ORAL HISTORY INTERVIEWS

CAROL LYNN ERWIN

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STATUS FOR INTERVIEWS:
OPEN FOR RESEARCH

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STATEMENT OF DONATION
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CAROL LYNN ERWIN

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INTERVIEWER: _____
Britt Allen Storey

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The transcriber and editor also have removed some extraneous words such as false starts and repetitions without indicating their removal. The meaning of the interview has not been changed by this editing.

While we attempt to conform to most standard academic rules of usage (see *The Chicago Manual of Style*), we do not conform to those standards in this interview for individual's titles which then would only be capitalized in the text when they are specifically used as a title connected to a name, e.g., "Secretary of the Interior Gale Norton" as opposed to "Gale Norton, the secretary of the interior;" or "Commissioner John Keys" as opposed to "the commissioner, who was John Keys at the time." The convention in the Federal government is to capitalize titles always. Likewise formal titles of acts and offices are capitalized but abbreviated usages are not, e.g., Division of Planning as opposed to "planning;" the Reclamation

Projects Authorization and Adjustment Act of 1992, as opposed to "the 1992 act."

The convention with acronyms is that if they are pronounced as a word then they are treated as if they are a word. If they are spelled out by the speaker then they have a hyphen between each letter. An example is the Agency for International Development's acronym: said as a word, it appears as AID but spelled out it appears as A-I-D; another example is the acronym for State Historic Preservation Officer: SHPO when said as a word, but S-H-P-O when spelled out.

Introduction

In 1988, Reclamation began to create a history program. While headquartered in Denver, the history program was developed as a bureau-wide program.

One component of Reclamation's history program is its oral history activity. The primary objectives of Reclamation's oral history activities are: preservation of historical data not normally available through Reclamation records (supplementing already available data on the whole range of Reclamation's history); making the preserved data available to researchers inside and outside Reclamation.

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For additional information about Reclamation's history program see:
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Oral History Interview
Carol Lynn Erwin

Storey: This is Brit Storey, senior historian with the Bureau of Reclamation interviewing Carol Lynn Erwin, area manager of the Phoenix Area Office, in her office, at about one o'clock in the afternoon on April 28, 2003. This is tape one.

Well, Ms. Erwin, would you tell me where you were born and raised and educated, and how you ended up at Reclamation, please?

Beginnings

Erwin: Okay. I was born in New York, in the town of Islip, and my family moved to California when I was ten. And, I finished high school in California. Went to a junior college, Moore Park Junior College. I actually had a California state scholarship and I was going to go to U-C-L-A, and I waived the first two years, because it's so much cheaper to go to a community college, and their system, like Arizona, is very good. Then, I went on to U-C-L-A and got my bachelor's degree in engineering.

The fact, wound up in Reclamation by a fluke of fate. My mother's and father's neighbor's family

member, or friend, heard about the fact that I was going to engineering school and they said, "Well you should, you should apply to the Corps of Engineers." To which I said, "Corps of who?" (Laugh) And then I went and found out about the Corps of Engineers. I did, in fact, apply to the Corps and the L-A County Department of Sanitation, and the Corps job came through first. Even though they had a hiring freeze on at the time, and I had to wait, I was coming in as a GS-5, and they had to, you know, clear a bunch of names, the same way that happens now, but they did.

And, they offered me a spot on the rotation program. Their rotation program is very similar to Reclamations. And so, I started out as a five, and then became a seven, and a nine, in like a year and a half. Went to work in Corps of Engineer's office in Los Angeles, and I worked for them for eight years. When I got off of the rotation, I went into their environmental group, which was composed of a number of different disciplines, including engineering, and so I wrote E-I-Ss [Environmental Impact Statements], which is something that we do here. That was the thing I liked the most.

And then I made a couple of other changes. But, while I was doing that kind of work, I wound up working on Bureau of Reclamation projects here in Arizona, because most of what I was doing in

Arizona. Not entirely, because the Corps of Engineers' Los Angeles District covers Arizona, and Southern California. But, I wound up working on Plan Six, which was the study that was the alternatives to Orme Dam, which is the dam that's across the [microphone noise]. It was on Carter's hit list, and was, the Bureau started looking at alternatives.[1] They formed a, like a public team in about 1978. I think I got involved in about 1979, was involved in the hiring of the consultants that were going to do all of the environmental work to come up with a plan. And we refer to it as Plan Six, because there were nine plans and we picked Plan Six, and so we often call the whole effort Plan Six. But, it was actually CAWCS, the Central Arizona Water Control Study. So, I started out in that study, working for the Corps of Engineers, because there was flood control involved, and the Corps does flood control, and the Bureau does water supply,

1. Jimmy Carter served as President of the United States from 1977 until 1981 after his election in 1976. Within a few weeks of the beginning of the Administration, an internal discussion document accidently fell into the hands of a reporter. The document proposed cancellation of a number of water projects considered environmentally or economically unsound. This proposal came to be known as Jimmy Carter's "hit list." This happened while Commissioner Daniel P. Beard worked in the Carter Administration, and he discussed his perspective on the issue in his Reclamation oral history interviews and in "The Passage of the Central Valley Project Improvement Act, 1991-1992: The Role of George Miller," an Oral History interview by Malca Chall, 1996 for the Regional Oral History Office, Bancroft Library, University of California.

and we often share.

And, that 's what we were doing in this case. But, I had met a gentleman from the Corps of Engineers, which had a small office here in Phoenix. Not one that they had room for me to have a job at, and we were getting seriously romantically involved. He didn't want to move to Los Angeles, because he didn't like Los Angeles. And, so I thought we might, I might move here. My parents are younger than his, so that was another reason to stay in Phoenix. And, Reclamation had a job. I took a downgrade to come to Reclamation, after eight years with the Corps.

And then, worked in Planning in Reclamation, which has always kind of been my first love. I fell into that, you know. I learned about it at the Corps. I really wasn't trained in planning, but I found that I really liked it, and that was my niche.

And then I became the, so I came to work here in '81, became the chief of the Planning Group, I think, in '86, although I was acting for almost a year and a half, on and off. And then, from there, became the deputy area manager, and the area manager, although the office went through some title changes as we did RIFs [Reductions in Force] and reductions as the C-A-P [Central Arizona Project] construction wound down. So, that's how I

got where I am.

Storey: Okay. When were you born?

Erwin: I was born February 6, 1951.

Storey: In Islip?

Erwin: In Islip.

Storey: I-slip.

Erwin: Islip, New York, which is on Long Island, on the ocean side of Long Island. Small town. I still have relatives who live there.

Storey: Why did you decide to go into engineering?

Decided to Go Into Engineering

Erwin: You know, I liked math as a student. I liked chemistry and physics and science, as a student. And, in about junior high school or so, I guess I thought that engineering was a combination of those things. And so, I said to my folks, "I think I'll be an engineer." And my folks said, "Okay." And I think, today I look back and I think that that's amazing. I don't think you would have called my mother a feminist at the time, or my father particularly enlightened at the time, but I guess that

they were. Because, even some of my counselors at school kind of said, "Don't you want to be a doctor–or don't you want to be a nurse? Don't you want to be a school teacher?" And I knew that I didn't have the patience to be a school teacher, even as a young person knew I didn't have that kind of patience.

But, nah, you know they, they didn't say things like that, they just said, "Oh sure." There are no engineers in my family. My mother didn't go to college. My dad didn't go to college. They wanted us to go to college, the kids. Three out of the four did. But, they just said, "Oh. Engineering. That sounds fine." You know like it, like there was no big deal there, it wasn't unusual. There were not a lot of women in engineering classes, particularly when I went to junior college. The only thing I really took differently in high school was drafting. And I was pretty much the only girl in the class who was, there was another girl. She was there with her boyfriend. (Storey: Uhm hmm.) Not necessarily to learn drafting. But, I didn't find a lot of discrimination, really, in school. If you sort of acted like you belonged there, people pretty much left you alone and let you do your thing.

So, I found it, I found it to pretty much be a combination of science. Although, by the time I go to about to my third year in engineering, I wasn't

really sure I liked it as well as I thought I did. But, then at the same time I thought, "God I'm three years into a four, maybe four and a half year course of study. Now is not a good time to change. And besides, school and the real world are not the same thing." And, as it turns out, I was smart, smarter than I thought. Because the real world is not the same thing as school. And so, I really went into, fell into because of the Corps' rotation program.

Fell Into Planning

I fell into planning. And, I loved it. But, I haven't done what anyone would consider "hard" engineering, ever. I've never done design, or something like that, and really that wouldn't interest me. The planning side was just perfect, and, but that ticket was sufficient, and off I went, sort of in a direction that fate handed me, that I loved. So.

Storey: Tell me about your rotation program with the Corps.

Corps of Engineers Rotation Program

Erwin: Well, in that particular office, I think they did it fairly similar to here. You just went to work for a period of time with different groups of folks. (Storey: Uhm hmm.) So, they had a group of economists, who had to benefit cost ratios. I

worked with them. They had a Design Group. In fact, the designer that I worked with was working on Indian Bend Wash, which is a Corps project here in Phoenix, that we came to visit, that had won awards for being kind of a nonstructural flood control project. And I worked on that, and I don't live very far from it right now. So, I think it's really cool to see it get built. And my husband was involved in building it, so it's kind of a family adventure. They had a Harbors and Navigation Group, that I got to work with. They had the Environmental Group I worked with, which I really liked. They had a, like a Soils Engineering Group. It would be almost like a Geo-Tech Group, that I worked with.

So, I moved around the office. And, A, I found out what they did, and what I might like to do. Because they placed you, if they could, where you wanted to go. The other thing you find out very quickly is who's good, who isn't, who produces, who doesn't, who you can ask questions from and get a decent answer, and who you don't, and what everybody does. It's a very quick introduction. When I came to work here, at P-X-A-O [Phoenix Area Office], and I've been here twenty-two years, it took me a long time to find those things out. Because I didn't have a way to go around, you know, and do that. So, in a year and a half, I figured that all out. And I also got to go to construction.

Actually, my first rotation with the Corps was in construction. And, it was a little odd. I am somewhat naive when it comes to what trouble I cause as a female in a male world. Okay? Pretty much I don't expect trouble, so I don't think about it. But, as the first rotation engineer, female rotation engineer they'd had in, like, ten years. They've had one once before. I think there was a whole lot of discussions going on in the back corner about, "Can she travel with the guys? And what happens when it's time to travel? And who's wife is going to think something about whether or not they travel together." But those things never really came up to me, and I don't see to this day that any of that ever stood in my way of going someplace I needed to go. (Storey: Uhm hmm.) It got dealt with, somehow. And, I don't think that I was ever really treated very differently. I don't look back and see any opportunity that I say to myself, "You know, everybody else got to do that, and I didn't, and I think they treated me differently." So, to some degree, if you expect to be treated like everyone else, you get treated like everyone else.

Storey: What kind of construction rotation did you do?

Corps Construction Projects

Erwin: Well, we were building, the Corps was building, or planning to build, okay, a concrete channel in Santa

Paula, California, starting with a debris basin in a park and then channelizing this little creek down to the Santa Clara River, I think, but I'm not sure. But, this little creek through Santa Paula, Santa Paula Creek, and when they actually started the construction, I was like the office engineer. So, I was out on the site checking the quantities of materials that the contractor wanted to buy for the job, and making sure it was within what the specifications called for, and just change orders, doing payroll estimates, general paperwork like that. And then getting a chance to actually go out and look at the job. I wasn't construction inspector on that job, (Storey: Uhm hmm.) but I did get to go out with the people who were, and look around and learn some.

Storey: So, was the office engineer in Santa Paula, (Erwin: Yes.) or in Los Angeles?

Erwin: No. It was in Santa Paula, at the job site.

Storey: They sent you up there for a few (Erwin: Uhm hmm.) weeks, months?

Erwin: Oh, I think it was probably a couple of months. I don't remember the time now. You know, it was an area I was already familiar with. What, it turns out that it was just convenient. My parents did not live all that far away. So, I just lived with them and

commuted. And the government didn't really have (Storey: Uhm hmm.) much of a cost in that particular rotation. So, it worked out rather nicely, you know. So that was good.

Storey: What about your rotation in the Environmental Group?

"I Loved the Environmental Group"

Erwin: Oh, I loved the Environmental Group. I had the perfect job. I had the perfect job. You know, nothing lasts forever, so you know it's not going to last. But, in the Environmental Group I found the spot. We had, we were just beginning to learn about cultural resource stuff, and we had just hired an actual, well we hadn't hired and archeologist yet. The guy who did most of the cultural resource work with the SHPO [State Historical Preservation Officer] and the Advisory Council, was a geographer who liked that kind of thing. We sat in cubicles of two, and my cubicle mate was a marine biologist, because we did work on the coast. So, we had terrestrial biologists and marine biologists. We had a lady who was a writer. We had a geographer. We had a couple of different kinds of engineers. All of whom had kind of gravitated to this, this fairly new field. I mean, I was doing this in 1973.

NEPA [National Environmental Protection Act]

had passed in '69. The first E-I-Ss were pages long. Nobody really knew what they were. By the time I had gotten into it, rules had come out, things were starting to look like volumes. You know, you had to look at all these different kinds of impacts. In fact, we were in court on the original E-I-S that had been written for the Santa Paula Creek Project. Which, having worked on it in construction, it was fascinating to see a different part of it. And, the document was, I don't know, ten pages long or something like that. The problem was, it was written in 1969, just basically fresh, when the law was fresh. Now, you're looking at it in nineteen seventy, maybe, four, with five years of experience, and a huge change in what E-I-Ss meant. But, I don't think that any of the lawyers, or the judge, could actually transport themselves back in time and say, "Would this have been adequate, under the rules we believed were in place, or the knowledge that we had of NEPA, in 1969?" It was clearly not what we would have written, you know, in 1974. (Storey: Uhm hmm.)

But, it was interesting to watch that process. And, I think, I can't remember but I think the Corps ultimately lost, and we wound up rewriting something. I don't recall then. But, we never did finish construction of that project for years and years. It got stopped. The, you know, kind of the piece that we did, just kind of got beat up, by nature.

You know, rolling boulders and things. And so not long ago, I got a mail message from somebody at the Corps that I knew that they said they had finally completed the project. It had been, over the years, rethought out and replanned into something a little bit different. But, they sent me some pictures. And someday, when I go visit my folks, I'm going to go up and see what it looks like. But it is, there is a project constructed there, (Storey: Uh huh.) now, so. Or I should say, finished and reconstructed.

Storey: After thirty years?

Erwin: Yeah. It's taken a long time.

Storey: More or less.

Erwin: But, and the whole idea of the project has changed some, and maybe that's what it takes. Maybe that's what it takes.

Storey: Now, I've forgotten your other rotations.

Indian Bend Wash was a Great Project

Erwin: Oh gosh. The design one, the one working on Indian Bend Wash was a great one. Working with the designers and coming out and looking at what they were doing. It was a nonstructural flood control solution, something the Corps was just

getting into, not what they were used to. And, I remember hearing that the Corps hierarchy had said, you know, because they were winning awards for this. "This is a great thing and we're never going to do it again." (Laugh) Because it was so difficult. But, it took a lot of involvement with the city of Scottsdale, and, but it wound up to be still a showplace. I mean, people still go to see Indian Bend Wash, and what happened there, and how it works. So, I think that was the one that stood out the most in my mind. That and the environmental rotation. (Storey: Uhm hmm.) Heck, that was thirty years ago, so it's been a while.

Storey: And, tell me why the environmental rotation was so good, from your point of view.

Environmental Consideration was a New Kind of Thing

Erwin: You know I think, I think it had a couple of things going for it. One was that we were young, and the people who gravitated to that group were the young people, because it was a new kind of thing. And, they were just coming out with some of the planning guidelines we've lived with ever since, like Principles & Standards for the Development of Water and Related Resources. That required that you look at an alternative that was economic, in terms of the nation. National economic development was a big key, but also regional

economic development, social well being, and environment. So, for the first time you were actually being told, you will formulate things that are good for the environment, that are good for people. We were beginning to move away from the, you know, "There's only really one criteria for selection of a project and that is the benefit cost ratio. That's the only thing that matters."

And so that was really interesting, and as the environmental folks, we were working with agency planners who were older, and were not taking to those changes very easily. So, we were kind of having fun feeling like we were the young crusaders, if you will, because we believed in this stuff. This is how it ought to be. And so, it's hard not to have a great time with your work, when you believe in what you're doing. (Storey: Uhm hmm.) I think, for the Corps and the Bureau, both, in both cases, maybe the Corps was a little bit easier. You could look at what you were doing and say, "I am having impacts on peoples lives and this is a good thing." Particularly if you were doing flood control and you were protecting somebody from being flooded, or you saw the effects of them being flooded and now you knew they were protected. It was very easy to understand what you were doing as a job, and why it was a good thing.

Storey: But wasn't it also frustrating?

Erwin: Sure. Oh sure. Working for the government is always frustrating. But, part of the reason that I gravitated to planning instead of design, is that I have a much larger tolerance for that frustration than some people do. The fact is, you may, as a planner, go your whole career and never see the planning thing that you plan to get built. You know, Santa Paula Creek is a little bit like that. The fact that it actually got built is pretty good. But, I've seen things built that I worked on.

But, you know, if you've got to see immediate results, then you don't become a planner you become a designer, or you go work in construction where the results are even more immediate. You know, you've got to have something done from here to there, and if you have a change, you have to have that change figured out immediately, because the contractor is burning money waiting for you to get out of the way. You know, if you need that kind of immediacy, there are places that you can work. If you have a much larger tolerance for ambiguity and frustration, you work in planning, because you never know what you're doing in planning. If you knew what you were doing, you wouldn't be planning. Right? So, my tolerance for "fog" as we call it. I have a high tolerance for "fog." It doesn't bother me that I don't know exactly where the edge

of the cliff is. Ah, I'll find it before I fall off it. (Laughter)

Storey: That's interesting.

Erwin: That's kind of the definition of a planner. If you're real worried where the end, edge of the cliff is, then you don't do planning. You do something much more concrete, if you'll pardon the pun, which was intended.

Storey: Yeah. One guy once told me he loved O&M, because you got to see it right away.

Erwin: Yeah. Well see. That's, that's kind of, he wouldn't be happy doing what I did in planning.

Storey: Yeah.

Erwin: Well, I guess I would be happy doing what he did, but I have the ability to put off that for some period of time and be okay.

Storey: What kind of, in addition to being willing to put up with the "fog," what other things characterized planning that don't characterize the other aspects of engineering in an organization like the Corps, or Reclamation?

Erwin: I used to give a lecture on this, and I haven't done it in a couple years, so hopefully I'll remember it. But, I used to give a lecture each year, for a couple of three or four years, to a A-S-U [Arizona State University] planning class that I called "Lessons From Real Life." And, at the end I realized after the first couple of years that I really needed to add something like that about, about who a planner is as opposed to what a planner does. (Storey: Uhm hmm.) Management has sort of given me that perspective. Part of management's role, a large part of management's role, in my opinion, is finding square holes for square pegs and round holes for round pegs, and not trying to force one into the other.

And, I look at my children and I have one daughter who is a people person. She's going to be a salesman. That would be the right thing for her. She can't be off the phone or out of people's reach for five minutes. My son and sit in his room for five hours, play his Nintendo, never interact with another person, and doesn't care. Okay? People have to learn who they are, and then go looking for a job. Because, among other things, if you've got the wrong job for you, they can pay you all the money in the world and it won't get you up out of bed in the morning.

So, I started to talk to the planners about what

they needed to understand if they were going to be planners. If you had a tolerance for "fog," you know, if you could get along with politicians and lawyers, if you could interact with people, because you were going to be out in the public trying to reach consensus. You're going to have all kinds of viewpoints. You're going to have people who didn't like what you're doing. At every turn someone was not going to like what you were doing. And if you could do two or three different things at once, then that was good. That was a planner.

If you needed to analyze everything, if you needed every piece of information before you could move forward, if you needed to move forward in a linear direction, do step one and then step two, you know if you really wanted to work with a small group of people that you knew, in a team, and not be affected by sort of the vagarities of, you know politics and the public, then you didn't want to be a planner. You wanted to be an analyst, and that's okay. Because the planners have to have analysts. But, you know, if that's your kind of personality bent, don't go into planning because it will scare you to death. And, if you're a planner, by nature, don't go into analysis, because it'll bore you to death.

You know, figure out who you are, (Storey: Uhm hmm.) and then go looking for something that uses

your talents. Because it's not that there's a right or a wrong, it's just, you either, your talents are used or they aren't used, by what you pick. And I don't think that, right now, just based on the fact that I have two kids in high school, that they really spend very much time talking to kids about figuring out who they are. And I think they'd be better served if they did. You know, do you want to work inside? Do you want to work outside? (Storey: Yeah.) You know, do you like the idea of sitting behind a desk, or not? Do you want to interact with a lot of people? Do you want to interact with a few people that you know? You know, do you want to have all the information?

And I think of it as, a room. So, you have a room. I had a planner, well, I had, I had people in planning who ran the gambit. There were people who could not enter that room until they knew everything about that room and how it looked. There were people like me who felt like, "Oh, by the time I walk through the room, I'll have a pretty good idea, you know, what the room looks like." And then I had one planner like, "Walls, I don't need no stinking walls." (Laughter) You know, so, they kind of run the gambit. But the, if you have to have that thing, that room defined before you're comfortable walking in the door, then you don't want to be a planner, you want to be something else, (Storey: Uh huh.) a designer, an analyst, you know.

But, I don't think that school spends much time. When I went to school , they spent zero time doing that kind of thing. I mean they didn't even have any of these tests that kids and people can take right now to say what kinds of things . . .

Storey: They just assume that you'd find it.

Erwin: I think so. You know, and it's amazing. It's amazing that people did find it. Some of us sort of right off, I mean I fell into it and was more or less accurate in what I chose. I know there were people who were always changing their major. But, I guess they do some things now. They do give the kids some tests that give them some idea of kind of their areas of interest. But I think that they'd make life decisions a little easier if they spent a little bit more time with that. Because I think my daughter came home the other day and said she'd taken, like, the Myers-Briggs Personality thing, you know. And, all those kinds of things are helpful, but, we got into them as we became supervisors and took O-P-M [Office of Personnel Management] classes. But, when it came time to choose a career, uh, we had basically nothing, if you were my age, or your age, that helped you figure that out.

Storey: Before we go on with your Corps career, let's talk some more about this. Can you think of examples of situations where you saw good matches and

bad matches of those personality types in Reclamation?

Fitting Personalities to Positions in Reclamation

Erwin: Hmm. Oh yeah. Oh yeah. Just people on my own staff, you could see it. I've got, had, one guy, who shall remain nameless, and he is "the analyst." If he said, right now, that it was dark outside, at noon, you better go look out the window because the chances are it was dark. I mean he just didn't make any mistakes. But that, that level of analysis can become paralytic almost. He would go to meetings with sort of the upper level management people that were involved in the study, and they didn't want him to talk. They wanted his boss to talk about what the results were. Because he couldn't talk in twenty-five words or less. With all this analysis, it came out in pages and pages and pages, and his audience, you know, if it was of the technical people, they loved that. But, when the audience got to be managers, they wanted the executive-summary version, and he couldn't give the executive-summary version.

So, at one point we thought about making this person the study manager of an effort, and it just did not work, because he could never get up to that executive-summary level. (Storey: Uhm hmm.) And, it was a waste of his talent. His talent was in

analysis. And then I had my, "I don't need no stinking walls" planner. Okay? Who, at one point when it was time and the division was big enough, I thought about creating two groups. I had water conservation people. I had planning people. I thought you would put a team leader, kind of a quasi-supervisor on top of each. He was horrible. He was horrible at the details of supervision, and–you know, working with a group of equal planners, and sharing ideas, he was great, but all the sudden, when they became somehow, everything everybody was doing became his responsibility. It was like, "Well, now I'll have to do it my way." "Well, no, time out. No they don't." (Laughter) And so, it just, it just did not work out at all.

And, I think everybody's probably seen those examples where you have a great technician, who ascends the ladder, and then becomes a manager, because you can only go so far in Reclamation and anywhere else as a technician. And so you become a manager, and you may or may not be management material when you are a great technical person. It does happen. (Cough) But, I've seen it enough to know that that's management's job. I've seen people just move in the organization, and just because relationships are a combination or two people, always, regardless of how much you don't or do like one person. It's always two. Have an employee move from one situation to another

situation, and it's almost like you have a different employee, because the situation has something to do with what's going on. (Storey: Uhm hmm.) So management's got to be always looking for those kind of things. I mean, you can beat up people about what's going on, but half the time it's not worth beating them up when you can change it. And everybody wins. So, that's the way to do it.

Storey: Hmm. Well, let's talk more about the Corps. What kind of projects were you working on?

Corps of Engineers Experiences

Erwin: Well, let me see. What was I doing?

Storey: Now, you were just an office staffer, right?

Erwin: Right. Right.

Storey: You weren't managing the office?

Erwin: No. No I wasn't. The, I think the Corps office, I don't know how many people they had. I'm sure they had a hundred or two. You know, I wasn't really thinking about it. And, they were set up in divisions. It, the Corps' structure's very similar to Reclamation's. They have a District Office, which isn't very different now from what area offices are. They have a Division Office, which is very close to

the regions, except that they're country-wide. They don't have a huge engineering staff located in a place like Denver, like we do. So you have, you tend to have designers spread through the organization, but they do have some very large research facilities in Vicksburg, and in other places.

So, they're bigger than the Bureau is, but they're set up very very much the same. So, it was a somewhat comfortable transition, when I came to the Bureau (Storey: Uhm hmm.) because the only thing that was different was the Corps had a lot of military people. Their, their office was always headed by a military person, and the deputy's generally military, even though they transfer out about every three years. And, they do it so that they overlap. Otherwise the structure's very the same. What was I working on?

Storey: Oh, your place in the organization.

"I Kind of Worked My Way Up"

Erwin: Oh, my place in the organization. Well, I wound up eventually as a GS-12. I kind of worked my way up. And so, I worked within the Environmental Group at the end, which was a, one part of the Environmental Division. You had the people who were doing E-I-Ss and then you also had, in the way the Corps was structured, the Recreation people,

were both a part of this Environmental Division. I did have the opportunity to become the chief of that Environmental Compliant Section, at one time, but I chose, I declined the offer because at the time I was thinking of becoming a part-time employee and moving away from the Los Angeles area, and didn't feel like it was very fair to do that. Ultimately, that kind of fell through. My life went in a different direction. And, at some point, you know, I actually . . . .

END SIDE 1, TAPE 1. APRIL 28, 2003.
BEGIN SIDE 2, TAPE 1. APRIL 28, 2003.

Storey: Went to work for?

Erwin: For Reclamation, (Storey: Uh huh.) which was in a whole different direction, but, so I was a GS-12 within the organization. That's pretty much where I was. I was, I was the head of an E-I-S writing team. A group of people who had to take a look at what the environmental impacts were of a variety of alternatives to do something. I was actually out in the field, sometimes, developing that information.

Actually, the biggest one that I worked on was, not the draft, but going from the draft to the final E-I-S on a flood control project right here in Phoenix. You know, and there were days when we were driving up and down what would be the project,

trying to figure out what the relocation impacts would be, looking at the map and counting how many apartment buildings and houses were within the impact area. So, we were doing some fieldwork. But, I'm not a biologist or an archeologist, so I didn't do that kind of fieldwork then. (Storey: Uhm hmm.) Some of the other stuff that we were actually involved in doing, and then actually writing, publishing the E-I-Ss, going from draft to final by answering all the public comments, holding the public meetings, was the kind of thing I was doing, at that point.

Storey: Which project was this, the flood control?

Corps Projects Related to CAP

Erwin: This was called New River and Phoenix City Streams, and it involved a series of dams that the Corps built here, Cave Buttes, Adobe, and New River. And, they're still here. I still see them. So, that was kind of fun. (Storey: Uhm hmm.) That was the first time I'd ever heard about C-A-P, because at the time there was some thought that the dams could be constructed to hold water permanently, as opposed to holding water for ten days, which is generally what a Corps dam, a flood control dam has to empty, otherwise it's no good for the next flood. But, at the time they couldn't get an allocation of C-A-P water, whoever wanted it. I

don't know whether it was the state or the county. That was before I knew anything about C-A-P, but that was my first introduction to C-A-P, was that the Corps went ahead and designed those dams not to permanently hold water. At least two, the New River and Adobe, because there wasn't any ability to get a C-A-P allocation to create recreational lakes, (Storey: Uhm hmm.) permanent recreational lakes.

Storey: Uhm hmm. So, when did you go to the Corps?

Erwin: I started in the Corps in 1973, May 14, 1973. And then I came to Reclamation, as it turns out, on May 14, 1981. So it was exactly eight years, to the day, from the time that I started with the Corps. (Storey: Uhm hmm.) And so, I moved from Los Angeles to Phoenix. But I had worked on so many things in Phoenix, with the Corps, Indian Bend Wash and New River and Phoenix City Streams, that it was like moving across the street, that was.

L.A./Long Beach Harbor Extension

We did, the one thing that I did do, though, in working in L-A that was fun that I sort of miss is, we did beach erosion and navigation and harbor deepening, and I was working on the L-A/Long Beach Harbor Expansion. And, that was my first experience with endangered species, because we

were going to dredge the harbor deeper and use that dredged material to create a piece of new land. Which turned out to be where least terns nested. And least terns were endangered. So, that was my first introduction to the Endangered Species Act.

We also did some cultural resource surveys, underwater, because the level of the ocean had changed over time, and there were cultural resource stuff underneath the water, so, we were starting to play around with that, which was fun. And, just the whole idea of the harbor expansion. At the time they were talking about potentially building a whole new piece of land outside of L-A/Long Beach Harbor, to house an airport, and move Los Angeles, L-A-X Airport out of where it is, and out into the middle of the ocean, almost a little bit like Hong Kong's is. Those things never came about, but it was a lot of interesting discussion about (Storey: Hmm.) what would happen there. A lot of concern about liquefaction, because of earthquakes in California. Liquefaction being a shaking of the land and then turning it, essentially, into quicksand, and having things just sink. And, how would you design around those kind of things. That was pretty interesting stuff, but now I don't get involved in too much that has anything to do with the ocean. (Laughter) I'm a long way from the ocean, but . . . .

Storey: Tell me more about the C-A-P stuff you were

involved with.

"The Corps was Invited to Work with the Bureau"

Erwin: Well, once, once I got started working on C-A-P with the Bureau, what actually happened was, the Corps was invited to work with the Bureau when Orme Dam became part of the hit list, and the Bureau put together a group that involved multiple agencies here in Phoenix, I still lived in Los Angeles, that were going to look at alternatives to Orme. It started out as kind of, almost, not a citizen's committee but a group of agencies trying to figure out what to do. I think once they figured out what they were going to do, the Bureau decided it was going, it was going to try and study these alternatives, and they, it was what we eventually called the Central Arizona Water Control Study[2], or CAWCS, and it was going to be a lot of environmental work to be done, and the Bureau knew that it had the environmental people in this office to run a contract, but not to do all the work.

There was going to be a huge amount of work, that was done. And I think that ultimately, we selected Dames & Moore. I bet we spent $10 million on all that environmental and planning

2. The Central Arizona Water Control Study was implemented by Reclamation and sought to identify and evaluate alternative measures for flood control and regulatory water storage in Central Arizona.

work. Of course we spent probably a billion dollars building it, so, that was probably not a bad investment to figure out what it was you were supposed to do, if you were going to do it right. But, when it came time to select the contractor, I got involved in the contractor selection process. And there was actually a planner from the Corps, Joe Dixon [spelling?], who still works here in Phoenix for the Corps. Okay? And, an economist who worked with me. Of course, Chris Gelker [spelling?], who went to work for Reclamation, before I did, and then went to work for CAWCD for a while, so he kind of filtered through the whole process. But the three of us were involved on a very large group to figure out what the scope of work should be for this environmental contractor, and then select the contractor.

And, I remember that just the selection process was amazing. Having worked with lots of people. That's where I met Larry Morton.[3] Because he was the head of this office's environmental group at the time that I met him. We were working, we worked for, like, gosh it must have been June, July,

3. Larry Morton participated in Reclamation's oral history program. See Larry D. Morton, *Oral History Interviews*, Transcript of tape-recorded Bureau of Reclamation Oral History Interviews conducted by Brit Allan Storey, senior historian, Bureau of Reclamation, during 1996 in the Phoenix Area Office, Edited by Brit Allan Storey.

something like that. We were working on the Request for Proposals, what we wanted to get back from the contractors, and that's when I met Larry. And that would be in, maybe, '79, I guess, maybe, '78. Somewhere back in that time frame. And then, we got all these proposals, huge proposals, volumes, and you have to put together what's called a TPEC, a Technical Proposal Evaluation Committee, and I was on the TPEC. We met the week before Thanksgiving, in the Francisco Grande Hotel in Casa Grande. And, we all went out of site, off site, so that we wouldn't be affected by meetings and phones and things we absolutely thought we had to do. And, we did it the week before Thanksgiving so it wouldn't take us any longer than a week, because nobody wanted to be there on Thanksgiving, so we planned it that way on purpose. And we spent hours reading all those proposals and getting together with everybody.

We had several people from Reclamation. Most, I don't think work here anymore, but at the time Herb Dishlip [spelling?] who went to D-W-R [Division of Wildlife Resources], and Tim Henley [spelling?] who also went to D-W-R, were largely involved in this. Steve Magnussen was the head of the Planning Group at the time. Steve has since retired. And, a lady who worked for me in planning for a long time, June Gabler [spelling?], was doing all the secretarial work that needed to get involved. And, I can

remember that we met in the penthouse. That was, I think Steve had the penthouse because it had a huge room that we could meet in. But, it wasn't really set up very well, because I think that in this fairly large bathroom with a counter, June had her typewriter on the shelf. She was trying to take notes, (Laugh) because there wasn't that much room. But we had several Bureau people there and I think there were the three of us from the Corps, and then there was a guy from Fish and Wildlife Service, and I don't remember his name anymore, but he was also part of this group because the environment was going to be such a big thing that decided who the, who the contractor should be. So, we spent that whole week and we narrowed it down to three.

Then I think we went to Las Vegas, I want to say maybe January-ish, and we had day-long interviews with the three companies, or consortiums actually. Most of the time there were multiple companies involved. And then, after that was all done, a smaller subgroup, that I wasn't a part of, sat down and negotiated, picked the first contractor. And, you sit down and you negotiate with that contractor, if you can reach a price, fine. If you can't you go on to the second. It's not a bidding process, when you're looking for an A&E, the rules are different. And they sat down and they negotiated the contract with Dames & Moore and the various other companies that joined Dames & Moore. And then I

think that at one point we were all in Denver together and we had a party (Laugh) to celebrate this piece of work. But it had taken us, just that contract selection process was probably six months. (Storey: Uhm hmm.) Six months, of you know, probably eight or nine or ten people's work. But, we were going to spend a lot of money, so it was worth making sure we got the right folks. And, they did a great job. So.

Storey: That was on the...

Erwin: That was my first involvement with C-A-P, and the Bureau, and I was still working for the Corps during that process.

Storey: And so then it became an oversight issue? And were you involved in that?

Erwin: I was, for a period of time, while I was still working for the Corps, and, I was still meeting with Bureau people here. Particularly when they were working on the flood control side of things. But, I was on the environmental side, so I generally met whenever the environmental team met, and we started working on what the E-I-S would have to look like, and all that kind of stuff. (Storey: Uhm hmm.) And that was all going on when I still, still when I moved to Reclamation. And then actually, when I moved to Reclamation, I started working on something else

completely different. It was still a part of C-A-P, but it wasn't the water control study anymore. So, I saw part of that and then I moved off and did something else. But, it was all being done by the group of people that I joined when I came to work for Reclamation. So, it was like at the desk across from me. It wasn't very far away. So, I got to hear and see the stuff that was going on, but I still, I wasn't working on it anymore.

Storey: So, when you came in you succeeded Steve Magnussen, is that right?

"I took a Downgrade to move to Phoenix"

Erwin: Oh, not for a long time. It took a while. When I came in I actually took a downgrade. I was a 12 with the Corps, I took a downgrade to move to Phoenix. And so I went back to being an 11, and I moved into the Planning Group. And Steve Magnussen was the head of the Planning Group. And, not very long before I came in, the Planning Group was growing because of all the C-A-P stuff that had to be done, and I think that it was, it was not very long before I came in that it kind of split into three groups.

There was a group involved in canals, because we were still trying to figure out where to build the canal, from Phoenix to Tucson. That part of the

canal was not built yet. We had started construction in probably '73, on the Hayden-Rhodes part of the canal, but Salt-Gila part going out of Tucson. And the Tucson Aqueduct itself was still a question. Did it go all the way to Tucson? Did it stop? Did it go on the Tucson side of the hills or on the other side of the hills, which is ultimately where it wound up, was the other side of the hills. So that was really a big consideration of the canals-side of planning. And I think Steve Magnussen brought in Frank Desanza [spelling?] to run that. On the dam side he brought in Will Worthington [spelling?]. Well, I knew Will. Will had worked for the Corps. And Will had, in fact, been the boss of the Planning Group that the Corps had here in Phoenix.

That's actually where I met my husband. I was doing environmental work for the Corps, and I wound up working on a job he was doing here in Phoenix, a little flood control job. And, he was doing it kind of on loan. He was a construction guy, but he was on loan to Will. But the two of them knew each other from the National Guard. So, you know, the relationships are interesting. And, the . . . Where was I?

Storey: Let's see, we were talking, I asked about the office you came into, and Magnussen.

Phoenix Planning Office Activities

Erwin: Oh, okay. So, they'd hired a few people and at the time John Rutlinger [spelling?], who currently works in the region, was working on Hooker Dam, which was part of C-A-P, and . . . .

Storey: That was, what? The New Mexican component?

Erwin: That's the New Mexico component. Right. And Herb Dishlip [spelling?], with Tim Henley [spelling?] as an assistant, was working on Orme Dam alternatives, that CAWCS study. Herb went to D-W-R and Tim became the study manager for that. And Rick Johnson was his assistant. Some years later Rick left and went to the Corps in Sacramento, and he's back working for Reclamation. Maybe at Folsom, I'm not sure. But, I just met him the other day. At the last area manager meeting he was that region's representative-at-large. So, the people that we worked with are still out there. I got hired, actually, once I came in I worked on the CAWCS study for a while, but I wound up being promoted, getting my 12 back again, and I became the study manager for Buttes Dam, which was another piece of C-A-P that needed to be worked on. Which we probably will never build. But we came to that conclusion.

Sometimes that the conclusion of a planning study is, "This might have looked like a good idea forty years ago, but doesn't look like such a hot idea

today." (Storey: Uhm hmm.) So, right now, it and the New Mexico piece are on hold. I guess if I had to put money on it, I'd guess that we may build something in New Mexico someday, but we probably won't ever build anything in Buttes. And then we had a piece, Charleston, that nobody was really working on, that never will get built, down on the San Pedro River. And the area's currently in the middle of a B-L-M [Bureau of Land Management] Natural Conservation Area, that pretty much precludes us from ever doing anything.

But, at the time that C-A-P was originally envisioned the aqueduct wasn't going to go all the way to Tucson. Tucson was going to get its water from the San Pedro by way of an aqueduct. And by the time that we got to that point in the planning–I didn't work on it, but I understand that a couple of things went on. First of all, that San Pedro area, Sierra Vista, began to grow. It might have become clear that taking water from there was probably not good thing. They were going to be in need of water. Secondly the San Pedro runs north from Mexico, and Mexico has, around Cananea, mines. And those mines have had spills that have polluted the water in the San Pedro. So, we have really no control over that. They could have built the dam at the border and you know, kind of done away with the water supply. But even if they didn't, to have that reservoir there, with the potential of being

contaminated at any time, being Tucson's water supply, probably, you know, didn't really wind up to be a very good idea. (Storey: Uhm hmm.) So, as it turns out, we wound up just taking the C-A-P Aqueduct all the way to Tucson. And that worked out better.

Storey: And you were studying Buttes?

The Idea of Buttes Dam Had Been Around a Long Time

Erwin: I was studying Buttes [Dam], which was actually, I think, and I don't all the history of this, but Buttes had been around a long time. Long before the rest of us showed up. The Gila River Indian Community or their ancestors were here. And, at the time that settlement started, the Gila River Indians were already farming. And they were farming maybe, I think the number was 14,000 acres. I mean they were doing a lot of farming on the Gila River down where the reservation is now. As white settlers started to come in, not only here in Arizona around Florence, but further north around Safford, started to use that water, all of a sudden in the summer Gila River didn't have any water.

And, there are some old U-S-G-S. [United States Geological Survey] Water Supply Papers, old old ones, that talk about the fact that "The water supply for the Indians is diminishing and someone should

do something about that." But, we were generally still killing Indians at the time, so I don't think anybody was really taking Gila River's [Indian Community] water interests seriously at the time. But, the predecessor to B-I-A [Bureau of Indian Affairs] was actually involved in that in some way I guess. But, eventually the thought was that that water supply ought to be replaced and that's what Coolidge Dam was built to do. And, I don't remember when Coolidge was finished.[4] I want to say in the 1928, maybe something like that.

Storey: I think it was in the '20s, something like that.

Erwin: And the idea was to deliver water to the Gila River Indian Community, and then to non-Indian lands to the extent that that was practical to help make the project economical. So, what you now have today is the San Carlos Irrigation, Federal Irrigation Project, Indian Irrigation Project. And it's got really two pieces. It's got the Gila River on the inside, and it's got the non-Indian side, the San Carlos Irrigation and Drainage District. But at the time that they were looking for a site for Coolidge Dam, Buttes Dam site was one of the sites that they considered. And, at the time, it had the same problem that we discovered with C-A-P. It is down stream of the San Pedro River. Coolidge is

4. Coolidge Dam was part of a Bureau of Indian Affairs Indian irrigation project and completed in1928.

upstream.

The San Pedro River can be a very dirty river. Apparently around the turn of the century, the San Pedro watershed was significantly over grazed, and then there was a drought. So, between overgrazing and the drought, it really just tore up the watershed. And, the San Pedro, instead of being a soft rolling river, became an incised, erosive, kind of dirty stream. And when there are thunderstorms in the San Pedro watershed in the summer, you know, you can't see through the mud. But, when you get to the Gila-San Pedro confluence you can see this kind of brown blue interface, and they measure turbidity with a little instrument, and I don't know whether it's pronounced Seshi disk or Seki disk [spelled Secchi Disk], but you put it into the water and you see how far down it can go before you can't see it anymore, and that distance is measure of turbidity. The instant you put it in the San Pedro River water it's gone. It's gone. (Storey: Hmm.) You can't see it at all. Okay? I mean you can, you can take San Pedro River water in a coffee cup and the bottom, you know, inch will settle out mud, it's that dirty.

And so, what that means is, for Gila River, both sides of the system, they often have problems. The water's so muddy they can't irrigate with it. Or it fouls up the first part of the furrows, or whatever. But, that meant that if we were looking to design a

dam, a significant portion of the volume of the dam had to be for sediment, much larger than you were used to. And I can't remember the numbers anymore, but I'm thinking that of a, you know, 300,000 acre foot reservoir, a 100,000 acre feet was sediment, (Storey: Uhm hmm.) over a hundred years. I mean it was just huge. And it was going to do some good for Gila River and San Carlos Irrigation and Drainage District, but it was very difficult to figure out economically how much good.

We were never able to justify, in the benefit/cost ratio, the construction of that dam. It was pretty iffy even at the interest rates for C-A-P, which are legislated at 3.342% or something close to that. But, at the time that we were doing this, interest rates, for brand new projects, were around six, seven, eight percent. I mean it was at that time when interest rates had really gone up. (Storey: Uhm hmm.) And, you know I'd get six or so percent or whatever we were using, it wasn't even close to being justified. And so we put Buttes on hold. But, we just, it's hard to imagine that we will ever build that. It was, it's been looked at as a dam site for a long time.

Storey: I think I missed the details of how you came to Reclamation. Did you meet somebody? Did you just apply for jobs that were available? How did

that work?

Coming to Work for Reclamation

Erwin: Gosh, I'll just have to remember. I knew everybody already, because I was already working for the Corps. (Storey: Right.) So, I knew Steve, and then of course I knew Will, because Will had worked for the Corps. And then, I think, what was probably going on is that because Will had worked for the Corps and knew me and knew Neal, I think Will probably knew that I wanted to come to Phoenix. I was already working with all those people, and I think when the stuff came up with Buttes Dam, that eleven position was available and they told me about it, and they said basically, "We have a position. It's a downgrade, but, you know, we could do just a direct reassignment." And I think that that's what happened, as I recall. And I was willing to do that, so it was, you know, I mean it was here, and I was already spending half my time working with them anyway.

Storey: Yeah.

Erwin: So, it was the kind of thing you just kind of fall into out of opportunity. So, it worked out rather well.

Storey: And, now, did they assign you to Butte right away?

Erwin: No.

Storey: Buttes, I mean.

Erwin: No, they didn't. I think, I worked, I continued to work on the CAWCS study with Tim Henley [spelling?]. That was about the time that Herb left, and Tim took the study over, and I worked on the CAWCS study for a while, with Tim. But, I think that they were looking for, they were looking for a study manager for Buttes, and I think that they knew that at the time I came over that that was probably going to happen. They were going to get the studies for Buttes going. And, I think at the same time they were looking for someone to work on the Tucson Aqueduct studies too. So, I think that I got hired and another guy Rexford Stone [spelling?] and I think I hired at about the same time. I think he came from N-R-C-S [National Resources Conservation Service] here in Phoenix, and I came from the Corps. And it's, it was as that stuff was beginning to need to be done that the Planning Group was still, was still growing then. Because I know we picked up a tech writer, and the Canals Group picked up a tech writer or two, and two or three more people got hired over the next few years.

And then, we had broken up into three, and I mentioned there was a Canals Group and a Dams

Group, bu t then there was the group, the group in the middle was, like, somebody working on public involvement, a sociologist, Debbie Saint, was a sociologist. Chris Gelker was the economist, and Adrienne Marks was a hydrologist and a hydraulic-modeling type person. And that group kind of supported everybody. (Storey: Uhm hmm.) So. It was, it was a healthy sized planning group, and we had a big job to do.

Storey: Yeah. So, when you were assigned to, when were you assigned to the Buttes project?

Erwin: That's a good question. I do not remember. I'd have to go back and look.

Storey: Do you have any sense of how long you spent on the study?

Erwin: On the Buttes study?

Storey: Yeah.

Erwin: Oh. No. I'd have to go back and look. I think I probably worked on the CAWCS study for less than a year. And then became the Buttes study manager. I'm sure I worked on it a couple of years, easily. And then, as it kind of went to bed, John Rutlinger [spelling?] went to work in the regional office, and I took on Upper Gila [River]. And, I became the

Upper Gila study manager, and I know that I kind of handed that off in November of 1984, because I got pregnant and I gave birth to my daughter in '84 and I went on maternity leave. And so, that's when the tech writer in the other group, Joe Smith, kind of became a study manager because I handed him Upper Gila and said, "You got it. Because I won't be back for a few months." So, the whole thing had to transpire between '91 and '84–or '81 and '84. (Storey: Uhm hmm.) So, I think I worked on CAWCS probably less than a year. I probably worked on Buttes a couple of years, maybe '82 and '83, and by '84, I was working on Upper Gila. And then when Jenny was born, I handed that off to Joe. And when I came back, I was working on probably a number of things, and I was working part-time, for about the first year that Jenny was born, I was working part-time.

And, I was going to school. So, I had been going to school at A-S-U to get my master's degree, and I was going at night. And, so, I know the last two classes I took were day classes. I mean I had to take them during the day. There wasn't any other option. I didn't want to take the classes, and I wanted to meet with my committee to talk about what I needed to do, and my committee met without me and decided what I needed to do. So, I said, "Okay, I'll take your last two classes. I'll get out of here and then I don't want to see you again." (Storey:

Uhm hmm.) (Laugh) So, by that time I was taking those last couple of classes, anyway, and then we had moved. We used to live in Tempe, which is where A-S-U is. We had moved out to north Scottsdale, because Neal was working on the building of the Corps flood control projects out there. He was working on New River, which is on the road to Lake Pleasant. So, it was just a long long way from Tempe. In fact, from Tempe, when he got here, essentially to Metro Center, he was half way to work. So, at some point we said, "Well, we were going to buy a house anyway." We bought a house in north Scottsdale.

So now I'm driving back to A-S-U for those two classes. And I remember my statistics class. It was a probability class, actually, was in the middle of the day. So it was like Monday, Wednesday, Friday at one o'clock. (Storey: Uhm hmm.) Well, that just destroys your week. Okay? And, I got to the point where, to save my life, I couldn't remember what had happened at work, and I couldn't remember what had happened at school. It just became a blur and I finally, I don't think I've ever gone through a burnout period, but that was it. When you just, your mind said, "I'm tired of this. I've had enough." But it was right at the end of that period. And then I needed to write my thesis. That I did after, I think, after Jenny was born.

Chief of the Planning Division Position Opened

But, so I was working part-time when I came back. And then, it wasn't very long, in fact I was probably still working part-time when Will left, and the job of the environmental, the chief of the Environmental Division was open. I think Steve had moved on. Will had taken over the whole division. So, it wasn't, it had started to get smaller. We had figured out what to do with the Tucson Aqueduct. We had kind have figured out we weren't going to do Buttes. We had done enough work on Upper Gila to realize that New Mexico was not yet in a position to do something. The CAWCS study stuff had finished. We were getting ready to start building Roosevelt and [New] Waddell [dams]. So, the Planning Group had kind of ballooned and now it was coming back down. By '84, '85 you were starting to see it get smaller. And, Will, Will left at some point, and so Larry Morton, who was I think the, probably the deputy by then, needed to make a decision on who was the head of the Environmental Division.

And, I remember that I applied and one of the fellows who worked here, John Moody[5], applied.

5. John Moody participated in Reclamation's oral history program. See John Moody, *Oral History Interview*, Transcript of tape-recorded Bureau of Reclamation Oral History Interviews conducted by

(continued...)

And, it took Larry a long time to make that decision. Sixteen months, as I remember. We were co-acting for sixteen months. And, I was working part-time, part of that time. And, after a while, you know, you're sort of jealous about your time. You know, you want to make a good impression because you want the job, but when the acting goes on for long enough, you stop worrying about all that stuff. And it kind of, it fell into a pattern. You know, if I was working on a personnel thing, I worked on it when I was there and he worked on his. And if it was a planning dams kind of thing, Upper Gila or Buttes, I knew about that. If it was Tucson, he was in the Canal Group to start with, he knew about that. Or if it was an Indian thing, he knew about that. And so, without really trying, it kind of separated into two, two jobs that were going on at the same time. It was almost like job sharing, is what it really separated into, was, and it was, it was uncomfortable at first but it wasn't bad in the end. And then I think Larry finally made a decision in 1986. I don't remember what month. I want to say November of '86. I got the job. John moved on eventually to, Saint Ignatius, Montana, and then Ephrata, Washington, and he's still working for the Bureau in Ephrata, Washington. And, I just hired

5. (...continued)
Brit Allan Storey, senior historian, Bureau of Reclamation, Denver, Colorado in 2004, Edited and desktop published by Andrew H. Gahan, 2013.

his brother. So, it's a small world. (Storey: Yeah.) It's a very small world.

So, I became the chief of the Environmental Group, and I was the chief of the Environmental Group for a long time. We went through some RIFs [Reduction in Force] and some reorganizations, but eventually–I'm sorry, not the Environmental Group, the Planning Group. What am I saying? It's the Planning Group that I was the chief of. Eventually we combined that with part of what used to be our Operations Group, the water conservation-type folks. And I finally wound up with both of them underneath me. And, I did that until I became the deputy area manager. And, I've been the area manager, I became the area manager I think January the 1st or so, of '99. And I think I was the deputy three years before that.

Storey: That would have been under Mr. Burpee [spelling?]?

Erwin: Yes. Yes. Tom was the area manager when I became the deputy. Right. And, I did that for–I'm not sure how long I did that. Maybe a year or two. Because I was the planning chief about a dozen years, all toll. And, so, that's kind of . . .

Storey: So, how did it change during those dozen years?

CAP Became More Indian-Involved

Erwin: It changed several different ways. It got much more Indian-involved. And, in fact, eventually the Indian part sort of broke away separately. There was a lot to planning the C-A-P, and but as you got it planned, what we discovered was . . .

END SIDE 2, TAPE 1. APRIL 28, 2003.
BEGIN SIDE 1, TAPE 2. APRIL 28, 2003.

Storey: This is tape two of an interview by Brit Storey with Carol Lynn Erwin, on April 28, 2003.

You found that the Indian users needed systems built?

Erwin: Systems built. And they, and they were kind of behind the power curve, I would say. There were non-Indians who also needed systems built, and they got, they got pretty involved in that pretty quick. But, if you look at the non-Indian irrigators, they didn't have any other job. That's what they did. If you went to talk to them, you talked about irrigation. They understood irrigation. That's what they did.

The Indians, on the other hand, you'd say, "Hey, we're from C-A-P." And they'd say, "C-A who?" They had lots of other problems. They had diabetes

and they had alcoholism, and they had housing, and they had poverty, and they had this, and they had that. This was before casinos. Water wasn't necessarily high on their radar screen. And I think the only reason we ever really got them involved in planning their distributions for, distributions systems for C-A-P is that Indian settlements came along, Indian water rights settlements. And all the sudden, water went up on their radar screen. And they said, "Hey, come in here and work with us." And so, we really got involved in a lot of things through water settlements. And, there was quite a bit of planning being done for the Tohono O'odham Nation, in southern Arizona, for Gila River, for Salt River, for Fort McDowell, for Ak-Chin.[6] Ak-Chin was a fairly small system. It was on of the first ones that got built. But for the most part, there was a settlement act there.

Most of the ones that really got moving, got moving as a result of being combined in some way with a settlement act. And, maybe it was because–I'm not sure that the Indians understood

6. Congress passed a number of Indian water settlements with multiple Arizona Native American tribes: Tohono O'odham in 1982, Ak-Chin in 1984, Salt River Pima-Maricopa Indian Community in 1988, and the Fort McDowell Indian Community in 1990; for a broad overview regarding Indian water settlements, see Daniel McCool, *Native Waters: Contemporary Indian Water Settlements and the Second Treaty Era* (Tucson: University of Arizona Press, 2002).

how they were going to afford C-A-P water. I'm not sure how anybody understood how they were going to afford C-A-P water. I think, when I first started working with C-A-P the thought would be that the, you know, the water would be $40 an acre-foot, then it was $50, then it was $60, then it was $70. Now it's $100, if you're a city. And if you're, you know, a farmer, it's not a whole lot better. You're not paying some of the capital costs, but pretty soon it became clear that while the C-A-P was originally envisioned, maybe as late as the early, as early as the early 1900s, you know, as an agricultural-savior project. Particularly once they started using ground water in large quantities and they understood that they were mining ground water, in huge amounts, to bring in Colorado River water is a good idea.

Storey: You meant the 1990s? You said the 1900s.

"The Idea of CAP Probably Spans from the Late 1800s"

Erwin: Yeah, no. Early, I think the idea of C-A-P probably spans from the late 1800s, early (Storey: Okay.) 1900s. (Storey: Okay.) But, you can back, I know in the '20s and '30s and particularly '40s, and hear about it. In this office, they had an office here in the '40s (Storey: Yeah.) and '50s.

So, the thought of bringing Colorado River water

into where it could be used, you know, has been around for a long long time. But it was, it was really an agricultural, the project was an agricultural project largely because the over drafting of ground water became obvious, in maybe the '40s or so, when the use of pumps really became large. But, by the time I was working on C-A-P it was becoming obvious to people that the water was getting so expensive the farmers weren't going to be able to use it. They could probably pump ground water for $30 an acre foot. And at $30 an acre foot, a lot of farmers are not making a profit these days, particularly with cotton market being fairly depressed. C-A-P water could not be used, but the thought was that, agriculture was going to take all the C-A-P water until the cities and the tribes used it or needed it. There was always a thought that there would be some tribes involved, in C-A-P.

Gila River Indian Community Single Largest CAP Water User

In fact, Gila River Indian Community is the single largest user. They have the single biggest allocation. It's bigger than Tucson, or bigger than Phoenix. And, I think part of C-A-P probably involved some old studies, like the Southwest Water Plan. I mean, some of the ideas for studies that had been going on for a long time, were incorporated into the idea of C-A-P and who would get the water.

I mean, the state was consulted about who should get allocations of C-A-P water that were non-Indian. But, the federal government also said, "We're going to bring all this water in, Indian users are going to be involved in this thing."[7] So, there was a need to build the distribution systems to get the water to the Indians. But, the idea of affording the water, I mean they could no more afford, you know, $40, $50, $70, $100 an acre foot than the non-Indian farmers could.

So, it didn't become a real resource, I don't think, for Indians until settlements occurred. And in the provisions of the settlement, something else could be worked out. I think with the Ak-Chin settlement, what got worked out is, the United States pays the cost of the water, to deliver it, as part of the settlement. Ouch, that gets expensive. But, we appropriate money every year to pay for and deliver the water to Ak-Chin. I think we tried to make sure that didn't happen, in subsequent settlements, because that's a big, becomes a big chunk of the Bureau's budget, and it's one of the things that's

7. In *Arizona v. California* (1963), the Supreme Court settled many long-standing lower Colorado River disputes between California and Arizona. In its ruling, the Court stipulated that Indian tribes within the basin were entitled to enough water to irrigate all "practically irrigable acreage." This ruling opened the door to develop water resources on Indian reservations. Indian water settlements are a direct result of the Court's ruling and an effort to quantify each tribes water allcation.

happening with the rural water in Great Plains that's a big issue right now. Is, not so much the need to appropriate water to build the initial system, but if we have to pay for the operation and maintenance, or the cost of delivering the water, all of a sudden there's a permanent chunk out of the Bureau's budget, that never can be used to go to something new and build it.

Eventually, if you're building a system, you finish, and then you take that money and you go somewhere else and build something. But O&M becomes a permanent, a permanent deficit, a permanent piece of money being spent for something you never get back to do anything new with. But, eventually, Fort McDowell had a settlement, the Tohono's had a settlement, Southern Arizona Water Right's Settlement, in '82. Salt River had a settlement. And, I think, as a part of all that, these systems for those communities got worked out. And, with it, came some idea of how to afford the water, who was going to pay for the water, and also some rights that they didn't have as C-A-P water users. And one of those was to lease water to surrounding cities. They weren't allowed to lease it out of state, but they were allowed to lease it to other C-A-P users. At the time, I think cities like Scottsdale and Phoenix and maybe Mesa, they were looking at their future water needs, and realizing that between S-R-P, C-A-P, and ground

water, they still would need water in the future. And they were looking at what conservation would do, and they were looking at water reefs would do. We're still working with them on those kind of things. But, they started thinking that, "Oh my, we're going to need more water in the future. We've got this canal, maybe we can move water from this canal. And, a couple of, I think three cities, bought water ranches. In . . .

Storey: Bought water . . . ?

Water Ranches and Indian Water Settlements

Erwin: Water ranches. In western Arizona they bought a ranch that had a water right associated with it. And they thought, "Okay. Someday we'll take that water and put it in the C-A-P canal, and that'll be our next source of supply." Well, as it turns out that doesn't look like what's going to happen now. It's much more economical for the cities to lease water from the Indian communities as their next source of supply. (Storey: Uhm hmm.) So, I know that Scottsdale's been trying to get rid of their water ranch. And I assume that Phoenix is also. And I think it was Mesa that bought the other one. I'm not sure.

So, sometimes you think you know what the future holds, and you don't. Right now, Gila River

Indian Community's got a settlement pending. And that has always been their biggest problem with C-A-P water. They didn't understand how they were going to afford it. They were already farmers. They already get San Carlos Project water for virtually free, you know, and they're having a tough time. There's no way they're going to pick up C-A-P water, you know, at $70 an acre foot, or whatever the, just the pure cost to deliver it, in canal O&M and energy. You know, whatever that number is, and how they could possibly afford that. But that's essentially what's, part of what's getting worked out for their, for their settlement. The other thing is that their distribution system is so large that getting the appropriations through is difficult. Sometimes it's easy, when you have something the size of C-A-P, to forget how big the pieces are. But Gila River Indian Community's distribution system is a Reclamation project in and of itself anywhere else. You know, it's going to be between, what we build for settlement, what we build for C-A-P, probably $600 million. Well, C-A-P's $5 billion dollars, so that doesn't look like very much, but anyplace else a $600 million system is a pretty big project. And it just sort of got buried in C-A-P. But, as we finished the aqueducts and we figured out where the aqueduct had to go, it was going to go all the way to Tucson and it was going to go on the farm side of Tucson, you know it became obvious that really–and the non-Indians were building, we were

helping them build their systems, that the next big block of planning had to be, "What do you do about the Indian reservations?"

What to Do About Indian Reservations?

And it had always been there, but until water settlements brought that up in the consciousness of the Indians, they never really engaged with us. Partly because they were a very limited number of people who can do that. You know, they've got a very limited number of folks to deal with all their issues. And, sometimes, they've even had difficulty dealing with us, if they were in settlement discussions, because the same people had to do it. And, their expertise base was small. But, settlements really got them engaged with us on what should happen with C-A-P. At about the same time, we were really starting to do the studies with Gila River, and we had kind of worked through Fort McDowell and Salt River, and the Tohonos, and Ak-Chin. It became clearer to Reclamation that they really had an Indian constituency.

It's always been something of a Department [of the Interior] problem to figure out where Indians fell. I mean B-I-A is where you go for Indians, right? When it comes to irrigation projects B-I-A doesn't have the money to do all the things they need to do, now, you know, and they're going, the

first place they're going is a hospital, probably. And, again, housing. All kinds of issues that Indians have. So, we have sort of shared the responsibility I guess on C-A-P. I know we did with SAWRSA [Southern Arizona Water Rights Settlement Act], doing the budgeting, and having the money come a little bit from B-I-A, and I think a little bit from us.

But, about the time we were working on Gila River is about the time that Reclamation understood that it wanted to be more responsive to Indians. And, they created a position that Joe Miller first held, which is kind of the Native American Affairs–I don't know what they called him–director. I don't remember what his title was exactly, but the idea was that there was a presence in Washington, for Indians, if they felt like they were being neglected or they needed to know who in the organization to come to to help get rid of roadblocks. There was somebody there for them.

Indian Issues Spawned a Change in the Organization

And that spawned a change in the organization. Each region now has a Native American Affairs Program director, and most offices do, or at least large offices like mine. So I now have a Native American Affairs Group, and a Planning Group. And they're separate. And, so you're really talking

about not only in my Native American Affairs Group, trying to figure out how to get these C-A-P systems built, the ones that are still left. But also just general outreach with Native Americans on the programs we already have, water conservation, planning, that are being done out of that group, and planning for non-Indians are being done out of a different group. And, of course they spend a lot of time coordinating with each other. Because a lot of times you got both parties in one planning study. Like we do in northern Arizona. It's pretty difficult actually to do a planning study in Arizona if you're not sitting in Phoenix, that doesn't involve a tribe, somehow. And even then, you know, Gila River, Salt River, Fort McDowell are all very close (Storey: Uhm hmm.) to the Phoenix area.

So, I think that is part of what has changed in planning, probably all through Reclamation, but certainly in this office, is that the Indian presence has gone way up. And, that's just, was partly because we had all of those C-A-P systems to build. But now, a great deal of our outreach program has nothing to do with C-A-P, it is also going to the Indian communities. We do a lot of work at Navajo. We could probably take all the people in this office, and all the money that comes into this office and work on the Navajo Reservation and still not be able to meet all the water resource needs of the Navajo people. It's a bit of a challenge.

Storey: How does that separate Indian Affairs Office affected the way the Area Office works?

Affect of Indian Affairs on Area Office

Erwin: I just think it has brought much more visibility to Indian issues. And, without that I'm not sure that I would have a Native American Affairs Group separate from the Planning Group. I don't know that I would have that. In the end, I think, given, (sigh) given where we've come, I think we would be doing the same sort of thing. But, I think it probably helps the tribes to have the visibility of having a Native–it's easy to get lost. And, it's harder to get lost when you have a Native American Affairs Program, which is expected to do something. (Storey: Uhm hmm.) Say if you can't, it's difficult enough in a planning program to figure out, you know, you never have enough money to go around. Who gets what? Okay? It's a lot easier to make sure that the Indians have a share of that program when you've got a separate group over here saying, this has got to be funded too. So I think it has, I think it has helped. Really make the needs of the tribes visible.

Storey: I've forgotten the name of the first director, in Washington?

Erwin: Jill Miller.

Storey: Jill Miller.

Erwin: Jill Miller was the first person. That's the position Chris Kenny holds right now.

Storey: I sort of . . . had the feeling, let's put it that way, that sometimes that office was a little out of control?

Erwin: Oh, I don't know. I suppose, I suppose so. I mean, I don't know that that's a bad thing. Okay? You're making the assumption that that's a bad thing. (Laughter)

Storey: Well, I'm ask, I'm asking about this.

Erwin: I don't think you start something new without it going off in directions that you didn't expect. And sometimes that's a good thing. You know, you let something grow, in and of itself. I think that it did take, though, individually and probably within Reclamation, some period of time to figure out, "Okay, this is the way the world used to look. And now it looks like this. How do we interact now, with those people?" I know that we had some trouble when things first got started, and they first began to work with Gila River on settlement issues. You know, we were still technically doing C-A-P stuff with Gila River. Okay? They, being the people at Jill Miller's level in the Bureau of

Reclamation but also the Department, gets involved in water rights settlements, (Storey: Uhm hmm.) right? They were doing stuff with Gila River with water rights settlements. Now, from Gila River's point of view, generally the same people were involved, but from our point of view, that was not the case.

My folks, at the time, before it was split, and even after it was split, we were not often involved in the settlement discussions, but we were involved in the C-A-P discussions. The C-A-P was being talked about in the settlement discussions. So sometimes you do something for C-A-P and the settlement people would say, "You can't, you know, you're stepping on our toes." Only, we weren't involved so we didn't know where the toes were. (Storey: Uh huh.) So it was pretty hard not to, you know. But that, that has ironed itself out over a period of time. At least in this region, what has helped, is Debbie Saint has been involved in several of the teams. She's the head of the implementation team for SAWRSA for the Tohono O'odham settlement. So, it's a lot closer here. It's a lot, that coordination is easier.

It's still not always easy, but it's easier when it's not back in Washington, or the Department [of the Interior] isn't doing something that we know nothing about. And also, just those relationships are

easier. We're doing a lot of work on the Little Colorado [River]. One of the people who is involved in the, from the Department and Reclamation side on that, from Washington, is Adrienne Marks, who used to be my hydrologist. So, it's so much easier. Relationships are so important in everything. Organizations don't do things, people do things. And, relationships is what makes things work smoothly. And, if you know people, and you trust people, and your first thought when they do something isn't, "Well, you S-O-B, why'd you do that?" It's, "Gosh I know Adrienne. I can't imagine why she did that, but I think I'll ask her." You know? (Laugh) You know the world, the world works a lot better.

"Lots of People Moved In and out of CAP"

And one thing that's nice about Reclamation is, they're all a lot of people that a lot of us knew. Lots of people moved in and out of C-A-P. I don't know how many people were here when I first came in, but I would guess under 200. Okay? We went to almost 700 at one point, and now we're back to about 100. Lots of people have moved through this office. So, I have never worked anywhere else in Reclamation. That's unusual. Reclamation has generally had a culture of moving around, and I have not, but I know a lot of people. I know a lot of people, because they used to work here. (Storey:

Uhm hmm.) And that's one way to do it.

And then, when you get to the area manager level, you go to area manager meetings and you start doing things at that level. You get involved in a couple of committees that the commissioner wants to do, and all of a sudden you know some people. So, it's, there was a time when I felt somewhat isolated here in Phoenix, because I'd never been anywhere else. But, once you get to this level you can't really be isolated anymore, because you're involved in too many things. But, so many people have worked here, that a lot of the people we have to work with are people we know. And that works out real well. (Storey: Hmm.) Yeah.

Storey: You've mention SAWRSA?

Erwin: Don't burn your bridges, because you never know. (Laughter) You learn not to burn your bridges.

Storey: Yeah. You've mentioned SAWRSA a couple of times, what is that?

Erwin: That's the Southern Arizona Water Rights Settlement Act. And that's the settlement act with the Tohono O'odham Nation.

Storey: Okay. (Pause; tape turned off)

Storey: About the Planning Office, (Erwin: Yeah.) when you were doing it.

Erwin: Right, and the fact that [?] Indian.

Storey: You started talking about the Indian stuff.

Erwin: Yeah. Right.

Storey: But what about C-A-P planning that was going on?

Erwin: Well, that was, that was in, that was C-A-P, because that was the Indian C-A-P users. (Storey: Uh huh.) But there was one, one piece of C-A-P that was left. The aqueduct itself, really by the time I took over, the aqueduct planning was done. We were starting to build the Tucson Aqueduct on the farm side of the hill, and so the Indian users were left, and the other thing that was left was what we call TASRI, Tucson Area System Reliability Investigation, or just reliability for the system. When, the Tucson studies were originally going on there was the thought that they would build in Tucson a terminal storage reservoir at a site called CAP Mountain. But that didn't get done.

Working Out the Details on the Tucson Aqueduct

Meanwhile, though, they were designing the

pumping plants for the Tucson Aqueduct. On the Phoenix end of the aqueduct, from the river to Phoenix, the pumping plants are large. And so there's really kind of two pumping plants together. They have a forebay, where the water comes in, and then it's pumped through a series of pumps and it comes out through a discharge line. Well, there are two discharge lines on the Phoenix pumping plants. That means that in the winter, when the water need is the lowest, you could take half that plant out of service, and do maintenance, particularly big maintenance like the coating of the inside of the discharge lines, which isn't going to be done very often, but when it's done it could take a few weeks or a month, or six weeks to do.

Well, once you get past Tucson, and you're going down the Hayden-Rhodes Aqueduct, you get past Phoenix and you're in the Salt-Gila, and then the Tucson Aqueduct. It's smaller. And the aqueduct gets smaller the further down it goes because you're delivering less and less water. And those pumping plants have only one discharge line. (Storey: Uhm hmm.) So, if you have to take those pumping plants out for maintenance for a month, there's no water delivered for a month. And, you may or may not, as a farmer, be able to deal with that, but if the city of Tucson is going to go from being the largest U.S. user of all ground water to a C-A-P water source, they cannot afford to have their water supply

disrupted for a month.

Plan Six Negotiations

So, when we were negotiating and doing the planning for what we call Plan Six, it's part of the Central Arizona Water Control Study. One of the things that the city of Tucson wanted was an agreement that we would at least look at making the deliveries to Tucson as reasonably reliable as the deliveries to the Phoenix area. So, once we got started looking at reliability, we said, "Okay. What does that mean?" And we said, "Well, we think that we can break up maintenance activities into maybe two weeks, or a month period of time. We don't have to go longer than that. But it means that we probably should have a way to store enough water so that if the, if we had to take, if C-A-W-C-D had to take the aqueduct down for a month, to recoat a discharge line or to do something, that there's be a month's worth of water sitting in Tucson." Okay, how do you do that? Well, we started looking at building a reservoir. There really isn't a reservoir site. I mean, if there was a natural river there'd be a dam in Tucson, and there isn't. We started to look and there is a, there is a wash on the west side of Tucson, Black Wash, and it's near the Pascua-Yaqui Indian Reservation, and the Tohono O'odham Indian Reservation, and we could essentially construct a reservoir out of dikes, the whole thing.

And it would hold enough water to get Tucson through a winter month. Because this is not, this is not an emergency, this is planned maintenance. What we said was, "You're on the hook for emergency. If there's an emergency anywhere, everybody's on the hook for their own emergency. I mean, if we lose a pumping plant, if we lose a piece of canal, you know, you're no different than Phoenix. Phoenix has, there's not help that, you know, that Phoenix is going to get that you don't already have. But, for planned maintenance, you know, you don't have the same deal as Phoenix." So we were looking for the one month storage, at a reservoir.

"The Whole Situation in Tucson Sort of Blew Up"

But, while we were kind of doing that, and the whole situation in Tucson sort of blew up. When Tucson, they built a treatment plant for C-A-P water like the other cities did, but when they first started to deliver C-A-P water, the water got delivered, I think, to an older neighborhood that had some old cast iron pipes. The city of Tucson was set up with wells, so they didn't have a point source for water. Water came from all over the place, and went all over the place. Well, once they put in C-A-P water, all the water was coming from here, through those pipes, not necessarily in the direction it used to go. So you had scale coming off and chemical

interactions, because C-A-P water, chemically, is differently from ground water. Much harder, among other things. And you had brown and red water running into people's houses.

And people got up in arms pretty quick. And, there was kind of a popular uprising, sort of, and they created and passed an initiative that forbade the city of Tucson for directly taking C-A-P water, until it essentially met the quality of the ground water, which meant that Tucson could not deliver C-A-P water through their treatment plant, and that kind of, everything was up in the air at that point. Tucson has since, there was a segment of the population and one person in particular who worked for the university who really thought that groundwater recharge is what you should do. You should recharge the C-A-P water into the ground and it would get cleaned up as it went through the ground and then you would pump it out. And, to some degree soil aquifer treatment is, is a good treatment, but that's a pretty big system to be trying to do that with, but that's what Tucson's doing right now.

They are recharging C-A-P water, and then they are pumping it up, and blending it with other ground water that they're using. I think ultimately they're going to have to go to a direct use of C-A-P water, but they are probably going to have to treat it a lot more than they are now. And, we've done some

studies with them, because we have a group in Denver that does desalinization and a lot of water treatment, and we've been down there with our mobile lab looking at, you know, "Could you do reverse osmosis, nano-filtration, micro filtration? What would you have to do to get the water to a decent quality? What do you do with the brine stream that's left?" So there's a lot of questions like that. But, the whole thing sort of fell apart. Well, as long as Tucson is doing recharge, they don't need to worry about reliability. They'll be pumping up water. It'll be ground water. It'll be C-A-P water. They'll be pumping up something. And if the recharge stops for a month, it's not really an issue. So, at the moment, Tucson doesn't have to worry about reliability.

But the other thing that happened is that the Tucson Basin has changed. For a long time Tucson was the biggest, maybe the only, almost the only water utility. And the thought was that as development spread to the north of Tucson, all that water would come through, all that C-A-P water would come through the Tucson treatment plant and be delivered up north. Well, the northern cities now, of Oro Valley and Marana, and the Metropolitan Water District don't really want to do that anymore. They would rather take their own water, you know, essentially have, they'd like to take charge of their own destiny and do it

themselves. That caused a big problem in Tucson, because they were supposed to pay a share of the treatment plant costs. There was a big lawsuit. And but they fought, I think they settled it out, and they have figured out what they wanted to do.

Effluent was also a big issue. Pima County does all the treatment. The Tucson Water sort of owns most of the effluent. Pima County has a little bit, as a part of SAWRSA. The secretary has a fair-sized chunk. Tucson has given some of that effluent back to those same cities, to start doing reuse with. So, the water situation in Tucson is beginning to clear up. It was very murky for a long time. It's beginning to clear up.

But, so we are working with the northwest folks, and we have been for a while, on how they might take C-A-P water, should they take it and recharge, and continue to pump, or should they treat it and use it? Well, they're looking at treating and using it, and they're looking at creating a reservoir of their own, because the Black Wash reservoir really isn't in a site that's going to do them any good. So now, if we build that Black Wash site someday, which we're going to have to go back and relook at it, it would be smaller to some degree. It also doesn't help the Tohono O'odham Nation a whole lot, but they're beginning to look at using their C-A-P agriculturally, mixed with ground water, and they

may very well use recharge as their way to develop reliability. So, it's taken us a long time, and those studies have gone very slowly, and the original studies have sat on the shelf for a while. But, that's probably appropriate because the whole water picture in Tucson is still clarifying itself. And, eventually, when it does, we'll have smarter ways to do things than we thought of originally.

Storey: Hmm. Interesting.

Buttes and Hooker Dams

Erwin: So that was a big part of C-A-P planning that was still going on at the same time the Indian distribution systems were going on. Because the non-Indian systems were pretty much done, and the aqueduct was pretty much built. So, the other two things still going on, were, well and we were building Roosevelt and Waddell, so there was a lot of activity there. The other two planning things were Buttes and Hooker [dams]. Buttes we had pretty much put to bed and said, "This is not likely. We'll just put it aside. We'll come back and visit it now and again." We did more, some more studies on Hooker Dam, and decided that, "Well the Hooker site's not where we should go." We moved it to a new site, Connor. That one didn't work out, as well, and we started to look at off-stream storage, because of endangered species impacts, and you

might not want to put the dam on the river itself, but off on a tributary. You could even pump water into that off-stream dam.

And, we got about that far when we concluded that the economics just weren't there. You just did not have–you had a lot of New Mexico users interested in the water, but none who could afford it. It was not yet, the development didn't exist to have somebody who could afford to pay for the water. So, I don't think New Mexico has any interest in losing their C-A-P water. I wouldn't call it a C-A-P allocation, but 18,000 acre foot of Colorado River water was set aside for New Mexico (Storey: Uhm hmm.) as a part of this project.

Storey: And they would get that through and exchange?

Issues on the Gila River

Erwin: Yes. That, and that would have to happen. And that will be a difficult thing to do. We had done quite a bit of work, while Adrienne was still working here as the hydrologist. Quite a bit of work on trying to figure out how that exchange would take place. And that was really before the worst of the endangered species issues cropped up, although we were already looking at endangered fish in the upper part of the Gila River. Really, the only entity to exchange with reasonably is Gila River Indian

Community. They have both a Gila River water right, and a C-A-P water allocation. So, if they didn't take water off the Gila [River], they could get more C-A-P water. Okay? So, and upstream entity like New Mexico or the San Carlos Indian Community, who both have . . . .

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BEGIN SIDE 2, TAPE 2. APRIL 28, 2003.

Erwin: Are going to give those C-A-P allocations to GRIC [Gila River Indian Community] and they're going to take Gila River water. Okay? Well, you have to somehow get that thing all worked out legally and institutionally. Right now San Carlos Reservoir provides water to GRIC. But the amount of water in San Carlos Reservoir also affects how much water the people upstream of it in Safford are allowed to use. So, there's already a decree in a court that oversees that. Well, if you put another dam on the system you mess that all up. So, what Adrienne was doing at the time was the beginning of a computer model. We wanted to model the whole river so that we had a model that worked. And, based on how much water was up here, and here, and here, and there on the tributaries we could figure out how much was going to wind up in Coolidge. If we could figure out how the river actually worked, then we could put a dam in the way and say this dam's in the way, but the model

will tell us what would have wound up at San Carlos Reservoir so that you can continue to compute water rights the way you've always done it.

And we started to do that, and we spent a fair amount of money but I think we finally came to the conclusion, a) that New Mexico couldn't afford the water, and b) we weren't quite sure how that exchange was going to take place. You could go for, you know, ten years on a, with a Gila drought and never have any water to capture. Or you could have a flood that filled the reservoir in one year. Well, if you had a flood that filled the reservoir in one year, you couldn't deliver that much water to Gila River in one year, so you were going to have to create some sort of a bank account.

And we had started to talk to Gila River [Indian Community] about what that bank account could look like. You could be overdrawn by only so much, or you could overpay by only so much water. But we never really went anywhere with that, because I think it became clear that it was going to be some time before New Mexico could afford to take the water anyway. So, that is one of the things that's going to have to happen to make that New Mexico exchange happen. But, it's also going to have to happen if we make the San Carlos Apache exchange happen. They have a Gila, or they have a

C-A-P allocation and they have a settlement, so they've got some water. The only way that they can get it, essentially, is out of San Carlos Reservoir, because there's not enough in the river itself to take, but they, they're not that far upstream. In fact, the San Carlos reservoir is partly on their reservation. Some how or other we're going to have to figure out how to make that exchange work.

And right now, the physical exchange will be an issue. But so will the endangered species part of the exchange, because downstream of Coolidge and upstream of where the Gila River Indians take their water out of the river, there are Southwest Willow Fly Catchers now. And Southwest Willow Fly Catchers, we're going to have to figure out what that means, and how we do what we do and what kind of mitigation we provide. (Storey: Uhm hmm.) So, we're getting ready to do that.

The San Carlos System

We're getting ready to start because it'll be a long time before the San Carlos system is built. We are still working on the planning of the system, so, we're not ready to construct, you know, something next year. But, even though they don't have a system–the reservoir goes dry periodically. I mean it's never a lot of water, and it has only spilled twice since it was built. And so, nobody wants to see all

the fish in the river, in the reservoir die, because among other things San Carlos Apaches fishing is at least of some economic benefit to the tribe. So for several times in the last several years, someone has come in and said they would buy C-A-P water to deliver to GRIC, if GRIC would leave the water, or the San Carlos Irrigation Project in general, would leave the water in the reservoir so the fish wouldn't die.

We're trying to create what they call "minimum pool." And the reservoir didn't use to have a minimum pool. And so that concept has kind of worked, but this year, in particular, the San Carlos Apaches came in with some money and said, "Hey we'd like to pay to leave some of the water that's in the reservoir, in the reservoir, we'd like to exchange with GRIC," but there wasn't any C-A-P water to exchange, at first. We had to go find some, and secondly, the question would be, what would happen to the Southwest Willow Fly Catchers? How would they be impacted? You have to do Section Seven Consultation. The Fish and Wildlife Service has finally said, "You know, we're not going to do an emergency Section Seven consultation every year. This should be foreseeable."

Well, the fact that Coolidge may go dry and someone may want to do something about it is

foreseeable. The problem is, until someone comes in and gives you a concrete plan that says, "I'm going to give you this much money. I want you to take this much water, and deliver it to Gila River on these days, and we won't let it out of Coolidge. You don't have anything to consult on. You have to have some concrete plan to consult on." So, I think what we're going to do, and I think the Fish and Wildlife Service director in Albuquerque is amenable to this, I think we're going to start working on the overall exchange for the San Carlos Apache system. We know it's coming. And, we know, like right now, that we're going to have to do some mitigation. We're either going to have to buy a habitat, or we're going to have to go down on the San Pedro river, let's say, and buy up some farmland so that that water stays in the river, or stays in the underflow of the river and helps maintain the river level. Why not just do the first part of it now? And say, "We know it's coming. We'll buy the first part now. It takes care of any impacts of these emergencies over the years it takes us to get the San Carlos Reservoir system ready, and then we'll figure out the last piece that we need to do." (Storey: Uhm hmm.) That's not the way you would normally do things, but it's the way we're going to have to start doing things.

And, we've got a lot of history on the, on the river itself, the Colorado River itself, in the M-S-C-P, in

the Multi Species Conservation Process. The region's trying to buy habitat for Southwest Willow Fly Catcher. We had to buy it for Roosevelt [Dam] when we enlarged the conservation space. S-R-P [Salt River Project] has had to go through this process with the Fish and Wildlife Service for the existing conservation space that wasn't affected. In the drought, the water has gone down and the habitat has gone with it. Now the Southwest Willow Fly Catchers are down in the actual reservoir, because of the drought. There's no water. And so S-R-P can't afford to have those reservoirs blocked off from water supply. That's a million acre feet for the Phoenix area every year. So, they're going to go out and buy habitat, and they're probably going to have to do the same thing for the dams on the Verde [River].

So, we have a pretty good idea, you know, where to get the habitat and how much we might have to get. We don't have to worry about overbuying, if you will. (Laugh) But, we could start now, and I think that that would relieve some of the pressure on the San Carlos Apaches. We could do something in the dry years and not have to worry about the Southwest Willow Fly Catcher. It's hard enough to get the Gila Decree people, who depend on Coolidge for their water rights, to agree to whatever

we want to do.[8] And the Gila's to agree to take the water.

You know there's a lot of things you got to do. You have to have C-A-P water, and you have to schedule it in advance. They didn't do that this year, so we had to go to users like, who are kind of at the end of the line, like the Arizona water bank, and say, "Hey we'd like to reschedule some of this for the San Carlos Apaches. Is that okay with you? You scheduled it." And they said, "Yes." And we were able to get them some water. Not as much as they would have liked, but, 6000 acre feet, which is better than nothing. (Storey: Uhm hmm.) In terms of contributing to that minimum pool to keep the sports fishery alive up there. So.

Storey: So, it's a different group at the reservoir than benefits from the reservoir?

8. The Gila River Decree is officially known as the 1935 Globe Equity Decree. It dictates "all diversions of the mainstream of the Gila River from confluence with the Salt River to the headwaters in New Mexico, including the Gila River and San Carlos Apache reservations and non-Indian landowners below Coolidge Dam. It awarded rights to use water on lands within the Gila River Indian Reservation with a priority date of 'time immemorial' and also awarded rights to the San Carlos Apache Tribe with a priority date of 1846, See Arizona Department of Water Resources, "Water Supply of the Southeastern Arizona Planning Area–Surface Waters, www.azwater.gov, accessed 1/16/2014.

Erwin: Absolutely. Absolutely. Which always causes a problem. When the costs of something fall on different people than the benefits accrue to, which almost always happens (Storey: Uhm hmm.) (Laugh) that's just sort of a classic planning problem that needs to be resolved, is what do you do about that? (Storey: Hmm.) It happens quite a bit. Yeah. Although, to some degree San Carlos Apaches do benefit form the existence of the lake, in that the sports fishery is on their reservation an that's an economic engine for them.

Storey: The, when you were in the Planning Office, anything for S-R-P?

CAP Issues and the Salt and Gila Rivers

Erwin: Not really. We've done some recreation development with S-R-P. Since the project is long over, it's not like C-A-P where we're still developing recreation as part of the project. We have used the Title 28 Program to go back and do some recreation development with S-R-P, but the project is basically built. It's long been built. What we have is an oversight responsibility. We have it for both C-A-P and S-R-P. There are some places where the Bureau operates the project. In this particular office, we don't operate either project. Salt River Valley Water User's Association, and the Salt River Water and Power Improvement District,

two different pieces, they operate the project for Water and Power. Central Arizona Water Conservation District operates C-A-P. We just have oversight. We have, we do facility inspections with them, periodically. There's a schedule.

We do security inspections now. I mean security's a big deal now. Since 9/11 we've been looking at our emergency plans, which used to worry more about flooding and natural disasters than man-made disasters, and now they have to incorporate both. The land, underneath the projects, and the facilities are held and titled to the United States. There hasn't been a title transfer. S-R-P has certainly never, at this point, talked about wanting to do that. That means that every time they want to move a canal, change an easement, sell a piece of land, or put a different piece of land into the project–I have Lands people. I have a couple of people who are lands experts and an appraiser that get involved in that process. And I have one guy who basically does nothing but lands stuff with S-R-P.

Because S-R-P started as an agricultural project, and now is in the middle of the sixth largest city in the country. And so, developers and cities are constantly wanting to move an S-R-P facility. They want to put the road here. They want to move the canal three feet, you know, or they want to–and

most of it is little stuff. It's laterals and ditches that they want to move. And so we've worked out with the State Historic Preservation Officer a streamlined way to do that for most of the small laterals. A lot of them, S-R-P was originally all open ditches. Now a lot of stuff is going in pipe, it's going under the streets or whatever.

But it's, it's still a lengthy process, and we're still working with the cities and, the developers are a little bit different than the cities. Developers can come in once and be gone. But the cities are with us all the time. They're constantly doing stuff, so is the county, and so is the state, like the Highway Department, the State Highway Department. So, we are looking to see if we can't facilitate that a little bit. They have a process of their own, and they tend to tack us on at the end. And then whine that the process takes a long time. Whereas I think if we, if they could get us started way back near the beginning it would help. I mean there are things that we have to do. Among other things, we have to get all the legal descriptions to the land and send it to the solicitor to get a title opinion. And then it comes back and we go through some more processes and we get a final title opinion. We really can't do anything until we get that preliminary title opinion. So, the better they have things scoped out, the better off we are, so we do quite a bit of that kind of thing.

And we are still looking at C-A-W-C-D, watching their O&M [Operations and Maintenance] program. And. . . just oversight. (Storey: Uhm hmm.) We don't have a lot of people. But that's something that we'll always do in this office. There will always be an oversight role there.

Storey: Let's talk about C-A-W-C-D, and the . . . their repayment responsibility.

CAWCD Repayment Responsibilities

Erwin: (Laugh) I'm not the expert on that, but it has been, it has been interesting. Relationships change, and when you come into Arizona with $5 billion in your pocket you're everybody's friend. As soon as you've spent the $5 billion and you come back and say, "Gee it's time for you to begin to repay some of the costs of this project." all of a sudden relationships look different. And, I suspect that the same issues probably came up with S-R-P, but there's no one around anymore, you know, who was here in the '20s, '30s, and '40s who remember any of it.

But, there were some big questions between us on who owed how much. We had an original repayment amount and it got renegotiated. And I think we were in the process of renegotiating it again. There was kind of a cost ceiling that C-A-W-

C-D didn't have to pay more of, and we were in the process of renegotiating it and that renegotiation kind of fell apart. And we finally got to the point where we went to court. They sued us. We sued them. And, court's never a very good way to resolve something, I don't think. But we lost the first part of the court battle. We thought that the repayment, that the contract said $2 billion, they thought it said 1.8. The court ruled for the 1.8. And, we were going for the second part. There were about six different issues, when people finally sat down and took settlement seriously and we were able to settle our differences.

And at the moment we are acting on that settlement. Although, it's not finally done. Because one of the issues, one of the prerequisites, I guess, for being finally done was that the whole Gila River Indian Community Water Rights Settlement would be done. Because it's all kind of together. The issue of what C-A-W-C-D paid, to some degree, got ironed out because the federal government was awarded, if you will, a couple hundred thousand acre feet of C-A-P water. We really didn't have an allocation of C-A-P water. The original water through the various secretaries of interior, there have been a number of allocation decisions that have changed over time, but a certain amount went to Indian users, and then to the non-Indian users, agricultural or urban. We asked the

state for their recommendation on who should get the water. Most of the water's been allocated. There's some M&I [municipal and industrial] water that's not allocated. But, you know, in order to arrive at a reasonable repayment obligation, C-A-W-C-D was willing to set aside a couple hundred thousand acre feet of C-A-P water for Indian use in settlements. That's generally where the water for the settlements has been coming from. Parties who feel they are at risk, over litigation brought by the Indian tribes, when they sit down and they negotiate a settlement, if they're going to give up water to the Indians, they don't give up their S-R-P water. They don't tend to give up their ground water, both of which are more reliable and maybe have better quality, they tend to give up their C-A-P water.

It's not really a case of the secretary taking the C-A-P water and giving it to the Indians. It's the people who have C-A-P allocations, who think they are at risk in litigation, choosing to settle by providing the Indians a certain amount of C-A-P water. Gila River [Indian Community], I think would argue that their claim to Gila River water is 1.2 million acre feet or something. They will, if this settlement comes to pass, and it's been introduced by [Arizona U.S.] Senator [Jon] Kyle, they'll settle for 650-odd thousand acre feet, or maybe half of what their claim was. But, you know, they feel like they got something. And, the other parties feel like

they avoided the costs of going to court, and the uncertainty of what might happen in court, and that's the whole idea of a settlement, is that both sides feel like, you know, they've done better than they would have if the court case had progressed.

So, the couple hundred thousand acre feet of water for use in Indian settlements, it wasn't really originally thought of. The original project didn't have government water. The Bureau has no water that it could give away. But now there's a couple of hundred thousand acre feet, so. (Storey: Uhm hmm.) Where were we going with that?

Storey: Well, we were talking about repayment responsibilities.

CAWCD Repayment Obligations Got Capped

Erwin: Oh, okay. So C-A-W-C-D, so here we are in court, and finally that kind of all settled out, and one of the things that happened is that C-A-W-C-D's repayment responsibility got capped. The original thought was they would repay the costs of municipal water with interest, agricultural water without interest, cause that's the rules, and water associated with Indians or flood control, recreation stuff would be dealt with differently, fish and wildlife enhancements. So, there are a number of the costs of the project and C-A-W-C-D was never

responsible for repaying all of them. Okay? (Storey: Uhm hmm.) So, their original thought was that, you know, it would be somewhere around $2 billion of a $5 billion project.

So, they're not going to wind up with all the costs, by any means. But, as a result of this litigation, two things happened. We arrived at a dollar amount. I think it's $1.65 billion. But the other thought was because agricultural water does not pay interest, municipal water does pay interest, that as the project became more and more urban, which we expected, C-A-P would deliver a lot of water to Ag at first, because the cities didn't need it yet, but over twenty years the cities were going to grow and eventually Ag wasn't going to have much water. The amount of money that the C-A-W-C-D owed would change. So there was like a rolling seven year average of what they owed.

And one of the things that, I mean they agreed to that, but I think as they became a district and they began to operate they began to see that it was difficult not to know what you were going to owe. They needed some certainty. So one of the things that they got out of this process was, we said, "Okay, we're going to make some assumptions about what future water supply will be, and we will set your repayment obligation based on that, and then we're not going to go back and look. We're

done. That's what you owe." So, their repayment obligation has since been set. The repayment was supposed to come in phases.

There was the aqueduct phase, then there was the dam phase, and there is still a phase for Tucson reliability. If we do Tucson reliability what, if anything, C-A-W-C-D repays of those costs is still open to negotiation. And it may just be that the entities that really benefit from the reliability repay parts of the costs of the projects. Although their argument is going to be that, "If you'd have built the project reliable in the first place, we wouldn't have had to do that. It would have been part of C-A-W-C-D's repayment obligation." So, in the future, there are going to be some very interesting discussions, with C-A-W-C-D and those entities in the Tucson area about what ought to get built and who ought to pay for it. You know, in a world of limited money, those discussions are interesting. (Storey: Uhm hmm.) But, C-A-W-C-D's current repayment obligation is set. And, since the lawsuit has now pretty much been put aside waiting for the Gila River settlement to get passed, and hopefully that will happen, that has really improved everybody's relationship. I think at the staff level we were fine. But, at the head of the State/Department, way up here level, there was a lot of animosity over the, over the suit, and you know, when you owe somebody a lot of money it's always

a, it always creates tension I guess. (Storey: Hmm.)

"Times Change, Physical Situation Changes, and Society Changes"

But I think that these are all the things I suspect every project of any size that's ever been built goes through these kind of things. You know you reach agreements that you think are reasonable, and then you start living them and you find out that you weren't as smart as you thought you were. And things have to change. (Storey: Hmm.) There has to be some flexibility. That's not always easy to come by. I think we have a general problem with that these days, in Reclamation, and Lake Powell's a great example. You build things that are going to last of a hundred years or more, and then there's agreements built around that and a set of expectations, and you saw that happen in Klamath [Project in Oregon].

The problem is, times change, the physical situation changes, and society changes. Society's values change. What society values is different than it was a hundred years ago. The problem is your structure is still there. It isn't going anywhere. (Laugh) (Storey: Uhm-hmm.) So, you know, how do you change with the times? That's not easy to do, because whoever, whoever you made those agreements with, they liked those agreements

usually. It's like Klamath. The irrigators liked those agreements. They got all this water. They paid money for that. I mean they're, now all of a sudden there's endangered species concerns and someone has walked in and said, "I want all the rules to change." Well, you know, if they said that to you, you'd be going, "No way do I want the rules to change." But society, in general, has changed. So now, what do we do? Our structures don't change easily. Their agreements don't change easily. The expectations don't change easily. But the world has changed. (Storey: Uhm-hmm.) And it's a very uncomfortable place to be.

But, we're going to be in that place a lot, so we better get used to how to deal with them. (Storey: Yeah.) And, it'll happen here. And, you know, to some degree it has happened here. And I guess S-R-P has kind of, I don't know whether they, it's just been easy or what, but they clearly were an agricultural project at a time when Phoenix wasn't anything but farm fields. And, it's urbanized and they've, they've gone through the changes they had to go through. I mean ultimately C-A-P will see changes. Right now, it looks like when the settlements are done, and assuming that 200,000 acre feet goes to Indians for settlement, I think, I don't know what the original allocations were, but the one that we were working on I think something like 300,000 or 400,000 acre feet of a $1.4 or $5

million supply went to Indians. When we're done, it'll be about half Indian and about half non-Indian and there won't be much agriculture in that non-Indian side. (Storey: Uhm hmm.) And that's you know, even as far back as when I joined Reclamation, that's not really what anybody's expectation was. But the world changes.

Storey: Yeah. Tell me who negotiated the settlements with C-A-W-C-D.

Erwin: You know, I wasn't really a part of that. I left most of that to Randy. We've, we played a technical role. We weren't really in the negotiations.

Storey: "We" being the Area Office?

Department of the Interior's Involvement in Negotiations

Erwin: Yeah. "We" being the Area Office. The Department [of the Interior] really got involved in that, attorneys, Bob Snow was really involved in that. I'm trying to thing of who all else has been involved in that. You know, at one point in the previous administration, David Hayes [spelling?]. I'm trying to think of what David's title was. He wasn't, I don't think he was the, deputy assistant secretary. I mean it's, I don't remember his title, but he was pretty high up in the Secretary's Office.

Usually, for something of this magnitude, and I don't think it's very different from the California 4.4 Plan stuff.[9] When you get to that level of political involvement, you got to have somebody pretty high up in the Secretary's Office taking an interest in this, or all the things that have to happen don't happen. You know, you just, somebody at this level, in an Area Office, even in a Regional Office has a tough time, you know, making decisions that will bind the department or the agency to the things that they need to do. It's a pretty high level involvement. And, it's hard to keep those negotiations together.

It really does need a person or two willing to put in an awful long time to kind of babysit all the relationships that keep people together, because you need people in the same room who don't even remotely want the same stuff or believe the same stuff. And, you know, that's not an easy thing to do. It's not an easy thing to do just to keep them in the same room, never mind eventually get them to all agree on something. So, there has been quite a bit of involvement in the Gila settlement, which is kind of a prerequisite for the C-A-P financial settlement

9. The California 4.4 Plan refers to programs developed to get California reliant upon its agreed to allocation of 4.4 million acre feet of Colorado River water established in the Boulder Canyon Project Act. In 1997 California was consuming approximately 5.2 million acre feet of Colorado River water.

holding together as the Gila River Indian Water Rights Settlement.

Senator Kyle has really taken a huge interest in that. I think he really believes that unless Gila River has the biggest water settlement there is in Arizona, and maybe in the country, without that you just don't have a lot of surety in Arizona's future, in terms of water. And so, he's taken, you know, a personal involvement and I suspect, used a political chips to move that thing forward. And it's been very very–it's taken somebody at that level to try and keep the parties together and move something forward. I mean, it's like something that spins, and the centrifugal force wants to send all the parties sideways, and somebody's holding them like this, trying to keep them from escaping.

Storey: Trying to hold them in place?

Erwin: Yeah. It's very very difficult, but he has spent a great deal of effort doing that. (Storey: Hmm.) And, and it looks like it may happen. At least it's been, it's been introduced. Of course, it'll be very expensive, but he had hoped to resolve some of the issues with the Tohono O'odham Southern Arizona Water Rights Settlement too, that didn't come about quite the way they expected in '82. And, some issues with the San Carlos Apaches, although they have a settlement, their settlement I don't think

dealt with the Upper Gila parties. And so, there's some issues like that, that they're trying to put all together in one thing. And, that's not easy, but if they do it they will have really helped cement the landscape for future water in Arizona. (Storey: Yeah.) So, it'll be very interesting.

Storey: Let's see, if I'm recalling about '84, '85 is when you began to get more and more involved, and then eventually became head of the Planning Office?

Erwin: In eighty-sometime in '85 I was acting with John, and I think it was November of '86 when I actually took over as the head of the (Storey: Okay.) Planning Office.

Storey: So, in '82 the Reclamation Reform Act was passed. Did your office have anything to do with the acreage limitation and all of that?

Acreage Limitation Issues in Relation to CAP

Erwin: Oh, I'm sure it did, but I know very little about R-R-A [Reclamation Reform Act]. That, again, has generally fallen under Randy's side of the organization. But, we do have a group here that deals with R-R-A. I know that there was some–you kind of–some people thought that, you know, it just wasn't the kind of thing that made any sense to

apply to C-A-P. Because you were trying to use C-A-P water, as opposed to ground water sources or other sources. But, it did apply to C-A-P. One of the things that is a part of this settlement legislation, would be an exemption, for the Ag districts from R-R-A, for the most part. I don't know if it's a hundred percent, but it's for the most part. So, we do, we do get involved with the C-A-P districts in R-R-A and in all the forms and reporting that they have to do, and in all the pricing, and whether or not the land can receive water or not receive water. So, you know, when that came in we wound up complying with that, and we still have a group that does that.

Storey: Uhm-hmm. One of the things that has been going on with the C-A-P, is, as I understand it taking "excess" water from the Colorado, putting it into ground banking (Erwin: Uhm-hmm.) against the time when California needs water in emergency situations, or drought situations. And I understand that now they're calling on that water. Do we have any involvement with that, or is that something that's being done with C-A-W-C-D? Or, how does this work?

Groundwater Recharge Efforts

Erwin: I think it's largely being done with C-A-W-C-D. They actually have a sort of a piece of C-A-W-C-D,

a sort of separate-together piece called CADRA, the Central Arizona Recharge Replenishment District? Central Arizona Replenishment District, maybe it is? And it's something that's being worked out with the state. Arizona has gone through, in the last twenty years or so, kind of a lot of changes. They're somewhat, I would say, behind California, sort of catching up to do the same things. When we started looking–when I worked for the Corps and we were working here in the early '70s, one of the things the Corps was doing in Phoenix was something they called an urban study. And it was the Corps' first, it was not exactly a watershed look, but it was similar to that. They were looking at the whole city of Phoenix, and water supply issues. And one of the things that we talked about was water reuse, and whether or not they should do recharge on the Salt River, and some other issues. And, we had an idea for a pilot project for recharge, but there was no state statute or structure for doing recharge, since kind of everybody owns the ground water. If you put the ground, if you put water back in the ground water, you had no right or expectation that you would get it back. So why would anybody do that? Okay? But, we proposed something like that, which turned out to be just twenty years ahead of it's time, because...

END SIDE 2, TAPE 2. APRIL 28, 2003.
BEGIN SIDE 1, TAPE 3. APRIL 28, 2003.

Storey: This is tape three of an interview by Brit Storey, with Carol Lynn Erwin, on April 28, 2003.

Now we've evolved (Erwin: Right) and they do do ground (Erwin: That's right.) water recharge?

Erwin: One of the things that happened is eventually Arizona created the legal mechanism to do groundwater recharge. And, that's kind of moved forward into a different phase, which is, you know, California is going to have a problem cutting back to 4.4, but even worse, Nevada, who never got, you know, the 300,000 acre feet. I mean, what was Las Vegas in 1922, when they divvied up the river? Okay, it's got even a more serious problem. What could you do? And, well even for Arizona, beyond the C-A-P water, you could bring in, when there was excess water on the river, when the river was in surplus, when you could deliver everything you needed to to everybody else in Mexico, and there was water left over, you could bring that water in, and you could store it underground.

You know, environmentally and financially you're not going to build a dam to store it. But, you can store it underground, and since we've been, in particularly in agricultural areas, like, pumping groundwater for years, there should be plenty of space. You know, the thought was you could bring it into some of those irrigation districts at the head

end of the C-A-P and Tar Parr and Harquahala, and maybe even on the water ranches that the cities had bought, and recharge it. Which is a smart idea, you know. And then you can pump it back out and put it in the canal. Well, eventually, you know, we, we're now able to do that.

The other, the second thing that happened is that the state, well in 1980 they passed a Ground Water Management Act. And they said, "Okay, the groundwater's being depleted. We've got to do something about that." I think at the time [Bruce] Babbitt was governor, and I'm not sure who was secretary of interior, it might have been Stewart Udall.[10] And I think there was a deal cut, and Babbitt said, you know, "Please don't throw me in the briar patch." You tell me," Stewart Udall, "that you're not going to fund the C-A-P unless I do groundwater management protection legislation, and that will force me to do it. Because I want to do it and it's hard for me to bring all the parties together." I'm not sure if that's how it worked, but I think that's how it worked. And in fact, he was able to bring the parties together, the mines, and agriculture, and the cities, and say, "We're going to pass . . . we're going to do something to protect groundwater." They passed a Groundwater Management Act in 1980, and it created some areas where they couldn't expand irrigation. But the big

10. Cecil D. Andrus was the Secretary of the Interior in 1980.

thing it created were active management areas around Phoenix, around Tucson, in Pinal County which is in between, and up in Prescott. In Phoenix and Tucson they said, we're going to try to come to safe yield, which means we're not over drafting the groundwater anymore. We're not pumping anymore groundwater than rain puts back in, which ain't much, okay, by 2025. In the middle, in Pinal County, which is largely where all the irrigation districts are, the goal was little different. It was, "Well, we can't, we now know we can't come to safe yield, but we want enough water left when agriculture transitions to cities to have a water supply." So, it was a little bit different. Still, the idea was groundwater protection, and they do ten-year plans, and they're supposed to meet conservation goals, and all sorts of things. On top of that came the concept of a hundred year assured water supply. So, at some point the state said, you know, "Developers,"–and I don't know whether it's everywhere, or just in the active management areas. Maybe it's just active management areas. That, you know, "We're not going to let you develop if you can't show that there's a hundred year water supply." Arizona has a great history of land fraud. You know, in the '20s and '30s or whatever, or '40s, you know, selling land to poor people back East, and when they got out there they discovered that they had plenty of land but no water. Because they didn't have to disclose any of the kind of stuff.

So, the idea was that either hydrologically underground there was a hundred years worth of water supply, or you were within a C-A-P service area, or you were within a municipal service area, or somewhere that it made sense that you could get a hundred year assured water supply. Well, another way to do that was, you could join this replenishment district, and help pay to have water brought in and put underground, and part of it them is credited to you, as a water supply. If you're a city, or a, you know we still have private water companies here. So, the, that was set up. So all this institutional change has taken place over the last probably twenty years, and it's been, it's been exciting to watch Arizona grow.

Then, of course, California and Nevada said, "Hey, you know maybe this is a way for us to get some water. If we pay for you to put that water in the ground, then in a drought or when the river's in a shortage supply, we can take water out of the river, you'll pump that out of the ground and put it in the canal." That's worked out well. I think that you referred to the fact that California was looking for some water. I think that California and Nevada are both banking water. What I'm not sure of is whether or not California has yet made all the agreements necessary to figure out how to get it back out, and all that kind of stuff. I think that Nevada may have. I'm not sure California has.

But that, what little I know about that comes from what I read in the newspaper, which is not a very reliable source (Laugh) of information, as it turns out. If you work in water and you read the newspaper, having something to do with water you realize that every story is wrong somewhere. Just, most people don't know where. (Storey: Uh huh.) So, my expectation is that's true of every other story that the newspapers write. (Laughter) Well, they're trying to figure out, you know, something that you've been doing for twenty-five years. They have twenty-five minutes to figure it out. (Storey: Yeah.) Even the best of them can't do that accurately all the time. Or any of the time. There's always something.

Storey: Well, C-A-P and S-R-P, of course, are the big things. (Erwin: Yeah.) Is there anything else managed out of this office?

Other Programs Managed by the Area Office

Erwin: Oh yes. Lots of stuff. Actually they're not, those are not the biggest things anymore. Money-wise C-A-P is still the biggest thing, because we are still building some of the Indian systems, and GRIC is the biggest. But, GRIC is building their system under . . .

Storey: GRIC is Gila River Indian?

Erwin: Right. Community.

Storey: Community.

Erwin: They are building their system under, well it's actually a step beyond Indian Self-Determination. There is the Indian Self Determination Act, which says that if you're doing something for the benefit of the Indians, they had the right to contract to do it. And so, a number of the Indian communities have contracted to do the planning, design, or construction of their systems. But Gila River's by far the biggest. I would think Gila River has more people working for them on C-A-P right now, than we have in this building. I think their staff is somewhere around a 110. So, essentially the money goes to Gila River, and we don't have a whole lot of involvement in it. Although my Native American Affairs people have some oversight. So it's kind of the same sort of oversight, similar kind of oversight, as you might have with S-R-P. But, a big block of money goes to that.

A fairly good size block of money goes to all the environmental commitments we made on C-A-P. We've done the better part of fifty Section Seven consultations, not to mention just the mitigation you do as part of the normal process of building something. So, we've got habitat that has to be managed in perpetuity, and bought, and a number of

studies that are going on for a long time, banding Willow Fly Catchers, eagle nest studies. So, a very large block of money still comes in for C-A-P, but not a lot of people in the office work on C-A-P anymore.

The O&M folks do their oversight. They do oversight of S-R-P, and that's a very small block of money that comes in. Usually when we have to do something on S-R-P lands, the city or the developers who want that done have to pay for it. They have to pay for the cultural resource studies, and the hazardous waste studies, and the NEPA compliance, and all that. It's not on the government to do that. If they want to (Storey: Uhm-hmm.) move S-R-P around, then they can pay.

We've also got a pretty sizable planning program, and a pretty sizable water conservation program, and a pretty sizable Native American Affairs program, that doesn't have anything to do with C-A-P.

We're working with the Navajos, quite a lot. The commissioner, Martinez, Commissioner [Eluid L.] Martinez[11] signed an M-O-U [Memorandum of

11. Commissioner Martinez participated in Reclamation's oral history program. See Eluid L. Martinez, *Oral History Interview*, Transcript of tape-recorded Bureau of Reclamation Oral History

(continued...)

Understanding] with the Navajos. We're doing a lot of water conservation work up there. The Navajos have huge water problems. I mean we could spend all of our money, everything we get, on the Navajos and still, and they'd still have water problems. The planning program involves both Indians and non-Indians.

In southern Arizona we've got a couple of pretty big water studies going on. It kind of spawned out of some of that stuff that we were doing for reliability. We started working with the Northwest Tucson folks, Napa Valley and Marana, and not Napa Valley, Oro Valley, Marana and Metropolitan Water District to kind of figure out what they ought to do as they became C-A-P water users. They took that allocation from Tucson and were trying to figure out what to do with it. Now, you know, it's kind of a broader thing.

We were also involved in looking at effluent reuse. When we got the Title Sixteen legislation in '92, or so, it gave Reclamation the ability to work in the water reuse arena, which makes a lot of sense because we're not going to build a lot more C-A-Ps or Hoover Dams, we're going to have to conserve

11. (...continued)
Interviews conducted by Brit Allan Storey, senior historian, Bureau of Reclamation, during 1996-2001, in Washington, D.C., and Santa Fe, New Mexico, edited by Brit Allan Storey, 2006.

water, reuse water, and then see what else we have to do to get water. We still need water supplies, because people keep moving here from New Jersey, and when they turn the tap on they expect the water to come out.

"The West's Water Supply Problems Are Not Solved"

So, the West's water supply problems are not solved, by any means, but how we do them is changing. (Storey: Uhm-hmm.) So, we're looking more at managing water than moving it. No more 300-mile canals from the Colorado River to Tucson. So, we're doing quite a bit of work on reuse. We've got a study going on in Tucson. We have got planning studies going on all over the place. We did a very large on the west side of Phoenix. And, it's really, they're really locally led, and we're doing a lot of technical assistance, and we're helping them, partly because it affects C-A-P.

The westside cities, there are a number of westside cities who are small, and don't sit on the canal, like Phoenix, and Glendale, and Scottsdale. So, how they take their C-A-P water and use it is a question for them. And they're going to have to do it together. It's not likely that they can all build individual treatment plants and pipelines. So, they, it took them a while to kind of form a group, and that's what's happening in a lot of places in the

state, where the water resource issues are now. A group of some sort needs to form. They need to all agree that there is an issue to be resolved, and then, if we can help them, great.

The state has a Rural Water Initiative and we're working with about half of the state rural group. So, but even in Phoenix, those cities needed to get together and they're coming to some resolution on what they want to do. Meanwhile, the cities on the east side, which have figured out how to take their C-A-P water, are also beginning to recognize that water reuse is in their future, and they're looking for us to help them look at that. We have a large study with the city of Phoenix, that was authorized in Title Sixteen, to look at water reuse from the 91st Avenue Treatment Plant, which is really the big treatment plant for the whole valley. You know, what do you do about that? And probably it gets recharged for future use.

But, at the original time that we looked at that, it was thought that the water discharge requirements would get so high that they'd have to redo the plant in order to meet discharge requirements. Was there something else you could do? And we started looking at wetlands as a treatment mechanism. And

so, we have a project that we call Tres Rios.[12] It's a demonstration project to see what wetlands could do to polish the effluent from 91st Avenue. We've been doing that for the better part of ten years, to get data, but it looks like, rather than needing a treatment wetland, we probably just need to maintain what's [flowing?] growing in the river as a result of the treatment plant. Because basically we built the Salt and Verde river dams. The Salt River's been dry for, you know, the better part of the last hundred years. The only thing [flowing?] growing in the lower Salt is because of the effluent from the treatment plant.

So, how do you keep that kind of thing, and make sure the water quality is good, and what you don't need for agriculture or the Palo Verde Nuclear Generating Station, how do you recharge that for potable use? We've actually wound up now, kind of breaking that project in two. The Corps of Engineers has a restoration authority. They are looking at, what do you do to keep the habitat down there. And once the water goes through that area, and is available for recharge, we will look at how do

12. Congress authorized the Tres Rios Demonstration Constructed Wetlands Project in 1992. It is a cooperative among the Bureau of Reclamation and the City of Phoenix, along with other federal, state, and municipal agencies, to design and construct facilities for environmental purposes, groundwater recharge, and direct potable reuse. The constructed wetlands consist of 800 acres.

you reuse that water for municipal supply. So, we're working together on that.

Northern Arizona, all over northern Arizona, we've got stuff going on, the Payson area, the Safford area. The Safford area we're doing some geomorphology. In the Payson area, there you've got a situation you have in a number of places in Arizona. You've got a community surrounded by National Forest, small aquifer, growing like crazy, no idea where the water's coming from. Williams, which is the Gateway of the Grand Canyon, in part of northern Arizona has already got growth moratoriums in place. City of Flagstaff, their reservoirs in this drought, I mean they do okay until there's a drought, and then they're really in trouble. The Navajo and the Hopi all need water. So there's a very large study going on in northern Arizona which involves all those partners in kind of a planning effort.

And, at the same time, all those partners in a water settlement effort, because the Little Colorado [River], which flows through the Navajo Reservation, the Hopis and the Navajos are looking for a settlement there. They're also looking for a supply of water for the Peabody Coal Mine. They mine coal and they slurry it to Laughlin, to the Mojave Generating Station, and they're using the ground water. The Navajos and Hopis don't want

them to use the ground water anymore, because they think it's affecting springs, and other things. But, they don't want them to stop, because that mine is a huge economic boon, particularly for the Hopis, but also for the Navajos. So, they're in a tough position, right? They also need water for other communities.

The Navajo Nation is so spread out it's hard to get water, and they don't always have a ground water source. The generating station needs to put on scrubbers, but they're not going to put on scrubbers until they're sure they've got a coal supply. They can't be sure they've got a coal supply until they're sure they got a water supply. So, the whole thing, all of northern Arizona is kind of all bundled up together, in a mess, and we are working, technically right now, as kind of support to the Department [of the Interior] and to the parties on just looking at alternatives. We have a big meeting tomorrow to present one of the alternatives for a Peabody water supply, and a municipal Navajo water supply to the community, and the Hopi communities it goes by on the way. So, there's all kinds of stuff.

Northern Arizona Water Supply Issues

Northern Arizona had got huge water supply issues, and no easy place to get it. If you take out of Lake Powell, that's upper basin water, because the

water's divided at Lee's Ferry, going to a lower basin use, that's a no no. We looked at a place to take it out of the Grand Canyon, at around Marble Canyon, or out of the river. Even though we think we could horizontally drill something and put it in filtration gallery and then in the end no one would see. The environmentalists don't like the idea. The Sierra Club doesn't like the idea. There's somebody that doesn't like the idea. That's a tough one. Pipelines from groundwater, groundwater use. There's just issues. Nothing is simple, but there are lots of options.

So, technically we're just helping people try to sort through the options. Ultimately you could see that, if everyone could partner in some way–and that might even be when they were thinking of a pipeline, the pipeline could come down to the Navajos, to the Hopis, to Flagstaff, to Williams, and maybe even to Prescott. I mean physically you can see the system, there's just so many issues to be resolved. I mean if we resolve it, it'll be years from now, but it's an exciting thing to be part of, because ultimately something's going to have to happen for that part of rural Arizona. The northern part of Arizona.

Storey: It seems like it would just be a bookkeeping problem to deliver water out of Powell?

"It's Like a Chip in a Larger Game"

Erwin: Ah, yes, but nothing is ever that simple. (Laugh) You know, you could call it a bookkeeping problem, and yet it's like a chip in a larger game. The Navajos are not happy that we've been working on this Gila River thing, and that we are kind of reallocating C-A-P water. They think that they have mainstream Colorado River water rights, and how can we reallocate the last of the C-A-P water without discussing that. So they sued us. Well, that's got everybody upset, and so, you know, whether or not somebody would allow upstream water, up-river water, upper basin water to be used in a lower basin, would have something to do with, "Who did something else?"

Arizona's always been a little worried about that kind of thing. The Navajos have a project that upper Colorado's doing, it's called Navajo-Gallup Project. It would take water out of the upper basin to Gallup, in New Mexico. Well, Gallup's in the lower basin. Okay, so there's one problem. But, then it makes a lot of sense if you're going to Gallup and you need water on Window Rock, Arizona, you know, which is like thirty miles away just to come over here with a pipeline. But now you've taken–it was bad enough that you took upper basin water to a lower-basin use in New Mexico. Now you're taking New Mexico water into Arizona.

Hah! (Laughter) You know. On paper, physically, it makes sense. Institutionally it's a disaster. But, you know, those things are going to have to be melted together.

Those are some of the changes that are going to be difficult. Some of those institutional things are going to change. Some of them aren't. And it's, it's kind of a, you know, it's anyone's opinion how much they're going to change, whether the whole law of the river is just going to get blown out of the water and completely revamped in some way, or whether the basic law of the river is going to stay the same and we're going to mess with the edges to allow to be done what needs to be done. You know, to some degree, you know, if, you know, somebody doesn't like that, the question is, "What is it that they need to do?" And, "Can you make enough little changes to make everyone happy? Or is there no way to do that?" You know, sometimes from an engineer's point of view you look at something physical and say, "But this makes so much sense." But, it's not the physical that gets in the way. It's the institutional and legal stuff that has, that has grown up over all those years, and that is, it's either impossible to change or it looks impossible to change. (Storey: Uhm-hmm.)

But, you know, but then again times change, and you know, we're already doing things that people

thought were impossible. So. It might be simply a matter of time.

Storey: And we're participating in these studies, technical mostly?

Reclamation's Participation in Technical Studies

Erwin: A lot of the studies were technical. I guess there's a question with some of these as to whether or not if a pipeline or some sort's ever built, who would build it? We might wind up building it, or not. For the most part they're kind of stuck with federal involvement in something like an E-I-S anyway, because if it's going across tribal land, as soon as you get into any kind of right of way issue it triggers NEPA. You know if there's any significant federal involvement, it triggers NEPA. I don't think they can go in there with their own money and just build it, and that's one of the questions that may come up, tomorrow, you know. But, it's a question of "Who trusts who? Who can come up with the money? Whose budget can it go in? How do they get this thing done?"

But I know that for Peabody, I mean, these people like Southern California Edison, they're, you know, they're interested in getting something resolved. Because they can't afford to put a billion dollars worth of scrubbers on the Mojave Generating

Station, if they're going to run out of a coal source. Or, which would happen only if they ran out of water. It's like a big puzzle, and I'll go back to the first thing we talked about. Alright, depending on whether you have a pretty high "fog" index, or whether you're analytical. It's almost, you know, "Do you like to solve puzzles?" And, this is a little bit like taking two puzzles, mixing them together in a box, turning them upside down so you can't see the picture, then putting on a blindfold and trying to put them together. (Storey: Uhm-hmm.) But if you're perverse enough to think that that's a challenge then you should do this kind of thing. And if that would just drive you nuts, you should work somewhere else.

Storey: Going out and taking the pieces and making it fit?

Difficulty in Putting All the Pieces Together

Erwin: Well, and figuring it out and thinking you have it and then finding that the last piece doesn't fit and throwing them all aside and starting over again. (Storey: Uhm-hmm.) I mean, this resolution, I know that they're all in a big hurry to get it done, but it may take several years. (Storey: Uhm-hmm.) And, you know, it, you don't know what the picture's going to look like at the end. All you know is that you'll keep putting those pieces together until it clicks. And, you won't really know

it has clicked until you're on the way to building it, and even then you may not know. I mean, they think they knew what Animas-La Plata was going to look like, and it went from like Animas-La Plata to Animas Light, to Animas Non Fat or something. I mean, what they're currently building doesn't look anything like what they first thought. One of the things you learn about planning is, you know, "It ain't over til it's over." I think a famous (Storey: Uhm-hmm.) Dodger once said. (Laughter)

Storey: What about other issues you're working on? That this office works on?

Erwin: You mean that's not enough? (Laughter)

Storey: Oh, I'm interested in exploring the whole scope of things.

Water Conservation and the Planning Program

Erwin: I think that most of it, most of the issues we're working on are probably covered somewhere in our Water Conservation and Planning Program. The local groups that are trying to figure out what to do on helping them figure out what to do. And a lot of those cases we don't anticipate that that's going to end in a federal project. But, we've got a lot of experience working with multiple partners to try and figure out issues. And, a lot of these

jurisdictions don't have much experience working with multiple partners, (Storey: Uhm-hmm.) so, we're trying to do what we can to help that out.

I need to take a break.

Storey: Oh. (Pause; tape turned off.)

Erwin: All except I'm going to sneeze but, maybe not right away (Laugh) so we'll just have to wait.

Storey: Tell me about Area Office relations with the two major projects, S-R-P and C-A-W-C-D, which now has refashioned itself as C-A-P, (Erwin: Uhm-hmm.) I guess?

Area Office's Relationship with SRP and CAWCD

Erwin: I think, I think they're actually pretty good. They have been for a long time with S-R-P. I think, I think in general, before I took this job there was a kind of laissez faire relationship with S-R-P. I don't know how much we did. But, our Lands people worked, because we have to, we own the land, every time they move something. And that involves environmental compliance stuff. A lot of that cultural resources, because sometimes the cultural resource laws are triggered for something that wouldn't trigger NEPA, (Storey: Uhm-hmm.) ordinarily, so. But, we have worked out an

agreement with the State Historic Preservation Officer and S-R-P that really helps deal with the small laterals that are not really culturally significant. And, we actually had a meeting the other day and we're working with them to try and see if there's something we can do on the land stuff to really help the cities move things a little bit faster. But, you know, they're pretty good at involving us in the reviews and things.

And, I would say that our relationship with S-R-P is pretty good. And, our relationship with C-A-W-C-D I think is improving. Sid Wilson and I have lunch every six weeks or so and talk about things that are going on. And, as we, when we were in the litigation it was difficult. It's hard to, you know, I went to the courtroom once just to listen to what people had to say. After that I walked away and I said, "I'm not going to do that because it's just going to make it more difficult for me to work with people afterwards. I don't want to hear what they said, because ultimately it won't make any difference." But, I think for the most part, a lot of people who work for C-A-P used to work for us. You know when they, we designed and built the control room, and the whole control room staff just moved. So, people have still friends there and I think that we, we were working out the relationship. And, my guess is this is exactly what S-R-P went through with Reclamation when S-R-P was there,

and what every project goes through. It's kind of a, you know, "Oh, this is our, this is our little girl and we just let her marry somebody and we're not sure we want her to move out of the house," kind of a feeling.

But that's you know, they're developing–C-A-P is developing their identity. It's very difficult for us right now, because when we say C-A-P we mean the ditch in the ground (Storey: Uhm-hmm.) that we're still working on. Okay? Even though it's substantially complete and been turned over to C-A-W-C-D for O&M. When we say S-R-P, we mean the canals, and the people who live on Project Drive. Well, eventually, certainly in the public's mind and eventually in our mind, when we say C-A-P we will mean the canal, and the people who live on North Seventh Street. It's just very difficult for us to do that. But it will, it will come about. (Storey: Uhm-hmm.) And it will make sense.

I mean eventually, I think they changed their name, but I'm not sure how well its gone over. But eventually it will. I think right now, if their board members are elected, I think you'd see the election documents probably say, "Election to the Central Arizona Water Conservation District Board." But, eventually the public will come to know them as C-A-P, as they're already doing. I mean I suspect when there's an election, it's the Salt River Valley

Water User's Association or Power Improvement District Board. But, everybody calls them S-R-P. (Storey: Yeah.) So. It's coming to that. It's just hard for us, because we're still in the middle of C-A-P. We're still building Indian distribution systems. So, C-A-P is the project, not the people. It will be eventually. (Laugh) It'll be hard but it'll get there eventually.

"In This Position You Find Yourself in a Position to Influence Things"

You were asking about things that this office takes on. There are things that I, that I take on too. It's kind of odd, but in this position you find yourself in a position to begin to influence things if you feel like influencing them. And, I think one of the things that Reclamation is struggling with is what it is, or who it is. Still struggling. It's been struggling since '88 when we reorganized.[13] And, I think that there's a big struggle between big offices like mine that oversee some construction, oversee some operation, and the offices who do their own operation.

13. The "88 reorganization" is best represented in Reclamation's *Assessment '87*. The report marked a dramatic departure for Reclamation by recognizing that the construction era had ended, and that Reclamation needed to discover new and innovated methods of conserving and better utilizing water in the West.

My office, well, would get a bunch of C-A-P money. As I said, it's largely either Gila River's building their system or commitments that we've already made. The office is largely working on planning studies and water conservation and helping other people do water management, and looking at where these future water supplies are coming from. They're going to come from conservation and reuse and then who knows where. Offices that are largely O&M are looking at keeping their facilities together. And there's, I think, kind of a big debate in Reclamation right now about sort of who gets, who gets what? Should all the money go to keeping facilities together? And, do these other programs like water conservation and planning siphon off too many resources.

And, I had the opportunity not last year, but the year before to be on the B-R-C [Budget Review Committee], which is a great opportunity to see what Reclamation does. It's fascinating. But, I also see that what I saw there continuing in this whole definition of core mission. If you look at the mission statement it says, "Manage, develop, and protect." (Storey: Uhm-hmm.) But, all that I see right now, people talking about in terms of core mission is "deliver." Deliver water and power. And to me, that says, "Deliver water and power from what you already built." Where's the future in that? There has to be a future. If there's not a

future, we will rapidly become irrelevant. You can do title transfers and get rid of all your operating facilities, if you want to, and then where are you?

"The Bureau Has to be in the Middle of Continuing to Solve Big Water Problems"

You have to be, the Bureau has to be in the middle of continuing to solve big water problems. And whether that's building a project, which someday we will do again, or just helping people with their water issues. Particularly in this region, we are very different. We don't have many projects. There is some concern that, well, you should be funding everything through projects. We shouldn't have a water conservation fund, we should just have a projects. Put some water conservation money in our projects, to work with people. Well, in this region, we don't have very many projects. We have S-R-P and C-A-P. Okay, so Central Arizona's kind of taken care of. We have Yuma. There's a couple projects in the Yuma area, well, Mohawk and Yuma. That's it. Southern Nevada is not a Bureau project. The Los Angeles Aqueduct is not a Bureau project.

The biggest problem we have right now is with Southern California needing to get off Colorado River water and get back to 4.4. That's not a project. If we do water conservation in southern

California, that money had to come through a project. What project would it come through? We don't have one in Southern California. That project focus does not work for this region. (Storey: Uhm-hmm.) And I think that ultimately it doesn't work for Reclamation, in that, are you telling me that if money has to come through an existing project, Reclamation will never have a new customer, that we hadn't had before? Then what happens to all the Indians? What happens to all the rural areas?

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Storey: [What] happens to all the new folks?

All Water Supply Problems Have Not Been Addressed

Erwin: All the folks who have water supply problems that haven't been addressed? Now, if someone will say, "Well, there's not enough money to go around." And that's true. That's always true. But we have plus or minus $800 million. Don't tell me you can't do great things with $800 million. It's a case of is that half empty or half full? You know. It, at $800 million the planning program's probably $12 million. You know, the water conservation program is, I don't know what it is. Something similar. So, you've got to have room for addressing the future problems. That's my view of the world, but it's not

everybody's view of the world. So, it's just going to be interesting to see where Reclamation goes, in the future. I think we're still, we're still struggling over who we ought to be.

Storey: Yeah, there's that tension.

Erwin: Well, you know, but to the extent that I have a pulpit to preach from, (Laugh) I'm more than willing to tell people what I think the answer should be. (Laugh) (Storey: Uhm-hmm.) And I do that occasionally. I may or may not win, but I'm certainly going to play in the game. (Laugh)

Storey: So, is this what you see as the current big issue in Reclamation?

Erwin: Yeah, I do. I think we haven't reached, yet, a real, a real corporate way to deal with money. And I'm not sure that I know the answer to how to do that. Reclamation, I think has to be very very careful. I think we are effective, largely because we're autonomous. The regions deal, you know, there's not a lot of centralization in Reclamation and what there is, in my view, doesn't work. The fact that we're out here dealing with our own constituents and understanding what they need. I think if you go to the Pacific Northwest you'll see that there are salmon issues and here there are reuse issues, and get in California of 4.4 is going to take reuse and

conservation. If you go to Upper Colorado it's something different. If you go to Great Plains, it's rural water, or Indian projects. We're effective because we're able to deal with our different constituents differently. I mean there has to be some level of, you know, service, I guess, that's–what's the word I want? Consistent. But, it's that autonomy that allows us to be effective.

At the same time, if you're going to share $800 million, you need a little bit of corporate philosophy, at least a little bit. And it's, when you have those autonomous groups, Denver and the regions, it's hard to get together and as a group say, "For the good of Reclamation, we all need to give up a little money to do that." That's a tough thing to do. But, that's where we have to continue to go. And I think that that was partly what the B-R-C was created to do, was to try and bring a corporate feel to it. But, I don't think you can go, you can't go entirely corporately.

And what has happened is everybody puts forward their budget and then they're told that, "Let's assume for a minute we don't get all the money we want. Tell us what you're going to cut." And what each region cuts is different from what other regions cut. And, but that's their best understanding of how to deal with their clients. And I think that that probably needs to continue. And that sometimes the

B-R-C makes some over-arching political decisions about what it ought to do, and that's where I think we get in trouble. Everybody tries to second guess what O-M-B and the secretary would want to say. At the same time, if you try to create a budget, with that stuff already put in it. Who goes forward and says to those people, "This is what we should be doing." You never have a budget that says this is what we should be doing. And, I think that's what we should be doing. But, at the same time, there are people involved in the Bureau of Budget that have a lot more experience at it than I do. So, there are times when you have to bow to people who have more experience. So, the B-R-C was fun, because I got a chance to say all that stuff. But, there were a lot of people there who have other experiences too.

Storey: Who was on that with you?

Budget Review Committee

Erwin: This B-R-C, Bill McDonald was the chairman. Bob Wolf is always on it, because of his budget role. Jerry Kelso [spelling?], who is the assistant or deputy, I'm not sure, R-D [Regional Director] in Great Plains was on it. And Mike Gabaldon was on it. And I'm not sure I'm not forgetting somebody. Not every region is represented. I think there was somebody from M-P and I don't think he got to stay for the whole thing. I don't remember his name.

(Storey: Hmm.) But, it was a pretty interesting group. And then, then there's staff. Some of Bob Wolf's folks are staff.

Storey: It takes a lot of travel and stuff, doesn't it?

Erwin: Well, we get together and do some work and then there's a regional presentation. And, in our particular case, it was like five days, and then the following day we did Denver and the Washington folks in Denver. So it's seven or eight days of doing that kind of thing. But, you got some pre-work to do to start with. You go through every region's budget, and you meet and talk about, there are, there is a Resources Group and an O&M Group that meet as kind of B-R-C staff. They go through the budgets and they come back and give us a presentation, give us a presentation on what they thought the issues were. We work through the kinds of things we wanted to ask the regions. Then we met with the regions, asked the questions, and then we get together in the end and start looking at, "What do we think that the O-M-B and Department target for the budget's going to be? How much did everybody ask for?" You know, "What are we going to do about the difference?" Because there's always a difference, and there's always items that people want to add if there's money. And, do you add those or don't you add those, or how do you deal with that? That's the interesting part.

But, I thought it was fascinating. You could look at that and say, "Oh this is a terrible thing I have to do." But I loved it. Money is where, you know, where all the power in the organization is, where the real decisions are being made, so. (Storey: Uhm-hmm.) I enjoyed, and plus it's a great opportunity to figure out what the rest of Reclamation is doing. I can't think of a better way to do that (Storey: Yeah.) in a short period of time, I mean, as opposed to working in all the regions and Denver. It's a great way to find out what the organization does. So, I loved it. (Laugh) It was a good experience.

Storey: One of the things that's been going on is the downsizing in the staff here. Could you talk about that, from your perspective?

Phoenix Area Office Downsizing

Erwin: Oh yeah, that has been interesting. It was a very difficult thing, I think for a couple of reasons. One is, intuitively people knew it would happen. Particularly the construction folks, because they all had come from somewhere else. But, C-A-P was so big and took so long and they spent so much time here, that a lot of people thought, "Oh god, I'll retire before this happens." Right? And not everybody got to retire before it happened. It would have been particularly ugly if it hadn't been for the buyouts that happened, because the buyouts took quite a few

people very close to retirement, and otherwise some younger people would have lost their jobs. But, when you look around there's not a lot of younger people, as it turns out. A lot of people left. They kind of saw the handwriting on the wall.

But, we wound up doing six RIFs in six years. One of the difficult parts for the construction folks, too, is even though it had been a long time, you know, they had been used to moving. There was no place to go. There was no construction project. Animas was way behind schedule. There was no place to go. (Storey: Uhm-hmm.) So, if you're a forty-five-year-old construction inspector, you are in a world of hurt, unless you wanted to go do something else. You're too young to retire, and there was no place to go. Those were the people that had a really tough time. In some cases, you know, we were able to RIF positions that weren't filled, but by the time we did the sixth RIF–the sixth one was mine. I decided to do it. Hard decision. It was twenty-nine people and they were all real bodies and jobs. And, you know, if I look back on it now, I think, "Well, we probably should have gone another ten, twelve people." But it would, it would have been difficult. So, you know, we went through a big process and we did the best we could do to figure out where we ought to stop. At this point, I still expect that over a period of years the staff will go down to maybe eighty. I mean that was

always Larry Morton's thought and I don't think he was very far from wrong. I mean, that's about how many the office had in it, before C-A-P. I mean, the early sixties this was the Phoenix Development Office and they were doing planning studies. And so the thing went way up and then it's come way down. It's just like, you know, we're back to where we probably should be pretty soon. But, I think it would be very slow.

We've got lots of people, I mean the majority, probably the average age of the office must be fifty, or you know, late forties. (Storey: Uhm-hmm.) There might be two people in this office in their twenties, and a couple in their thirties, and everybody else is in their forties or early fifties. So, it's, it's the same age in workforces everywhere else. But, rather than, you know, getting to hire students and stuff, we're still getting smaller. So, I expect that the office will get smaller. But, you know, it's not, it's just not likely that even though you can walk around and say, well, there may be some positions we could eliminate. Doing a RIF is such a demoralizing, painful, expensive thing. I mean, you go through a process, and so you're spending a lot of staff time, so it's expensive. And, then you still have to, you know, be paying retirements or whatever you do. But, it's so demoralizing. All you have to do is whisper the word RIF and the morale of the organization goes

boom, straight down. And there's really nothing much you can do about that.

One of the thing's that's been interesting in this office, and I think one of the reasons I wound up with this job, is that there was a role to play after C-A-P. But, it wasn't altogether obvious to the construction folks. In fact the construction folks are not largely in it, at least not at the moment. And that was another transition that was going on at the same time, because C-A-P was ending. The planners were the first one's out of work. We figured it out first. If we didn't find something else to do, we were out the door. Okay? (Storey: Uhm-hmm.) So we kind of looked around and said, "Well the rest of Reclamation does something. There's nobody else planning a C-A-P. So what does the rest of Reclamation do?" We didn't even know way back then. We weren't even smart enough to know that money was appropriated in, at the time, in three funds, Construction, O&M, and General Investigations which is planning. (Storey: Uhm-hmm.)

That structure has since been changed a little, but at the time that was the structure. We were too dumb to know that. Those of us who had been working on C-A-P for years, we were working on C-A-P money, which was construction money, and didn't know anything about anything else. Okay?

Well, the planners looked around and said, "Whoops. We're going to be out of work. What does the rest of Reclamation do?" So we took a look at the budget, and there were all these line items in the budget. Water conservation, and examination of existing structures, and all sorts of things. And we said, "Hey! We could do these things, right?" And then we looked around at the state and we put together a process. That's what planners do. And we said, "You know, there's problems all around this state. What do we know are the problems? What kind of programs does the Bureau have? Where can we go look for money?"

And we first did this in about 1995, I think, for money that would be in the 1997 budget, so it's like a two-year span. And, for the first time we started to put together some money in this office for something other than C-A-P. And, I think as we ended the RIFs and things were beginning to move, there were just a lot of people here who didn't believe there was any life after C-A-P. Well, I was convinced I knew better, but that's partly because I was a planner and I gone through this exercise to figure out, you know, the rest of Reclamation does something. There must be something we could be doing here. And there was. There was lots of things. And so, we've gone, in that span of time, from having nothing but C-A-P to having the majority of our people work on other programs,

working all over the state, doing all kinds of things. And we pretty much did that on our own. We didn't get a lot of help from anybody else. We just figured it all out, and started looking for things to do. So there really was life after C-A-P, but it took a while, and the transition internally has also been difficult. Construction was king for a long time.

The design and construction folks, all the C-A-P money was kind of coming to them. They never did figure out what these planning yahoos over here were doing. Pretty soon, when things changed, the money was coming in through the planning program, there wasn't much money going to design and construction. We couldn't figure out what those yahoos in construction were doing, and for a long time the office was kind of divided. It was like, I don't understand why you people have jobs. We don't understand why you people have jobs. And it took a while to kind of meld them into, "Hey, there's the possibility here for everyone to have a job, if we work together. We need the planners out there planning, but they need the design people and the NEPA people doing, helping them come up with their plans. And, you know, if there's a possibility to do some construction out there, you know, we'll keep that, we'll keep that hope alive.

And in fact, we're going to build fish barriers as part of mitigation we're doing for C-A-P." It's like,

"Why do you have to build fish barriers?" We said, "Oh, what a shame, you know, that's construction." (Laugh) Throw me in the briar patch. Don't throw me in the briar patch. But, it just took a while I think to move the office through that. I think they're there. I think most the, you know, if you sat down with people and they had a minute to reflect and you said, "Do you know where the office is going?" They should know. My managers all know now. And, is there life after C-A-P? Well, obviously there is, because we're living it. You know, the C-A-P money is going pretty much to GRIC, and there's some things we're doing, but the majority of people in this office are not funded out of C-A-P. So there is life after C-A-P.

Storey: And you're having fun, I take it?

"You Should Always Do Something You Love"

Erwin: I love it. I love it. (Laugh) First of all, you should always do something you love, because there's not enough money to get you out of bed otherwise. (Laugh) No, I think this is great. And I like the management part of it too. I didn't, you know, that is always a risk you take. When I first became a supervisor, when I became the head of Planning. I didn't know, you know, exactly what that would mean. I mean, when you're a planner you spend a lot of time working with teams of people. That's

what you do. You have planning teams, and you have the public, and you're constantly working with people. That's a little different than supervising people.

But it turns out that I liked it, you know. I guess you have to do it to find out if you like it. And there's, there's management problems, and people gripe, and you need to fix problems, but you know in a sense that's all a planner does, is try to solve problems. So, you know, I don't mind if the union has a problem. I don't–I'll fix that too. I enjoy it. You need to get people together and think about what they really want, come up with options that help everybody. There's usually a win-win way to do things. And, I have found, in my experiences that when management has a problem with E-E-O or union grievances, they're usually getting exactly what they asked for. (Laugh) If management had had, you know, one ounce of flexibility, they wouldn't have the problems they were having. So, I have not found management to usually be blameless. (Laugh) At all. Yeah.

Sometime, in fact, I was on, Reclamation has a Reclamation-wide Union Management Partnership Council. Well, you're not allowed to call it a Partnership Council right now, because that's a politically incorrect term but, because that's a Clinton-term. (Storey: Uh huh.) But that's still

what it is. Everybody figured out that you can either spend all your money fighting each other or you could figure out how to get along. Figuring out how to get along is a lot smarter. So, at the Bureau level, I was on the Partnership Council for a while. And, I think one of the things I always loved about the Partnership Council is that it was equal union and management, but if you came in to talk to us, without being introduced, you would not have been able to tell who was who, for the most part. And, I think that for ninety percent of all the problems I ever heard, you know, my solution was hit management over the head with a two-by-four, it was their fault. (Laugh) Get them to see the light.

Storey: Well, speaking of management, how has management changed since you came to Reclamation in '81?

Reclamation's Management Change Since 1981

Erwin: Oh gosh, there's been all kinds of things. One of my favorite, one of my favorite things to talk about is diversity. Diversity is a big issue with everybody, but I think we miss that there's more than black, white, male, female, young, old. One of the things that I love is that you're starting to see people in positions that, in the old Reclamation, wouldn't have been okay. I don't know how economists were thought of in the old Reclamation, but if you look at

our region, Bob Johnson's and economist. LaGrande [spelling?] was not an engineer. Bill Renny [spelling?] was a biologist. He's gone on to be the chief operating officer, right, in Washington. Our assistant regional director, Lori, is from the human resources side of the organization. Tim Ulrich, who's running Hoover Dam is an economist. Gary Bryant, who was running Yuma and now works at Hoover with Tim, is a biologist. (Laugh)

So, I would think that, you know, twenty years ago that would have been nearly unthought of to have people in those positions that were not engineers. So, I think that that's neat. Because you have different ways of looking at things. There are, were not a lot of women in management in Reclamation, yet they're there. And I don't see that they're treated any differently than anyone else. You know, Maryanne Bach is a regional director. Connie is the new assistant regional director, so is Lori. Liz Harrison was an area manager, and she moved into management. Margaret Sibley's [spelling?] in management. There are, I think, four of us who are area managers right now, out of about two dozen area managers. I guess someday you'd expect it to be 50/50, but you're also still coming out of the ranks of engineers and scientists who, you know, if you look at who's available to you in the ranks of engineers and scientists you're not going to see a 50/50 population. (Storey: Uhm-hmm.) It

just, it just isn't.

People our age, there weren't that many of us coming out of engineering school, or whatever. So, I think that in that kind of diversity we're doing well, but I think in the diversity of disciplines who are now moving into management positions, I think, Reclamation's doing great. And that's good because that's what helped move Reclamation forward. I think it's clear that we're not going to do–I think, I think we are still water supply developers. That's what we do. That's what we need to do. And the West still needs water supplies. But we're not going to do it the same way. We're going to manage instead of move. So, we're going to do water conservation, we're going to do water reuse, we're going to look at groundwater recharge, before we build a dam to store water. But I think it's all still in the direction of water supply. But, we're doing it for, instead of just Ag, now we've got cities, we've got Indians, we've got recreational people, we've got the environment. You now, user base has gotten bigger. So, to some degree the problem has gotten bigger.

And, we're only going to solve those problems kind of in a group context, because you need all the creativity you can get. And, for Reclamation, the more different kinds of people you have involved the better off you are. Because I think economists,

and H-R people, and biologists are going to look at things differently than engineers. (Storey: Uhm-hmm.) And that's good. And then when you put them in a group, then you get everything, instead of one thing. So I think that's neat. We're moving in the right direction.

Storey: Hmm. Is there anything else we should talk about today? Now that we've gone three and a half hours, more or less.

Erwin: Oh heavens, I don't know. I'm sure there is, but nothing jumps out at me.

Storey: Well, let me ask you for today, then, if you're willing for the information on these tapes and the resulting transcripts to be used by researchers.

Erwin: Oh yes, why not?

Storey: Okay.

Erwin: What are they going to do fire me? They can't fire me. (Laugh)

Storey: Thank you.

END SIDE 2, TAPE 3. APRIL 28, 2003.
END OF INTERVIEW.