that was six feet deep in slime and it's hard sand. And that's why there's seagrasses on it.

So, it's been, you know, that's been a really—knowing how those decisions were made and how quickly they had to be made because we had contractors out in the middle of the night, contracts for dredging and so forth; but to understand how, in the long term, many of those decisions were right, there was some pretty good science involved by the folks involved and it's paid off. You know, the bay is better today than it was when I got here, and better today than it had been in a long, long time.

²⁷Carl R. Goodwin was chief of the USGS Florida Water District and worked for the US Geological Survey for 38 years. He was instrumental in developing an innovative hydrologic model of the Tampa Bay estuary.

AH: You've mentioned the harbor deepening project several times, which was, basically, just barely underway as you came onboard at the port.

WF: Right.

AH: Because we're looking back in history, you know, so many folks today really have no knowledge of the initial changes in the bay. Could we go back and can you tell us, basically, how that evolved? How it was formulated? You know, give us some vignettes on the, you know, the implementation of the harbor deepening project?

WF: There's a—I did a paper for BASIS 1²⁸ on the history of dredging in the bay, and let me just start back with that, but when the bay, the bay's natural depth is about 11 feet. The channel up into Hillsborough Bay and up to the Hillsborough River basically runs over by Ballast Point and gets very shallow at that point, which is why it's called Ballast Point: the ships would throw off the ballast rocks and then lighten themselves and were able to get up into the Hillsborough River.

When the harbor began, the port began to develop, the first channel was over to Port Tampa, because it had almost twenty feet, and that was a very little channel. They had to cut through a bar to get a channel to get twenty feet to Port Tampa, which is where H.B. Plant's²⁹ railroad ended; and that became the first place for shipping phosphate out and so forth. That was the early port. But that bypassed downtown Tampa, and there were maritime interests along the Hillsborough River and along what is now the north side of Harbor Island and that channel and so forth.

So, over the years, the corps got a series of authorizations to begin to build a channel up the middle of the bay; and it was initially, you know, it went from eleven feet to seventeen or something, then went to twenty, went to twenty-four feet; and during the course of those projects, they would throw the spoil off to the side. There was a series of little islands that were along the east side of the channel, and they just would throw more sand up there and disperse; a lot of it went back into the channel, they'd throw it again.

And so, the harbor was, had, by the time I got here, the harbor was about, thirty-four feet was the controlling depth, and they needed to be competitive with other ports,

²⁸The BASIS (Bay Area Scientific Information Symposium) has been sponsored by the Tampa Bay Regional Planning Council and the Bay Estuary Program since 1982.

²⁹Henry Bradley Plant (1819-1899) was a developer and railroad magnate who was responsible for founding and constructing the Plant System of railroads and steamboats in Florida, which ultimately became the Atlantic Coast Line Railroad.

particularly for the export of phosphate, which was the big ships. Everything else that came in the port, including today the crew ships, they could handle thirty-four feet no problem. But the big dry bulk carriers needed greater depth. So, they went to—they had, like, 41 offshore. They went to 43 feet, which was a huge project. I mean, it was big deepening; a lot of material, more than they had ever tried to dredge here, and at the time, I think, about the biggest one in the world, at least, in the US, the biggest dredging project.

So, it was a major undertaking to keep the phosphate industry here competitive with Morocco. North Carolina has a thing, but mostly Africa, where they had naturally deeper water. And so, that was the driver, was the benefits to the phosphate industry. Now, how long will the phosphate industry last? It's beginning to taper out on its own, but it's lasted the length of time, at least there, to make the benefits work. So, that had been studied for a number of years. It was authorized in the early '70s, before I got here. They got congressional authorization to go ahead and do the studies, do the design, and do the environmental impact statement. And that's what triggered my position.

And so, the harbor project was an outgrowth of a long time program, and then, we had the public channels. You had some private channels like the one at Big Bend, which was not public, still is not completely public, I mean, for the way it's funded. The Alafia River used to serve what is now a Mosaic plant down there, it used to be Gardinier; and those channels, Port Sutton was a private channel built by the Thomas family, and so, their maintenance dredging, they dredged out the channel, used the material to create the industrial area. The port authority now owns that, and that channel has been taken over for federal maintenance. So, there's an ongoing process of the federal government assuming the maintenance program and the harbor project getting bigger, and at the same time, the need to deepen it like every other port in the country right now.

The Jacksonville Port was trying to get to 50 feet to capture cargo coming out of, through the Panama Canal. You know, Tampa very likely will not, they might go deeper, but they've got the constraint down at the mouth that may keep them from ever wanting to go too much deeper than they are right now. There's been talk about a 50-foot channel, but do they really have the resources? We're not as big a container port, being on the gulf, to perhaps make that economical; but you've got the [Sunshine] Skyway down there, which limits somewhat the sizes of the ships into the harbor, in any case. So, the harbor project was a natural outgrowth of a problem that had been going on since 1900.

AH: I know part of the early discussion, in terms of the harbor project, was where to place spoil; and there was a lot of debate about whether it should be stored in the bay, the two islands that were finally established, or whether it should be pumped onshore, perhaps even trucked further.

WF: Um-hm.

AH: Again, this is, you know, old history for a lot of folks who will be looking at some of these questions. Can you give us a little bit of an overview? How did that decision get evaluated? How did it roll out? What were the pros and cons?

WF: The—well, there's actually a third option—

AH: Um-hm.

WF: —that you need to consider. There was the option of taking it offshore.

AH: Um-hm.

WF: And that was very controversial. So, one of the interesting things, while I was at the port authority, was to work with the EPA on designating the offshore disposal site, which is still used, but only for material from the lower part of the bay, where it's clean, mostly sand, and there's not that much, because they use most of that for beach nourishment. They put it on Egmont [Key], they put it on Pinellas beaches. As you got up into the bay, the material becomes finer. It used to be reasonably contaminated with—from runoff, and so, you didn't want to—that was one of the arguments for not just putting it in open water in the bay.

The history was, those islands up the side of the channel, you just side cast it, but everybody recognized that in a good storm, they eroded and went back in the channels. You had to do it again. And that's what we began to think about enclosed disposal. And this was in an era when there weren't many of that around in the world, the corps was moving, and the environmental management was moving towards getting that dredge material out of the system, and so enclosing the islands.

We did look at going uplands. Two problems: One, the pumping distances. Remember, at that point, a lot of developers were still eyeballing the east side of Hillsborough Bay for development. We hadn't acquired all that as public property. As it turns out, had they gone through and built a whole series of big disposal containment areas, and there were a

couple of them, they would look like the Mosaic mountains down there. I mean, a lot of material was in this. You know, they're much bigger than our islands are.

So, you've got the cost of taking it inland. You've also got the material. Could you reuse it for something? Well, the material is a mix of clay and limestone. It's not good construction material. It hardens up, but then, as soon as it rains it becomes mush. So, while there was a lot of talk of beneficial use, the only real beneficial use of material from the upper part of the bay that I'm aware of, has been the sunken island area. They've done—when they had good sand, they'd put it there. They have filled in a bunch of the old dredge holes that were dug along The Kitchen³⁰, in that area, for development land where people were borrowing from the bay.

But other than that, we've looked at all kinds of things. It's just like the gypsum ponds. They've looked at constructive use of that, and we're still putting in ponds, you know, 30 years later. The material's just very difficult, economically, to work with. So, they will continue to have to raise the dykes on those islands, and at some point, they're gonna' reach—they may have to consider another island, and that will be another chapter.

AH: That certainly has been a huge commitment on the part of the port over the years, because, at this point, if I recall correctly, they have raised the dykes on both of those islands.

WF: I think they've raised it on the south island. They're working, they've reshaped them on the north island, they are studying how far they can go. Part of the problem is how good the underlying geology is, how high can you take the dyke, and is the material that you're bringing up from the inside going to be deep enough? You know, is there enough material of construction grade? And they have the birds. Those are the two biggest gull-nesting areas in the state. So, they only have a short period each year to work on them.

AH: Now, that's a good point, and of course, one of the persons that we've been able to interview is Ann Paul, who is the Audubon regional coordinator. So she gave us a wonderful overview on the populations of sea birds and shore birds in Tampa Bay. Was that an element that became a consideration in the environmental program, in the port's environmental program?

WF: It did, but that largely evolved after I had left the port, but was a consultant to the port. And when the islands were first built, they were mostly open water on the inside;

³⁰The Kitchen is a 3-mile area of Tampa Bay that lies between the Big Bend power plant and the Cargill phosphate plant. In spite of surrounding industrialization, it is comprised of abundant mangroves, seagrasses, wading birds, and other wildlife.

and the birds were not using them, initially, but as they began to fill in, and created the great big flats the birds liked, protected inside the dykes. You know, no people didn't go to the islands to go to the beach and stuff and so forth. The birds had this thousand acres of protected habitat in there and pretty soon, they learned to use it.

Well, as that happened, you then got a discussion with Audubon and the corps. The port authority basically is not involved in the maintenance dredging, that's a corps function; the corps takes that over. But we're able to, again, provide the forum for the discussion to start. So, when it first started, the discussion of protecting the birds out there, I think it was Frank Dunstan was the warden at the time; and through the successes through Rich, you know, they worked their program, and were able to get the corps—and the corps was doing this on a national basis. They do it in Maryland, they have the same issue of nesting birds. Birds like those disposal areas.

So, they've had to change their policies to accommodate it, and on a much broader scale than just Tampa. But they've worked at it pretty well, they know they have to get a contractor in by this, they size the contract that they can get done and get out of there by April, so as the birds come in and, you know, I think they're closed from April to July. So, they have a known dredging window; and, sometimes, that's very beneficial.

Occasionally, as in the case of Egmont Key, it becomes a—they were trying to put a lot of material on Egmont, but could only get half of the material that they really wanted out there, out of the latest dredge, because A, the turtles showed up, and the birds showed up; and that which they were put there is being used extensively right now by skimmers. But those environmental windows constrain what the corps can accomplish. Sometimes, there is an environmental cost to our own environmental protection. That's a choice you make.

AH: As you look back over your long history of involvement with Tampa Bay and port development and activities, are there some particular lessons learned or projections that you would make for the future? Messages to future managers?

WF: Well, I think you have to recognize, you know, you work day to day with best information you have. You're not likely to always be right. There are things going to evolve a little differently than you might anticipate, but I think a lot of it is: maintain your relationships. The people who tend to be in this—we live in Florida. People become "becalmed in the mullet latitudes". You're likely to be dealing with the same person ten years or twenty years later. Your positions may have changed, but those relationships that allow the phone call to be made and the deal to be struck—you know, that, "Politically, that's not going to fly, can we do it this way? Package it a little differently, and maybe get our ELAPP program in or the protection of lands?"

The kinds of networking that went on to get the constitutional amendment passed that may or may not be helpful, given our legislature; but it's that type of thing is you're dealing with the same people today that I was dealing with in the late '70s. And I think to the benefit of the estuary. You know, it's a long-term commitment. It isn't a process that happens overnight; and you need to recognize that it's little steps taken as a cumulative, constant effort that it takes to get where we have gotten today.

I mean, I tell the students that I'm teaching that this is the best example of how to restore an estuary in the world right now. This bay has come further from where it was to where it is than any other bay. It didn't have the kinds of problems that some others do. San Francisco Bay has got some immense problems, Chesapeake Bay: multi-state, huge drainage area. But Tampa Bay is a great model of what you can accomplish.

You won't accomplish everything, but we have, what, tripled our population and improved the bay at the same time? That's a pretty good step to have taken. And it's been fun as a career. I've made a career out of being involved in that kind of stuff. It's, you know, I go out and take my canoe and go fishing in the bay, and there are more fish out there today than there have ever been since I moved here.

AH: Well, thank you Bill, so very much, for being with us today. As we move forward with other interviews, with the Tampa Bay Oral History Project, the information that you've given us will inform some of those other interviews and help to bring into focus all of the history and the transitions that have gone on in the bay. We really appreciate your being with us today. Thank you.

WF: You're welcome.

End of Interview