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Interviewee: James Vearil

Interview: Alan Bliss

Date: July 17, 2002

B: It is July 17, 2003. I am in Jacksonville, Florida at the offices of the United States Army Corps of Engineers talking with James Vearil, Jim Vearil. This is an interview in connection with the Cross Florida Barge Canal/Cross Florida Greenway Project, the CG interview series. Mr. Vearil, would you please tell us your full name and where and when you were born, please?

V: My names is James Wilson Vearil. I was born in August of 1955 here in Jacksonville, Florida.

B: Who were you parents and what were their occupations, please?

V: My father was James Vearil, Jr. He was with the United States Navy working in, at that time, what was called the NARF, the Naval Air Rework Facility, for many years. He retired from there. My mother is Nadine Priest Vearil. She worked as a secretary out there but, after kids, she basically was a homemaker working in the house.

B: Tell me again, I'm not quite sure we got this for the tape, where were you born?

V: I was born in Jacksonville, Florida.

B: Where did you live growing up and where were you educated, please?

V: I lived in an older section of Jacksonville called Murray Hill. My parents have lived there. My mother still lives there. [She's] lived in the same house since the 1950s. I went to public schools here in Jacksonville, on the westside of Jacksonville. I graduated from Lee High School, then I went to the University of Florida and got a bachelor's degree in environmental engineering in 1979. I took some graduate courses at the University of Central Florida through the FEEDS program.

B: What is the FEEDS program?

V: It's called the Florida Engineering Educational Delivery System. It's a state-wide system where they can deliver graduate courses to sites all over the state via videotape and, in some cases, even essentially online courses. Then, I went back to the University of Florida. In 1989 and 1990, I was selected for the Army long-term training program. So, the Army sent me back and I got a Masters of Engineering at the University of Florida in 1990, and then I've taken a few history courses at the University of North Florida in the past couple of years.

B: We recommend history courses to everybody.

V: Well, that's good to hear. I enjoyed that.

B: Well, we strenuously encourage it, all my students and all my colleagues. Did you have early plans or early ideas for your life's career? Growing up, do you recall having established your career track early on in your mind?

V: Yes, ironically, I do. A lot of it I probably owe to a ninth grade civic teacher when I was at John Gorrie Junior High School. He had us do a project on a career. [We] tried to figure out what would be a career we would be interested in. So, that got my thinking, I was good in math and science. My father working out at the naval base, he worked around a lot of engineers, so he encouraged me to look at engineering. He would take me out there and introduce me to engineers. I would go out and see what they were doing with planes. So, I kind of settled on engineering in that ninth grade project. Then, as I went to high school there was a program called Junior Engineering Society, or Technical Society that I participated some in. I continued to look into engineering. They had some tests they would recommend you to take to see if you had the skills set that would be good for engineering.

In high school I had pretty much settled on [engineering]. I wanted to go into engineering. I structured my classes that way. I was taking a lot of math and science. So, when I went off to the University of Florida, I wanted to go into engineering. At that time, that was in the early 1970s, a lot of things were going on with the environment, so I kind of was interested in environmental engineering. It kind of became the one that I thought I would be interested in, applying engineering to a lot of the problems that were going on at the time. So, when I went to the University of Florida, I wouldn't mind walking right in, assuming I was going to go into engineering. [I] probably, atypically, actually stayed with the major I started with when I went to college.

B: That's true.

V: [I was] an anomaly there most likely.

B: Well, yes, that's what we find with undergraduates who are moving through the program these days. The declared major on arrival does not often survive the undergraduate program. How did you find yourself employed with the Corps of Engineers? How did you come to wind up getting your first job with the Corps? You mentioned being selected for a program.

V: The way that it happened is, as a freshman in college, I was looking for a

summer job and my father had encouraged me to take, at that time, what was called the Civil Service Test for Summer Employment. It was aimed at college students. So, I took the test and lo and behold the Corps of Engineers offered me a clerk job in their design branch. Ironically, it was at what we called the GS-1 level. It was the lowest pay level that they had for somebody. I really had not ever looked or thought about the Corps of Engineers as a place to work, but that job was available, and I thought that would be good experience in engineering.

So, I came, worked here for that summer and I like working with the people. It turned out, fortuitously for me, at that time the Corps of Engineers was once again establishing their cooperative education program. This is pretty typical in engineering, where companies and government agencies will set up a work-study type program to where you can go to school either a semester or a quarter and then to go work with that company or that agency for a semester or a quarter. You basically alternate or rotate. That was of interest to me, so I applied for the program and there were four of us that basically got in the program that first year. I owe a lot to the personnel [director]. There was a personnel director there named Bruce Stevens who really kind of pushed the program and got me involved and interested, got my application through. So, I spent the rest of my college career going to school and then coming back here every quarter to work at the Corps of Engineers.

B: The way that works, apparently, there is no exceptional cost to the employer to employ student workers under that program. I guess the cost would come in the fact that your tenure of employment is interrupted periodically as you're moving through your education. On the other hand, they get the benefit of somebody who is being trained sort of on the cutting edge of the academic discipline that they are working in for the employer, right?

V: Well, I've seen it from both sides. I've seen it from the side of being a coop[erative] student and I've seen it from the side of a supervisor hiring coop[erative] students. I'm a big believer in the coop[erative] program. When I was working as chief of the water management section, we had a number of coop[erative] students that we hired and came through the program. The way I see the program, as a student, it was great because I could earn money. I could make a decent salary in the quarters I was working here, and then I could use that to help pay for my college expenses. I got experience in my field. I was mentored and taught by a lot of very good engineers here at the Corps of Engineers when I was on the program, so I learned so much from them that I actually found I did better in school because they would help me understand concepts. I would see things from a real, more practical oriented situation. I found a lot of benefits just for myself.

From an employer's standpoint, I think we've a lot of success getting some pretty good ones in here who can do a lot of good work. It's also an opportunity for the employer and the future possible employee to check each other out. In other words, you have an idea to assess someone's abilities, their temperament, how they would perform as an engineer. Plus, it's just not limited to engineers. We have coop[erative] students in a variety of disciplines. Then, it also gives that potential employee [the opportunity] to access the organization. Is this a place they really do want to work at when they decide to graduate? So, it helps, I think, to break down the possibility of an improper fit for an employee. The employee and the future employer both get to assess each other in a sense. It's also good for the coop[erative] student. There's usually a very good chance that they would be offered a position upon when they finish the program. If we have vacancies available, they generally try to make an effort to extend offers to the students, particularly if they performed well. In my view, it's been a very beneficial program in both directions.

B: Do most people who participate in that program through the Jacksonville district of the Corps wind up taking positions with the Corps, say over half?

V: It would just be strictly an estimate, but I would say it's a pretty high percentage, particularly if they stick [with] it all the way through. What we would usually find is, they may work a quarter or two and say, they really don't like it here, it's not a fit. But if a student stays until they graduate, usually a lot of them are interested in coming to work here. They've already decided, hey, this is a good place for me. The supervisors here have had a chance to say, yes, this is a person that fits well her, that's a good person, very capable. So, I would say we've had a pretty high percentage.

In the section I worked in, I would say, we probably had anywhere from probably 10, 15, 20 coop[erative] students come through. A number of them did come to work for the Corps. A lot of them are still here. Now, what we do find is, a lot of people will work here for a few years, get their experience, and then move on to something else. It doesn't mean they will still be here. It's an interesting number of people that are still here that started their career as coop[erative] students.

B: At the time that you were moving through the program, what year would that have been that you first took your first job at the Corps as an undergraduate?

V: I took that clerk position, it would have been the summer of 1974. That was just a three month, temporary job. Then, I came onto the coop[erative] program in probably January of 1975.

B: Were most of your fellow student coop[erative] program workers, were they also in the engineering program at the University of Florida or from other schools?

V: Actually, there [were people] from a variety of schools. To start with I would say the University of Florida, but we've had coop[erative] students from the University of Tennessee, from Florida State, from Florida A&M, from University of Miami, from the University of South Florida. It's been a wide variety of schools that we've had coop[erative] students from. Obviously, we tend to draw them from the local area, but there are really two factors involved. One, it's the schools in Florida are typically looking here. Also it's a factor if somebody lives near Jacksonville, if their family lives near Jacksonville, they're often looking for a job in Jacksonville like I did, because you're able to stay with your family and not have to find a place to live. You're able to save a lot more money that you can then in turn use for expenses. We've had some people who came from schools in other places but were looking for a job in the Jacksonville area because of family connections.

B: It's makes a lot of sense. A variety of schools feed the program. Do you have any opinion as to whether or not the University of Florida is particularly heavily represented in supplying the program?

V: Yes.

B: At FSU [Florida State University], is it maybe to a similar extent or to a lesser extent?

V: [It's] probably a lesser extent, but FSU and FAMU [Florida Agricultural and Mechanical University] have a joint engineering program, so if you look at the joint program, we probably have a fair amount of students there. Just guessing, I would have to say probably the majority have come from the University of Florida, but it's mixed. I think the University of Florida has been very well represented here with the coop[erative] program.

B: Well, you're a Florida native and also a man with a professional engagement in part to do with the project that this interview relates to, the original Cross Florida Ship Canal, later the Cross Florida Barge Canal, now, the Cross Florida Greenway Project. I wonder what your earliest memories are of that project, under whatever name it first came to your attention. I guess, I don't necessarily mean to confine my question to your professional engagement with it. I'm wondering if, as a young person, you or your family or friends seemed to you to show any awareness of the project, of its existence. Did you hear opinions, discussion related to it?

V: Yes, I did. My mother grew up outside of Ocala in a small town called Burbank, which is just a couple of miles from the Oklawaha River off of State Road 315, north of Silver Springs. A lot of her family still lives in the Ocala area, so I can remember as a kid, as a young person, going to the Ocala area and seeing the bridge supports across US 301. [I was] always wondering, what is this? My parents explained to me about the Ship Canal and the bridge supports being built. That's probably my earliest memory of it, just being struck by that. Then, of course, driving around some you'd go over State Road 40 and cross the big bridge over there and come across US 19. Just driving as a young person with my parents in the North Florida area [I remember] just seeing pieces of it.

My next memory would probably be in high school. As I said, being in the 1970s with the environmental movement going on at the time, of course, that was always in the press. So, I had an awareness of it and that project going on, not on a deep level but at least in a bigger picture level, that there was a lot of controversy with the canal. I can remember that from my high school days. That's kind of, from a family standpoint, the memories.

From a professional standpoint probably my earliest memories were when I first came as a coop[erative] student. I worked in our water quality group basically going out and collecting samples and running samples. We would go across lots of parts of Florida, but I can remember going to collect samples on the Oklawaha River, going out on Oklawaha. I had my first air boat ride in that period of time working as a coop[erative] student because the folks in Palatka would get us out into the water quality sites we were sampling via air boat.

In fact, I have a humorous experience from that time that has always stuck in my mind. I was a newbie basically. They were bringing the new kid on the block in and they had me sitting in the front of the air boat. We were going across Rodman Reservoir and Lake Oklawaha and the air boat driver pushed us into where a bunch of ducks were down and they took off. The ducks, they were in a hurry, so I ended up getting splattered all [over] by the ducks. So there was this lasting memory of, "Welcome to Rodman Reservoir and the Corps of Engineers." Know better next time. Don't sit in the front, sit in the back.

I can remember going along the Oklawaha River. We would go up into Lake Griffin in the upper chain. We'd go over on the Withlacoochee side and collect samples. I'd seen a lot of the project as a college student. I don't know if you want me to continue. That's kind of my earlier experiences.

B: I would like to continue, but let me back up for just a moment. When you became aware of the program as a young person, growing up listening to your

parents, for example, answering your question about the bridge supports; hearing your mother's family in the area mention the project; what kind of opinions or conjecture do you recall, if any, that they expressed about it? Did they say, this is something that is never going to happen, this is something that maybe someday will, it could be a good thing to this area, it's controversial? What flavor did their comments have?

V: You know, in the early days, I really don't recall them expressing opinion either way. Where I can really remember more opinions was discussing it probably when I was about high school age, that 1969/1970 period back at the time when the barge canal was stopped. I don't know if they had any strong feelings either way. I can't really remember them strongly expressing an opinion. My memories are of just realizing how controversial it was in that period of time. More of what I was getting it from was just from reading what I was reading in the press, hearing what people were saying and thinking that it [all] had a lot of negative connotations with the barge canal.

I don't really have any strong memories of them [my parents] really taking a position either way. It was more of they would explain, here's what this was, here's what it was. I don't have a sense that they had a strong opinion either way, whether they were for or against it when I was a youngster. I have a little more sense from my mom now that I know what I know. I've studied a lot more about family history in recent years, so I've got some recollections and [there have been] some discussions that I've had with her since then. From the time of being a young person, I can't remember a real strong opinion either way.

B: Do you recall anything that your mother has expressed in her recollections about it?

V: She was born in 1924, so she remembers kind of, as a young person, a lot was going on in the ship canal. It was probably around 1935 when a lot was going on. She remembers there was a lot of hubbub. It's not that she has a specific memory of anything. She just remembers that it was a big deal down there in the Ocala area from when she was a youngster. It was of interest to her from the standpoint that she grew up very close to the Oklawaha River, so we've talked about that. I've talked about her memories about what it was like in the area. They would go to Gores Landing. [That] would be a place she can remember as a child going to, which is on the Oklawaha River. She remembers going a lot up to Orange Springs, where the spring was, as a youngster, [in which] she was going to swim. She can remember going to Silver Springs as a youngster. Her dad would take her to these places. These are some of her memories of the river, so that would be some of her things.

I have some other family members, one in particular, who's done a lot of genealogical research that I've talked to some about it. She has some pretty strong feelings about it because they had family property on the river that ended up being acquired as part of the barge canal, so she has some pretty strong negative feelings about the barge canal and the family property being taken. I've talked to her a little bit about that, and that was a pretty sensitive topic with her. Interestingly enough, she still lives at Fort McCoy, this particular cousin, and she's very active in history and genealogical work there. She has a good understanding of the whole history of the area, specifically some strong family feelings about that.

B: Do you think that cousin would be willing to talk to us for this project about her perspective?

V: She might be, because when Dave Bowman had spoken to me a while back, I did speak to her to see if she would be interested in it. At the time, she said she may be interested, so it's a possibility. I haven't brought it up again to her in a while. I hadn't really appreciated her feelings about it, but in my opinion, if she was willing, she would be a good person to talk to from the standpoint of both her personal feelings about it, and then also just the fact that she's been very active in the history of the Fort McCoy area. Fort McCoy, of course, being right around there, she's done a lot of work. There's the Eureka Cemetery there, there's an African American Cemetery there, [and] one of their projects was to clean it up. She's just a person that would have a lot of the sense of history of people living in the Fort McCoy area. If that's something you're interested in, trying to talk to people that have lived around there for a long time, then [she would be a good person to talk to].

B: Definitely so. We can pursue this after the interview off tape, but I would like to make sure that we come back to that. Maybe I could ask you to follow up your conversation and see if she's willing to meet with us.

V: Okay. For me, personally, it's been interesting. As the more I get into my interest in studying Florida history, and specifically things related to my family history, I learn a lot more about connections, if you will, to the Oklawaha River and the Withlacoochee River, from a family standpoint, in these areas. I have gotten a lot more understanding now than I ever had when I worked on the Barge Canal Project. I had this vague idea. I knew my parents and my mother's family was from this area and I had kind of vague notions, but now that I've actually spent a lot of time doing research, it's been interesting to me seeing connections of things I've worked on for the Corps of Engineers related to having family that have been in Florida since probably the early 1800s and where they've lived and some of their interactions. That's come after the fact now in

the last couple of years, but it's been interesting as I dig through and see these connections, these tie-ins and stuff.

B: Yes, that must be a pretty interesting transition to become aware of the historic impact of the profession and the business that you chose as your life's work, to kind of have that paradigm unfold for yourself, especially with some family impacted directly, people that you know and who you've spent your life listening to. You knew of the project. You knew it was underway. You were aware that it had a history of its own, and then, I think, I understood you to say that it really first emerged as something with some current impact during the years when the environmental movement raised its profile to a level of something that was controversial. Is that fair to say?

V: Yes.

B: You were in high school then. That would have been circa 1969, and that was the year that the Florida Defenders of the Environment became pretty high profile about proposing the project.

V: Right, actually in 1969 I would have been in junior high school. I graduated in 1973, so roughly 1971 to 1973 would have been the high school period. For me, it was probably more the 1970-1971 [period]. I seem to recall that in high school is when I really started [becoming interested]. It was probably a couple years after [Richard] Nixon [U.S. President, 1968-1974] stopping it in 1969 where it really [was] starting to sink in what was going [on], the controversy, the issues and stuff like that.

B: What do you remember about your own reaction to that controversy? Did you have any kind of feeling about it? Did it strike you as something that marked a change in the way people thought about engineering or the environment, or economics, business, the history of Florida?

V: Well, it did strike me as a change. I think at that time, my recollection would be, I would have thought that this was a bad idea. Why was the Corps of Engineers building a barge canal across Florida? There was a lot of potential impacts and damages. My recollection would have been basically a negative connotation of the barge canal and all the talk going on. There was also a recognition that things were changing. Environmental considerations were going to be, it looked like, given a lot more consideration in probably all facets of our life, but specifically to projects like this. It had been, up to that point, that there was kind of a change going on in the mood of the country. The country was changing its values in the way it valued things over what had been through the 1950s and 1960s.

B: Did that strike you as a positive thing or negative?

V: I would say at that time I would have taken it as a positive thing. Thinking about how I thought back in those times, I would have said that was a good thing, that was a needed thing.

B: I'm hesitating over the sequence of the questions here, but what I'm migrating toward with these next couple of questions is in your education. You came to be involved in the work of the Corps of Engineers, and later on, I understand, you did a Masters' project that related specifically to the Oklawaha River project itself. What I want to know, first of all is, what did your education and training equip you to do that related particularly to the issues surrounding the canal project? How did your reaction to the project and its issues unfold as you went through the process of acquiring your professional skills and your education in your specialty? That's a long-winded and circuitous question, but can you have a run at any of that?

V: I'll take a shot and if you want to guide me along the way just kind of bring me back to direction. When I went to college, at that time in environmental engineering, I would have thought I was going to be working with water and wastewater treatment because that was a lot of the emphasis. Environmental engineering was sewage treatment [and] wastewater treatment. At that time, I felt like we still had a lot of places. I mean, we weren't even doing well, probably in this country, with sewage. We had really basic problems. The St. Johns River was famous for being so polluted you couldn't swim in it. That's really where I thought I'd be focusing on. It's this set of interesting coincidences or circumstances as I reflect back on my life and other people's lives, you always wonder; it's the things you don't plan for that probably have a great[er] impact on your life than you ever can imagine or realize.

B: Isn't that the truth.

V: In high school I never would have thought I would work for the Corps of Engineers, because the Corps of Engineers was viewed as the black hats [villains], an agency that caused a lot of damage. I took that job just from my dad suggesting I take the job, but I even kind of debated, do I really want to take this job? He said, you ought to take it, it would be a good experience for you. If you don't like it, then it's just three months [and] you'll learn. I liked the people here and I liked what I was doing and then got on the coop[erative] program.

The other big change for me was, on the coop[erative] program I had done the water quality work for a couple of semesters, and I really wanted to do something

different. It just so happened that in the water management section they were looking for a coop[erative] student, and I went to work there. That's where I really found my interest. I really enjoyed working for my supervisor. His name was Carol White and he was a very good mentor to me. Plus, there were several other people in the section that were very good mentors. They took the time, they taught a lot of practical [things], and they taught theory to me. They were very patient with me. I really enjoyed the water management part of it.

So, when I started going back to school, I began to say, this is what I want to concentrate in. I took more courses in hydraulics, hydrology, water management, and water resources. That was my real interest. That was one of those other little coincidences or circumstances that came up. That's what I really focused on, was doing the water management stuff. I felt like my education was good. It helped prepare me for coming here to work in water management. Water resources engineering and water resources management became what I really had my interest in to work on. I felt like to be good in water management you really had to be, in some ways, a jack of all trades. I enjoy a lot of different subject areas. I felt it was important to understand geology. We needed to understand meteorology, of course hydrology, and engineering, but a lot of it had to do with politics and people. So, you had a chance to observe people, politics, [and] social things. I've always enjoyed history from the time I was a kid, so it allowed me to also apply history. My supervisor, he taught us how to do research. He thought it was very important that when you came up with solutions that you'd done your homework, that you had thought things through, that you had done research. I learned a lot from then on how to do research, a process to go about arriving at answers and conclusions.

I felt [that] my education helped prepare me for that. I went on a one-year intern program where I rotated around once I got out of college in 1979, which was a very good experience. Then, I really wanted to go work back in water management section, work for Mr. White, but there was no vacancies at the time. So, I went and worked for a man named Mann Davis in planning. He was another great supervisor and mentor, very smart.

B: What was that name?

V: Mann Davis. Mann, again, was just a great teacher. [He was] very smart person, very astute. He taught me a lot about planning and the planning process. Carol White had an opening about a year and a half after that, so I went back to work on water management because it was really where my interest was and where I wanted to work. That's where I really got back involved with the barge canal. I was involved in it some as a coop[erative] student working for Carol White because the water management section was involved in the

operations of water resource projects.

B: That's when you did things like the sampling visits out to Lake Rodman.

V: Actually, I did the sampling visit when I was working in our water quality group. I did that for a couple of years. That's where I actually went out on the field. Then, I went to work for Carol and the water management section. That was the operations piece, you know, opening and closing spillway gates, doing stuff like that. So, I had a couple years there, and I had some involvement with the barge canal there. I have some good memories of that, of dealing with it. Once again, it was helping other engineers out and that kind of thing. But I did work the barge canal project at that time. Then, when I came back in 1982, working for Carol, that's when I really got in to working with the barge canal. So, it would be that period, professionally speaking, from 1982 until the time we turned it over to the state, which I think was probably around 1991. Right around in there is when I did a lot of work with the barge canal as a part of my duties.

I felt like, from a training standpoint, a water manager needed to be a specialist. I mean you're a technical specialist because you're expected to be strong in hydraulics, hydrology, and water resources engineering; but in order to do the job it's not a strictly technical function. You don't just sit there and grind things out. You have to interact with the public. You have to interact with other folks. Water management tends to be very controversial because it's not an esoteric exercise. When you open or close the spillway gate, there's an impact. It's not a planning process. It's not a study. To me, it was interesting because I found I was able to expand my horizons in a lot of different directions. I was able, in those jobs, to really learn a lot about a lot of different things and to not strictly be focused on engineering itself but to at least attempt to broaden my horizons and to deal with some other factors. You get into some economic issues, social issues. I've given you a long-winded answer to your question. I don't know if you need to bring me back and hone me in better to your question.

B: There are a couple of details and then I'll bring you back to your master's paper. What is hydraulics, and is that your specialty? You refer to yourself as a specialist who has become in many ways a generalist, but how would you identify your specialty?

V: Which is a fair question. We engineers will tend to talk in "technocratese" or what we would call corps speak. I just have to be conscious of trying to get out of the jargon and make it understandable. I would really see myself [as] more of a water resource engineer. Water resources engineering is where I really could see my specialty. As a subset of water resources engineering we have hydrology, [which] really focuses on when the rain falls and hits the ground and it

runs off. I mean, putting it simply, it's trying to figure out and understand how the water makes its way into the rivers or how it flows in the aquifer, in the groundwater table. That's simply talking about hydrology. Hydraulics tends to be, in my view, more focused on dealing with actual flow in the rivers or canals. It's another subset of water resources engineering, very focused on analyzing that.

There are different techniques and tools that we use. A lot of it really goes back and forth. We tend to kind of narrow things down even more finer to a speciality. We'll see people that are hydrologists that tend to deal with the runoff or flow in the aquifers. Hydraulics folks are typically people that will do a hydraulic design of spillways or canals. So, it's dealing with flow. It can be on the ground. It can be underground. It can be in rivers and channels. I tend to kind of simply distinguish them between whether it's that bigger picture macro-view flowing over the ground or the very much more narrow, in some ways more analytically driven, hydraulic type analysis. These tend to shift back and forth and they merge. Water resources engineering incorporates these. We also get into meteorology. A lot of time in hydrology, it's very heavily focused on statistics, which is some of our background with trying to do that. I would tend to say, like I said, I would be considered a hydraulic engineer for many years when I was working, but the hydraulic engineer position encompasses a wide variety. We'll have people doing a lot of different pieces of it. My technical speciality was that water management piece, which is a specialty where you need to have a background in hydrology, a background in hydraulics, meteorology. Now, water management kind of brings all these in together to deal with operating projects. Does that help any? Does that make any more sense?

- B: Yes, that gives me and the people who consult this interview in the future a clearer idea of your work, your profession. Tell me about your masters project on the Oklawaha River? I think I have a sense of how you arrived at that as a topic, but explain for the record how you came into it and what the project was.
- V: When I went back to graduate school, the Army sent me back there. So, basically, I had a year to do graduate studies. My hope was that while I was there for that year to also get a master's degree. Now, the Army program does not pay for a master's degree, they pay for a year of training. So, I had to lay out a program. Here's the courses I want to take [and] here's the reasons why. The professors at the University of Florida I had studied under when I was an undergraduate I really had a lot of respect for, [they were] very sharp.
- B: Could you name any of them?
- V: I certainly can. Dr. Jim Heaney and Dr. Wayne Huber were the co-chairs of my

graduate committee. Dr. Bud Viessman was the chairman of the department at that time. He was another practitioner I really wanted to study under. He was another one I really wanted to work under. There was a groundwater professor named Lou Motz, in the civil department. He also ended up serving on my committee because I wanted to take a minor in civil engineering.

I set up my program and I wanted to get it all done in a year because I wanted to get my degree. I had a lot of people warn me that the temptation was [to say], oh, I'll come back and get my degree, I'll finish up my work later. They all said, don't fall into that trap, really focus. I was able to go full-time because the Corps was paying. So, I was able to knock all my course work out and then have the summer to do my project. In engineering, you have an option to take a thesis or a non-thesis option. They generally encourage people, if you're going to go on to do a PhD, to do the thesis option. In my case, I really didn't think I was going to go for a PhD in engineering. The non-thesis option gave me the opportunity [to finish sooner]; I could actually get it done in that year. It had been very difficult to finish my thesis in the year that I had. A non-thesis option doesn't have to be as big, doesn't have to go through as much of the rigor of going through the graduate committee for your thesis, so it was a doable option for me. My committee was fine with that. They knew where I was coming from. In fact they have a lot of students that do do the non-thesis option in engineering.

Then, I was trying to figure out a project to do. How do I settle on something that I can do? So, I was talking with my [graduate committee] co-chair Jim Heaney and he was doing work for the St. Johns River Water Management District on the Oklawaha River basin. He knew of my experience, so I would try to help out his graduate students working on it. I had access to the documents. I knew a lot of the history and the background and the philosophy and design of the project. He was really working on the piece, not the barge canal piece, but there is a project upstream of the barge canal [that] is part of what's called the Four River Basins Project. That was what he was working on with Lake Griffith, Lake Harris, Lake Eustis, [and the] chain of lakes.

I would try to help his students out, and Jim and I would kind of kick around [ideas for my project]. [I would say] I've got to come up with a project, what can I come up with? So, I was kicking around ideas. I had another idea. In the Corps of Engineers for our projects we now write what's called water control manuals for the project. That contains our operating criteria, our regulations schedule, the history of the project, the design philosophy. These are kind of the guidance that operators will use to operate the project. Well, we hadn't done one yet for the Oklawaha River Basin, so I had the thought, well, I can kill two birds with one stone, the most bang for the buck. I can actually write this as my master's report and then turn around and bring it back to the office and it's done,

and then we can turn around and publish it. So, from the Corps perspective, they got even more value for their dollar because while I was actually doing my graduate work I was writing a document that we needed to do anyway. Jim was okay with that. We kind of negotiated that content, but he saw it, I think, as useful for the work he was doing for St. Johns.

What he had me do is, which was a good thing, I had to turn in more than just strictly the manual. He wanted me to do a literature search. I had to come up with conclusions. There were things he made me structure in the document that was over and above what was needed for the Corps, but that was actually a very good thing because I really got into doing the literature search and thought about some of the stuff. That was very helpful for me.

B: When you were employed with the Corps during this period you were in Carol White's section again?

V: That's correct.

B: Did he have a response to this proposal? Was this something he saw as being something that fit well with your employment, your career track with the Corps?

V: Yes, he did. In fact, what I would do is, I was able to come back up here, and actually he let me take a lot of the files with me or make copies of stuff, so I had the documents that I needed to do the work, old files that basically nobody was using but had a lot of historical stuff. I was able to get and take some of them down to Gainesville and make copies of documents. He was very supportive of that project. He saw that as a useful exercise. So, that's how I selected my project and defended it before I left. At that time Jim was also director of the Florida Water Resources Research Center, so it was very kind of him to ask me [to have my report published]. He wanted to end up publishing that as a Water Center report, so I appreciated that, that he was willing to do that. So, it ended up being published as a Water Center report. That's kind of how I settled on that. I had done a couple of my in-class projects related to the Oklawaha River for Jim's classes, so I kept building it until finishing the report.

B: What was the title of the report.

V: It was "Water Control Manual for Oklawaha River: Four River Basins Project."

B: That was published in what year.

V: [It was published in]1990.

B: The publisher was the Florida Water Resources Center?

V: [The publisher was] the Florida Water Resources Research Center.

B: Was the center based at the University of Florida?

V: That's correct. A number of these centers across the nation, I think they've been supported by the United States Geological Survey. It's currently at the University of Florida in the Civil Engineering Department and Lou Motz is now the director of the Florida Water Resources Research Center.

B: Has the center published anything subsequently that addresses the Oklawaha River basin specifically, or is your report the most recent thing?

V: I don't know. Probably there's been stuff since then, because Jim was doing work for the Water Management District and I think several people had reports published based on the research they were doing on the Oklawaha River. Some [was published] prior to that and some after that, most likely, but I haven't looked at the publication list in a while to know. That wasn't the only one that was published on the Oklawaha. On my recollection, I think there were several others that were published based on research.

[End side A1]

B: Your project addressed the Oklawaha River Basin. When you talk about that, what geographic territory are you covering?

V: The project that I worked on for my master's report, I viewed that part of the Oklawaha River Basin being upstream of, essentially, State Road 40. It had been upstream of the Barge Canal piece. That was considered kind of the Four River Basins project area. That would run up all the way to Lake Apopka, basically realizing that that river flows north, so by upstream I mean to the south of State Road 40.

B: Did you treat any of the geography that runs downstream, or north of State 40, as part of your project, or any of the impacts on the basin downstream?

V: Right, I dealt with the impacts of the basin downstream because the Four River Basins project features there had assumed that the barge canal would be constructed and in place. I addressed in my report what was some of the impacts and issues that were related with the Barge Canal not being completed and the affects on the Four River Basins features that were built on the Oklawaha River Basin.

- B: At that point in time, 1989 was the year that you were actually doing this project. What were your assumptions about the Barge Canal project? Was there still any consideration that it might come back to life as a complete project or were your assumptions based on the fact that it was all going to stay exactly as it was?
- V: My assumptions were basically it wasn't going to be completed. I viewed it as, okay, it's not going to be complete, so here's the impacts that I and others have seen as a result.
- B: What you see is what you got?
- V: What you see is what you got, right.
- B: Did you make an assumptions at all with respect to the existence of the Rodman Dam and the lock structure downstream on the Oklawaha River?
- V: I didn't, because that was too far downstream to have any affects on the four river basins features that I was looking at.
- B: What was the general thrust of your report then, your project? What conclusion did you say you migrated toward with that project?
- V: [Do you mean] in terms of the report itself for the Four River Basins?
- B: Yes, and put it in the context of the management of the basin.
- V: That's an interesting question because really the big part of my project report was the actual manual itself, written in the standpoint of a traditional Corps of Engineers manual. The part where I really dealt with my conclusions were related more to my literature review where I talked about a general perspective of trends that I saw in the water management area, the importance of having operating manuals to operate projects by. So, a lot of my conclusions seemed like [they] were not related specifically to the Four River Basins project. There were more conclusions on water management in general that I kind of concluded from doing the report and then my literature search. I really feel that the report itself, the bulk of it on the project, was very much oriented toward a technical report, here's what the details are. When Jim had me do a summary and conclusions it was more of the generic, the bigger picture as I saw the world of water management from not just a project level but a more of a big-picture level.
- B: There has been a considerable amount of work, as I understand it, and you know more about this, but as I understand it there has been a considerable amount of restoration effort directed toward that river basin, lake restoration projects and

that sort of thing. Did you address those restoration projects in there [the report]?

V: I talked about them in there, but more talking about them as other projects going on in the basin. Whatever was going on at that time that I was aware of, in the water management district, I listed those projects that I was aware of. Of course, they've done a lot more since then, since the time of doing my report.

B: Have there been changes in the direction of those projects that would affect your report the way you authored it in 1990?

V: Yes, probably some, because there's been some areas that now are storage areas, things that have come on-line that may have changed some of the thinking but probably not a lot I would say.

[pause in tape]

B: We've talked about your master's project with respect to the Oklawaha River basin. I guess I would ask if you would have anything that you want to add to that discussion about the relationship between your master's project and the legacy of the canal. You did your project with the assumption that there would be no canal project. Is there any relationship now between what we see as the history of the canal or its historical place in Florida, society, in questions to do with hydrology, or do you think you pretty much can draw a line between the canal's legacy and the project that you did?

V: I'm not quite sure how to answer that question.

B: Give it some thought. We can come back to that.

V: I'll try to think about that and we'll come back to that.

B: Let that one rest for the moment. Let me ask you to talk, if you can, about this. You came to your education with, as you have said, sort of some sensitivity to the environmental impacts of things like the canal project and a sensitivity that society was changing in its opinion of how environmental issues relate to the way we do things such as engineering projects, the way we do building in general, development, humans' use of our natural resources. Then, you embarked on a professional career reinforced by an academic preparation for that career, an ongoing engagement with the academic aspect of it, that really centers on the human effect on the environment. Has that changed your perspective with regard to the environmental movement that you saw emerging in your formative years in high school, and we've said that was around 1969, 1970, 1971,

with 1971 being the year the canal project was de-authorized by President Nixon? Has your experience with the Corps affected your philosophy of those things?

V: I would say, yes, and part of it, I think, might just be age. Part of it is the work I've done, projects I've worked on, and where I really see it. When I was in high school and college, I tended to see things more black and white, it's this or it's this. Since I worked on the Barge Canal, it comes from working on Everglades' issues and issues in South Florida that I see things a lot more in shades of gray. Like I said, part of that is experience and part of it's age. Part of it is just experience, in things I've worked on. I realize I can go back and look at things now. I can look at opinions I may have held twenty years ago, not specifically my opinion in high school, I just mean on a lot of things. [I can] say I've learned a lot more, I see things a little bit differently than I did. I definitely think my opinions have changed. Probably in high school I would have thought everything about the Barge Canal was environmentally bad based on my experience working on the Barge Canal. I think that was too simplistic a view of the project. Some of that has changed. Yes, I definitely think my views have been affected by working here and just working on a lot of the different projects that I have worked on.

B: Can you think of any specifics about the canal project itself that would fit into that shift in your point of view or your philosophy?

V: I probably would have thought that Lake Oklawaha or Rodman Reservoir [had] no environmental value to it when I was in high school. Now, I can look at it and say there is some environmental value. I mean, there's a wetland there, there's fisheries there. To me it's probably more of a choice with Rodman. Well, what kind of environment do you want there? Do you want a reservoir kind of environment with a lot of hydrilla and trees, or would you prefer a free-flowing river environment? I think some of it now comes down more to not just strictly technical choices but more social choices. It's the value different individuals would place on something. In high school I probably would have thought there would be no environmental value to Rodman. Having worked around it, been around it, seen a lot of it, [I can] say, yes, there is some value to it. It's not an environmental desert, but it has its problems, it has issues, it's not what was there before when it was a free-flowing river. So, it's a different kind of environment with pros and cons and good choices and bad choices. That's one example. I think maybe some of the groundwater issues might have been probably hyped a little bit in the media, of being maybe a little bit over simplified and oversold. I thought the USGS [United States Geological Survey] did a good report on groundwater issue, Faulkner's report.

B: What year was that?

V: That would have been probably in the 1960s or early 1970s. There's some of that.

B: When you say groundwater issues, what are you referring to?

V: Well, issues of groundwater contamination, impacts on the aquifer, concerns about the canal being cut across through the aquifer and some of those issues.

B: You have reached a point where you consider that perhaps there's not as much certainty to the criticism that was a threat to the aquifer during the project.

V: It's not even so much that, it's just realizing what I would read in the media when I was in high school is a little bit different than when I would read the technical report. It doesn't mean it's still not a problem or issue, but I found things I would read in high school when you really pick at it, when you read the technical reports you get a little bit different perceptive understanding. Things that I would have seen would have been more of the technical media stuff, what was in the media. Later on, I got a chance to read the technical reports. I'm not saying it was a problem or an issue, but it's not as simple. So, that's one of probably my biggest things. There's an old saying around here. It seems like I work on a lot of complex problems. There's an old saying: complex problems usually have simply, easy-to-understand, wrong answers. So, that's a rule of engineering I learned many years later. In school, I thought everything had an answer, and my experience is, it's not that way. That's my point. I haven't looked at a lot of those reports in many years, I just felt like when I read the reports, it's just not quite as simple as maybe everybody makes it out to be. There's uncertainties here. I found it better reading the reports than reading just what I would read, say maybe in the general media. I got insights from reading the reports. You have to simplify things here, but there you can get a little more into the details.

B: You're a hydrologist by profession, is that a fair statement?

V: Well, [I'm] a water resource engineer.

B: So, the ground water issues really are the things, correct me if I'm wrong, those are aspects with which you have the highest level of familiarity or in depth familiarity? Is that right?

V: Well, really from my experience, what I have the most familiarity with is actually the operations of the dams and the locks, the actual day-to-day operations. That's really where my experience is at, that's what I have the familiarity with.

- B: We're going to get to that in a moment, but, I guess, before we leave this line of questioning. You speculated that the ground water issues that were raised by environmental critics in the project are more complicated than perhaps the popular understanding is. Are there other aspects of the project that think are also similarly more complicated or misunderstood?
- V: Well, I think some of the issues revolving around Rodman probably are not as simple as everybody makes it, and you see the spectrum from both sides. I guess, my general observation is just a lot of times I don't think everything is as simple as everybody tries to make it. Like I said, I haven't really looked at a lot of the stuff in ten or fifteen years. That was just kind of my impression from that and more, especially from work I continue to do in water resources issues, that it's that way.
- B: Before we get to the operational aspects of the existing structures, tell me if you can, keeping in mind of course that I am a lay person and most of the people who consult this interview will be lay persons, but what would you say are the more complicated dimensions of the ground water issues to do with the project that you think have been rendered too simplistically. What do you mean?
- V: If you dig the canal, are there going to be water quality impacts on the aquifer? Is that a given? Can you deal with that? What about the impacts on Silver Springs? Can you deal with that? Is that a solvable problem? Is it a big problem? What about impacts on the ground water table around the canal?
- B: Now, those were questions that people brought up with considerable energy, going all the way back to the 1930s when the Ship Canal project was proposed. The concerns that were raised with respect to the Ship Canal seemed in the minds of many to have been addressed or ameliorated by the less topographically intrusive Barge Canal project with its system of locks that brought traffic up to a higher elevation as it crossed the peninsula. Of course, historians hate to ask the what if things had been different questions because history is history, what you see if what you get. But what if the project were to, for some reason that we can't imagine right now, come back to life? Would you say that those hydrologic issues and ground water issues could be addressed and negotiated in a way that was responsible to the environment and to the needs of all the users of the environment?
- V: That's an interesting question. I guess, for so many years I've had the mind set that it's not going to happen, so why even think about it. It's done, it's over. Even back in those days, I mean, back when I was working on the project in the 1980s and early 1990s, to me as an observer the trend was, it's not going to get built, it's not going to have.

B: That was the feeling even then?

V: [That was the feeling] even before it was de-authorized. Even in those days I wasn't thinking so much about was it going to be finished. We were just dealing with what we've got left. How do we manage it? How do we operate it? How do we deal with it? It's never going to be built. I hadn't really thought much about that kind of a question because I've never really thought too strongly that that was every going to happen. A general observation is, yes, it probably can be. One, you'd have to address it, that would be the first thing. You couldn't build it without addressing it. Two, technically-wise it probably can be dealt with. Some of it comes down to risk and uncertainty. How much risk do people really want to accept? Some of it's cost. How much do you want to spend?

B: All it takes is money [laughing].

V: Well, yes, but then you start weighing [whether it's] worth it. Why would I put precious investment dollars in this, spend all this money for no return? Why would you do that? So, that's a hard question because I've thought for so long that it's done, it's over, it's never going to happen, you don't even have to think about it.

B: Well, moving on then to a discussion of the operational side of the lot, let me ask you this first. We touched basically on some of the geographic aspects of the region when we talked about your master's project on the Oklawaha River Basin. The canal project, overall, is something that you dealt with professionally at both ends and it crosses the peninsula from near Yankee Town on the Gulf of Mexico coast to near Palatka on the St. Johns River. Do you divide the project up geographically, and, if so, how? Where do you draw the boundaries between the segments of the project?

V: In my mind, yes, I do divide them. I would divide them by river basin. In my way of thinking, I think of the Oklawaha River Basin and then Rodman Reservoir. Then, on the west side I think of the Withlacoochee River and Inglis Dam and Lake Rousseau. So, that's how I, as a water resource type person, I think in terms of water basin. That's how I would divide them.

B: You had operational responsibilities in both places professionally?

V: That's correct, yes.

B: What were the differences between those places as far as its impact on your work, your responsibilities?

V: Some of the basins have some similarities. I would say in many ways Lake Rousseau and Inglis Dam was a lot tougher one to operate, because with Rodman really you didn't have a bunch of people living around the reservoir. Most of that land had been acquired, so you didn't have as much in the way of people issues, trying to deal with people right on the reservoir. Rodman was constrained by having that old injunction. It really limited flexibility. I think the original injunction said you had to keep the reservoir at eighteen, and then they would go back to the judge [asking], can we do a draw down. So, I found that often times that was a constraint to operate with. There was a legal component to that, so [we would have to figure out] what authority did we have to do to vary our operations. I know that Dave Bowman a lot of times really would like to try to use a bigger range of fluctuation on Rodman Reservoir, like maybe take it up to twenty [or] take it down lower. We actually were able to do some draw downs on the lake strictly for environmental purposes. I felt like [at] Rodman we probably could have done more strictly for managing the lake for the lake itself, but we had some technical and legal issues with the draw downs, but we were able to do them.

A big one we did was the one in 1985, I guess, after the fish kill, and then, I think, we did several more after that trying to deal with managing the lake, more for managing for the lake. So, that caused a constraint. I would say the Inglis side was tougher because that was already an existing reservoir that we took over from Florida Power Corporation. You already had a lot of people living around it. It had unusual things like the lower river channel. I think we had designed it [so that it would] just discharge down the Barge Canal channel from the river and that was going to cut the lower river channel off. That was a big issue from the standpoint of saltwater intrusion, cutting off the lower [channel] down toward Yankeetown. We ended up building the bypass structure, so we had kind of an interesting combination of structures there to operate with.

B: When was the bypass structure built?

V: It was built right around the time when all that was completed. I want to say probably the late 1960s. A lot of this is documented in the design reports. I even have stuff here that we could look at afterwards, if you want to, that has a little more of the history. That made it tough. Another operational nightmare was during flood situations. The reservoir creates what we call in hydraulics, a backwater effect. The water surface profile is raised upstream of the reservoir due to the reservoir itself. It's easier to draw a picture than it is to try to tell it in an interview. That would cause, during high flow conditions, flooding upstream in Dunnellon. As an operational strategy, we would draw Lake Rousseau down in order to reduce the backwater effect at Dunnellon to keep from exceeding the

flood stage at Dunnellon. That was always a tricky operation because the people living on the lake were not happy when the lake was drawn down, because it affected their navigational access. We were caught between people on the lake being affected by the lake being drawn down to try to avoid flooding the people upstream.

B: When you talk about the relationship between the people who live around Lake Rousseau and your management of the lake for flood control purposes, you mentioned that you took over the lake and the dam structure, not you personally but the Corps in its administration of the project. You took it over from Florida Power, so the lake and the dam actually had a pretty considerable history going back, as I understand it, until the very early decades of the twentieth century.

V: I think it was actually a phosphate company that built the dam back in the early 1900s, so it does go way back.

B: The growth and residential use around the lake occurred, starting in earnest, in the late 1960s and accelerated, as most Florida growth did, during the decade of the 1970s. Do you think that the fact that people really sort of started using the lake as a residential resource or recreational resource then affected their expectations about the lake? It sounds as though they've got expectations about the reliability about its water level that really don't have much to do with the historical fluctuations in the lake. Is that true, or did Florida Power pretty much just let the spill way and the dam and nature take its course with respect to flooding further up the Withlacoochee?

V: That's a good question. I have this perception that I've looked at some records in the past where I think maybe Florida Power did draw the lake down for flood control, but I'm really not sure. I would have to go back and look at it. There are some records available. DEP [Department of Environmental Protection] might have a lot of their old records. What happened is, a lot of the published water records don't start until the 1960s when we started paying the USGS [United States Geological Survey] to run the records. I don't think it's that easy. You can't actually go into the USGS and find the lake level data. You'd have to actually get the records from Florida Power. I keep thinking that they did draw it down, but I don't know. I would want to verify that.

B: What did you hear from people on Lake Rousseau when you were involved with responding to those conflicts?

V: Well, like I said, they would not be happy. They would be very dissatisfied because it affected their ability to recreate. You'd have fish camps where people couldn't get out and go fishing on the lake, so it was having impact on businesses and people.

B: How radical of a draw down are you talking about?

V: Usually for there the normal pool elevation at Inglis was about twenty-seven and a half feet about mean sea level, which really we would call in our term National Geodetic Vertical Datum plane, but, for the general audience, above mean sea level. We'd usually be talking about drawing the lake down maybe no more than about elevation twenty-four. So, it was anywhere between two to three and a half feet of draw down, which may not sound like a lot, but when you're down in a flat area, a couple of feet makes a big difference. That has an impact. That's the kind of draw down we would be talking about in order to reduce those flood impacts upstream. It actually happened pretty frequently. I went back and looked at some old notes that I had, and it was probably every three or four years [that] we had to draw down the reservoir for flood situations. Ironically, they're in that situation now over there. There's a little minor flood on the Withlacoochee River, so whoever is operating it now . . . Is it DEP?

B: I think it's the Water Management District.

V: [It may be] the Southwest [Water Management District]. Southwest may be facing this as we're doing this interview. The flows are coming up, so they may have a decision to make. I don't know how they're operating it now, whether they do draw the reservoir down to prevent that impact at Dunnellon.

We have another issue where people way upstream, say up at State Road 200 or even further upstream, would attribute their flooding to the reservoir. So, we would have to try to explain [that] the backwater effect from the reservoir doesn't extend indefinitely upstream. At some point the backwater effect becomes essentially zero or minimal from the reservoir. Then, the river levels are controlled by whatever is going on, that the cross-section of the river there is not influenced anymore by the reservoir. So, we have that going on during the floods where people way upstream would be saying, hey, your reservoir has blocked up the river and it's causing this flooding. So, [we would be] trying to explain to people, no, you're outside the influence of the reservoir. It's what's going on in the river there, it has nothing to do with the reservoir. We would have that kind of going on. It was a tough thing also from the standpoint of recreation because there would be weed problems and a lot of snags and stumps. It was a tough reservoir to get around, so you had that going on.

I think another thing that we did from the Corps standpoint that was hard for this project was, being in the limbo that it was, it was kind of like, well, what's going to happen to the reservoir, what's going to happen to the project. So, a lot of times I think there were some limitations on how much you could really do from a

management standpoint because you couldn't finish things maybe you needed to finish. An important thing over there was to hire a park ranger at Inglis to try to help out with managing the resource over there. I thought that was a good move when that was done, to try to deal more with the local folks and the public over there. That's kind of some of my thoughts, I guess, maybe, about Inglis.

Then Inglis gets tricky because people downstream of the bypass spillway, there on the title reach of the Yankeetown and Inglis, and we tried to operate the bypass spillway when there was a storm surge. We tried to reduce the flows through the bypass spillway to reduce the impacts on the people downstream during a storm surge situation, but you had to be real careful because if you did it wrong, if the tide went out, then we could put their boats on the ground. That made some interesting things for management during hurricanes and even noreasters [strong northeastern winds], how we would try to cut the flows back there and then we could ship it out the main spillway out through the Barge Canal channel where it wouldn't impact people. We would generally cut back maybe to 300 cubic feet per second at the bypass spillway to try to not make it any worse for the folks that were living there in Yankeetown and Inglis along the whole river channel.

B: It's very, very complicated business you're in. There are meteorological impacts and human use impacts, demand, and factors. All of that's sort of layered on top of the hydrologic and hydraulic issues that maybe seem more routine than day to day, but it makes it all pretty complicated. I can see where you come to be the generalist, I guess, that you referred to earlier.

Florida Power created a dam in a lake there sometime before the Corps came into the picture. The Corps engineered a spillway and a much more sophisticated dam and lock set of structures there. Now, if we conclude, as I think everybody has, that the canal is not going to be built, are there issues that are peculiar to the dam and lock the way they were engineered in the 1960s that complicate the management that continued operation and management of Lake Rousseau and that watershed? I guess, what I'm wondering is, do you see there being a need for structural changes in that end of the system that would make management of all these complicated issues we've talked about more simple?

V: Well, one thing that comes to mind, I'm sure people have struggled with this one, is, what do you do in terms of maintaining navigation and boat traffic on the river? You don't need this huge lock.

B: What are the dimensions of that lock? Do you recall it?

- V: I could look them up in here, but it's huge.
- B: It's about 600 feet long, as I recall, by whatever a couple of barges width is, somewhere around 100 feet or so. It's a big structure.
- V: You have that issue of what do you do. You have an impediment to navigation on the river with the dam, but can you really afford to operate a big lock? Do you need to operate a big lock? I'm sure people have been struggling with that, what to do. I don't know what they decided to do with that, but that's one issue.
- B: They've done nothing yet, but there is a struggle.
- V: Some people might advocate just close the lock and people can portage around the dam, and others would say, can we replace it with something smaller and more efficient, and probably others would say, no, maintain the lock. So, that's at least some of what comes to mind.
- B: As I understand it then, from your point of view the lock really serves no function other than navigational, and you could manage the resources effectively just with the dam and spillway.
- V: What the lock does give you is, that in an emergency there is a procedure that could be used to discharge water through the lock, for example if for some reason we had problems with the spillway gates at the main spillway. We have done this and there is a procedure set out to where you can use the lock in an emergency. It's rarely, if ever, used. I don't know if we've used it at Inglis. I think we might have used it at Rodman before. So, that's there in my mind. I don't know if that provides a strong rationale for keeping it because that's not its intended function. It's not intended to discharge water from the lake in an emergency, but we're always looking for backup plans. We figured, yes, it can be [done] and here's how we could do it. We wouldn't recommend doing it, but it could [be done].

Some other things that come to mind there would be there's always going to be this dilemma with the flooding stuff upstream, because the Barge Canal channel, in theory the idea was, that would provide sufficient capacity through the Dunnellon area to where you wouldn't have to draw the reservoir down to prevent the flooding upstream. So, that's one of those unintended consequences of not completing it. [What] was going to take care of that problem, our designers thought, well, now you don't have that. That's an issue dealing with that.

Probably [we had] some geotechnical issues. Geotechnical deals with seepage and stability, earth-type things. There's been issue with seepage there at the

dam over the years. I know we did some emergency work, I want to say probably in the 1960s, with grouting and stuff. Our geotechnical people have kept an eye on seepage problems at the dam. I don't know what the final outcome was. In the future, you've got to continue to do monitoring and maintenance work on the filters. You just can't walk away from it, because you don't want to have problems develop at the dam. You've got to keep your spillway gates operational. You've got to maintain your inspections of the dam, make sure there's no problems and stuff like that.

Let's see what else [we deal with]. I guess, the question would be what do you do with the Barge Canal downstream of the dam? I mean, do people want to try to restore that in any shape, form, or fashion? It has some value from the standpoint of mak[ing] high releases through the main spillway through there and not really cause flooding impacts on people like it used to be downstream of the old dam. See, under the old dam, when they released water through the Inglis dam, it went down the lower river channel through Yankeetown and Inglis. Now, those people have gotten an unexpected reduction in flood conditions, because, historically, if we had a flood, Florida Power would have to release all that water straight down the old river channel. So, they'd have a storm surge [and] here would come water on top of it. Now, we can divert it all through the Barge Canal channel and help reduce the flood impacts in Inglis.

B: So, on the lower river, they have become accustomed to a very nicely managed water level.

V: Well, they may not say it's nicely managed, they may have a different opinion, but they have gotten accustomed to [our managing the flood levels]. They'd still get flooded out with a storm surge, but it could be worse. It's not as bad as it could have been, and they've probably become used to that. For all that I know, there may be people living there that have no idea, because how many people go back that far or would know? They would be surprised if suddenly you discharged all the water down the old river channel. They could be in for a shock. I haven't been down there in years, but typically what happens is, people might tend to encroach down on the river with docks and things because it doesn't get that high. That would be a thing. I wonder what people want to do with the old Barge Canal channel. Do they want to try to fill it in? Do they want to restore it? Do they want to put weirs in it? What do you do with it? Do you just leave it the way it is now or do you try to do something? You don't need that Barge Canal channel anymore, so what do you do with it? It does have some value or some uses from the standpoint of some of the way you operate stuff. I would think people would want to at least be cognizant of that, and at least acknowledge it or address it, or just say we're going to change it anyway and put it back the way it was, but at least realize that there is something there. That's

some of the few things that come to mind, I guess.

- B: What about on the other end on the Oklawaha River Basin area, the Rodman Dam area? We've talked a little bit about the fact that the Rodman Reservoir has really sort of matured into an ecosystem in its own right, now at this point, of fisheries and recreational resource. The flood issues are different there, as you had said, because there is not as much residential use around there. Are flood control issues really pretty much noncontroversial at that end anymore, at this point?
- V: I would say, yes. I can't think of anything that really comes to mind from a flooding issue because [of], like I said, what the state has in terms of land and, I guess, for that matter, the forest service has. I can't really think of a big flooding issue that's there. Now, I assume the state has a flexibility to manage it over a much wider range of water levels, which I assume that they do. They no longer are constrained by the injunction and stuff like that, so they probably have more flexibility to manage it for different reasons. [There's] the same question with the lock. What do you do about the lock? What do you do about navigation?
- B: The issue there, apparently, has more historical consequence because the Oklawaha River does have history in having been used for some commercial navigation. As someone with a personal history in Florida and a sense of history as a Floridian, do you have any opinions about the navigational issues there or is it meaningful to your way of thinking to maintain it as a waterway that's got the potential for navigation? How far would you go?
- V: Oh, that's a good one. Both the Oklawaha and the Withlacoochee River have Corps authorized navigation projects on it from many years ago. The Oklawaha project must have been [from] the early 1900s. It was a small project. I mean, we're talking small stuff here. The Withlacoochee River was authorized probably in the late 1800s. In fact, I have a lot of the old annual reports and the House [of Representatives] or Senate documents that went with those project.
- B: Yes, we'll have to talk about those documents, but that's something that I was not aware of.
- V: I know these questions have come up in the past. I don't know how our district engineers responded to them. I don't know what our current policy or position is. I think, in the past they kicked around [the question], okay, so we have these authorized projects, what does that mean? How do you deal with that? In other words, does somebody want to de-authorize that and say there's no longer a federal interest in the navigation there? I've heard some other people say, that doesn't mean you have to keep a lock operating all the time, that to maintain

the federal navigation channel perhaps it's once a week, perhaps it's once a month. I've heard some of these kinds of discussions in the past, but that is something that has been brought up before.

Realize these are small projects. I mean a lot of them involve snagging and clearing, there might be a little bit of dredging, so these are not authorizations for huge navigation projects. They really, in my view, reflected the time that people were doing logging. They were seeing log rafts or there was steam boating going on. In fact, talking about the personal interest, I've found that one of my mother's uncles served on steamboats on the Oklawaha River in the early 1900s. In fact, he was the engineer on the *Metamora* that sank in the Oklawaha River and had a couple people drown.

B: Yes, that was a famous incident. Are there any mementos, recollections, memoirs, journals, anything from him?

V: [No] not from him. I have found the newspaper articles from that time period. I wish I had some of the stuff. It ended up, I found that he was in the 1910 census. He was living in Palatka and he listed his occupation as a steamboat captain, so I guess he must have made captain. Anyway, that's off the point for what we're talking about here.

So, that was kind of the focus of the discussion. That Withlacoochee report talked about phosphate had been discovered, as I recall, so there was some phosphate out. Realize these are small scale type projects. So, you've got that piece of it. Just my own personal view is, I would hope that navigation could be maintained, because it's not so much that you have what I would call commercial navigation now, it's just that people like to recreate and they like to be able to boat. Probably your commercial navigation now involves the people that maybe run tours on rivers. You've got the people that want to fish and want to be able to go back and forth. I would hope, as I said, from a personal standpoint, that some kind of access along the river could be maintained. The tricky part is, how do you do it and how do you be cost effective, and there's probably a lot of different ways to get there.

B: Do you think that the management issues, with respect to those resources at either end of the project, are going to be changing in the future or are the issues that we face now pretty much what the state will be facing as time goes on? Do you perceive any changing dynamics to the management questions?

V: Not that I can see, but just observing history of water resource projects in Florida I would say yes they'll change. Something will change over time. I'll take an example down in south Florida. Who would have foreseen the impact of the

Cuban Revolution (1952-58) and Fidel Castro [Premier and President of Cuba, 1959-present] and the impact on the Everglades agricultural areas? When they were doing the planning for that project in 1948 and they wrote that report, who could have realized the impact that would have had on the project? Our C&SF [Central and Southern Florida] project, our people estimated maybe 2 million people would be living in Florida. I don't remember the exact numbers, [but it was estimated that] maybe 2 million in the year 2000, [but] there was 7 million in the area. Just appreciating history, I look back and, I'm sure there are things that are coming that I don't know about or I can't see that will have an impact.

B: Never say never.

V: We talked about your work you're doing on Tampa. I mean, I think a major impact on Florida was air conditioning. So, I've given you a long-winded answer, but there's probably something out there. Some of the things were changed. I do notice that a lot of the times we do deal with the same issues over and over again, so I think a lot of the same issues will still be there. The curious one to me is, what's going to be the fate of Rodman Reservoir? That's a big one to me that will have a lot of impact on what finally ends up happening in this area.

B: Are you settled in your mind as far as your convictions about what ought to be done with the Reservoir? This is a controversy that's going on. What do you think?

V: Well, I'm going to waffle on you and say I don't have a strong feeling either way. I see both sides of this debate. I really think it almost comes down to your values question. Which value does society place the most on? I see the value of it from a recreational and fishery standpoint. It's got value from an environmental standpoint, but I see the other point of view of it's not what the river was there historically. Can we put it back? We're doing other restoration work in the state of Florida. We're redoing the Kissimmee River, we're redoing the Everglades, so society has valued those in a way to say, yes, it is important to restore those and to try to put them back the way they were. Like I said, I can see it from both sides. I mean part of me would like to see it the way it used to be, as a historic river. It's interesting in reading some of the old annual reports. When you read [of] officers doing their surveys in the late 1800s, it's interesting hearing them talk about it, or looking at old pictures, or reading some of the old accounts of going along the Oklawaha River. What a fascinating place, the back and forth, the twist and turns, the cypress. How about that for a waffle for you?

B: I wouldn't call it a waffle, but it's faithful to what you have expressed. There's

not much in life that comes down clearly into sharp black and white focus.

[End side A2]

B: This is tape B from the Jim Vearil interview on July 17, 2003 at his office at the U.S. Army Corps of Engineers in Jacksonville. We just concluded with the discussion of Mr. Vearil's assessment of the debate over Oklawaha restoration, the restoration of the Rodman Reservoir. He put that in a context. You were talking, Jim, about some of the other really major restoration projects that Florida has undertaken [such as] the Kissimmee River Valley project and the Everglades Project, which you're involved with professionally today. I wonder if you have anything to say by way of broad opinion or interpretive comment about the relationship between science and policy. What comes to projects like this?

V: Wow, you hit on an interesting topic for me that I struggle with quite frequently. I could go on for a long time probably about this. I have to be focused on my comments.

B: If you can put a focus on it, I would ask that you try to aim the focus toward the Canal Project and what we now we wind up with as the people of Florida own this ribbon of land all the way across the peninsula. The fact that they do really is complicated by this tension between changes in policy and changes in science and changes in the way people interpret those, people who are neither policy makers nor scientists.

V: Some of my thoughts on that would be [that] this is a difficult topic. I think people have a tendency to think of science as being black or white. In fact, it's interesting you ask this. I'm reading a book right now by Thomas Kuhn. He wrote a book about how scientific revolutions take place. I'm intrigued by what he talks about because I've read some of [what] people have said about his theories and I'm trying to actually get into his book and read it. Kuhn seems to be arguing that scientific revolutions don't occur the way we think of them, like the scientist are very apolitical, no impact on social values, they just go in a room and they analyze the data and everybody reaches a conclusion and science marches on. From what people have written about his work, the impression I get is, he writes more that scientists are like everybody else. They are affected by their values, their perspectives, societal influences. He tends to think science occurs as a revolution. In fact, he's accredited with coming up with the word paradigm and paradigm shift; it's attributed to him in some of these articles. He gives examples like people used to think the sun revolved around the Earth and everybody believed that, and it took a revolutionary scientist to argue, no it's the other way around. Eventually, the other school overtakes the school of thought that was en vogue, that was the accepted school. So, he says it really takes

revolutionaries to come in and break it. So, I've been thinking a lot about that in terms of science.

Some of my other stuff comes from one of my other favorites, a person named William Lord. He wrote several good articles, in my view, in the 1970s about water resource issues. Also, our folks up at our Institute of Water Resources [wrote good articles]. So many of the projects I work on, and the Barge Canal is this way too, [are controversial]. What is about water projects that have so much controversy, particularly here in Florida? I used to joke, I've worked on so many lawsuits; every action we took provoked a lawsuit. Everybody ran to the court and litigated and everything, and there's all this controversy. To me, part of the problem with dealing with controversy is, William Lord talks about this, the guy at IWR [Institute of Water Resources] talks about this, people have a hard time separating [things]. Often times we couch things as argument over the data. For example, Rodman Reservoir is bad water quality [or] no, Rodman Reservoir is good water quality. Rodman is a good fishery, no it's a bad fishery. We tend to argue things like, here's the data, how come people can't see this is what the data shows? Bill Lord argues that many conflicts, you have to understand when you're arguing over data or when you're really arguing over values, when you're arguing over essentially positions. There's like four things that they categorize.

Jerry Delli Priscoli at IWR has written a lot on conflict, so I've read a lot about conflict, and I think what tends to happen is, people don't understand what they're really arguing for, I think, a lot of times. They want to argue the data says this, and it's really about my values that leads me to examine the data in a certain way to reach certain conclusions. So, that's part of what I see as what I think needs to be better understood. I see too many conflicts where managers are frustrated because they feel like technical folks can't agree. [They say] you're just working with the data, it's just a model, why can't you agree? In reality, often times they're not arguing over the technical details, or if they are, it's because they have a different value structure. They see the world in a different way, they attack the problem in a different perspective. Technical folks, I think, have a hard time understanding that. They see it as a technical issue, probably don't even realize they have value or interest conflict, and that's why they see the world in a way.

I think decision makers and managers often times don't want to deal with the hard choices. What I see is that if there's a hard choice people don't really want to make that hard choice, so they do what I call kick[ing] the can down the road or they punt. There's a tendency sometimes to shift that back to technical people and say, well, you guys just go in a room and solve this. They don't want to face the hard decision or hard choice. In fairness to the managers and policy

people, often times we technical people don't articulate things very well, we don't give them what they really need, or we don't really do the job they ask us to do and be the technical piece. We have our own agenda, our own interest in mind. A lot of this is probably subconscious, I think, so that different people look at it differently and reach a different conclusion.

So, this is a very interesting topic that I've thought a lot about. I see a lot. I mean I've been involved with the Cape Sable Seaside Sparrow nightmare down in south Florida. I've seen a lot of the lawsuits. It's something that we're trying to work with in south Florida with, how do you incorporate science into this? How do you deal with policy makers? I saw some good presentations on this at the Greater Everglades [Ecosystem] Restoration Conference, the GEER Conference, a couple months ago where there was a session on this issue. This is really mostly scientists, but they brought in some policy makers and talked about this. Somebody from the University of Florida came and spoke. [He was] one of our keynote speakers, [but] I can't remember his name right now.

I'm giving you a lot of big picture stuff, but I think there needs to be more thought given to this. I think there's really something here with this science versus policy [issue], or the interaction of science and policy and how you deal with it and do it. How do we ask the right questions and how do we have the right people? Sometimes there's a tendency, I think, for politicians to try to do science and scientists to do policy. How do you separate these out? How do you get the right people into the right box? How do you do this interface? A big change I've seen, particularly with the Corps, is a lot more focus, and I think it's a good thing, for these multi-disciplinary teams inter-agency approaches. I think, for years in the Corps we kind of had [the mentality of] we're the Corps, we know what we're doing, here it is, here's the plan. Now, I see a lot more efforts toward trying to bring people in, trying to build [relationships]. You can't be just a bunch of engineers deciding this, you need a wide range of disciplines. You need biologists, you need economists, well, we've used economists in the past; sociologists, or whatever it takes to come up with a better answer. There's a lot, I think, going on with how you bring a lot of this into the effort. I guess you want me to kind of focus maybe on the Barge Canal. I kind of got on my soap now.

B: Well, you anticipated and answered the follow-up question I had, which was, how you see a large, technically-oriented institution like the Corps responding to the demands of these complications or the friction or the tension between hard data, science, and policy making, and the politics of human use and that sort of thing? So, that anticipated that question well. Do you see anything that you would add to that with respect to the canal project itself as work? That segues into a question that I wanted to get to eventually, which is, how would you hope to see the Greenway treated by Floridians in the future?

V: Other thoughts specifically for maybe helping with the Barge Canal [question] would be, DEP is very involved in the Everglades restoration efforts, so I'm sure they're familiar with at least some of the strategies there, the [following] things. Do you have groups that have a lot of disciplines here involved on the efforts for the Greenway? Do you have a lot of agency involvement? What about stakeholder involvement? How do you incorporate that involvement? How stakeholders feel that they're part of the process and they're not just reacting things that agencies produce? I'm not saying this is easy. We still, I think, struggle to get this right. In getting stakeholder involvement to where they feel like they're part of the process, how do you use committees, task forces? I'm not sure what all is envisioned for doing this.

Another technique that's very en vogue right now that we're trying to apply is this concept that's very important to the restoration effort, [it] is adaptive management, where we recognize we don't know all the answers, that we're working with incomplete information and knowledge. So, you try to structure your processes to build on that uncertainty, to say, I want my solutions to be flexible, I want to monitor, and I want to be able say ten years from now, you know, really we've learned since then, now, we really want to try this. That's a philosophy. Steve Light from the University of Minnesota has been very involved in this. There's a group called the Adaptive Management Consortium, or whatever, practitioners that are doing a lot of this. That's kind of where I see a lot of things heading, and that appeals to me.

In fact Buzz Hollings who was at the university, he's retired now, he lives over in Cedar Key, is one of the pioneers of adaptive management, environmental stuff. I went to several of his workshops back in the 1990s. It's appealing to me because, once again, to put it in this history context, one of the things I see a lot about the history of projects is the famous law of unintended consequences. [There are] many things we don't know, we didn't see, [and] we miss it. I think it's a change from a little bit of almost an arrogance of we build projects, we've got the solution and this is going to be the solution. To where, if you go into adaptive management, you acknowledge, I don't know everything, I don't all the answers, science is imperfect. I'll structure a process to account for that and being willing to change in the future to adapt as we go, to changing information or even, for that matter, changing societal values. I know people are aware of this. I don't know if it's applicable to what they're doing, but if you're asking what are some of the things I see going on in pieces that I'm working on, that's one of them, this whole philosophy of trying to say, I don't know all the answers, how do I make things to where our successors can adapt and change and, as they gather information and learn, to adapt the project? I think that, as a student of history, makes sense because that gets you out of that mode of, we know all the

answers. We acknowledge, no, we don't know all the answers.

- B: Do you see this openness to ideas such as adaptive management, do you see that as being evocative of the culture of institutions like the Corps of Engineers as we move into the twenty-first century now? Is that more the way the Corps, as a collective group of thinkers, looks at projects that it embraces or takes?
- V: I would say, yes, and I'll caveat it with some things. I think, in particular here on the work we're doing in south Florida I would say, definitely, yes, particularly the restoration effort. It's in the law. I mean, when Congress passed the Water Resource Development Act of 2000, they put adaptive management in there.
- B: Really, that wrote that in those words?
- V: Well, [they wrote in] words to that affect. I mean I'm working in this recouer branch now.
- B: What does recouer mean, by the way?
- V: [It means] restoration, coordination, and verification. It's all about adaptive management. It's all about science incorporating in a decision. Well, that's not what it's all about, but that's a big piece of it. So, this whole concept of this whole recover, adaptive management was in the center of the law. I think, Congress kind of bought into this philosophy. I think it was important to them in order to approve this big project [to say], we're not going to spend all this money and build something that's going to be lemon. We want you to be able to adapt as you go and change.
- B: If you had to point to any historical forces that have led scientists and engineers to this paradigm, what occurs to you as a force in history that has provoked that?
- V: Well, you're going to get an interesting view from me and it's going to be maybe a narrower view. I think some of it is people like Buzz Hollings. Buzz has been an advocate of this.
- B: What was he at the University of Florida?
- V: He was in the department of zoology. He was in the Arthur Marshall Chair. [He was] a great thinker. For me, personally, he had done some work with what's called resilience. Resilience is something we work with in engineering systems and our resource systems. He applied it to ecological systems. He worked with a water resource engineering-type person on these issues. He was a big proponent. It's just not him, I mean it's others. They were doing stuff on the

Columbia River Basin. I guy named Lee, I've seen his work.

B: So, when you say people in response to that, you mean people with innovative ideas?

V: Yes, [I mean] the good thinkers. Like I said, I don't have the whole view. There's some others I could point you to to give you a better view, academics and practitioners who have been thinking about this. Steve Light, he was at the South Florida Water Management District, that's where I knew him from, as a policy director. He's gone up to University of Minnesota working on adaptive management. In fact, another one of their students was Lance Gunderson who's now at Emory [University]. They wrote a book called *Barriers and Bridges to Ecological Restoration* that gets into this. They've just done a lot of work, so I think it kind of starts with that.

Another big person I want to give a lot of credit to is John Ogden at the South Florida Management District. John is head of the recouer group down at the South Florida Water Management District with my boss, Stu Applebaum. John went to a lot of these workshops. It wasn't that things changed over night. I think the method to Buzz's idea was, you start slow and you start promulgating ideas, and it might be ten years before something shows up. Buzz may not think we're even there yet. I mean, I don't think what we're doing is even exactly what he had in mind, but [there's] kind of this philosophy. I think John, to me, has been a big proponent of this. He's a visionary. He had worked for many years at the Everglades National Park as a biologist. He went to work for the Water Management District as a senior scientist. John is a thinker and he's been a proponent of this. In fact he and Steve Davis wrote a book on the Everglades and edited the book in 1994. I've got it on my desk [and] I can show you. I consider it like a classic on the Everglades with a bunch of papers on where to go, so I think John had a lot to do with it. Stu, my boss, had a lot to do with it. Stu is a very innovative thinker. That's Stu Applebaum.

Another person would have been Dennis Duke, who's the chief of our restoration effort here. He's another innovative thinker. I think some of it was my perception. They probably would tell you the real story or their version of the story, but some of the things that I've observed is just having people like Buzz push the ideas, then other people picking up on the ideas and people becoming proponents, and then it ended up in the WRDA 2000 [Water Resources Act of 2000]. I think another impact has been our chief of engineers now, General Flowers is a very innovative thinker. I think he's really pushed us a lot on environmental operating principles, trying to change our culture from a standpoint of looking at some of these kinds of things. So, a lot of this, I think, is a variety of efforts and a variety of people having influence on the effort.

B: When we talk about how you would want to see the people of Florida use the Greenway resource in the future, I guess it sounds like you're saying that it would be most desirable to leave it in sort of a dynamic model and have it be something that people can use in response to the changing social priorities, changing policy demands, changing environmental conditions. Is that a fair statement?

V: It could be. I think you have to kind of think about, are some of the things I've talked about really applied to this. I think part of this is the definition of what do people want the Greenway to be? Maybe adaptive management applies, maybe it doesn't. When I think about the Greenway, some of the things I think you have to deal with [are] how are you going to operate the lakes and the reservoirs and what's going to happen to them. That's a piece. How do you want to manage the Greenway itself, the land base pieces of it. I can see different things. I would advocate [that] some of it is, what's good for recreation there. I mean, what about hiking trails, bike trails? Do you want to have parks? Do you just want to leave it natural?

I think there are some things of historical interest [that] I hope are done. There's the piece out there in the Greenway where the digging was done in 1935 for the ship canal. Have some interpretation or something like that. Payne's Landing, where the treaty was signed with the Seminoles, you've got a history. There are other things [such as] steamboats on the river. So, you've got different things like that. Marshall Swamp, there's some history there. I've seen things from Civil War history. I think there was a big raid on a sugar place [plantation] there. So, you've got that from a historical perspective.

I think there's a lot of recreation there with that land through there that can be used for different recreational purposes. Perhaps adaptive management is not appropriate. I would kind of believe [that] you study around and you look for other examples, and you say, do things fit my case. If they do, can I adapt them or modify them to fit my example? That's kind of my feeling of [when] you look around for ideas. I don't want to make this blanket statement [that] adaptive management is the way to go for the Greenway, because it may not be. I would like to at least pose it as, that's out there, that may fit on some things that they're trying to do on certain operations. Other things may be much more straight forward. My other point is, how do you get stakeholder involvement? What level of stakeholder involvement do you have? The hardest thing is probably, what do you do when you have conflicting objectives? How are you going to resolve those conflicts? Do they have conflicting objectives on their management pieces? Maybe it's easier than that, maybe it is more straight forward and simple? Did that help clarify any of this?

B: Yes, that was a good and complete, and very articulate, response. I think that I

have reached the end of the line of questioning that I had laid out for us for this morning, and we've used a good chunk of the time that we both allocated for this. I wonder if there's anything that occurs to you that we've left unsaid that you would want to add to your comments about the relationship between you, your operations, your career with the Corps and the canal and Greenway projects? Is there anything that you would add in conclusion?

V: Yes, I would say it was a good experience for me, the work I did on it. I got to do different things. I got to see a lot of that part of the state from a standpoint of starting my days collecting water samples to actually operating a project. It was interesting working on some of these [projects] like the Lake Rousseau task force. That was hard because it was having to deal more with the public. It's a funny thing, as an engineer, basically, I think I'm introverted, but I find in doing water management stuff you have to get out and do more with the public, and I wish I was better at it. I wish I was more articulate. I find it hard, but it's got to be done. So, that helped me grow as a person. Dealing on that task force, like I said, you're working with the park managers over there, working with Dave Bowman. I've worked with a lot of good people in the Corps, on the Barge Canal. [I worked with] Dave Bowman for many years, lock masters, operations maintenance people like Tommy Gaskin, people I had mentor and teach me here like some I mentioned earlier; so that was a good experience for me.

I learned a lot, [and] it also helped illustrate, as I talked earlier about, how everything is not so simple, that there's tough choices. Some of these debates over the value that society places on certain things, so dealing with that. It was a good experience working with a lot of the operations where I learned things about flooding stuff [and] how to make operational changes. For me, I've done a lot of different things on it. Working with people in our real estate division who knew a lot about it, so it helped me grow professionally. It wasn't always easy. There were a lot of hard things with it, but I had a chance to work with people who knew a lot about the Barge Canal. I actually worked with people who had done a lot of work on the Barge Canal back in the 1960s, so I learned a lot from them about the history of the project, and they would be people who would be interesting at some point maybe to talk to or interview if they would be willing to.

Finally, the interesting part, that we probably started the interview with, is just kind of realizing some of my personal family history connections to this area. I've found that I had an ancestor, back in the 1830s there was a territorial legislature passed a law where, he was going to be one of the ones to help improve navigation on the Oklawaha River. The three of them was John Mizell, Gad Humphreys, and somebody else were appointed to do that. Having family living down there, and having some family living in the Gorge Landing area in the 1850s. We also have another group of ancestors that live in Citrus and Levy

County that were in the Withlacoochee basin. In fact, one of them apparently, from what I can tell, was part of the Orange State Canal Group that did the Orange State Canal that goes into the Tsala Apopka Lakes. I've found some documentation, at least some of it's secondary sources and even a little bit of primary sources, that apparently, I think, he might have been a stockholder or a shareholder of that company that did that work. James Priest was his name. So, that part has been kind of interesting in hindsight as I go back and going wow, I had more interesting kind of ties and connections from that standpoint too. That's what I can kind of, off the top of my head, answer on that question.

B: Okay, for the purpose of the taped part of the interview I would like to say, at this point, thank you, Jim Vearil, for your time and for your thoughts. I have some other questions for you that don't run with the interview. We'll just get to those off the tape. That concludes this interview now.

V: I want to say thank you very much, Alan. I enjoyed talking with you.

B: Thanks to you.

[End of interview]