ORAL HISTORY INTERVIEW

Joseph I. Burns

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STATUS OF INTERVIEW:
OPEN FOR RESEARCH

♦ ♦ ♦ ♦ ♦ ♦

Interviews Conducted and Edited by:
Donald B. Seney in 2006
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INTERVIEWER: DONALD B. SENEY

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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.

In the case of the Newlands Project, the senior historian consulted the regional director to design a special research project to take an all around look at one Reclamation project. The regional director suggested the Newlands Project, and the research program occurred between 1994 and signing of the Truckee River Operating Agreement in 2008. Professor Donald B. Seney of the Government Department at California State University - Sacramento (now emeritus and living in South Lake Tahoe, California) undertook this work. The Newlands Project, while a small- to medium-sized Reclamation project, represents a microcosm of issues found throughout Reclamation: water transportation over great distances; three Native American groups with sometimes conflicting interests; private entities with competitive and sometimes misunderstood water rights; many local governments with growing water needs; Fish and Wildlife Service programs

competing for water for endangered species in Pyramid Lake and for viability of the Stillwater National Wildlife Refuge to the east of Fallon, Nevada; and Reclamation's original water user, the Truckee-Carson Irrigation District, having to deal with modern competition for some of the water supply that originally flowed to farms and ranches in its community.

The senior historian of the Bureau of Reclamation developed and directs the oral history program. Questions, comments, and suggestions may be addressed to the senior historian.

Brit Allan Storey
Senior Historian
Land Resources Division(84-53000)
Policy and Administration
Bureau of Reclamation
P. O. Box 25007
Denver, Colorado 80225-0007
(303) 445-2918
FAX: (720) 544-0639
E-mail: bstorey@usbr.gov

For additional information about Reclamation's history program see:
www.usbr.gov/history

Oral History Interviews
Joseph I. Burns

Seney: In his home in Lake Tahoe, California. Whoops. Oh, that's just the tape. Today is September 14, 2006. This is our first session and our first tape. Good morning Mr. Burns.

Burns: Good morning.

Seney: Why don't you begin, we'd like to know a little bit about the people we're interviewing, so where you were born, and when, and a little about your upbringing and education, and how you came to be involved in water policy matters.

Born in Chula Vista, California, in 1926

Burns: Well, I was born in Chula Vista, California, in 1926, and growing up in Southern California you get kind of an interest in water. (Seney: Right.) Yeah. My father was involved in the lemon Sunkist packing house (Seney: Ah.) and so you're kind of introduced to water. (Seney: Right. Right.)

Enlisted in the Army at the Age of Seventeen and Was Sent to Various Universities for Specialized Training

And, of course, World War II came along and I enlisted in the Army at seventeen. Went in[to][1] the Army Specialized Training Program, got sent up to the University of Idaho for a couple of quarters or semesters. Then [when] you turn eighteen ~~and then~~ you go back into the "regular" Army, (Seney: Right.) and went through basic training, infantry basic training, Camp Wolters, Texas. Of course, at that time, for the Philippines going to, things are going (Laugh) a lot of problems in Europe (Seney: Right.) things are sort of . . .

Seney: What year are we talking about?

Burns: Nineteen forty-four.

Seney: Forty-four. Right.

1. Note that in the text of these interviews, as opposed to headings, information in parentheses, ( ), is actually on the tape. Information in brackets, [ ], has been added to the tape either by the editor to clarify meaning or at the request of the interviewee in order to correct, enlarge, or clarify the interview as it was originally spoken. Words have sometimes been struck out by editor or interviewee in order to clarify meaning or eliminate repetition. In the case of strikeouts, that material has been printed at 50% density to aid in reading the interviews but assuring that the struckout material is readable.

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.

Burns: And so anyway, I went to Camp Wolters and finished up the . . .

Seney: Let me pause just a second. Let me see if I can . . . [Tape Paused] Now. Oh yeah, that helped a lot. (Laugh)

Burns: Well, I finished up infantry basic training and the day we were to ship out half the battalion to Philippines, half the battalion to Europe, and they called six of us out of the company and said that, "You're going back to school." And so, they sent us to Penn State, and that was the time when the Army Specialized Training Program, they had cleaned virtually everybody out back in the service so there were only a few hundred of us up at Penn State. There had been thousands. And so, in civil engineering that's where my interest was (Seney: Ah.) so I had three semesters/three quarters there, and then [the war in] Europe [ended].

Seney: What were they training you for?

Burns: Civil engineer.

Seney: For civil engineering?

Burns: For civil engineering.

Seney: To rebuild things, was that what that was about

[inaudible]?

Burns: Well, I think, at that time, you know, they were training doctors and civil engineers. But, (Seney: Right.) we're a, I think we're back there because some of them finished to Oak Ridge, Tennessee. So apparently, I think that's where they still wanted people trained. (Seney: Oh.) So some of them finished and went to Oak Ridge, Tennessee. (Seney: I see.) So, I think that was perhaps . . .

Seney: That's what their motive was?

1st Army Headquarters Moved to Fort Bragg and He Was Sent There

Burns: Their motive was, but there were only a few hundred of us left. There had been thousands on the campus. And then the war in Europe finished and the 1st Army headquarters was moved. The 1st Army was really going to the Pacific, and the Army headquarters ended up down in Fort Bragg getting ready to go to the Pacific (Seney: Right.) theater. And so they, sent some of us, gave us a choice of going to get a commission in the communications area. Of course, then, I was just interested in getting back to school. (Laugh) (Seney: Yeah.) Sent a few of us down to the 1st Army headquarters and they said they needed stenographers. So, the

stenographers they didn't have, but they set up a little school and taught some of us to be a stenographer and taught us to type. And so, then the advanced part had gone to Japan.

1st Army Headquarters Was Transferred to New York City

But then, the war ended and then the headquarters went up to New York, went up to New York to establish the 1st Army [area] headquarters. (Seney: Ah.) So, that was sort of, and then July of '46 . . .

Seney: By the way, did you find the training as a stenographer useful later on?

". . . I just finished the school at Fort Bragg and was in working on Sunday down at the Adjutant General's Office, had a few staff on, and a call came down that General Courtney H. Hodges needed a stenographer. And so, well I said, 'I'm a stenographer,' but I said, 'I've never taken dictation.' So, they said, 'Oh, come on up,' . . ."

Burns: Well. It did. Yes, I did. In school I'd just take a few notes. I wouldn't take extensive (Seney: Ah. Sure. Sure.) notes, because the only time I really used it was I just finished the school at Fort Bragg and was in working on Sunday down at the Adjutant General's Office, had a few staff

on, and a call came down that General [Courtney H.] Hodges needed a stenographer. And so, well I said, "I'm a stenographer," but I said, "I've never taken dictation." (Laugh) So, they said, "Oh, come on up," so I went up to the, and General Hodges was the Commanding General of the 1st Army wanting to have dictation. So, I told the Colonel, his aide, "I've never taken dictation." He said, "It's all right. He's just like your father." So then . . .

Seney: Was he?

Burns: Well, yeah. I went in, but the only trouble is here when you stay in school you're a Private, (Seney: Yeah.) so I'd been a Private for a couple years. (Seney: Right.) And so, I walked in but all I can see are four stars on each shoulder. (Laugh) No, he was, he was very good.

Seney: Yeah, I'm sure.

". . . the Colonel came in and he said, 'General, General Gavin is here for his reprimand.' Major General Gavin, Commanding General of the 82nd Airborne. . . . And so, General Hodges tells him, 'Well tell the general to wait. I'm busy with Burns.' . . ."

Burns: So, he dictated some letters and we were just

finishing up when the Colonel came in and he said, "General, General Gavin is here for his reprimand." Major General Gavin, Commanding General of the 82nd Airborne.

Seney: Oh, my goodness.

Burns: And so, General Hodges tells him, "Well tell the general to wait. I'm busy with Burns." (Laugh) That's my war story.

Seney: That's funny.

Burns: And, General Gavin was in the 82nd Airborne and was back at Fort Bragg ready to go to the Pacific, (Seney: Right.) and they're still jumping training jumps. And he jumped, the General jumped anytime any of his people jumped. (Seney: Ah.) And some of them, all through Europe they said, "We've had it. [We will fight, but] we're not going to jump anymore." Maybe fifteen of them. (Seney: Right.) So, he took them out in front of the entire division, 10,000 men, on the parade ground, had them take off their jump boots, take off their patches, and march off the field. And, Congress got rather upset about that. (Seney: Ah.) So, he had a choice, Congress said, "Hey, something had to happen," so he had a choice of a court martial or a reprimand. So, he was in for his reprimand. (Seney: Oh.) But it was

interesting because, and he jumped, [inaudible] he jumped. But, they had the C-82 with the jumping out the back of the plane (Seney: Right.) between the booms and he'd been testing it, he jumped and got his chute hung up and then it came loose. So, you know, I could see his point that, (Seney: Right. Right.) he wasn't asking any of them to do what he wouldn't do. So, (Seney: Right. Right.) that's a long –so that . . .

Seney: Right. Did you have to pass him on the way out, by the way?

Burns: Yes.

Seney: So, he realized that Burns was a Private?

Burns: Yeah. (Laugh) No, I was a PFC.

Seney: Oh, PFC. Well, that makes all the difference. (Laughter)

Burns: Yeah. So, anyway.

Seney: Oh, that's interesting.

"But I liked, working in an Army headquarters is a wonderful place for an enlisted man. . . . that team had been together all through Europe . . . very impressed with the men and the way they were

running (Seney: Ah.) that, because they'd worked together (Seney: Right.) all those years. And we had sixty-seven colonels. We had about thirteen generals. No second lieutenants, first lieutenants, one or two captains . . ."

Burns: But I liked, working in an Army headquarters is a wonderful place for an enlisted man.

Seney: Oh really?

Burns: It's good. They, you know, that team had been together all through Europe, (Seney: Ah.) and very, very impressed with the men and the way they were running (Seney: Ah.) that, because they'd worked together (Seney: Right.) all those years. And we had sixty-seven Colonels. We had about thirteen Generals. No Second Lieutenants, First Lieutenants, one or two Captains, and everything else. But, anyhow I just, as a young (Seney: Sure.)–I was *really* impressed. (Seney: Ah.) You know, I [was] well treated, too, (Seney: Right.) so for an enlisted man it was a wonderful place to (Seney: Wow.) work. So. But I, and, I got out of the Army in July and came out, well needed to get, wanted to get into school but it was too late to apply to school.

Seney: July of '46?

Burns: July ~~'47~~ ['46].

Seney: Seven? Ah.

After Leaving the Army in 1946 Attended San Diego State and Stanford Studying Civil Engineering

Burns: No, '46. (Seney: Forty-six?) July of '46. So, I went back to San Diego, and knew I wanted to go to school. I went to San Diego State for one year, but then I had applied to Stanford, and next year got up to Stanford and thought I would take a couple years to get a bachelors degree. (Seney: Right.) But, I got up there and they had the Army Specialized Training Program, and they said, about the units they said, "Fine. We'll know whether you have the background you need or not." (Seney: Right.) They had the program. Because in, we, in the program we took about twenty-one units in ten weeks. We took about twenty-one units (Seney: Wow.) of work, went six days a week, (Seney: Yeah.) and a week off and then, and so it was really pretty intense.

Seney: I'm sure. Yeah.

Burns: But anyway . . .

Seney: And pretty good training was it?

Burns: *Excellent*.

Seney: Yeah.

Burns: At Penn State, the president of Penn State helped set up the program (Seney: Ah.) and so they gave tests at the end (Seney: Right.) to kind of compare the schools, (Seney: Sure.) and he wanted to make sure that Penn State (Seney: Ah.) was at the top.

Seney: Right. And that's a first-class school in any case. So.

Burns: It was good.

Seney: Yeah. Right.

With the Combination of University Training in the Army, the Year at San Diego State, and a Year at Stanford He Was Able to Graduate

Burns: And so, then back at Stanford and it worked out well. I really, I could earn other units. But, after a couple quarters I found out that Professor Oglesby said, looked at it, and "What are you going to take?" And, I said, "Well, I plan to get out." He said, "Well, you've got enough units, take, what you're taking this next quarter, you can graduate." So, "Wonderful." So, I graduated in one, after one year.

Seney: After one year. Yeah.

Burns: At Stanford, because I'd had enough.

Seney: Oh yeah.

"So, I went back the next year to get a masters. So, I ended up in hydrology and water, and got a masters degree. . . ."

Burns: They took everything from Idaho and Penn State. (Seney: Right.) And so I had planned to be there for two years. So, I went back the next year to get a masters. So, I ended up in hydrology and water, and got a masters degree.

Seney: Then that was in, that's when you specialized in water and hydrology just for the masters degree?

Burns: Yes. Well, and even in the bachelors, trying to take that.

Seney: Why did you do that? Why did you choose hydrology and water?

Why He Was Interested in Water and Hydrology

Burns: Again, back in San Diego, kind of interested in water. (Laugh) Because, you know, water is pretty important (Seney: Right. Right.) down

there, and my parents sort of picked up from the teachers in grade school that I was good, pretty good in math, "Maybe an engineer." (Laugh) And so they would, we just, we went and we visited every dam and people talking, (Seney: Ah.) you know, and so it just sort of, I guess, sort of developed that interest. (Seney: I see. Oh.) So, that's where, I just really had an interest way back then. (Seney: Right.) I wanted to be a civil engineer and work in water.

Seney: You said your dad was involved with Sunkist?

Burns: Sunkist lemons.

Seney: On the lemon side?

Burns: Packing house.

Seney: Right.

"My parents are from Ireland. . . ."

Burns: Yes. My parents are from Ireland. They came over from Ireland after all the troubles in Northern Ireland, (Seney: Oh yeah.) and decided they'd come to, (Seney: Ah.) you know, just come to America.

Seney: So, was your father involved in the troubles?

Burns: Yeah. In the sense that, yes, he worked in the shipyards in Belfast, and at the shipyards, then in 1920, they, a lot of the servicemen coming back from the war needed jobs, and what have you, (Seney: Right.) and in the, he had a, frankly a good–he was a catholic–(Seney: Right.) he had a good job in the shipyards. He was a very good soccer player, (Laugh) so I understand, and he was crane operator. He had a very good job. And, also good as soccer player, so they had a team for that, (Laugh) (Seney: Ah.) for the shipyard. But anyway, they came in and just started throwing all the Catholics overboard, throwing them out, and a couple of his friends got him out of the shipyard safely. (Seney: Oh.) And, he decided that was enough. (Seney: Ah.) It was time to go. So, he came over in 1920, and then my mother came in 1921.

Seney: I see.

Father Worked in the Sunkist Packing House in Chula Vista

Burns: So it, (Seney: Yeah.) they moved down to [Chula Vista.] ~~San Diego.~~ But anyway he ended up with Sunkist, in the packing house, and worked there. So, that's sort of the background. (Seney: Sure. Sure.) But they really, I look back, they really kind of just put

things, didn't push. (Laugh)

Seney: Right. Well, they probably saw what your interests were?

Burns: And actually, we'd go talk to people who, you know, operated things. And so that, (Seney: Ah.) that sort of generates interest.

Seney: Right. Right.

Went to Work for the Division of Water Resources in California in 1949

Burns: But back at Stanford, then, I got a masters in water and hydrology. Well, I went then, went to work for the Department, Division of Water Resources, State of California, at that time, and . . .

Seney: So, this would have been maybe 1948?

Burns: Nineteen forty-nine.

Seney: Forty-nine?

Summer of 1948 Worked for Cal Trans

Burns: Because in the summer of '48 I worked for Cal Trans on a survey crew and all in San Diego. But then in '49 I did my masters degree and I

went to work with the Division of Water Resources.

"At that time there were probably three hundred people in the entire Division, statewide. . . ."

At that time there were probably three hundred people in the entire Division, statewide. So, (Laugh) it was a pretty small group.

Seney: Wow. Yeah.

Burns: But . . .

Seney: And what were the, what were the responsibilities of the Division? What were you . . .

"All the water rights went through the state engineer. But also at that time they started to talk about the State Water Plan. So, they're starting to plan the State Water Plan . . ."

Burns: The Division, you had the state, state engineer and all the water rights. All the water rights went through the state engineer. (Seney: Ahh.) But also at that time they started to talk about the State Water Plan. So, they're starting to plan the State Water Plan, (Seney: Ah.) and so all the, but in the group were starting to direct, "What's the water?" first the water supply and

they put out Bulletin One. "Here's the water supply in California." It really documented that. Then the next step . . .

Seney: Were these so-called counties of origin in northern, the northern part of the state?

Bulletins One, Two, and Three in Preparation for the State Water Plan

Burns: Yes. Then the next step was, "What are the water requirements?" So, there's Bulletin One, "Here's the water supply." They put that out about 1950. And then the next step, ~~"What are the water supply?~~ What are the demands needed?" (Seney: Right.) And, that's Bulletin Two. And then they looked at that, then, "What are going to be the facilities that are required to meet the water requirements in California?" That was Bulletin Three. So, [when] ~~while~~ I got there they were just finishing up the Bulletin One. Here's the bulletin with the "Here's the water supply." (Seney: Right.) So, it's starting to work on "What are the water needs of California?"

". . . they sent me down to the Colorado desert area, Palo Verde, Coachella Valley, and Imperial Valley. And so, I went down and worked out of San Diego for six months . . ."

And so, they sent me down to the Colorado desert area, Palo Verde, Coachella Valley, and Imperial Valley. (Seney: Ah.) And so, I went down and worked out of San Diego for six months to go out and gather all the water needs, the water requirements. So, I got a pretty good introduction.

". . . Bulletin Two, the Chapter on the Colorado Desert Area Is What I Worked on . . ."

And, I had, then we came up and with Bulletin Two, the chapter on the Colorado desert area is what I worked on, (Seney: Ah.) prepared. And so, that was sort of the, "What are the water demands, the water needs, of the Colorado desert area?"

In 1951 went back to Stanford "to work on a 'Degree of Engineer' . . ."

So then that, sort of, I was sort of finishing up, but I sort of made up my mind I wanted to go back to school again, so I went back to Stanford in 1951. And, because Ray Linsley, who was the hydrologist in with the Weather Bureau, his book's very well known, so I thought I'd kind of like to go back and work with him. So, I went back in 1951 to work on a "Degree of Engineer." Stanford has, you know, you've got the, they call it a "Degree of

Engineer." It's the same as a doctor of education and a doctor of medicine. It's their professional degree (Seney: Ah.) in engineering, an engineer's degree.

Seney: So, is it a PhD in engineering?

Burns: It's, no it's like a doctor of . . .

Seney: Doctor of engineering?

Burns: Doctor of, at Cal it's a doctor of engineering. At most schools it's a doctor of engineering.

Seney: I see. Right. Right.

Burns: It's not a Ph.D.

Seney: And, that's what you have?

Decided Not to Go on for a Ph.D. in Civil Engineering after Receiving His "Degree of Engineer" in 1952, and Returned to the Department of Water Resources

Burns: A doctor, the "degree of engineer," which is doctor of engineering. (Seney: Uh huh.) But anyway, I went back and worked with Ray Linsley and I really enjoyed that. (Laugh) So, again, in just another year I finished up my course work in my degree and I got a fellowship

to go on for Ph.D. And I suddenly decided I was interested in getting out (Laugh) and practicing. (Seney: Right.) And so, I got a "degree of engineer" in 1952, (Seney: I see.) and then I came back to the Department of Water Resources.

Seney: Well, a Ph.D. would only have been necessary say if you'd wanted to teach (Burns: Yes.) at the university level, (Burns: Yes.) right?

Burns: So, from a practical, practical engineering side (Seney: Right.) I think the degree of engineer is sort of the (Seney: Right.) level. (Seney: Right.) But anyway, I came back to the Department, and . . .

Seney: At a higher level I would think?

Worked in Flood Control after His Return to the Division of Water Resources

Burns: Oh it's just a, you've got to be a junior engineer. And then they counted that time down in (Seney: Yeah.) to the assistant level. And, but I came back and then they–started working in sort of the flood control, the operations. But again, the Division, it was a very small group and, but working over in the flood control area they did forecast floods, but they had very small radios, five watt, all the way up to, up to Oroville, and

then on up to . . .

Seney: How far will a five-watt radio go?

Burns: They got it, they would get [data] all the way from up at Red Bluff. They had these that an engineer, and he made up the equipment, made it, but you had to have a real expertise to be able to hear, (Seney: Oh.) because they could broadcast once an hour, but then to be, you, to pick it up you *really* had to have a trained ear. (Seney: Oh.) So, I had had some, and you couldn't *always* get it, but at least you were getting some information (Seney: Right.) during the flood time.

". . . then, we could also do some flood forecasting and worked very closely with the Weather Bureau. . . ."

And so then, we could also do some flood forecasting and worked very closely with the Weather Bureau. But, not anything like they have now. We didn't have any radios, car-to-car radios, and get data from the river (Seney: Right.) area, so they had people calling in.

Seney: Wasn't there a big flood in 1955?

Flood in 1955

Burns: (Laugh) In 1955, yes, there was a big flood.

Seney: You're smiling and sort of chuckling when I said that.

Burns: Because in [1952] ~~1955~~ I started working in this area. (Seney: Ah.) And so, anyway, and in 1955 I was getting married December 17th. So, in the office, they all went "We'll have a big flood," if I get married. So, I got married December 17th, and it was raining. I mean, it was pouring. So anyway, Maxine and I went on our honeymoon, you know, with all the flooding, and got down as far as San Diego. Kept touching in, and they finally said, "Better come back."

Seney: Oh no.

Burns: So, it took us about twenty-eight hours to drive back. And at that time then the break had occurred up at Yuba City. And . . .

Seney: Sacramento flooded, right?

Burns: No.

Seney: No?

Burns: Down, Nicolaus was flooded but got down to the north end of Natomas. (Seney: Ah.) But,

the day I got back, again only a handful of us, I mean a half a dozen of us working on all this, and so Walter Schulz, who I worked with, he became assistant state engineer, but anyway, he said, "Hey, we need to find out what's going on." So, I got a National Guard plane. I went out to the airport. At that time the National Guard didn't have a whole lot of aircraft. (Seney: Right.) They had kind of an observation plane. So, I got out, we flew up to try to size up what's going on up at–so I got up as far as, you know, over the whole area (Seney: Right.) to see what's, see where the flood waters are and what's going on. And so, then coming back we had a strong north wind. So, coming back got down and [inaudible] the water had come down to the Natomas Cross Canal, that's just north of the Natomas area. (Seney: Right.) So here this north wind was blowing so hard water was going, splashing over the top of the levee, or I mean the Natomas Cross Canal, and that water's heading down to the Natomas area. So I got back and landed, got on the phone and called the office and said, "Hey, we have a problem. The water's, you know, splashing over the top of the Natomas levee." And so, there again, Fred Straus worked in the office. *Then* you could make a decision and act. (Seney: Yeah.) He picked up the phone and called out to Mather Field and said, "Hey, [we] ~~you~~ need people up on the . . ." [Several

hundred airmen were sent to support the flood fight] Also at that time, "Go down to Third Avenue and get the winos, get people loaded up on buses, get them out to, you know, fill sandbags." (Seney: Right. Right.) It became pretty highly organized and went on the whole three miles, and for, how many days. But, they put down panels–wave action (Seney: Right.) that would come in, so they put down panels, weighed it down. They put down plastic and weighed it down. So, they had a full-blown flood fight going there for three or four (Seney: Wow.) days. (Seney: Yeah.) So anyway, they held. (Seney: Right. Yeah.) So yes, I'm aware of the flood in 1955. (Laughter)

Seney: I guess you are. Yeah.

Worked on the Hydrology for Oroville Dam

Burns: And so then they started into a lot of litigation. And so that's, and working, I worked in the hydrology and over on, oh like Oroville Dam, the size of the spillway for Oroville Dam.

"And the litigation started . . . so I started to work with the Attorney General's Office. So, I worked for the Attorney General Office for thirty-five years, on flood litigation. . . ."

And the litigation started, started suing there so

I started to work [with] ~~at~~ the Attorney General's Office. So, I worked for the Attorney General Office for thirty-five years, on flood litigation. (Seney: Ah.) And, but anyway that also, then the Division would, they passed the Burns-Porter Act, the State Water Project, (Seney: Right.) and again it's interesting how the Department had good leadership.

Ed Hyatt, Bob Edmonston, and Harvey Banks

They had, Ed Hyatt was the engineer, state engineer, and then [Bob Edmonston followed by] Harvey Banks. (Seney: Right.) Harvey was the right man at the right time because you get kind of, politically you kind of put things together.

Worked on the Governor's Principles for the State Water Project that later Led to the Burns-Porter Act Authorizing the State Water Plan

And, [Governor] Pat Brown wanted to get this (Seney: Right.) done. And so, they would use people. "How are you going to sell, what's the governor's principles for the State Water Project?" So, Harvey Banks got about six of us and he said, "Okay, brainstorm. Whatever, you know, let, what, how are you going to pay? Is it a postage stamp? How do you pay? Who repays?" And, you know, trying to put it

together. So, they came out with the Governor's Contracting Principles as the basis for the Burns-Porter Act, when you go to the big [inaudible]. (Seney: Right.) So it was kind of challenging, pretty young and I ended up working (Seney: Yeah.) then with Harvey. "Yeah they accepted it." And, those were the Governor's Principles. And so, they really used people, you know, you're young but you've still got responsibility.

Seney: Right. Right.

Burns: So, it went to . . .

Seney: This was an exciting time, I would think?

Bob Edmonston and the Feather River Project

Burns: Oh, it was tremendously exciting. (Seney: Yeah.) We started out with three hundred people total, (Seney: Right.) and then they put out the, you know, Bulletin One, Bulletin Two, then later Bulletin Three, which started out as sort of the Feather River Project, and Bob Edmondston was the state engineer. He came up with sort of the idea of the Feather River Project. So, the State Water Project sort of, they had Bulletin Three, overall, how to redevelop, but then specifically the Feather River Project, Oroville Dam, (Seney: Ah.) sort of *became* the

State Water Project. And so the, they worked on that, but then they passed the Burns-Porter Act, then the Department of Water Resources was formed, and it did get exciting because here you're going to start [with] virtually nothing to build up to this (Seney: Right. Right.) State Water Project.

Seney: Go ahead.

Burns: It's two.

Seney: Oh, no. No. That's fine. That's fine.

". . . we were working sort of flood control and hydrology of the State Water Project, but then they formed a Division of Design and Construction and I was moved over as the assistant to the chief of the Division of Design and Construction. So, I got involved in building up the staff . . ."

Burns: Anyway, and we were working sort of flood control and hydrology of the State Water Project, but then they formed a Division of Design and Construction and I was moved over as the assistant to the chief of the Division of Design and Construction. So, I got involved in building up the staff, "How are we going to build up the staff?" and then "How are you going to manage this sort of a program

control?"

Harvey Banks Left and Bill Warne Became Head of the Department of Water Resources

And at that time, then Harvey left and Bill Warne came in as director of the Department.

". . . we heard Bill Warne was coming, but we'd always had an engineer as the head of the Division or the Department. As engineers are, we're skeptical of non-engineers. . . . newspaper man. . . . So, we're all a bit skeptical. . . ."

And it was kind of interesting at the time because we heard Bill Warne was coming, but we'd always had an engineer as the head of the Division or the Department. As engineers are, (Laugh) we're skeptical of non-engineers. (Laugh)

Seney: Right. Sure. Right. (Laugh) Yes.

Burns: But anyway . . .

Seney: And, Bill Warne was not an engineer?

Burns: Not an engineer. A newspaper man. (Seney: Ah.) So, we kind of went, "Gee, who are we getting?" Because Governor Brown had brought him, Bill Warne, in as head of Fish &

Game. (Seney: Ah.) And, he moved him from Fish & Game over to the Department of Water Resources, as the head. So, we're all a bit skeptical. (Seney: Sure.)

". . . it turned out Harvey Banks is exactly the right man, at the time, and Bill Warne was exactly the right man. . . ."

But, it turned out Harvey Banks is exactly the right man, at the time, and Bill Warne was exactly the right man.

". . . it turned out . . . Bill Warne had been born in the Imperial Valley so he knew the Imperial Valley. He was a newspaper man, worked in San Francisco, back in Washington . . . moved over and worked for Interior, then he worked up and became assistant commissioner of reclamation. Then . . . deputy secretary . . ."

Because it turned out, and I don't think we all realized, Bill Warne had been born in the Imperial Valley so he knew the Imperial Valley. He was a newspaper man, worked in San Francisco, back in Washington with the Interior and all as a newspaper man, then he sort of moved over and worked for Interior, then he worked up and became assistant commissioner of reclamation. Then, under, I mean in the Secretary's Office as deputy secretary in there,

and he worked out, at that time, Boca Reservoir was going to be built. And, everything came through his, his desk. We didn't know that. Well, I knew it. (Laugh) (Seney: Yeah. Yeah.)

". . . he wrote the speech for President Roosevelt for the dedication of Hoover Dam. . . ."

So, and then he, and the administration and the policy, he wrote the speech for President Roosevelt for the dedication of Hoover Dam. (Laugh)

Seney: Whoa.

"He really knew his policy and where they were going. And so, he had *that* background coming in. . . ."

Burns: Anyway, (Seney: Yeah.) and he worked in all of these areas. He really knew his policy and where they were going. And so, he had *that* background (Seney: Right.) coming in.

Seney: Right. Right. He didn't need to be an engineer?

". . . he came in, and he said, 'Okay. You people are the engineers. You're going to build it on time and within budget.' . . ."

Burns: He didn't. But, he came in, (Seney: Yeah.) and

he said, "Okay. You people are the engineers. You're going to build it on time and within budget." And so, over in Design and Construction, I was fortunate to be where I was (Laugh) because one thing we worked out, "Okay, here's a stack of," the Personnel Board gave the Department and said, "Okay, what do you need?" rather than going through a long process. (Seney: Right.) So, we tried to set out, "Here's what's needed in the Department, a principal engineer supervising the structure of it. (Seney: Right.) Here are the levels that are needed." And, went, you, with Bill Warne and then they bought the Finance Department, and everybody said, "Fine." And then we didn't have–"Well, we need a few more people." He would just have said, "Get them." (Laugh) He said, "Don't, your job is to get that done." So, he didn't try to second guess. (Seney: Yeah. Yeah.)

". . . he said, 'Get the best people you can and do the job.' And, he brought in with him, Al Golzé as chief engineer. Now, Al Golzé was back with the Bureau and in charge of all their program control . . ."

But he said, "Get the best people you can and do the job." And, he brought in with him, Al Golzé as chief engineer. Now, Al Golzé was back with the Bureau and in charge of all their

program control, "How do you control all these projects?" (Seney: Ah.) So, Al Golzé was in charge of all that. So, he brought Al Golzé. Here, again, we're skeptical. (Laugh) (Seney: Right.) But, he brought in someone who really understood, "How do you control projects and how do you control the financing?" (Seney: Ah.) And so, he really set up a pretty good team. (Seney: Right.) And so then we, Design and Construction, they went, "Okay, well how are we, what's going to be the schedule, the programming? How are we going to schedule all this and build up the staff?" And so, again, a really good deal, Jeff Wineland and, Don Thayer, and . . . I mean, really top-flight people, had really sat down and (Seney: Right.) put together an overall schedule, "How long will it take to design parts of the aqueduct and construct it and all?" and laid out all of this. So then they presented this to Bill Warne. You know, the whole, (Seney: Yeah.) and very, he really could pick up good questions. But then he asked, "Well, are you really going to be able to do this? Is this realistic?" So, you know, I said, being a little smart, I said, "Yes, because some of us are probably are going to be around here longer than you." Because, you know, we, we're committed. (Laugh) I said, "No, we are committed." Well, he allowed, "Well, you might not be around as long as you think you will." (Laugh) But, that's what he wanted.

(Seney: Yeah.) He wanted people committed. (Seney: Right. Right.) You make a decision.

". . . Al Golzé did a great thing . . . said, 'An engineer you prepare anything, memo, you make any decisions, you put your registration number on it as a professional engineer.' It made a *tremendous* difference, because if things came up, if somebody put their stamps on it they're committing themselves professionally . . ."

And then Al Golzé did a great thing, and it kept growing, but bringing in good–I keep coming back to very good people. (Seney: Right. Right.) And so, Al Golzé, we always had to write memorandums [in] ~~to~~ the state government, they'd buck it up for review, somebody would initial it and buck it up. But, Al Golzé said, "An engineer you prepare anything, memo, you make any decisions, you put your registration number on it as a professional engineer." It made a *tremendous* difference, because if things came up, if somebody put their stamps on it they're committing themselves professionally (Seney: Right. Right.) to what they're doing. (Seney: Right.) And it sort of speeded up the whole process.

Seney: Well, in terms of getting good people I would think that among engineers around the country

this California Water Project would have been well known as kind of a cutting-edge big deal project?

Burns: But, it was not, you know, it was started with two other people.

Seney: Yeah.

Burns: You had to build up staff. (Seney: Right. Right.) You had to build up the whole thing.

Seney: I would think it would be attractive to people?

Burns: Oh, it was attractive. Yeah. (Seney: Yeah.) And that's why you got them. (Seney: Right.) And Don Thayer, *excellent* on dams, large dams. And, Jeff Wineland, great on canals, and they had experience. (Seney: Right.) And then Tuthill on concrete. You know, he was an expert on–along came the Bureau, Corp of Engineers and the Bureau. Yeah, they came from all over because it was a (Seney: Right.) tremendous challenge.

Seney: Right. I would think. Yeah.

Burns: Like Tuthill on concrete, these contractors would scream but he [did not back] ~~had~~ down, "This is the way you're going to do it. You have to put ice. You had to cool it down up at

Oroville Dam." And, the Department insisted on them *meeting* the requirements. And had great, you know, (Seney: Yeah.) a great project. So, with Bill Warne pushing, "You need people, get them, build it, but build it on time." So he didn't, he wasn't worrying about the pennies he was worried about the whole project. (Seney: Right. Right.) So anyway that . . .

Seney: And did it get built on time?

Burns: It got built on time.

Seney: Within budget?

Burns: And I'd say within budget. The [budget] analysts say we were $300,000 off, which, you know, they were short. My god, it was, how many billions were spent?

Seney: I know. That's nothing. Yeah. Yeah.

Burns: And but, but really I, they built it. And they said, "Do it first-class, do it right." And, it . . .

Seney: Go ahead.

Burns: This is getting too much.

Seney: No. No. No. I'm just seeing how much tape is left. (Burns: Oh.) I want to make sure . . .

Burns: But the type of thing that the Division, Department of Water Resources designed was the California Aqueduct from, went down from [inaudible] then south. (Seney: Right.) The Bureau designed the dam [San Luis], the canal upstream. And, we were always in kind of at loggerheads with the Bureau, (Seney: Yeah.) and they said, "Well, they probably know what they were doing," and one type of thing you get into, well it was runoff from the coastal, and again, Bill Warne and . . .

Seney: Runoff from the coastal range?

Burns: Yeah.

Seney: Yeah.

Burns: Insisted all that [runoff] could not go into that. We built across ~~for~~ [and] siphons under, all added cost, and it's a lot of cost. But, [Warren] ~~I~~ kept insisting, "You're going to do it, do it right." (Seney: Right.) The Bureau did *not* do that in the stretch up here, so today all the runoff up there goes in the canal–boron [detrimentally affecting] water quality.

Seney: Oh wow.

Burns: A major problem. (Laugh) Anyway, just (Seney: Oh, that's interesting.) [inaudible] that

(Seney: Yeah. That's interesting.) Bill Warne and then "Just do it right."

Seney: Yeah. Yeah.

Burns: And, I think they got it right. They've got a very interesting project.

Seney: Oh, let me turn this . . .

END SIDE 1, TAPE 1. SEPTEMBER 14, 2006.
BEGIN SIDE 2, TAPE 1. SEPTEMBER 14, 2006.

In 1963, Walter Schulz Contacted Him about Working in East Pakistan for Three Years on a Flood Control Project for Leedshill-DeLeuw Engineers

Burns: But it, at that time the the, you know, State Water Project was going. And then came 1963, Walter Schulz, who I had worked with on the flood control, he'd gone with Leedshill-DeLeuw Engineers. And, Harvey Banks was Leedshill-Jewett. And so, he contacted me and they had a job going over in East Pakistan on the levees.

Seney: And what year was this?

Burns: This is 1963. And, sort of in the first part of '63 he said, "I'm looking for engineers to go over to work on this. It's a flood control project." And

so, I went home and talked to Maxine. And, I was interested in India (Seney: Yeah.) and that part of the world, because my mother's family were in the British Army, (Seney: Oh.) and a large part of her family were in India.

Seney: Ah. Still in India?

Burns: Well, *were* in India.

Seney: *Were* in India?

Burns: Yeah.

Seney: Yeah.

Burns: And they were civil engineers. Again, to tie back to engineering, my mother kept talking about (Seney: Oh.) civil engineering. And so some of them were *in* the British Army, some were not, but they were civil engineers in India. (Seney: Ah.) And so, you know, she talked a great deal (Seney: Sure.) about her cousins, and the letters, and all. And so, that kind of generated an interest in India. So, I talked to Maxine . . .

Burns: But anyway, yeah. So, here was an interest. "Hey, this sounds interesting." But, by that time the Department–I was a principal engineer–I went through four, I went from

junior, assistant, associate, senior, supervising, to principal in thirteen years. (Seney: Yeah.) You know, it was, and you, (Seney: Yeah.) they really bounced you up the line.[2] But, I told Walt, "Gosh, I'd be interested." He was amazed that I'd be interested in going over. So then Maxine turns up pregnant. We think, "Gosh, is this going to work?" (Seney: Yeah.) But, and, our daughter was born and so anyway it ended up that I did go over to East Pakistan as chief engineer for Leedshill-DeLeuw Engineers, and we were working on, mainly with coastal . . .

Seney: For what engineering company?

Burns: Leedshill, L-E-E-D-S-H-I-L-L, DeLeuw, D-E capital L-E-U-W. Leedshill-DeLeuw. (Seney: Okay.) Leedshill from San Francisco. DeLeuw Cather from Chicago. (Seney: Oh, they . . .) They were formed for this work.

Seney: For this project? I see. Yeah.

Burns: And so . . .

Seney: How did you like it in East Pakistan, what is now Bangladesh?

2. At this time he was assistant to the chief engineer, and in the absence of the chief engineer, he often served as acting chief engineer. ". . . at age 37 it was a lot of responsibility which I enjoyed. . . ."

Burns: Interesting.

Seney: Yeah.

Burns: It was well worth the trip because, you know, you get over there and . . .

Seney: Now did, was your wife able to go and bring the baby too?

Burns: Yeah. (Seney: Oh neat.) And, we talked to our pediatrician and he happened, he would take six months off and go over to ~~East,~~ West Pakistan and work in the hospital, just pro bono, (Seney: Right.) and so he knew he–and said, "Well, would he check on East Pakistan?" He checked. He said, "No. It was okay." So, here Jolene was three months old at the time (Seney: Yeah.) I was going and he said, "No, it would," he thought we could get good medical care, because the hospital, there were two medical missionary sisters, (Seney: Ah.) and one was a surgeon and they ran a *very good* hospital. (Seney: Uh huh.) So anyway, (Seney: Right.) and we decided, well then I went on ahead, though our baby, she had twenty-one shots. We had cholera, small pox, (Seney: Whoa.) you know, the whole, (Seney: Yeah.)–but anyway. And, we had two small boys. They were five and seven. And so, I went on over ahead of Maxine and then she came over. But no, it

turned out to be a wonderful experience, that, just getting around, and the people. And, you get there and there's no housing. You have to get housing. But, the coastal embankment project building 3,000 miles of levees or embankments, because East Pakistan is the delta of Brahma, Brahmaputra and Ganges Rivers. (Seney: I see.) So, you had millions of second feet of water coming down. Sixty percent of the country is flooded every year. (Seney: Right.) But, we're down around the very coastal area, the lowest areas, and they wanted to build embankments, levees, around these so-called islands or polders, and if you can keep the salt water off then you get a crop. (Seney: Ah.) And so, the idea was build a polder to keep the salt water off and then you'll be able to pass the fresh water down. (Seney: Right.) But they had plans to build 3,000 miles and all by head basket, moving the earth by head basket. So, when you got over there it was really fascinating.

Seney: I'll bet, yeah.

The Old Pakistani Methods for Building Dikes Worked Well

Burns: And a lot of them. You had to have compaction earth. But it turned out, you worked with them and they, and the chief engineer Haq, very, very

good engineer, how did they, how– they had survived all those years. You look at, "How did they do it?" USAID would say, "Let's get equipped." (Seney: Yeah.) And then, and that–and, no way. (Laugh) But just, yet, how did they do it? (Seney: Right.) And you find out they would overbuild the materials very high. Build the levee, say 20 percent overbuilt, and then you have the monsoon rains. It sort of melts down and compacts. So, we went down and cut the levees to find out, "Hey, what do we need to do?" We found out, just overbuild them, let the monsoon rains come down. [If] you didn't have a major disaster and flood, it settled down, and you had a well-compacted levee. (Seney: Wow.) So anyway. We . . .

Seney: So, their old methods worked very well?

Burns: They worked well, (Seney: Yeah.) in a sense. (Seney: Yeah.) Then we worked on the Brahma. But anyway that, but traveling around the country was a wonderful experience.

Seney: I'll bet.

Burns: But, we ended up getting a helicopter so we could get around better. But, they were building hundreds of miles of levees.

Seney: How long were you there?

Burns: We were three years.

Seney: Three years. My goodness.

India and Pakistan Went to War While They Were There, and He Evacuated His and Other Families to Bangkok Where the Kids Were Put in an American School

Burns: Then, of course, India and Pakistan went to war. (Laugh) (Seney: Yes.) In the midst of it they were having their problems. (Seney: Right.) And so, had to evacuate all the families. And they came in and we were not privileged Americans. We lived on the local market. We didn't have the commissary. (Seney: Ah.) We just had to live, again, on the local market.

Seney: Which may have been better, in a way, do you think?

Burns: Oh yeah.

Seney: Yeah.

Burns: Oh yeah. You had to have a cook because you went to market every day. (Seney: Sure.) You didn't have refrigeration. (Seney: Sure.) But you did learn, (Seney: Yeah.) and you appreciated the country (Seney: Right. Exactly.) more. But anyway, they went to war

and they evacuated the families because–we were very close to the airport. But, Indian aircraft would come over, throw a few bombs, and Pakistani would go over and throw a few bombs at Dum Dum Airport. (Seney: Yeah.) (Laugh) And, they were fussing around, so then we were going to be evacuated and made arrangements for that, but then they couldn't get permission to bring the aircraft in for eleven days. (Laugh) They couldn't get permission from India, and then Pakistan wouldn't give it, and finally the United States said they're going to send some naval vessels up, because you did *not* want to be in the Bay of Bengal in the monsoon season and in the (Seney: Ah.) cyclone season. That wasn't the place. It was very shallow, and you had some really tremendous storms. But at any rate, the Navy, they were going to move–but then they said, "Okay. They could come in." But we kept waiting. And on a Sunday, a DC-6 came in with an American flag on it–so it landed. And, they had already made arrangements that planes would come in and then we'd go out by groups. Had to go down to the embassy. And they, what they did they had seven planes come in. They were C-130s rigged for jumpers, for parachutists. (Seney: Right.) And, they had–so it came in and was there and then on the hour an American C-130, on the minute, it would land, go to the end of the runway. They had the

busload of the Americans and *other* people, (Seney: Yeah.) you had to throw all the bags they permitted on the back, put a tarp, get everybody onboard and take off. So, we were in the last, [inaudible] Maxine's a nurse, so she, they wanted a nurse (Seney: Sure.) on every plane. So, we're on the seventh one. But, it was really fascinating to watch that operation. (Seney: I'll bet.) Because seven planes, and we were on the seventh one. So, you know, you're taking off and the machine guns are trained on you. (Laugh)

Seney: Whoa.

Burns: So, but then they said, the, we were not privileged. They said, "Where are we going?" "Someplace in Southeast Asia." But, I [knew I was not] ~~know we're~~ going to let my family go on [alone to "somewhere" in southeast Asia]. So, I went along. But then Burma–it ended up we went to Bangkok. We didn't know that. We thought, but we had no idea where we were going. But, it took a four or five hour flight. But we couldn't, they wouldn't get permission to fly over Burma so we had to fly all around Burma, come back up, up to Bangkok. (Seney: Oh no.) We lost an engine en route.

Seney: Oh god.

Burns: Anyway . . .

Seney: Exciting?

Burns: Yeah. We got up to Bangkok and in our group there were about thirty, thirty, about thirty-five women and kids, you know. So, you know, we tried to get them into a hotel to kind of get settled but we didn't know where we were going to end up. Went to the American embassy this morning and said, "Hey, we have these people. Can we make arrangements?" And, they simply said, "Get them the hell out of here." They said, "We have too many Americans here now," and he said, "And we can't support you. Just, get them out." (Laugh) So, again another interesting experience (Seney: Yeah.) trying to take care of thirty-five women and kids and get them into school and get them into apartments. The Thai government was great. The Thai government, you know, made arrangements, I'd get all the passports and maintain for thirty days and then they could . . .

Seney: But the American embassy would not help at all?

Burns: No help at all. No, they just simply said, "We won't support you. You know, there are a lot of Americans coming over from Vietnam," (Seney: Yeah.) and, I don't know, and they

simply didn't want them. But, the Thai government, they had been very, very helpful.

Seney: That's interesting.

Burns: So anyway, (Seney: Yeah.) I kept trying to get back in. And I . . .

Seney: Back into?

Burns: Back, go back to work.

Seney: Yeah. And you couldn't?

Burns: And, I couldn't get in because I, no flights in or out. (Seney: Ah.) But I, there was a flight up to Rangoon, and the Burmese airlines would get in, and then they were flying into Chittagong. So, I'd go at four o'clock in the morning down and try to get a flight to Rangoon. But, there was a problem there. You had to get a visa. If you stayed more than twenty-four hours in Rangoon you were locked up. (Seney: Oh.) So, I never did get through because they were [inaudible] (Phone Rings) and then the Thai [Recording Paused].

Seney: So you would–I think it cut off the Thai airline school.

Burns: Yeah. They had a flight, going in to test, you

know, things back in so I got on that and got back in.

Seney: And how much longer did you stay then?

Burns: Another year.

Seney: Another year?

Burns: Yeah.

Seney: So you were there three years?

Burns: For a total of three years.

Seney: A total of three years?

Burns: Towards the end of the second year that . . .

Seney: Did the family come back then too?

Burns: Yeah.

Seney: Yeah.

Burns: And they came back in . . .

Seney: And everything settled down?

Burns: And they were three, almost three or four months, in Bangkok, (Seney: Ah.) and the boys

were put in school there, American school, (Seney: Right.) and then when things opened up then they flew back in and came back. (Seney: Ah.) So, anyway it was a good experience all around.

Seney: I'll bet. Well, this is typical of this time, wasn't it? There was a lot of people who went around (Burns: Yes.) and worked on foreign engineering projects?

Learned about Bill Warne's Work in Asia

Burns: Yes. (Seney: Yeah.) A *lot* of it went on. And, that's where I found out more information about Bill Warne, (Seney: Oh.) that Bill Warne was the best known man in that part of the world. He worked with the Bureau on the Point-Four Program, and wherever, in part of the world he was in charge of it, (Seney: Ah.) but he was interested in the overseas work and he thought all these countries needed to get their public administrators trained, so he wanted to set up, get a university here to set up a program for them. He finally set it up at USC [University of Southern California], (Seney: Ah.) and so set up a program where these governments could come in and get training on public administration and all. And so, traveling over there Bill Warne was well known. You'd be amazed how many of all these government positions had gone back

through that program at USC.

Seney: Interesting.

Burns: And so, Bill Warne was the Point-Four Program also, so he was . . . (Laugh) (Seney: Wow.) And, that was sort of part of the project. Bill Warne certainly encouraged us going over too.

Seney: Sure. Sure. Right. Right. Well, that sounds fascinating.

Burns: Well then we ended up over there, we set up, called a program-control system which the State Water Project had and really controlled things. So, when I got over there they had no control– they had four thousand people working on the Coastland Embankment Project. How much – tens of thousands of rupees being spent, had no idea (Seney: Right.) what they had. (Seney: Yeah.) So anyway, I, "We better get some control on this." So, that's where the chief engineer Haq put in a program control system, the same as we had on the State Water Project. It started working where they, you know, really getting some control on the engineers out in the field, and what they're going at, how they're going to do it. "Here's your goal. If you don't get it you don't get the money." (Seney: Yeah.) And he set that up, but then the East Pakistan Water and Power Development Authority who

we worked for was interested in that. So we ended up, the Department of Water Resources sent people over on the team, (Seney: Ah.) and they worked, then, with East Pakistan Water and Power Development. They were employed by the Department, (Seney: Interesting.) but worked over there.

Seney: Wow.

Burns: So that went pretty well. So they ended up working –they set up a program control system the same as we set up on the State Water Project.

Seney: Well, that's interesting isn't it, to be able to export those ideas you've got?

Burns: California can export. (Seney: Yeah.) Yeah. I always wondered, could you export your knowledge? You certainly can, (Seney: Right.) because in California we've got the Delta, we've got beach, we've got flood waters, we've got subsidence, we've got (Seney: Everything?) everything. (Seney: Yeah. Yeah.) And, that's, you don't realize you can apply it. (Seney: Right. Right.) And again, the California Department of Water Resources, *I think*, is one of the best engineering organizations, where they gave people the responsibility, if you could take it you got it and they usually said, "Do it."

(Seney: Right. Uh huh.) Where you weren't bogged down with a lot of bureaucratics. So, anyway, that . . .

Seney: Great. What did you do when you came back?

". . . I liked working for Leedshill, but I watched some of the larger engineering firms have contracts over there. What they do, they get these big contracts with foreign countries. They didn't have people. They go out and grab whoever they could and send them over on those jobs. (Seney: Ah.) So, I decided I didn't like that . . ."

Burns: I, well, I found out that when I was over there I wasn't enthralled–I liked working for Leedshill, but I watched some of the larger engineering firms have contracts over there. What they do, they get these big contracts with foreign countries. They didn't have people. They go out and grab whoever they could and send them over on those jobs. (Seney: Ah.)

". . . I didn't like that . . . I enjoyed working with the Department, and Bill Warne . . . I went with the idea, came back, . . . I went into the Claims Appeal Board. . . ."

So, I decided I didn't like that, (Laugh) and that, you know, I liked, I enjoyed working with the

Department, and Bill Warne, (Seney: Right.) and all of them, you know. I went with the idea, came back, so I had to get back within the three-year period, and so I came back to the Department. And they kept, I went into the Claims Appeal Board. They had set up an attorney, a couple engineers, and the contractors would come in with, you know, claims, and the state engineer wanted an independent look at it, not just to have . . .

Seney: Claims for?

Burns: Construction. Let's say at Oroville the contractor's going over time. He says, "No, I'm entitled to more money because of this and this." (Seney: Ah.) And so, the Appeal people, you know, either agree or disagree and then it comes to the state [chief] engineer for approval. Well, the ~~state~~ [chief] engineer wanted an independent review (Seney: Sure.) of these claims, so he set up the two, two engineers, an attorney. And so, we would review the claim. So, I went on the Claims Appeal Board.

Seney: Was that interesting?

Burns: Oh, certainly, yes. (Seney: Yeah.) Yeah, because here, and you have your, all the department engineers, you have all the contractors, and you want an independent look.

(Seney: Right.) And, we'd agree sometimes. Sometimes we wouldn't. And then the ~~state~~ [chief] engineer, "How much, you know, is this claim worth $300,000?" or whatever, and make a recommendation to the ~~state~~ [chief] engineer, ~~or the chief engineer,~~ how it would be.

Seney: What do you think you learned from doing that?

Burns: Beg pardon?

Seney: What do you think you learned from doing that? What did . . .

Burns: Well, you sure learned a lot about making decisions and trying to make sure you need to have all the facts. Because, in all, everything that I have done in engineering, get data. You know, I, on the flood, the flood control you *have* to have good data, and that's, later we'll talk about (Seney: Right.) why it's so important. But then, I was there six months and there was, from Gianelli & Murray, a two-man firm.

Seney: Is this Bill Gianelli?

Bill Gianelli Came to the Department of Water Resources and Burns Went to Gianelli's Old Firm–Gianelli and Murray

Burns: Bill Gianelli. (Seney: Right.) And so, Bill was

appointed as director of the Department, so he came [back] ~~with~~ to the Department.

Seney: I've actually interviewed him too.

Burns: Yeah. Okay. (Seney: Yeah.) So, Bill came over to the Department. I went over to the firm Bill had. (Seney: Ah.) So, Gianelli & Murray, because there are only two of them, and Murray, Angus Murray, he had been the assistant regional director of the Bureau, then head of the Reclamation board for California, but then he, he and Bill (Seney: Ah.) were teamed up.

"So anyway, when Bill came over to the Department I then went over to that small firm. And then shortly after, we formed Murray, Burns, and Kienlen. . . ."

So anyway, when Bill came over to the Department I then went over to that small firm. And then shortly after, we ~~firmed,~~ formed Murray, Burns, and Kienlen.

Seney: Right. Right.

Burns: And just, Don Kienlen had been working for Bill, so he was there. So then just the three of us, then we formed the firm Murray, Burns, & Kienlen. That was 1967.

Seney: Sixties? And you, that's been your home base since?

Burns: Yes.

Seney: Well, I understand about your firm, you've kept it small deliberately, is that right?

Burns: That's right. That, the clients we had, we just, whoever were involved were directly involved. And the, you end up with some, you know, all the clients that Bill Gianelli had, he represented San Joaquin County, a lot of the districts, and in water rights, his deal with the water rights with the Sacramento Valley Water Rights Settlement. Bill had worked on that. (Seney: Ah.) Don had worked on that. Norm Murray, in water rights. And so, all the clients stayed. And then I started sort of in the flood control area, because I had been working with the Attorney General's Office on the '55 flood, then we had the '69 flood, the '70 flood. (Laughter) And so, I had been working on those, (Seney: Yeah.) so I continued to work for the Attorney General's Office. And so anyway, we stayed small but we just gradually added a few people. We got up to about twelve people.

Seney: Well, that's *very* small, isn't it, for an engineering firm?

Burns: Yes. But it's, it's how we wanted to operate. But, if you grow then you start worrying about proposals and all the rest. But, they're up to about twenty people now. And even because with, we were able to buy into, with Gianelli, and Murray, and then Murray, and they permitted us to buy into the firm, so we bought, and right away started buying, then we bought into the firm. And then, as Murray, Burns, and Kienlen. Then we had some young people come in and we told them that, "Hey, we were able to buy into it. If you're good and you stay with it, then . . ."

Seney: They'd become partners too?

Burns: They'll then, we'll, you know, turn it over to them.

Seney: What was your kind of theory behind, when we all got together you said, "How are we going to do this?" and what did you discuss and how did you decide to be the kind of firm you were? And still are I guess. You must still be involved?

Burns: Yes.

Seney: And it's still going?

Burns: I worked – it's MBK Engineers now. They

shortened it to MBK.

Seney: Murray, Burns, and . . .

Burns: Murray, Burns & Kienlan. (Seney: Yeah.) So, they just kept MBK. So, it's still . . .

Seney: And you're still a partner, obviously?

". . . I sold out in 1991 . . . But, I didn't want to retire so . . . So, I continue to work . . . through them. . . . I bill it through them. . . ."

Burns: Well I, no, I sold out in 1991, (Seney: Oh.) because Don wanted to sell out. But, I didn't want to retire so I'm just, I work through them. So, I continue to work, but just work through them. I work as an independent. I bill it through them.

Seney: Oh, I see.

". . . from . . . the litigation standpoint you learn you have to have data, you have to have information. . . ."

Burns: But I didn't, I just wanted to keep on working, (Seney: Sure.) and with all the litigation. But from, you know the litigation standpoint you learn you have to have data, you have to have information. So that, in working on the flood

control on the flood–we would get out on the floods to make sure, setup, we had the water surface profiles, you know, (Seney: Right.) what had happened. We would fly like over the Butte Basin, the whole area. Every spring we'd get up, and the Department had a contract. We'd fly and every quarter of a mile take 70mm photographs right across, right up the Sacramento River, the Feather River, and up the Butte Basin. (Seney: Ah.) And then when something happens, oh, we're right up there. You get up in the air, you get the flood event, and then you have after, and then you make sure you have all the data. (Seney: Right. Right.) And so that, in working, even outside, really work through the Attorney General's Office and the Department, and we always had people in the flood. So, that's where I spent most of my time on litigation (Seney: Ah.) working.

Seney: So this was, in other words, if my property gets flooded I might be suing somebody and you're going to be working on the behalf of the state then, on it?

Burns: The state, and we also work–I found it kind of interesting, we're working with the state and I would say 99 percent of the time, if the attorneys on the other side, everyone would come back and ask us to work on it for them. So, we worked on it for the state, if there's no

conflict (Seney: Right.) then we worked for other people too. (Seney: I see.) But, I think we, I think we've developed sort of a reputation of, we had the data, (Seney: Right.) we had the information, here it is. And we had a lot of clients, in effect, we didn't agree with but they stayed as clients.

". . . we still feel strongly the Peripheral Canal is the answer. But, we went to San Joaquin County and said, 'No, we think the Peripheral Canal,' but for other reasons in the Delta, they didn't want to support that. But, we stayed on the payroll. . . ."

San Joaquin County, we're the engineers, consultants for San Joaquin County, and you come up to the Peripheral Canal issue and we still feel strongly the Peripheral Canal is the answer. But, we went to San Joaquin County and said, "No, we think the Peripheral Canal," but for other reasons in the Delta, they didn't want to support that. (Seney: Right.) But, we stayed (Seney: Right.) on the payroll. And, I worked for J. Boswell and Company down in Tulare Lake, and all the San Joaquin Valley interests. And there again, we were supporting the Peripheral Canal. But, for other interests they decided *not* to support it.

Seney: Boswell didn't support the canal?

Burns: No. Because they had the Pine Flat Dam issue.

Seney: Oh.

Burns: Pine Flat Dam was built by the Corps and they were big water users in Tulare Lake, 160-acre limitation that, is it under the Bureau, (Seney: Oh.) that they have to apply the 160-acre limitation for Boswell who has 20,000 acres down there?

Seney: Yeah.

Burns: And so, they've had that interest and they were working with the federal government. It ended up where they paid off the total cost of Pine Flat, therefore the 160-acre limitation did (Seney: Ah.) did not come into play.

Seney: Oh, that's how they got out from under it?

Burns: Yes. But, at that time that was ongoing. (Seney: Yeah.) So, we went down and, you know, met with the people down there, the Salyers, the Howes [phonetic], the Boswells.

Seney: The big land companies?

Burns: Beg pardon?

Seney: The big land companies?

Burns: Oh yeah. That's Tulare Lake.

Seney: What's it like to work with Boswell, and Salyer, and those big . . .

Burns: Great.

Seney: Is it?

Burns: And Boswell, because they had Stan Barnes, and Stan was a very good engineer. He went to Stanford, but he was the, sort of their engineer down there. (Seney: Right.) But, we went down on this one issue. You go down, say, met with these boards and people, "Here's what, we're supporting Peripheral Canal. We think it's the answer. We recognize you're not." And, we thought, "Well," but and Stan was there and they said they told us, and Stan told them the same thing, he wanted to support Peripheral Canal. So, Stan did not have to, in public, take, you know, he did not have to get onboard in publically supporting their position in opposition to Peripheral Canal. (Seney: Huh.) So, that's a, they respected your opinion and no, it, they were great. (Seney: Yeah.) I mean you, they all expected, again, get your opinion, you get it right. (Seney: Right. Right.) And, no. They were really . . .

Seney: Well, companies like that don't, they don't care

about things like–if they're getting what they want from you they don't care if you're in favor of the Peripheral Canal or not because it's not going to influence your opinion and the outcome of the work you're doing.

Burns: That's right they . . .

Seney: So what do they care, you know? I mean, they're very practical about it.

Burns: But, the Peripheral Canal was very important to them (Seney: Right.) because they are large contractors on the State Water Project. They get state water from [inaudible], so they're very interested in getting a water supply (Seney: Right.) and water. But anyway, that's the type of thing that (Seney: Ah.) and we ended up and again, these (Laugh) the background how (Seney: Sure.) these things come together. You know, at that time weather forecasting, because at the Flood Center, before we even had a Flood Center, there were a half a dozen of us and there were a lot of snow surveys to make the water supply firm and we'd get together and coordinate the small group of meteoroligists and we'd come up with a forecast for the runoff from the Sierra, the snow. It was kind of–and we'd make sure that we'd balanced after they made a forecast. We'd put them together. And then when, they'd get in, go in on the Division

of Design and Construction. They came out with weather radar, just new, just coming out. We thought, "Gosh, this could be great." So Harvey Banks, Harvey went back to Washington (Seney: Right.) and made arrangements and got the first radar out, and that was in Sacramento, out in the building we were in at 23rd and R, (Seney: Wow.) and the Weather Bureau moved over. So, that's when the Weather Bureau and the Department of Water Resources sort of, in a sense, moved together, right together, same, you know, office space separate. (Seney: Sure. Sure.) So that was when we were put together and we had radar for the first time for the storms, (Seney: Right.) and so we started there. But then, we were interested in this work in with Boswell and what have you, but became interested in water supply in the forecasting. "Is it going to be wet or dry?" Extremely important. (Seney: Sure.) And so, dealing in hydrology, so I said, "Why don't we take a look at this. Can we get just climatology?" And so, we talked to a meteorologist, said the one man back at MIT, Hurd Willett, Professor Willett, he was the one highly respected. He was looking at making projections beyond seven days, ten days, (Seney: Right.) thirty days. So, we called him and we had him come out for a week to talk to us professionally, "Are we getting in over our heads, or what are we doing?" "No," he said,

we should try, because we wanted to do it, not forecast weather but can they project wet or dry?

Seney: Yeah. For the season?

Worked with a Group of Clients to Begin to Forecast the Water Supply

Burns: All our, flood, our water operations, our floods and everything else. (Seney: Right.) So, then he encouraged us. And so, we went to the districts down over the San Joaquin, Kings River, Tulare–the Bureau of Reclamation and their water districts down there, and the Corp of Engineers, and the Department of Water Resources, and the Bureau. So, we put together a package, got enough money, and we [wished to use Professor] ~~heard~~ Willett ~~was~~, he was just beyond [our price range.] ~~us.~~ So, we met with Dr. Krick. Dr. Krick had been at Caltech and so we went, and he, his forecasting, and he would take seven-day blocks of weather, and you know you can kind of move them ahead so we can get, it's not day-by-day, but it's kind of a seven-day block. (Seney: Right.) So, we met with Dr. Krick, who was quite a promoter, and he said, "Yeah,", he'd be interested. Because he, you know, apparently, supposedly made the predictions for the invasion of Normandy. (Seney: Ah.) So, I mean he, highly, (Seney:

Right.)–anyway, we met with Dr. Krick, so, "Yeah, let's try it." So, we started there and got kind of projected forecasts, and we had to translate that into a runoff. So, we did the San Joaquin, and Kings River, and Tule, taking that can we then project what the spring, you know, how much runoff is going to come off? (Seney: Right.) And the first year we had a disaster. We hit it right on the nose. (Laugh) You know, *really* had good–which is ridiculous. (Seney: Yeah.) But anyway, the way we worked it we would go down and meet down there, Bill Arvola the meteorologist for the Department, specifically forecasting the date, we'd go down and meet with the watermasters and all these districts who were–and we would go over it with them, "Okay, here's where we are. Here's the weather, is this type. Here's the snow survey forecast," and we'd meet monthly with them, and what we found out they weren't using all the data available to them. They really weren't using the snow survey forecasts. (Seney: Oh.) Then we said, "Well," we went for a year then, and then the next forecast we were in the range, we were making progress (Seney: Right.) and then [we] ~~they~~ would say, "Well, we don't need to come down every month." "Oh no, [you] ~~we~~ had to come down" because that was the vehicle. They're always at loggerheads, these districts, on water, water rights, but they all got together, but they all got

together when we came down and gave them a chance to be able to get, (Seney: Oh.) to react (Seney: Ah.) and talk. (Seney: Right.) So, that was kind of (Seney: Yeah.) interesting.

Seney: So, you say the first year was a disaster. I take it you mean there was a lot of water?

Burns: Well no.

Seney: No?

Burns: The forecast was good.

Seney: That's what I mean.

Burns: No, our forecast, no it wasn't a super wet year or anything. It was, you know, about a normal year, (Seney: Right.) a little wetter.

Seney: But, you were right on the money?

Burns: Yeah, we were right on the money.

Seney: How about in subsequent years? Did you . . .

Types of Uses to Which the Weather Data Was Put by Clients

Burns: We did pretty good and it was point blank. The *big* benefit, other than them getting together to

talk, Tulare County, half their roads are up in the snow country half not–they always budgeted a lot of budget for snow removal. But, if it's going to be "dry," heck they can go ahead and plan on doing construction work down here. If it turns wet they can't do the construction work, therefore they can go up and do the snow removal. (Seney: Right.) So here Tulare County all of a sudden (Seney: Ah.) started using the data.

Seney: That's interesting.

Burns: And then, do you fertilize? Are you looking ahead, you know, as far as some of these, you make some pretty long-range decisions. (Seney: Right.) So, they're not life or death, but still you have to make a decision, (Seney: Right.) or, and then we had given them sort of up-to-date forecast . . .

END SIDE 2, TAPE 1. SEPTEMBER 14, 2006.
BEGIN SIDE 1, TAPE 2. SEPTEMBER 14, 2006.

Seney: Lake Tahoe, California. It's September 14th, 2006. This is our first session and our second tape. I think the tape stopped just as you were saying you were forecasting fertilizer need . . .

Burns: Yeah. You could, had questions like, if you had to make decisions of that type, you know.

(Seney: Right.) Not likely, but you make them. But I think then they started to use the snow survey forecast, because the snow survey forecast you go, February, March, April, May, and they began to realize they could use those forecasts and make better–so it was really, (Seney: Right.) it was really working out. And, flood control, because down there flood control is the snow melt. (Seney: Yeah.) Because it isn't the high flows of raining, it's the tremendous volumes of snow melt, because the volume comes down. If it doesn't go north it goes in and floods Tulare Lake. And so, they were very interested in, you know, ~~can the–and then~~ the runoff (Seney: Right.) from that. But anyway they, so this was really going along well, and then the federal government said, "Okay," and then they started, decided they were going to look into climatology, a lot of money. And said, "God, this is wonderful. We'll just latch on." Here, we're doing all this work and put our program in with theirs. (Laugh) They weren't about to do that. (Laugh) So, we had all the farmers down there, they put *money* into this, and they said, "Well why," he said, "Here, all that money is sitting there, why should we be funding?" And, I agreed with them. (Seney: Right.) So anyway, we didn't get the funding and we'd gone five or six years, and it was, it was a good program. So anyway, now they have seven-day, thirty-day

forecasting, (Seney: Right. Right.) but at that time they were, they were pretty hard on us at the end. (Seney: Yeah.) But we kept on, we're, is it wet or dry, *tremendously* valuable. (Seney: Right.) So anyway, that would come up.

Seney: Right. Well, now we take all this for granted, right, the snow surveys, and runoff forecasts, (Burns: Yeah.) and all the rest of it, right?

". . . like down on Tulare Lake in 1969 . . . when water comes down you can't send more than 4,000 second feet *north* to the San Joaquin River now. It has to go into Tulare Lake, because the Kings River splits, either north or into Tulare Lake. . . . They have big levee, very large levees, that flood this cell, more water, then it goes to another cell. And so, it's broken into areas. So, it certainly becomes a question, do the Salyers get flooded, do the Howes get flooded, or Boswell. . . ."

Managing the Flood in 1969

Burns: And like down on Tulare Lake in 1969, you know, and when water comes down if you can't send more than 4,000 second feet *north* to the San Joaquin River now. It has to go into Tulare Lake, because the Kings River splits, either north or into Tulare Lake. More water is going into Tulare Lake, and they flood themselves.

They have big levee, very large levees, that flood this cell, more water, then it goes to another cell. And so, it's broken into areas. So, it certainly becomes a question, do the Salyers get flooded, do the Howes [phonetic] get flooded, or Boswell. (Laugh) So, anyway, the water from 1969, that water's coming and I worked with them on the snow, how much water's coming off, when. And that's when they had a interesting thing that Boswell, they put every wrecked car that California could find, had them shipped down and they put it on the levee for wave wash protection. Okay, a large body of water and the waves just eats the levees away. They took all these flattened cars and used it for bank protection. They had miles of it. (Seney: Wow.) And, they paid a good price, and then when they [were through,] ~~went to~~, they paid people to come in and get it and take it out. (Seney: Wow.) But also in [1983] ~~1918~~ we had a really a big tremendous snow event and they really get on the flooding. Well, they had over 800, over 100,000 acres flooded. But they were, in one section they had a levee, they were spending $50,000 a day on raising levees. And, but here, the question is, very hot, a lot of water coming down, but in snow melt you learn, once it, you know, hot, once that stops the peak snow melt runoff, it drops. I mean, literally in a day. That if it doesn't, it's the amount of energy going into the snow. And

I had no data, but in '83 went up. We had 105 degree in the Valley. Everybody forecasted tremendous flows, but just keeping track everyday of the degree days, the temperature going into the snow, how much water coming off, and it, and the temperatures dropped. You know, what the temperatures kept going up, the temperature kept going up, and the flow it just dropped. So, I called Stan and said, "Okay, that's it." And he said, "Fine. You better be right because we're spending $50,000 a day to raise these levees and we're stopping today." (Laugh) But you know, they look, and they make decisions.

Seney: Yeah. Yeah.

Burns: By June they had 100,000 acres flooded out there. So, they . . .

Seney: Is that all bad to have it flooded? Does it . . .?

Burns: Well, you have to get rid of the water. And so, one way we got rid of the water coming down is they said, "Well, can we put water into the Friant-Kern Canal. The Friant-Kern Canal, you know, goes down to Bakersfield and comes down to where the California Aqueduct is. So, there are two things. Get permission, "Hey," to the Bureau, can they say, "Put pumps at the Kings and Kaweah rivers, pump the flood

waters *into* the Friant-Kern Canal, let it go on down either to other farmers down below." "They can do that." So they got, I went to Mike Catino, at the Bureau of Reclamation, (Seney: Right.) he was in charge of the Bureau, and anyway said, "Hey, all the flood waters can get, you know, use the Friant-Kern Canal. Can we do this?" "Yeah, sure. Why don't we do it." [Catino] just made the decision. (Seney: Right.) So, they put big pumps at the Kaweah, Tule rivers, and then pumping the flow into the the Friant-Kern Canal. (Seney: Ah.) And then that water went down, all the way down to the California Aqueduct. And they had built a connection with the, at the California Aqueduct, and the flood, and the waters coming down. So, put the water into the California Aqueduct and then the Department of Water Resources went back up stream where the checks were, damned it up and put pumps and pumped water in the California Aqueduct back up to where that water could then come down into Tulare Lake. You know, for irrigation. (Seney: Right.) But also they wanted them to, there was water going down the Friant-Kern Canal, for the farmers, "Hey, here's free water." And not only free water, they went to any farmer, "We'll pay you $50 an acre if you irrigate, if you take the water." So, they went, the farmers had, working with Boswell and those people down there, anybody there that made a commitment, you

keep it.

Seney: Is that right?

Burns: Yeah.

Seney: Yeah.

Burns: It's just kind of fascinating. (Seney: Yeah.) But then, then we got all this water down to the California Aqueduct, how about can we get it over to [southern] California? Well, it costs money to pump it over. So Tom [Hurlburt], a young fellow, a young engineer [for J. G. Boswell], so we got on a plane and went to Los Angeles, L.A. Water and Power, and they worked out that Boswell would pay $45 an acre-foot against pumping the water over the hill and then they recovered the water and got all the energy, (Seney: Right.) and California got the benefit of the energy going down. So, we made a deal with the Southern California Edison, so part of that water Boswell paid $45 an acre-foot, pump it over to Southern California. So, I mean, you know, they really did . . .

Seney: Yeah. So, the flooding is serious problem?

Burns: Oh, it's a (Seney: Yeah.) serious problem. (Seney: Right. Right.) But the, here you had all these people coordinating, Department of Water

Resources, the California Aqueduct, you know, pumping that water back up, (Seney: Right.) and just working to make use of the facility and the water you have. So, anyway that's, you know, and again Boswell, you know, you had good people, you made the commitment, that's, (Seney: Right.) you know. And, go way back. The first time I met that was 1958, working in the Division of Water Resources, snow survey forecasts, a lot of water coming down in Pine Flat. We didn't have all the snow sensors we have [now] but forecast a lot of water coming down and going to have to take water into the Tulare Lake. And so Robinson, the manager for Boswell, came up and on a Saturday met with Harvey Banks, Walt Schulz, myself, and they said, "Could you hold off taking these flood waters into the lake?" He said, "Just hold off for a week or two, because we're trying to harvest the grain." And he said, "You know, that," but then they said, "we're able to," you know, it came off, the snow melt came off slow enough they didn't have to put it in at that time. (Seney: Good.) Then we, if our forecast wasn't that good the water tapered off, as much water had come down, didn't have to put water–but they came back and said, "We committed ourselves to taking water into the lake," and they said, "Turn it in." And so, they said, and because that eased the pressure up here. (Seney: Yeah.) And here they said, "No. You backed

off and we said we'd take it later," and they took it, when physically they didn't have to, (Seney: Yeah.) but it eased . . .

Seney: Oh, that's interesting, isn't it?

Burns: So, that was 1958. That was my first contact.

Seney: Yeah. Well, I suppose a good working relationship is important. So you, you keep your word on (Burns: Oh, you keep your word.) something like that?

". . . in the water business. We do have problems where people try to play the games. But, you have to have people who make commitments, and do what they say, and make decisions. . . ."

Burns: And down there, you can, well, that's in the water business. We do have problems where people try to play the games. (Seney: Right.) But, you have to have people who make commitments, and do what they say, and make decisions. (Seney: Right. Right. Right.) So that's, so anyway this is . . .

Seney: Fascinating. Yeah. (Burns: Yeah.) When did you start working for Sierra Pacific Power?

Burns: About 1975, because on the water supply forecast, you forecast Lake Tahoe, the rise of

Lake Tahoe. (Seney: Ah.)

In 1952 They Were Forecasting the Rise in the Level of Lake Tahoe

So, even in '52, you know, the forecast, the group, we'd have to make forecasts of the rise of the water in Lake Tahoe. So, that kind of made . . .

Seney: Why were you doing that? Just part of what you were doing? Just . . .

Burns: Yeah. That's was part, you know, and the forecast of the rise of Lake Tahoe is extremely important. It goes back to the problems around Lake Tahoe, (Seney: Right.) back in the '30s. And back in '07 they had their high water. But, the snow surveys, Nevada's very important. Dr. Roe, Dr. Church, University of Nevada, and he was one, he started making the first snow surveys. He developed the Mount Rose snow tube that they use now to go down and get a core [of snow.] ~~or two.~~ That's called the Mount Rose snow tube. (Seney: Ah.) And, Professor Church went up on here and started making snow surveys here to forecast the rise of Lake Tahoe. Because, you have trouble getting water out of the dam, (Seney: Right.) you can only take out so much water. So anyway, ~~they,~~ this was the first forecast, with Dr. Church up here

at Lake Tahoe.

Seney: I know that–I'm trying to understand. You, did you have clients up here who were interested in the . . .

Burns: No. The, it's a cooperative program, California Cooperative Snow Survey Program, so you had districts, you know, people pay (Seney: Right.) the district. It's a cooperative program. (Seney: Right.) And, I think Sierra Pacific Power is part of the program. The Forest Service.

Seney: Ah. And you were running this?

Burns: Well, well no, well I worked in the Department, at the Division of Water Resources. The Snow Survey Unit in the Division of Water Resources, (Seney: I see.) and they started that back in 1930.

Seney: I see.

Burns: They came and started this. And so the Department, the Division started all the snow surveys in California. You know, so a small group we put out a chart, and then [inaudible] start making the forecast. And so, it tied in here, one of the spots was making forecasts for Tahoe. (Seney: I see.) It was just part of the overall program, and yes they do get funds.

People contribute funds (Seney: Right. Right.) for that.

Seney: But in 1975 Sierra Pacific got a hold of your (Burns: Uh huh.) firm and . . .

The Pyramid Lake Paiute Tribe Sued on the Grounds Their Interests Weren't Properly Represented in the Orr Ditch Decree

Burns: The litigation where the tribe was suing, they said, "The Orr Ditch Decree," that they did not get the water that they should. (Seney: Right.) They were not properly represented. Now, you're probably better . . .

Seney: Well, I know . . .

Burns: I [inaudible].

Seney: I don't know about that.

Worked for TCID for a Time and Sierra Pacific Power

Burns: Generally. And that was the idea then, (Seney: Right.) they were not properly represented, did not get the water they needed, (Seney: Right.) for the fishery, etcetera, in the Orr Ditch Decree. So, they sued and then we came in federal court and then [in audible], Fred

Girard's the attorney for TCID [Truckee Carson Irrigation District] and contacted us. So then I came and started working up here and on that litigation. (Seney: Ah.) So, that's the story about it.

Seney: Working with Fred Girard?

Burns: With Fred Girard, and working with, you know, for TCID.

Seney: Whom I've also interviewed.

Burns: Beg pardon?

Seney: Whom I've also interviewed.

Burns: Oh, have you?

Seney: Yes.

Burns: Fred's good.

Seney: He is good.

Burns: I hope he gave you . . .

Seney: He did.

Burns: Fred is excellent.

Seney: Yes. He was great. Yeah.

Burns: So anyway, Fred, you know, so I got involved working up here with TCID, and of course *with* Sierra Pacific Power Company, because they were widely interested. (Laugh)

Seney: Right. Right. And at that time they were on the same side?

Sierra Pacific Even Paid for Work That Should Have Been TCID's Responsibility in Order to Determine Where They Wanted to Go

Burns: Yes. And, we were working for both. The first one we were to work, first one we started with Sierra Pacific was right at the same time, so we worked for both and they divided the bill up. And so, we worked for both for a long time. And then down in, in [inaudible] later on we did work even while all the problems and negotiations. Sierra Pacific even paid us to work with, for them, for TCID, do the modeling. But I just, independently we did not, wanted to keep it separate, you know, what's going on in the negotiations. (Seney: Right.) When Pete Moris [, Nevada state engineer,] came in working, trying to get Nevada, trying to get TCID onboard, and Pete set up some negotiations, well TCID, Sierra Pacific paid us to work with TCID and Pete (Seney: Ah.) on

trying to work out, get their ideas of what they wanted to do. (Seney: Ah.) So, we were working. So, you know it . . .

Seney: I take it Sierra Pacific Power's motive here was they wanted a settlement and they were hoping you could help TCID come to some kind of a (Burns: Yes.) conclusion?

Sierra Pacific Wanted TCID On-board

Burns: They wanted TCID onboard, (Seney: Right.) and still want TCID onboard. (Seney: Right. Right.) And, so anyway, it kind of evolved. Yeah, but then working on that litigation and then of course that went up, got up to the Supreme Court and it said, "But, the Orr Ditch . . ."–have you seen a copy of the Orr Ditch Decree?

Seney: I have. I have a copy.

Burns: You have a copy? Good.

Seney: Yes. It's a wonderfully thick document, (Burns: So you . . .) very detailed, and (Burns: So, yeah.) yeah.

Burns: And that's the bible.

Seney: Right.

Judge Gerhard Gesell Ruled That TCID Had to Cut Back to 288,000 Acre Feet

Burns: In Nevada. You better understand (Seney: Right.) what's in there. But anyway, of course, it got up and the Supreme Court said, "No, that stands. That's it." (Seney: Right.) And so, you know, that sort of started a chain of litigation. (Seney: Right. Right.) And then the Judge [Gerhard] Gesell, what '72, '73, (Seney: Right.) that, they had came back there and TCID wasn't there, which always amazed me. They weren't in the court with the United States and Judge Gesell came out and "Hey, you have to cut back to 288,000 acre-feet," (Seney: Right. Right.) and put all the limitations on that. And, we were certainly working with TCID. They were talking OCAP [Operations Criteria And Procedures] and working with them a lot of the, running the, the operation of the model, which we will get to, (Seney: Right.) how that played in on all their working. And even before that, working with TCID, "Are they going to get a water supply?" And, you know, they had unlimited water supply until 1965, then they started cutting back, (Seney: Right. Right.) because they, Pyramid Lake was getting nothing.

Seney: Right. Well, winter power generation? I mean, they would take whatever they wanted.

Burns: They'd take it in [for] power because they had the twenty[-six]-foot drop, they had the powerplant (Seney: Right.) at Lahontan, (Seney: Right.) and they went down to the twenty-six foot drop. (Seney: Right.) And power, because Lahontan Dam with the powerplant that's when they first got electricity out in the valley. (Seney: Right. Right.) And so, if you can run–and plus, the Carson Lake Pasture, [inaudible] wash, still water [inaudible], so they felt the water was all going, was being beneficially used and (Seney: Right. Right.) they're entitled to take that. But, you know, then . . .

Seney: No one had ever raised a question to them before. They just *did* it.

Burns: Just *did* it.

Seney: Yeah. Right.

Reclamation Suggested 376,000 Acre Feet Annually and TCID's Board Was Finally Proposing 340,000 Acre Feet and ". . . What Did They Do? They Recalled the Board. . . ."

Burns: And then they, then they were talking about OCAP coming back in the Bureau, setting criteria when they could take water, and they came up, Bureau I think came up with an OCAP

376,000 acre-feet. (Seney: Right.) And then they, we were kind of involved with running the studies for them, "Yes, could you get by with that?" Anyway, that came up and we ended up, you have to get by with 340,000 acre-feet and the Board was going to come back and try to negotiate for that. And, what did they do? They recalled the Board. (Laugh)

Seney: I know, the Board tried to make it, a deal.

Burns: Tried to make . . .

Seney: Yeah.

Burns: And they were talking with, you know, had talked with everybody, they were recalled.

Seney: Yeah. And a deal which they wish they had now?

Then TCID Was Sued Because It Wasn't Following Judge Gesell's Ruling

Burns: Oh. And then (Seney: Yeah.) Judge Gesell's decision, you know, it comes down and they're supposed to be meeting that. And, then they're sued because they weren't following that.

". . . then we got involved in that. If you take the Truckee River Agreement and really follow these

agreements through to *find* the water when it's available . . . we felt we could tap through and demonstrate that TCID was getting water that they were entitled to, that they were entitled to *more* and *could get* more than, you know, what Judge Gesell had . . ."

> But, it's interesting because then we got involved in that. If you take the Truckee River Agreement and really follow these agreements through to *find* the water when it's available, and we felt we could tap through and demonstrate that TCID was getting water that they were entitled to, that they were entitled to *more* and *could get* more than, you know, what Judge Gesell had [ruled], and they were entitled to it. (Seney: Right.)

". . . we presented all this to Judge Thompson. He was really sharp. He had been an attorney on the Orr Ditch Decree. . . A very good federal judge. . . . Then the manager of TCID is testifying and he testified that he ignored Judge Gesell's order, you know, flatly, 'Yeah, I ignored it.' And so Judge Thompson simply says, 'Yeah, I don't care what your numbers are. They ignored a federal court order. That's it.' And that's where they come back to have to repay a million and some acre-feet. . . ."

> And so, Judge Thompson, we presented

all this to Judge Thompson. He was really sharp. He had been an attorney on the Orr Ditch Decree representing the people. A very good federal judge. Really a hard [inaudible], but he really knew what was going on water-wise. But, it was kind of interesting. Then the manager of TCID is testifying and he testified that he ignored Judge Gesell's order, you know, flatly, "Yeah, I ignored it." And so Judge Thompson simply says, "Yeah, I don't care what your numbers are. They ignored a federal court order. That's it." And that's where they come back to have to repay a million and some acre-feet.

Seney: Oh, the recoupment business?

"If they'd been wise they would have started playing the game. Started cutting back and trying to accommodate. But, they were so adamant that, 'That's our water. We have a right to it.' . . ."

Burns: The recoupment. Simply because the manager said *he ignored*. If they'd been wise they would have started playing the game. (Seney: Right. Right.) Started cutting back and trying to accommodate. (Seney: Ah.) But, they were so adamant that, "That's our water. We have a right to it."

Seney: So, when they said that to Judge Thompson,

Judge Thompson's view was . . .

Burns: And he said ignore it, you know, he didn't care whether they were entitled to the water or whatever. They ignored a federal court order. And so then all hell breaks loose. (Laugh) (Seney: Yeah.) So now, supposedly, you know, they owe over a million acre-feet (Seney: Right. Right.) in recoupment.

Seney: Right. Well, I guess the judge has decided now in that case it's more like 200,000 acre-feet that's going to be owed.

Burns: I don't know.

Seney: Yeah.

Burns: Yeah. They just have to work that out.

Seney: Right. Right.

TCID was not willing to get onboard the negotiations regarding the Truckee River

Burns: It should go away, because, (Laugh) it should go away. Because they were, they were cutting back on water. But, nevertheless, you know, they have had to pay a lot of attorney fees. (Seney: Right. Right.) And then, when we were coming down to negotiations and they sort

of, they were leading me on. "We're onboard with them. Get them onboard." And, getting down to the negotiations as far as the Public Law 101. And they kept saying, "Well, we don't want to have the Valley bought out." Which we, and we'd meet with them and say, "Okay, well let's put a limit in the negotiation. Here, let's put a limit 20,000 acre-feet. What do you want in here? Put a limit so they can't buy more than that." They wouldn't agree to it. (Laugh) They wouldn't put that in.

Seney: The TCID would not?

Burns: TCID wouldn't. And so, they just *wouldn't* get onboard. And, if they had kept Fred Girard onboard they would have made it. But, down the road they've all kind of thought the fees are too high, etcetera. If they had kept Fred–Fred understood. He understood the system, the rights, you know, and he knew when, when you should do something.

Seney: Right. Others have said the same thing.

Burns: Have they?

Seney: Yes, right. That Fred Girard was really good at this and perhaps could have influenced them.

Burns: Very practical.

Seney: Yeah.

Burns: Yeah, he knew. He knew, he'd protect them. (Seney: Right.) And, very good in the courtroom. (Seney: Right.) Fred, you know how he is, kind of the–(Seney: Yeah.) and they, some of them would sit in and listen to Fred in the courtroom, "What in the heck is this guy doing?" Fred would get up, walk all around the courtroom examining a witness, (Seney: Yeah.) and you know how Fred (Seney: Yeah.) talks, and then he'd just stop. And [they would say,] ~~he'd,~~ "Why didn't he do this? Why didn't he do that?" Yet, when he'd come and he'd write up the appeal, Fred had these witnesses exactly what he wanted them to say. (Seney: Ah.) When he got what he knew he wanted he stopped. He'd never go the next–Pelcyger keeps going. (Laughter) Yeah, but anyway. (Seney: Yeah.)

". . . TCID should have . . . had some people who wanted to be onboard, but this purchase, Ted DeBraga who's the president now, and as you know, and then when things went through who was the first one to sell a couple, a million dollars of water? It was Ted DeBraga . . ."

But it's, TCID should have been where they had some people who wanted to be onboard, but this purchase, Ted DeBraga who's the president

now, (Seney: Right.) and as you know, and then when things went through who was the first one to sell a couple, a million dollars of water? It was Ted DeBraga, which, you know– (Seney: Right. Right.) but damn it he was, he was representing on, the board and all the farmers there. (Seney: Right. Right.) And well it's just Ted, but anyway Ted ended up . . .

Seney: How would you, how would you explain the reluctance of TCID to come to, you know, to come to the table and accept these offers and compromises?

Burns: I don't know whether it goes back to kind of the Indian, you know, the conflict with the Indians. I kind of, I kind of think it's back in that basic. Because, we got involved in litigation, started working, and Pelcyger's on the other side. Well, he was very cordial Pelcyger and the Court. We never had a, you know, other contact with him and you couldn't, we couldn't talk. They couldn't talk to the Indians. You could never–that barrier. And, they had all this water, you know, they were entitled to it and they had a *right* to it.

Seney: TCID you mean.

Burns: TCID said, "So it's *our* water and we have the right to it." And just sort of a mindset. And

then, I'm kind of jumping ahead, where that broke down was Joe Gremban and Joe Ely. (Seney: Right.) So, you know how that came about?

Seney: Right. Right.

"Joe Gremban apparently called Joe Ely and said, 'You need a cup of coffee.' Because Joe Ely, Joe Gremban needed water. . . ."

Burns: Joe Gremban apparently called Joe Ely and said, "You need a cup of coffee." Because Joe Ely, Joe Gremban needed water.

Seney: Right.

Burns: And backing up . . .

Seney: Reliable water?

". . . Sierra Pacific, they said, 'Well, with all this going on we have the Stampede Reservoir,' and they formed the Conservancy District (Seney: Right.) to sign a contract with the government for, the water from Stampede Reservoir, 57.3 percent of the yield of Stampede was for M&I . . ."

Burns: Backing up, now how did we get involved, *more* deeply with Sierra Pacific. That, settled the trial, and then Sierra Pacific, they said,

"Well, with all this going on we have the Stampede Reservoir," and they formed the Conservancy District (Seney: Right.) to sign a contract with the government for, the water from Stampede Reservoir, 57.3 percent of the yield of Stampede was for M&I [Municipal & Industrial], while 26 percent to go to the farmers, the remainder to go to fish. And so, here we had a nice large reservoir up there (Laugh) and then–I'm kind of jumping back and forth here.

Seney: That's all right. Go ahead.

Burns: And, we were going to take a look at, "Do they have a water supply?" Well, in taking a look at Stampede, if they got the 57.3 percent and used irrigation rights, you know, *they did* have a pretty good water supply, (Seney: Right.) because when the Truckee River goes dry, 1977 you had thirty to thirty-five cubic feet per second flowing past the state line. There's no water. (Seney: Right.) So, you *have to have* stored water, and that's what the company was looking for, the stored water rights.

Seney: Seventy-five to '77 were the worst drought years, ever, were they not?

Burns: Well, a short–they were important, *but* then this '92, we have a *longer* period of drought here in

the ‘90s, up to ‘97. But, in just one shot and here, yet, it was . . .

Seney: Yeah. That was the sharpest?

Burns: Right. (Seney: Yeah.) We had the ‘30s, ‘33, ‘34, ‘35, so we had the, a drought of the ‘30s, which we were kind of relying on the study, then we had the ‘77. (Seney: Right.) which really helped trigger, “Hey, what are they, you know, going to do?” Because, you *have* to draw the water out of Boca, and the only water left was up at Independence. So, they brought 4,000 acre-feet down to Boca. But, when you get a few hundred thousand people and you’re down to the point you don’t know what’s going to happen, and so they had 4,000 acre-feet of water down there and they started to call on that in ‘77. So, you really need, you really needed water. But at about that time Sierra Pacific said, “Hey, do we have a water supply?” They ended up retaining Murray, Burns & Kienlen to take a look at their water supply. So, we came in and this time we had the model. Because–maybe I’ll drop back later on how the model developed. The model being, to keep track of all the water, allocate the water and all the rest, and keep track of evaporation, where it’s stored, and water rights, keep track of all of that, and apply all the limitations we have, which of course by the Orr Ditch Decree every drop of

water in the Valley is adjudicated. (Seney: Right. Right.) And then, California is sitting up here. California can get their [inaudible]. If you don't get a settlement with California they can drain you dry. (Laugh) And, we have Tahoe. (Seney: Right.) So, you know, this question, "Do they have a water supply?" and we have the model, because we were looking at Stampede, if you get the . . .

Seney: How did the model get developed? Why did you (Burns: Okay.) develop that?

Developing the Truckee River Water Model

Burns: Well, we started, in order to take a look at the water supply back on the, when the Indians challenged (Seney: Okay.) the basic Orr Ditch (Seney: Right.) water. Well, you have to understand what's happening. So, with Rod Hall, an engineer up at–so [he] ~~here I~~ had a two-man firm, and we'd all worked together in the Department. He was over in East Pakistan. So, we all kind of worked, and he was *really good* on Fortran programming and what have you, and a *good* engineer. And then, okay, we had the water rights. We had the rest, so we got together on, to make the water supply analysis for Sierra Pacific.

". . . the Bureau had a basic model . . . trying to

keep track of the water, but a very basic one. They didn't keep track of the water rights, when can you store, and the rest, but they were using it for their Washoe Project to analyze how much water would get down for TCID and the Washoe Project. And, they made that available to us. . . ."

And the, the Bureau had a basic model of the Fortran, trying to keep track of the water, but a very basic one. They didn't keep track of the water rights, when can you store, and the rest, but they were using it for their Washoe Project to analyze how much water would get down for TCID and the Washoe Project. And, they made that available to us. And so, we started with that basic Fortran (Seney: Ah.) model and started trying to kind of build a model.

Getting a Data Set for the Model Everyone Agrees with

And Monte Bianchi, who kind of ran it (Seney: Right.) for them, he was very good with this, but we got into it and you didn't have the water rights built into it. You didn't have the Truckee River Agreement, all the limitations of the Truckee River Agreement built in. So, we were generating the hydrology to what goes into it. So, as far as hydrology, that took us a few years. You had to have a common data set. We have a hundred years of record. What was the

1907, how much water came down the Little Truckee River? If you're going to analyze this you better have agreement of what the water supply is. (Seney: Ah.) So, we started trying to get a data set everybody could agree with. So, we met with the USGS [U.S. Geological Survey], with the watermaster, and we got all the representatives together, and the Bureau of Reclamation, and we got, you know, and then we'd keep meeting with the State of Nevada to come up and get an agreed database. It took years, but we finally ended up, and the tribe, and Ali Shahroody signed off. "Okay here is the agreed database, now we make an analysis. We're not going to argue about the water supply numbers." (Seney: Ah.) So that was a, and that took us up to 1980. So, that was the . . .

Seney: But, that was a key matter wasn't it, to do that?

Burns: Oh, absolutely. You come back to data. You have to have good data. You can wave your arms all you want, but until you can say, "So we put that here. Now, we're going to operate this system, how much water's coming in to Tahoe, how much is going out, how much runoff?" And, we dealt in monthly blocks.

". . . we started with the Bureau's basic model and then started to put in, for example, on the Little Truckee River, the first 3,000 acre can be stored at

Independence. And then, because then the next in line is Boca Reservoir . . ."

So, we started with the Bureau's basic model and then started to put in, for example, on the Little Truckee River, the first 3,000 acre can be stored at Independence. And then, because then the next in line is Boca Reservoir, and Boca's 1937 right. So, you can put water into Boca. And, when you fill that up to Boca, then you can go up and fill Independence. No, fill Independence– we fill–Boca, and then go to Independence, *then* you can put water in Stampede. (Seney: Ah.) So, you have to keep track of all this water time wise and who has the right to store it. (Seney: Ah.) The first 25,000 acre-feet coming down *after* the 3,000 in Independence *can* come down to Boca Reservoir. It *can* be stored adverse to TCID, but once you store 25,000 you can't store anymore until you make sure TCID has taken their water. (Seney: Ah.) So, the upper 25,000 TCID has to get what they're entitled, then you can fill Boca up to 40,000. Then you can go back up and (Laugh) . . .

Seney: And fill Stampede?

Burns: And fill Stampede. So, that's, you have to have all that built in, (Seney: Ah.) are you meeting all those criteria? (Seney: Right.) And so, we

started to build that in and what we would do, Bob Leighton, of Sierra Pacific–not too many engineers involved directly in it, and so we'd take that and work that out and go to Roland Westergaard, and say, "Okay, here is this way to interpret. This is the way we're, it's in the model," and get their blessing on that, and then the Truckee River Agreement, which is really an operating agreement. (Seney: Right.) And then how to understand . . .

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BEGIN SIDE 2, TAPE 2. SEPTEMBER 14, 2006.

Seney: And the Floriston Rates are an important part of it?

Burns: Oh, absolutely.

Seney: Yeah.

Burns: But, (Laugh) I'll keep–I might be working my way back to it.

Seney: That's all right.

Floriston Rates Date Back to 1908

Burns: But, the Floriston Rates are key to the settlement, but the Floriston Rates go back to 1908. In 1908 they had, at first, a rock and crib

dam, and the Truckee . . .

Seney: At Tahoe, at Tahoe City?

History of the Dam at the Truckee River Outlet of Lake Tahoe at Tahoe City

Burns: At Tahoe. (Seney: Yeah.)

". . . built in 1870, and they used the dam, the big sluice gates, water . . . logging all the way down on the Truckee. Put the logs in the river and lift the gates, big surge of water. They had to get the water down to Truckee, the logs down to Truckee. (Seney: Ah.) And it was the Donner Boom & Lumber, or Lumber & Boom Company, and they got permission . . . to charge people downstream for that service. . . ."

> And, that was built in 1870, and they used the dam, the big sluice gates, water, and there was logging all the way down on the Truckee. Put the logs in the river and lift the gates, big surge of water. They had to get the water down to Truckee, the logs down to Truckee. (Seney: Ah.) And it was the Donner Boom & Lumber, or Lumber & Boom Company, and they got permission from the State of [California] ~~Nevada~~ to charge people downstream for that service. So, the Donner Boom & Lumber Company had the dam and had the right to

control the water going down. And then the Truckee River General Electric Company, and they had been using the powerplants down below, but they then purchased from the, they purchased the dam, because in the meantime the Floriston, there was a mill at Floriston, a pulp and paper mill, and they had a Floriston Land Company, and they had purchased the dam from the Donner Boom & Lumber Company. So, they owned it. So, the Truckee River General Electric Company were purchasing it from the Floriston Pulp & Paper Mill. (Seney: Ah.) And, they had the mill there and they relied on the 400 or 500 cubic feet a second that came down there for power at the mill. But, you also had the other small powerplants, and Truckee River General Electric had a couple of these plants, and they were relying on those plants for energy and the water. So, when the Truckee River General Electric purchased the old dam, in that contract they agreed to maintain the 400 cubic feet per second in the wintertime or the 500 at the state line at Floriston in perpetuity. They committed to do that, to use the water in Lake Tahoe. So, and also, it would also help [protect the powerplants down there.] (Seney: Right.) So, that was the start of the Floriston Rates. (Seney: Ah.) And then the federal government, you know, came in, 1902, the Reclamation Project, and they're going to make, there's a boom, and they're going to irrigate

over 300,000 plus [acres] ~~acre-feet~~ (Seney: Right.) of the desert. And so, they recognized they had to have a water supply. So, and at that time they'd also been making measurements. The government had come in and started making measurements on some flows in some of these streams. And, they were making measurements at Tahoe.

In 1903 Reclamation Claimed 3,000 Second Feet from Tahoe Dam and Enough to Deliver 1,500 Second Feet at Derby Dam

In 1903 they put, and the way you got an appropriation of water, you put a notice on, where you're going to divert it, put a notice on a tree and they, and they stuck a notice up that they were going to get a right to get a release of up to 3,000 second feet from Tahoe Dam, and also get enough water to have 1,500 cubic feet per second at the head of Derby Dam. So, in 1903 they "got that" . . .

Seney: They tacked up their . . .

Historic Irrigation in Truckee Meadows Using Natural Flow of the Truckee River

Burns: They tacked up. (Seney: Yeah.) So, in effect, they got the stored water at Tahoe. And down in the Truckee Meadows you had about twenty-

eight or thirty ditches, and they started, you know, they started putting ditches in the 1860s up to 1875, but they were getting, getting the natural flow. So anyway, (Seney: Right. Right.) it started to come to a conflict.

Seney: Yeah. I understand that the, that those water rights down there are dependent on the natural flow and they don't have anything to do with the stored water at Tahoe, right?

Burns: They did in 1913. Or, in 1935 the Truckee River Agreement.

Seney: Ah. That changed it?

". . . the government . . . wanted to control the water of the dam so they . . . purchased that land, designed and went to contract for a new outlet coming out of Tahoe. . . . went to contract, contractors were going to get started and they were shut down . . . they recognized they needed to get control of stored water and they started working with the Truckee River General Electric Company, which is Stone & Webster. . . . they finally agreed. They started building the present dam. And, the Reclamation Service had a resident engineer, but Stone & Webster was very deeply involved in design, and what have you. So, they built the first half of the dam, completed that in 1909 . . .then they came back in 1913 and

finished the other half. . . ."

Burns: That started the change. Yes. (Seney: Ah.) But, it really started in–then, you see, the government, they wanted to control the water of the dam so they purchased the 64-acre tract. The Bureau purchased that land, designed and went to contract for a new outlet coming out of Tahoe. And so, the plans, "We have the plans," they had it all set to go, went to contract, contractors were going to get started and they were shut down, whether by an injunction, or what happened, but that 64-acre tract was never used for the new outlet. So, they recognized they needed to get control of stored water and they started working with the Truckee River General Electric Company, which is Stone & Webster. (Seney: Right.) And they tried to negotiate to get a right, and again I don't know *all* the details, but then they finally agreed. They started building the present dam. And, the Reclamation Service had a resident engineer, but ~~the~~ Stone & Webster was very deeply involved in design, and what have you. So, they built the first half of the dam, completed that in 1909, and they planned a – then they came back in 1913 and finished the other half. So, they finished from 1909, then 1913 the dam was finished. And at 1912 they decided, you know, they had to, there's a natural rim out there that when you get down to 6,223, no water (Laugh)

(Seney: Right.) comes over that. So, they recognized, they wanted to get better control. Your dams down here control the water. They started dredging, from the dam, upstream. And that dredging went up, oh, seven hundred feet. You can see it today. Very wide and slow water, then you can see it goes up. And, they were stopped, again, from dredging, you know, back in1912. And all these records, all the Reclamation Service records are out at TCID and they're wonderful records. So, I sat down and I just went through them and the type of thing that you learn from those, you found in the survey book, you know, we have–you don't use Lake Tahoe, you don't, this not mean sea level, when you refer to the level of Tahoe. That's not mean sea level.

The Lake Tahoe Datum

It's Lake Tahoe datum. It's a very *special* datum. And then how they got that, in 1905, a nice calm day, they had a, they had an idea about what the elevation should be, so in June of 1905 that elevation, the lake is 6,225.

". . . when they built the dam they kept track of that as a datum. And . . . they put a hexagonal bolt on the south wall coming out and that ties it with that elevation from 6,225, set the elevation there. So, Lake Tahoe datum is about a foot and a

half-, and three-tenths, within the mean sea level. But, you have to, as written into TROA, you have to be careful. . . ."

So, they came back over here and when they built the dam they kept track of that as a datum. And when they built the dam they put a hexagonal bolt on the south wall coming out and that ties it with that elevation from 6,225, set the elevation there. So, Lake Tahoe datum is about a foot ~~and a half-,~~ and three-tenths, within the mean sea level. (Seney: Oh.) But, you have to, as written into TROA [Truckee River Operating Agreement], you have to be careful. (Seney: Ah.) And so anyway . . .

Seney: It's 6,223 that's the number that's in TROA?

Burns: Is the level. (Seney: Yeah.) But on that day in June . . .

Seney: It was 6,225?

Burns: They said, "It's 6,225." You know, you'd come back sixty-five to here, that's, you know, 6,220 and so they established the benchmark. And the other thing they did in 1903 . . .

Seney: Well, what's the impact of that, having that benchmark at sixty-two-, 6,225?

Part of the Issue of the Lake Tahoe Datum, Which Is off Between One and Two Feet, Is Determining Where the Sovereign Lands of the State of California Begin and End and Where Is the Legal Lake Boundary on Private Property

Burns: Well then it established the law. When you deal with the water level. What is the sovereign lines of California? What elevation? You have to assign an elevation. You know, it means, if somebody wants to come in and survey you want to survey a lot down here (Seney: Ah.) what's a high water line? What, you know . . .

Seney: Oh, I see. So surveying along the lake at 6,225.

Burns: Sure, to get that level. Yeah. (Seney: Ah.) Sovereign lands. What does the State of California own, you know, what level? (Seney: Ah.) All the waters, everything, our operational forecast, the Truckee River Agreement, all refer to elevation of Lake Tahoe, "Lake Tahoe datum." So, we're measuring from here and not from here so we come up this level. If we didn't in here it would be a different elevation. (Seney: Right. Right.) So, all, the Truckee River Agreement, everything, and even in TROA you have to refer to Lake Tahoe datum. So, that sort of established that. (Seney: Ah.) But what they also did in nineteen–they were making current meter measurements on trying

to get an idea of how much water they get out of the ~~little~~ Truckee River–and they put a gauging station just down stream of where the dam, you know, the old dam, just downstream where the existing dam is, and made current meter measurements and they set a staff gauge in so the reading of one foot on the staff really measured ten cubic feet per second over here. Fortunately, they tied it back to that datum. They tied it back to the benchmark, so we are able to establish the channel characteristics before they built the dam, the original channel characteristics coming out of Lake Tahoe. (Seney: Ah.) So, you could tie–you know, I found that little piece of paper in the survey book out in TCID's . . .

Seney: Wow. And why is that important? What is important about that?

Establishing the Mean Lake Level of Lake Tahoe

Burns: Well, then it came into play (Laugh) when the State of California came back and said, "What is the sovereign lands here?" You know, big issue. "What are the sovereign lands (Seney: Right.) for this?" So, the Attorney General's Office said, "Well, we better look back before the dam went in." And so, it ended up that we worked with them on that, so we ended up with all these back records of how much water was in

the dam, with the dam, but we can back it out and with knowing this, we could, water down here, okay, ten feet, and elevation we got so much water out, so it gave us, [a flow rating.] ~~we've got TROA.~~ And the we had the survey, the 1903 survey, of the natural channel going back up (Seney: Oh.) and all of the, all surveyed. So, we were able to then go back and put the characteristics of the old channel up into the lake and then operate the lake with all the historic record. And we ended up with, "What would happen without the dam?" So, we generated, okay here are the elevations of the lake without the dam. Again, data. (Laugh) (Seney: Right.) And I, you know, to us we could, you know, say "Here, if you don't like, you know, what we did do something else, but here is a basis for this." So, we came up and said, "Okay," and then go back and the mean elevation is 6,227.5 that we came up with. And then the Attorney General they said, "Okay, they're going to go into court and claim sovereign land, the mean level of Lake Tahoe, the natural mean level." And so that . . .

Seney: That what you, the 6,227.5 you get off of all this historic data?

Burns: Yeah. That is, we ran all the floods and everything, how much flood, (Seney: Right.) because, you know, this operates. It goes up

and down. (Seney: Right. Right.) And so, if we know how much water is coming in, so much in flood and with these characteristics, so we just operated with the natural channel and natural outlet. We say, "Rate it." If we have two feet over the, you know, the natural rim and coming down, (Seney: Right.) we *knew* then the elevation in the lake. It went up, and anyway we can relate the rating, we could rate the outlet. So, we had so much water coming in and we know how much water will go out, so you just keep balancing it. So much water and so much out it changes the level. So anyway, we came up with that. And, you know, it was kind of a sideline in '77, you know, how do you check this. And, down at Sugar Pine Point the water is very low and there are large granite stones, and the grinding stones of the Indians, survey those. And, all those grinding stones, many of them, at elevation just about 6,227.

Seney: Oh!

Burns: To us, "Hey, the mean elevation, that is not a bad gauge of the mean elevation of historic mean elevation."

Seney: Because they were above water?

Burns: Sure, and they'd be down close to the water.

Seney: Sure they were. Right.

"'The sovereign lands is from 6,223 down.' So, . . . the State of California owns from 6,223 *down*. *But*, from 6,223 up to 6.229.1 feet they found that there's a public interest in having access to all the lands between 6,223 and 6,229.1. So now the public. . . has a right to access from 29.1. . . ."

Burns: And what's the average, you know, with that– and that's no control down here, naturally, so they, that kind of (Seney: Ah.) encouraged us. So, they went into court with that but then the Appellate Court on its own made some other findings. They made some findings of fact and they came up and said, "The sovereign lands is from 6,223 down." So, there's now the sovereign lands, the State of California owns from 6,223 *down*. *But*, from 6,223 up to 6.229.1 feet (Seney: Right.) they found that there's a public, there's a public interest in having access to all the lands between 6,223 and 6,229.1. So now the public, you know, all these big owners have fences (Seney: Right.) right down to 6,223. Now the public has a right to access from (Seney: Ah.) 29.1. You can go down and walk. They cannot keep you off. (Laugh) So, you know, and there's, then you end up with . . .

Seney: Interesting.

Burns: So, that's how some of the data, when you want data.

Seney: Yeah.

Burns: So.

Seney: Well that's, this with the grinding stones is fascinating. That must have made you feel really good?

Burns: Oh yeah, it would.

Seney: Yeah.

Burns: Again, either the data's good or it's not.

Seney: Right. Right.

Burns: If, you know, it turned out some–but it's just bad, you look for things like, as an engineer, (Seney: Sure.) you looked at things like, "Hey, does this confirm what we're doing?" (Seney: Right. Right.) So anyway, all that was used to establish California's, what they owned and this public trust, the public has a public interest and you can, you can access now. So, you go walk around the . . .

Seney: No more fences to the water line?

Burns: Yeah.

Seney: Yeah.

Burns: Or just, you know, you have the right. Now, there are a lot of piers you have to climb over. (Seney: Right.) (Laugh) But anyway, so that sort of . . .

Seney: Wow. That's interesting.

Lake Tahoe Dam Is Still Owned by Sierra Pacific Power Company, but Reclamation, since 1915, Has the Right to Operate the Dam with the Proviso That it Meet Floriston Rates Requirements

Burns: Sort of a side (Seney: Right. Right.) moment we have there. But, you know, you come back to a dam in the federal government, they just couldn't, I guess, negotiate to operate the dam. So, in 1913 they came, "Okay," entered into condemnation proceedings to get control of the dam and really try to–but they, they ended up with a stipulated judgment, I guess you'd call it, whereby they didn't get, you know, didn't purchase the dam itself. What they got, the fourteen acres right around the dam, they got a right to use that and they got a right to *operate* the dam. The dam is still owned by Sierra Pacific Power Company and the land is still owned, but the government got a *right*, an

easement, a right to *operate* the dam. So, they got that in [1915.] ~~1913.~~ Then by [1915] ~~1913~~ what they also then agreed to then, then the Floriston Rates. There they had, Truckee River General Electric had agreed in 1908, "We will meet," and then the federal government said, "We will meet those rights."

Seney: They inherited those?

Burns: They inherited those rights and said, "We will meet those." So, they cast that in stone. So everybody said, "Well, they started in nineteen . . ." No. The Floriston Rates started in 1908, so they were *adopted* by the federal government, but then they *also* had a lot of criteria to elevations of the lake in this stipulated judgement on, you know, when extra water, and the Bureau could get it, etcetera. (Seney: Ah.) But then that, that went by the wayside with the Truckee River Agreement in 1935. So anyway, you have all, (Seney: Right. Right.) and so then of course–no, that was, I beg your pardon, 1915 was the date they finally got that. It was in 1913 they started the adjudication.

Seney: I see.

In 1913 Reclamation Brought Action to Clear the Water Rights in the Area to Insure Stored Water Would Get past the Ditches in Truckee Meadows

and the Settlement Came in 1926

Burns: In 1913 they started [to adjudicate] ~~toward~~ the Orr Ditch Decree as they brought an action against, what, 17,000 water right holders in Nevada. Because with the Truckee Meadows, all these ditches, they had to get the stored water past Truckee Meadows down to Derby Dam, (Seney: Right.) and that's [why] ~~when~~ they needed to adjudicate all the rights in Nevada. (Seney: Ah.) Otherwise, the right, they'd tell them to [inaudible.] And the water rights in the Truckee Meadows works with the natural flow not the stored water. (Seney: Right. Right.) But, how are you going to make sure? So, they started in 1913 on the adjudication. (Seney: Right.) In 1926 they got a, a special master came out with his findings in 1926, and that same year the Bureau turned the operation of Truckee-Carson over to TCID, (Seney: Right.) and then they started operating the dam as well. But anyway, then California got very concerned on the level of the lake, and the water going below the rim, and then we had the drought. In '24 water was below the rim and they pumped some water out of the lake. But, all of that was going on.

Seney: In 1924?

Burns: 1924.

Seney: They pumped?

Burns: They pumped some. (Seney: Right.) And then in the ‘30s.

Seney: That’s when they came and tried to dig the ditch, wasn’t it?

Burns: Well they did, they put a pumping plant out there (Seney: Ah.) for three years. They actually put a pumping plant out and pumped it up, got up–they had gone another time and tried to dig and they were stopped. (Seney: Right.) But they did, and they set pumping plants out there and I have the years. I think ‘24, and then two other years in the early ‘30s they did pump some water, (Seney: Right. Right.) and use some, some water. But with California interest they, earlier you had a very high lake level and very high in 1907, kind of flooding land, and so then your water’s below the rim so you had all the boat docks. So, California, *extremely* interested in what’s going on up here, they formed a–and maybe you’ve had all this with others?

Seney: That’s all right.

Truckee River Agreement of 1935

Burns: They formed the California–I forget the name of

their–a Colonel Barton [of] ~~and~~ the [state] Reclamation Board was in charge of it. So, they started meeting with Nevada interests and trying to work out, about "How high is the level going to be? How about keeping water from dropping down so early." (Seney: Right.) And together and with Nevada they ended up with the Truckee River Agreement in 1935, which *is* an operating agreement. And that's where you spell out, really, the controls on the river. But, California *didn't sign* it, but California had a *big* part in implementing it, (Seney: Ah.) getting it, you know, getting it agreed to. And, that's where like at Tahoe, you end up with, if you have sufficient water at Floriston, 400 or 500 cubic feet per second, you will release *no* water from Tahoe. Cut it off. Literally, you couldn't release water. (Seney: Right.) And that's part of the Truckee River Agreement. (Seney: Right.) *But*, if you're not meeting the flow here then you shall release, (Seney: Right. Right.) release the water. So, that type thing, you know, (Seney: Yeah.) getting, got in. And then, in the dry period, when you're really dry, how can you balance out the water, you know, getting water from Tahoe and the rest in a dry period? Then, it comes out that, you look at the water, Truckee Meadows can divert sixty-nine percent of water, but TCID gets thirty-one percent of the water. (Seney: Ah.) It gets very complex.

Seney: Really? Why don't we leave it there. Do you mind if I come back and see you again?

Burns: No.

Seney: Okay.

Burns: Yeah.

END SIDE 2, TAPE 1. SEPTEMBER 14, 2006.
BEGIN SIDE 1, TAPE 1. SEPTEMBER 25, 2006.

Seney: I should say, Lake Tahoe, California. Today is September 25th, 2006. This is our second session and our first tape. Yeah, Mr. Burns, we were talking about the Tahoe datum. And, go ahead and expand on that, and, if you like.

Burns: Well, the Lake Tahoe datum is important to us because of the Truckee River Agreement in 1935, *and* in TROA [Truckee River Operating Agreement] we refer to Lake Tahoe, the elevation of Lake Tahoe, and it's Lake Tahoe datum (Seney: Right.) that you're referring to. (Seney: Right.) So, all our operations come down with elevation 6,223 and 6,229. (Seney: Right.) And again, it is the Lake Tahoe datum, which is about 1.3 feet different at mean sea level data. (Seney: Right.) And, that's significant to us. You can't take your quad sheet here and say, "All right. Now, I'll look at

the quad sheet. Here's my level."

Seney: A quad sheet is?

Burns: The quadrangle. A Geological Survey topographic maps.

Seney: I see. So, this would be a quadrangle of that map?

Burns: Yeah. It's a map, and I know people have tried to use that down around the lake. "Well, here's the elevation of ground," but they don't realize that they're looking at the water level is different (Seney: Ah.) and the Lake Tahoe datum, not on the U.S. Geological Survey data.

Seney: Normally if you were looking at a lake, Berryessa, or something like that you'd look at the . . .

Burns: The elevation that goes with the quad sheet and it would be expressed to a common datum. (Seney: Ah.) In other words a National Geodetic vertical datum.

Seney: I see.

Burns: But anyway, this Lake Tahoe datum is unique and I find people need to . . .

Seney: Yeah. And that's interesting because they entered this original measurement of it on that (Burns: Right.) very calm day?

Burns: Calm day. It was 6,225, and we tied everything to that. (Seney: Uh huh.) And that was important to us because I mentioned they started making water flow measurements in all these streams, (Seney: Right.) in 1902. (Seney: Right.) And they put a stream gauge downstream of the old dam, (Seney: Go ahead.) and on, with that and they had a staff gauge, and they relate the staff gauge, what's the reading on the staff gauge to the water elevation. So, they could make a current meter measurement. Then they know that if the water level is at this level that's five cubic feet per second.

Seney: Wow.

". . .I found in a survey book a piece of paper that tied the staff gauge, where they made the measurements, *to* the Lake Tahoe datum. And by doing that then we *knew* the elevations of the *flow* at the gauge in relation to the flow, the level of the lake. And, that was the data that we were able to use to go back and reconstruct, 'What would be the elevation of Lake Tahoe in the historic times *without* any dam?' . . ."

Burns: And that's, like I mentioned, that I went through

all the Reclamation Service records there at TCID, (Seney: Right.) just boxes of them. It's really a wealth of information. (Laugh) And, I found in a survey book a piece of paper that tied the staff gauge, where they made the measurements, *to* the Lake Tahoe datum. And by doing that then we *knew* the elevations of the *flow* at the gauge in relation to the flow, the level of the lake. And, that was the data that we were able to use to go back and reconstruct, "What would be the elevation of Lake Tahoe in the historic times *without* any dam?" (Seney: Ah.) So, you find little pieces (Laugh) and tie them together.

Seney: Ah, then why was it important to know what the elevation of the lake was without the dam?

Burns: Well, that came back to the, California saying, "What are the sovereign lands of California?" And so, they tried to establish "What is the sovereign lands under Lake Tahoe?" And, that's when they went into court, and we worked with the Attorney General's office, and we came up with our studies that the mean elevation was 6,227.5 Lake Tahoe datum. And the attorneys were taking that position that that would establish the level for the state. And the Appellate Court – [Phone Rings]– found . . .

Seney: Do you want to answer that?

Burns: Yes. Let me. [Tape Paused]

Seney: That's all right. Don't worry about it. So, you mentioned last time it was the Appellate Court then that said that the public had an interest in that area?

Burns: Right. The Appellate Court found some findings of fact on their own. [Beep] And . . . (Laugh)

Seney: Is that Mrs. Burns?

Burns: I don't think so. [Tape Paused]

Seney: That's all right.

Burns: But the Appellate Court, you know, found some of their own findings of fact in a sense and came down and said that the state lands, sovereign lands, could be from 6,223, which is the elevation of the natural rim, from that point down, and that would be the sovereign lands. But, they also found that they, there was a public interest in between 6,223 and 6,229.1, which is the maximum (Seney: Right.) corrected elevation. (Seney: Right.) And that the public had an interest and could access any of that land. So, that was a significant (Seney: Right.) finding.

Seney: Right. I guess I'm trying to figure out – well, I guess you'd go back to do this, if you were reconstructing the history of the lake, right?

Burns: Right.

Seney: And the flows?

Figuring the Historic Elevation of Lake Tahoe's Surface

Burns: And the elevation, what's the elevation of the lake? So, if we know the characteristics down here at this gauging station for certain flows we have a rating curve. So, if it's a hundred cubic feet per second then the elevation on the staff gauge is a certain amount. And then we, by computation, put that elevation back into the lake. So, we have history of precipitation. We have the history, if elevation of Tahoe, well we can take the change, Tahoe elevation. If it comes up a tenth of a foot *and* so much water goes out, (Seney: Right.) we put it together and then we have the amount of water that came into the lake. (Seney: Ah.) And then we would take that. "Okay, what water came *into* the lake?" And then we'd just sort of operate the natural lake with the outflow. (Seney: I see.) And so you'd just run through it again, dump it in with the–and we went back close to a hundred years.

Seney: That's how far this, this,–what am I trying to say?

Burns: Well, the gauge.

Seney: The gauge, that's how far the gauge dated?

Burns: Well, no, we just had the gauge, the rating of the gauge, but then with the inflow into the lake. (Seney: Ah.) Precipitation records, and people have been keeping track.

Seney: I see. I see.

Burns: So, we just took all those historic records and sort of translated them back into the natural condition.

Seney: And this you were doing in order to–I take it this was in anticipation of the Preliminary Settlement Agreement?

He Undertook Studies of Lake Elevation Independently Because of All the Interests Affected by it

Burns: No. This was independent. It had nothing to do with the Settlement Agreement. It had to do with a *lot* of interest around Lake Tahoe on sovereign lands and who owns what, and the piers going into the lake.

". . . now if you put a buoy out there you have to get a permit from the Corp of Engineers *and* State Lands, and pay State of California a *fee* to have that buoy on their lands. . . ."

And, because now if you put a buoy out there you have to get a permit from the Corp of Engineers *and* State Lands, and pay State of California a *fee* to have that buoy on their lands.

Seney: Oh. So, if I want to put a buoy out, in other words, to moor my boat to I have to pay a fee for that privilege?

Burns: Yes. Yes. Because the state lands, because you're using the state lands of California.

Seney: Is that hard to get? Is that . . .

Burns: No.

Seney: Just routine then?

Burns: No, then I think then the Corp of Engineers requires an application. (Seney: Ah.) So no, it was a, I *think,* fairly routine.

Seney: Right. Right. That's interesting.

". . . the lake interests have *definite* interest in the lake level, the operation of Tahoe. . . ."

Burns: So anyway that, is quite, well all the interests here in California even go back to the floods of 1907, got up to 6,231, and things flooded out. So, the lake interests have *definite* interest in the lake level, the operation of Tahoe.

Seney: So, in 1907 it got up to 6,231?

Burns: I think in 1907.

Seney: Did that top over the dam?

Burns: Well, yeah, water came over the top of the dam.

Seney: Right.

Burns: Because it, you know, the old dam, the top surface of the old dam, I forget what–it was set at 6,223 or something. (Seney: Ah.) Water would definitely go over. (Seney: Right. Right.) So sort of an uncontrolled flow.

Seney: That must have been a hell of a winter?

Burns: It was, they had quite a winter. (Laugh)

Seney: Yeah, I guess. Yeah.

The 1935 Truckee River Agreement Set Operating Criteria for Lake Tahoe

Burns: So anyway, you know, the California interests are certainly interested in (Seney: I see.) Lake Tahoe levels. They certainly got involved in the 1930s working with Nevada they have two commissions, the California group Nevada. (Seney: Right.) And that's when they worked together to come up with the Truckee River Agreement (Seney: Right.) in 1935, which *set* operating criteria for Lake Tahoe.

Seney: At what point did you go through and do all this? What were the years that you were doing this?

Burns: Well, we started up here in '75, 1975, and that was probably about in 1980 or early '80s, because we were working with the Attorney Generals' Office on flood litigation. (Seney: Ah.) So, I got involved. And all, we worked, over at Donner Lake they were trying to establish "What the sovereign lands of Donner Lake?" (Seney: Ah.) So, we, that was, that work was independent of working for Sierra Pacific Power Company.

Seney: Now, who was paying, paying you to do this?

Burns: The State of California.

Seney: The State of California?

Worked for the Attorney General's Office on Flood Litigation

Burns: A contract with the Attorney General's Office. (Seney: Ah.) Because in the past, after the 1955 flood, I started working on flood litigation, and I continued to do that all the time I was *in* the Department, and then after I left the Department I worked on flood litigation. (Seney: I see.) You know, for example, ~~we just seemed to get a,~~ when~~ever~~ the Brannan-Andrus levee broke down in the Delta, and we were in trial in Colusa on a flood case, 1969 flood case in Butte Basin. So, we got word that it broke. So, got down, and got in an airplane and flew down and could just see the water starting to come through. And, we got back and then with an investigator from the Attorney Generals' Office I went down so I could really see on the ground (Seney: Right.) what had happened, what was happening. So, we kept *very* close tabs on it. And, there was litigation after that. But, I'm digressing. (Laugh)

Seney: That's all right.

Burns: But, in the Delta we hear about so much in the Delta today about how vulnerable it is. (Seney: Right.) But, it's interesting, the Brannon-Andrus levee failed, because what they were doing, they wanted to widen the road on top of

the levee down on the San Joaquin and they were taking material up from the land side beefing it up, and when I got down there right on the site you could see they had added about three feet of earth on the top of the levee. You could see how they were trying to widen the road on the top. (Seney: Right.) And in the Delta you have to be very, very careful. We really said, "Well, if you don't raise it more than maybe a foot at a time," because the settlement, the weight, with the peat you get a new settlement. (Seney: Ah.) So, that went really, I mean, well my [inaudible] you can see.

Seney: They overburdened it?

Burns: Yes. Overburdened it. Because, and while we, we got many, many pictures of [inaudible]. They did sue the state on that but, again, the history is so important in every part of that. I went back to the old surveys, the old history, and we found that the channel is out about forty-, fifty feet from where the existing levee was. And in 1934, and to keep raising the levees they keep dredging the material from the river side. (Seney: Right.) So, they keep, as they subsided. (Seney: Right.) We found that they did come back and excavate this forty or fifty feet of berm around and moved it up, and so we established that was not state lands, but the state lands were *out* maybe fifty feet away from the levee.

(Seney: Ah.) So, the State of California wasn't liable for–the court–anyway, the State was not liable because it wasn't state lands, but the levee was the levee district's.

Seney: They were responsible?

Burns: They were responsible for it. But anyway, so went back . . .

Seney: That's interesting. Yeah.

Burns: To the history.

Seney: Right. Right.

Burns: So, . . .

Seney: So the records are pretty good for all that obviously?

Burns: Yes. Surprisingly good, because you're able to go out and find in the old maps there were some other polders, islands out there, and with the old maps you can tie down, we could go out and find now they're just truly out in the middle of these areas. We found some of the old structures. We could tell where the old levees were. So again, we were able to tie down the early survey at the turn of the century and up to 1934. So, tie it down and specifically rely on it.

So anyway, here we established (Seney: Right.) that the state *did not* own where the levee was, therefore they weren't liable.

Seney: I guess the state would own, what, the natural flow or something, the natural channel?

Burns: The natural channel.

Seney: And they had moved way beyond that?

Burns: Yes. Right. And the mean sea level, "What does the state own?"

Seney: Ah, so that's why all this is so important?

Burns: Yeah. So, what these, again, just [inaudible] you keep.

Seney: Yeah. What kind of litigation went on around Lake Tahoe? Was there litigation about how high the lake was? Because, I know when it gets pretty high that there's some questions of erosion along the beachfront.

". . . 1997, we did get a tenth of a foot above the legal limit. And so, I'm certain that, 'Gosh, there's probably going to be litigation.' So, we did go around and we took pictures of every dock everything all around the lake to tie down, because of litigation of what was, is the damage?

But, we did go around and tie all that down. But, nothing came of it. . . ."

Burns: Well, I think that, no, in nineteen–when we'd go, 1997, we did get a tenth of a foot above the legal limit. (Seney: Ah.) And so, I'm certain that, "Gosh, there's probably going to be litigation." So, we did go around and we took pictures of every dock everything all around the lake to tie down, because of litigation of what was, is the damage? (Seney: Ah.) But, we did go around and tie all that down. But, nothing came of it. There was no . . .

Seney: Ah. How did that work? Did the Attorney General get a hold of you? Did you get a hold of them?

". . . we did it for Sierra Pacific Power Company, because they'd be liable for it. . . .TCID and Sierra Pacific Power Company, as they are liable for any damage if the lake goes above 6,229.1. . . ."

Burns: Oh, this, on this we did it for Sierra Pacific Power Company, (Seney: Oh.) because they'd be liable for it.

Seney: Oh, I see, because of the operation of the dam?

Burns: Yeah. So, we knew they'd be liable, TCID (Seney: Ah.) and Sierra Pacific Power

Company, as they are liable for any damage if the lake goes above 6,229.1. (Seney: Ah.) And that will go away with TROA.

Seney: Oh, it will?

Burns: That's one of the *very* important things that there was a letter when they were negotiating the 1935 Truckee River Agreement and one of the conditions was that they could negotiate conditions, that the Truckee Meadows people were going to get the ability to use stored water from Lake Tahoe. (Seney: Right. Right.) And part of the *quid pro quo*, I guess, was that the TCID and Sierra Pacific *would* be responsible for any damage if it went above 6,229.1. (Seney: Ah.) And so [the Federal Government] ~~Sierra~~ sent a letter saying, "Here's what you agreed to for the 1935 Truckee River Agreement." Now, that letter, as part of the settlement, they will withdraw that letter. So, (Seney: Ah.) that's a *big*, *big* item for TCID *and* Sierra, and, now, TMWA [Truckee Meadows Water Authority]. Because you, with all the development around here, (Seney: Oh yeah.) you could have some pretty tremendous [damage] ~~down~~ on the south shore, but it was only a foot *above* the maximum limit, (Seney: Right. Right.) but as you know the waves, (Seney: Right. Right.) can get up.

Seney: Right. Especially with all the boating activity.

Burns: Boating activity, and the waves.

Seney: Right. Right. Does, is TCID aware of this, obviously?

Burns: Oh, absolutely. You know, and so again we worked jointly with TCID on, through all of these periods and also in the Truckee River Agreement they agreed to, instead of requiring the 400 or 500 cubic feet per second of the Floriston Rates that they [would] agreed, under certain conditions, the lake, and so they would have reduced Floriston Rates. (Seney: Right. Right.) And, those reduced Floriston Rates they have to, TMWA has to agree with TCID, they have to agree (Seney: Right.) for these conditions. So, TCID [inaudible] very much.

Seney: So, after the new one TCID and TMWA will have to agree to reduce the Floriston Rates?

Burns: No.

Seney: No?

The Truckee River Operating Agreement (TROA) Incorporates All the Operating Requirements for the Truckee River, Including the Floriston Rates

Burns: TROA will take over.

Seney: TROA will take over?

Burns: Yeah. Because all that's built in, all the detail's in TROA.

Seney: Ah. Is that advantageous to TMWA and TCID?

Burns: Oh yes.

Seney: In what way? How is that?

". . . now we'll start to operate *all* the reservoirs jointly so *all* the burden doesn't just come on Tahoe, Boca, and Independence for water supply. Now they can exchange water, store water, so it really . . . gives them much better control. . . ."

Burns: Well, I don't know that–now we'll start to operate *all* the reservoirs jointly so *all* the burden doesn't just come on Tahoe, Boca, and Independence for water supply. Now they can exchange water, store water, so it really, no it just gives them much better control.

Seney: I see. Right. Right.

Burns: So, no, I think it's a *definite* benefit for *all* concerned. (Laugh)

Seney: Ah. Does TCID see it that way, do you think?

"They [TCID] don't want TROA. They want the Truckee River Agreement that was agreed to as they were operating off the system. And so, they're just not onboard . . . And that's why they're [TROA negotiators] so careful in TROA, going back and taking every item that's in the Truckee River Agreement and identifying . . . 'Where is it changed so you can track it through?' . . ."

Burns: Well, I don't think they particularly want it. They don't want TROA. (Seney: Yeah.) They want the Truckee River Agreement that was agreed to as they were operating off the system. And so, they're just not onboard and (Seney: Right.) they oppose, apparently oppose this. (Seney: Right. Right.) And that's why they're so careful in TROA, going back and taking every item that's in the Truckee River Agreement and identifying, "Does that stay the same? That does not change? Or is it changed in TROA? Where is it changed so you can track it through?" (Seney: I see.) And Gordon DePaoli has done an excellent job on this.

". . . TCID says, 'Truckee River Agreement you can't change anything. We have agreed to that and been in court on this,' and . . . I believe that's the position now. . . ."

You can take every step, every item in the Truckee River Agreement, correlate it to TROA, (Seney: Ah.) because TCID says, "Truckee River Agreement you can't change anything. We have agreed to that and been in court on this," and I think that's, I believe that's the position now.

Seney: Right. Right. Well, I know the negotiations on TROA were, tried to do exactly what you're describing, and that is to make sure TCID was not harmed by this, so they wouldn't have a legal leg to stand on.

"The basic thing is, any Orr Ditch water right is protected. And they [TCID] want to make sure *they* are entitled to the water that they were getting. . . ."

Burns: The basic thing is, any Orr Ditch water right is protected. And they want to make sure *they* are entitled to the water that they were getting. And, in TROA, in the operation of TROA–it's very difficult just to operate. Every day [inaudible]. (Seney: Oh sure.) And if by chance some water was taken *out* of the river that makes TCID *short*–then that water has to be made up. So, that's the, where it protected TCID. "But, I'm short here." There's mechanisms here for them to have that water

(Seney: Wow.) returned to them. (Seney: Right. Right.)

"So, that's part of TROA, to make sure that *each* water right holder gets their full entitlement. . . ."

So, that's part of TROA, to make sure that ~~the water,~~ *each* water right holder gets their full entitlement. (Seney: Right. Right.) And I think that's the protection for TCID.

Seney: Right. Well it's, I know their attitude is one of really no compromise on that.

Burns: It's just, it's so unfortunate. (Seney: Yeah.) We've talked about before (Seney: Right. Right.) and every, everyone trying to have them onboard, (Seney: Right. Right.) and gosh I don't know *how* many meetings we met with them, and we were working with not just as TROA progressed and started developing, but on the OCAP, the OCAP we did the studies with Rod Hall and we did the studies for them on the OCAP. In fact, they were trying to negotiate it so we worked with the Board of Directors out there and made the analyses for them. And so, no they were very much . . .

Seney: What did your analysis show about the OCAP, did it harm them regularly, or no? Or . . .

Burns: No. No. ~~What~~ We ~~were=no. No. What we=and had we, we~~ tried to make sure that the OCAP didn't hurt them, and can you operate this? You're limited on when you can take water. (Seney: Right.) So, with the model . . .

Seney: Take water from the Truckee?

"You wanted to make sure that they get their full supply, but you don't want–the whole idea is to maximize the use of water in the Carson River, and to take less water from the Truckee. . . ."

Burns: Right. Right. You wanted to make sure that they get their full supply, but you don't want–the whole idea is to maximize the [use of] water in the Carson [River], (Seney: Right.) and to take less water from the Truckee.

Seney: And minimize the holdover?

Burns: Right. So, the OCAP, in working with them you want to make sure that your criteria, that they would be taken care of. So anyway, had sort of a problem. But, on the model, and maybe just a word on how did the model evolve?

Seney: Yes. That's good.

Evolution of the Water Model for the Truckee

Burns: And, as I've talked about, we started it on the Orr Ditch litigation (Seney: Right.) and the Bureau of Reclamation with their Washoe Project. They had a water–sort of a basic model that we started with and worked with Monte Bianchi from the Bureau (Seney: Right.) and with that as the base, but what they didn't have in their model, we said we talked more about, the water rights. You have to–"When can you store water?" And the first 3,000 acre-feet on the Little Truckee goes to the Independence Lake and then you get, you can store 25,000 acre-feet in Boca, *adverse* to TCID. Then you can put another 15,000 acre-feet of water into Boca, but you had to make sure that TCID's getting their water. Once you get Boca filled then you can go back out and then fill Independence. And after Independence fills then you can come down to put water in Stampede. So, it's that type of, and you have to have that model. So, we had to make sure we reflected the water rights and the hydrology.

". . . we understand we're doing this correctly. So, the model just sort of evolved. We just kept adding things to it. The model was used in the Orr Ditch litigation in what would be the effect on Stampede . . . And so, we used the model to run, say, how much water would be there. So, here we

start to get into the criteria for operating Stampede. And then we started building in fish criteria. . . . it became very important to Sierra Pacific, because they had to present water resource plans, and five-year plans, and go before the Public Service Commission of Nevada and demonstrate that they have a water supply. . . ."

> And so, that was where we started working, work with the model and worked then with the watermaster[,] ~~of~~ the Bureau, TCID, TMWA, we all, we understand we're doing this correctly. (Seney: Right. Right.) So, the model just sort of evolved. We just kept adding things to it. The model was used in the Orr Ditch litigation in what would be the effect on Stampede, and the litigation whenever the Sierra Pacific, and the Conservancy Districts to force the United States to meet (Laugh) the authorization for Stampede. (Seney: Right.) And so, we used the model to run, say, how much water would be there. So, here we start to get into the criteria for operating Stampede. And then we started building in fish criteria. So, each step of the way the model, you kind of kept *adding* (Seney: Ah.) things to it until it became very important to Sierra Pacific, because they had to present water resource plans, and five-year plans, and go before the Public Service Commission of Nevada and demonstrate that they have a water supply. And

so this is a, a really a good, it really helped Sierra Pacific when you have to put forth your plans, and you're financing goal and support it before the Public Service Commission.

". . . we've continued working closely with Sierra Pacific on their water by showing they have a water supply. . . ."

So, we were able to, and we've continued working closely with Sierra Pacific on their water by showing they have a water supply.

Seney: You must have presented some of this to the Public Service Commission in Nevada? Did you?

Burns: Oh yes. We testified I don't know how many times on the Water Resource Plan, here is the next plan as far as coming up. But also used the model in the dry periods. Even as a monthly model. It's really pretty good. (Laugh) We put in the hydrology as a basic and we'd come up with "When is the river going to go dry? When does Lake Tahoe drop below the rim?" Extremely important to Sierra Pacific, "Hey, when do I start calling on water from Independence? Maybe when Boca is dry." (Seney: Right.)

"So, we would operate that and we could tell very

closely when Tahoe would go below the rim and also when we'd have to start bringing in stored water. . . ."

So, we would operate that and we could tell very closely when Tahoe would go below the rim and also when we'd have to start bringing in stored water. And this we would then, we would go to the state engineer and the state, then we'd have to go down and demonstrate, "There is a water supply." (Seney: Right.) Because on the subdivisions in Truckee Meadows the water, the state engineer has to sign off that there's a water supply. (Seney: Ah.) So, Sierra Pacific we had to go down there and go–Roland. Roland [Westergaard], many times when he was the state engineer. (Seney: Yeah.) Go down and sit down, "Here are the analyses." "Yes, they have sufficient water to supply the commitments they have." (Seney: Ah.)

". . . the model just sort of evolved. Everybody being onboard. And, we were using it for all of these different uses, before the Public Service Commission, the state engineer, and I don't know how many times before the cities of Reno, Sparks, Washoe County, and everybody interested in water. . . ."

So really, the model just sort of evolved.

Everybody being onboard. And, we were using it for all of these different uses, before the Public Service Commission, the state engineer, and I don't know how many times before the cities of Reno, Sparks, Washoe County, and everybody interested in water. So, this sort of kept us up to speed. (Seney: Right.) So, I think really that's well–why don't people accept it?

Seney: Right. Yeah. Right.

"Then when you started talking about TROA, then you start talking about tremendous variations of detail, and then it gets pretty complicated . . ."

Burns: But, they were onboard, onboard every step of the way and it kept getting a little more complex. Then when you started talking about TROA, then you start talking about tremendous variations of detail, and then it gets (Seney: Right. Right.) pretty complicated, [inaudible].

Seney: You know, that was, when the, the Settlement II negotiations went on, and then the, I'm thinking of the Settlement II negotiations, there was, and I'm trying to think of the guy's name because I interviewed him extensively, a very smart guy, from the Environmental Defense Fund?

Burns: Yes.

Seney: We'll think of it. Yeah.

Burns: A tall thin fellow. I'll get it.

Seney: Yeah. Yeah. But he worked on the model too. He worked with you didn't he?

Why the Model Had Widespread Credibility

Burns: Oh yes. We worked with environmentalists and worked very closely, very close with him then whenever they had the, on they had negotiations, Betsy Rieke was assistant secretary of water and power, (Seney: Right.) and came down, and a good many times out at TCID. (Seney: Right.) And so, we were, oh what was his name, we worked very closely. sat down for days with the models (Seney: Right.) to understand them. And then Rose, in Truckee Meadows.

Seney: I know who you mean because I've interviewed her too.

Burns: We had her. We worked with everybody.

Seney: She worked at the Sierra Club.

Burns: Sierra Club first and then Friends of the River. (Seney: Right.) Yeah.

Seney: Right.

Burns: So, no, all those people we worked with, I'm pretty transparent, I guess.

Seney: Right. Yeah.

Burns: We did. We have.

Seney: Well, as I think I said to you, maybe not on tape, but otherwise people had confidence in the model even though you were working, being paid by Sierra Pacific Power or TCID, there wasn't the feeling that this was, there was partiality here or things were being skewed by you. And this is why, because you invited the environmentalists and whatnot in?

Burns: Right. We had, right, we worked with TCID, environmentalists, Environmental Defense Fund. (Seney: Right.) Gosh, I remember we came down and spent two days, (Seney: Yeah.) and just sat with them just going over the mode. (Seney: Right. Right.) So no, it, I think that was, I think that was very important to have everybody onboard. And, also, I think we are in a position to say no. We're small enough that anytime the clients want you to do something you could say "No." (Seney: Ah.) And well, and never with Sierra Pacific. We came up, we came up to see, told Joe Gremban "You don't

have a water supply." And, you know, that better be, make sure where you are.

Seney: Right. Yeah, right. Was this preparatory of the Preliminary Settlement Agreement when you told him (Burns: Yes.) he didn't have a water supply?

Joe Gremban Contacted Joe Ely When We Went to Him and Told Him Sierra Pacific Was Running out of Water

Burns: Yes. Because that came about in 1979 and that's where, where that triggered. And Joe Gremban, "To get a water supply you have to have storage." (Seney: Right.) And that the storage, all our studies and knowledge the storage we had at Lake Tahoe, and Independence, and Boca but we have Orr Ditch Decision that had to be satisfied. (Seney: Right.) So, we had all these constraints.

"'Hey, you're going to run out of water. You *have* to get more water rights.' And then, that's when Joe Gremban contacted Joe Ely and got set up to try a settlement. . . ."

And so, all our studies would show just limiting that storage to the water supply and that's when we came, "Hey, you're going to run out of water. You *have* to get more water rights."

(Seney: Yeah.) And then, that's when Joe Gremban contacted Joe Ely (Seney: Right.) and got set up to try a settlement. (Seney: Right.) Because then the Preliminary Settlement Agreement, then we got all this into play and if we reduced Floriston Rates a hundred cubic feet per second that's 200 acre-feet, can . . .

Seney: No, go ahead.

". . . in the Preliminary Settlement Agreement . . . we came up with credit water being stored. And also, the Preliminary Settlement Agreement we started to look at California . . . has to be limited in how much water they use. . . ."

Burns: Can we store *that* water upstream? (Seney: Right.) So, in the Preliminary Settlement Agreement, that's when we started, we came up with credit water being stored. And also, the Preliminary Settlement Agreement we started to look at California and we started looking, well, California has to be limited in how much water they use.

". . . we built in how much water, in California, can we consumptively use, otherwise they'll impact Nevada. . . . built in now to TROA . . . We figured the water California uses . . . Fifty percent of it is consumed and fifty percent comes back. . . ."

So, we built in how much water, in California, can we consumptively use, otherwise they'll impact Nevada. So, that sort of built in now (Seney: Ah.) to TROA we figured it out. We figured the water California uses, the first for M&I. Fifty percent of it is consumed and fifty percent comes back.

Seney: Right. So, this is the whole depletion question that came up?

"So, you don't want California to divert more than 32,000 acre-feet, in total, in–not Tahoe, but in the Truckee Basin. We figured around half of that would be consumed. But, you did not want California to take more than 16,000 acre-feet. So, that was built in to the Preliminary Settlement Agreement . . ."

Burns: So, you don't want California to divert more than 32,000 acre-feet ~~in~~, in total, in–not Tahoe, but in the Truckee Basin. (Seney: Right.) We figured around half of that would be consumed. But, you did not want California to take more than 16,000 acre-feet.

". . . also built in the Preliminary Settlement Agreement, 'How much water can we store, firm water and non-firm water?' As the growth, as soon as it needs more water we can then store more water. . . ."

So, that was built in to the Preliminary Settlement Agreement, and also built in the Preliminary Settlement Agreement, "How much water can we store, firm water and non-firm water?" As the growth, as soon as it needs more water we can then store more water. (Seney: Right.) And all that was built into the Preliminary Settlement Agreement. I believe it was about 1983, I believe, when they finally signed that.

Seney: Right. Right. Well, one of the keys has to be the fact that Sierra Pacific Power had the Floriston Rates to give up?

". . . whenever Joe Ely and Joe Gremban got together, the ace in the hole was the Floriston Rates. . . ."

Burns: Absolutely. That was–whenever Joe Ely and Joe Gremban got together, the ace in the hole was the Floriston Rates. That was, (Seney: Yeah.) that was what triggered it. (Seney: Right.)

"'Hey, if we back off on having 400 or 500 second feet, for those powerplants, can we store that water?' If that water is not needed for downstream users, you *must* make sure that Orr Ditch water right holders get their water supply. . .

."

And they knew that,"Hey, if we back off on having 400 or 500 second feet, for those powerplants, can we store that water?" If that water is not needed for downstream users, you *must* make sure that Orr Ditch water right holders get their water supply. (Seney: Right.) But, it's not needed the water's just going into Pyramid Lake. And maybe when they don't *need* it, if they should need it . . .

Seney: Right. Right. This time of year when they don't need it?

Burns: Right. So, they just store that. And, then they made an agreement that Sierra Pacific, then "We will use so much water, we only need so much water . . .

END SIDE 1, TAPE 1. SEPTEMBER 25, 2006
BEGIN SIDE 2, TAPE 1. SEPTEMBER 25, 2006.

Seney: Sierra Pacific?

"Sierra Pacific is committed to developing as much credit storage as they can. So they can take the water out of Donner if it's not needed, or release it and have it converted into credit storage in Boca and then up to Stampede. So, Sierra Pacific committed to making all their water rights,

as soon as they can, to credit storage. . . ."

Burns: Sierra Pacific is committed to developing as much credit storage as they can. So they can take the water out of Donner if it's not needed, or release it and have it converted into credit storage in Boca and then up to Stampede. So, Sierra Pacific committed to making all their water rights, as soon as they can, to credit storage.

"And then you come down to April 15th . . . there's limits how much water that Sierra Pacific *needs* . . . And then the rest of that water is turned over to the fishery and they can, people can call on that water. . . . I think on the average they probably get about 3,000 acre-feet a year or more than they would have received. But, Sierra Pacific really needs it in a drought year. In one year out of eight, or one year out of ten. . . ."

And then you come down to April 15th, and then there's limits how much water that Sierra Pacific *needs* for ~~power~~ [drought protection], depending on where [inaudible]. (Seney: Right.) And then the rest of that water is turned over to the fishery and they can, people can call on that water. So you end up, I think on the average they probably get about 3,000 acre-feet a year or more than they would have received. (Seney: Right.) But, Sierra Pacific really needs

it in a drought year. (Seney: Right.) In one year out of eight, or one year out of ten.

Seney: And that's what your historical data showed (Burns: Right. Right.) it was.

Burns: So, all the studies you want to make sure you have that.

Seney: Yeah. How, you know, tell me how–you know, I know that on Donner there's 10,000 acre-feet there, and five belongs to TCID and five belongs to Sierra Pacific Power. How do you convert that water into credit water in Stampede or one of the other reservoirs?

How Sierra Pacific Could Exchange Water in Donner Lake for Water Stored in Stampede Reservoir or Boca Reservoir

Burns: Well, I'll tell you. There's 9,500 acre-feet is what they purchase, *but* they can't get the whole 9,500 out because of the control, they can get about, get about 6,500 out. (Seney: I see.) But, the way they do it in the, they release water from Donner and then you say, "I'm going to release this to ~~meet,~~ help meet Floriston rates." And that means you do not have to release an equivalent amount of water from Boca. (Seney: Ah.) You just exchange it. You have to commit, you have to say, (Seney: Right.) you

have to say, "We have to meet Floriston Rates. Boca has to release water to meet Floriston Rates or we'll release 30 second feet from Donner." (Seney: I see.) And, they will withhold that 30 second feet so they're meeting Floriston Rates.

Seney: Ah. So now that's credit water?

Burns: Yeah. That's credit water.

Seney: Firm credit water?

Burns: Well, (Laugh) that's what they can get, you know. (Seney: Yeah.) They can get so much firm.

Seney: Yeah. I know, just in working with Donner, they can't release until September 15th, right? Isn't that right?

Burns: No, they *have* to, they have to open the gates to make sure it's drawn down by November. (Seney: I see.) But there is, in September, there is a limit. They cannot drop down [below] a certain limit because [of] the docks and all, (Seney: Right.) and that's three or four feet above the rim control. (Seney: I see.) And so, you have to maintain, to the extent you can, a certain level as of Labor Day through September 15th and for the recreation. Because

they agreed with Donner Lake–Donner Lake Water Company. (Seney: Right.) Commission, then after that, then they can drop down. (Seney: I see.) And they must open all the gates fully in November. (Seney: I see.) It's a supervision of Safety of Dams for California. (Seney: Ah.) So, you *have* to just keep it down as low as you can.

Seney: But now, obviously, you can credit that up into Boca or somewhere else?

Burns: If, if you have, you have to make a release from, you have to make an exchange.

Seney: Ah. Now, what's the difference between firm and non-firm-credit water?

"Firm [water], you don't lose it. . . . the only reason is evaporation. It's *there*. . . . and it will be *there*. So, you can only lose it to evaporation. Then, the non-firm [water] you *do* lose some to evaporation and there are limits on how you can exchange it. . . ."

Burns: Okay. Firm, you don't lose it. It doesn't, the only reason is evaporation. It's *there*. You can't–and it will be *there*. So, you can only lose it to evaporation. Then, the non-firm you *do* lose some to evaporation and there are limits on how you can exchange it. But, the firm is there.

And also, I think, just to refresh my memory, (Seney: Right.) but initially and try to be, there's 7,500 acre-feet of water that can be put in there initially that's firm, so it's going to be there no matter what. And, so nobody can touch that water.

". . . we create as much storage in non-firm as we can, but then April 15th you take a look at how,'Okay, how much do we need?' If we have more than our demand or drought requires then we turn that water over to the fish. . . ."

But then the non-firm, all right, we create as much storage in non-firm as we can, but then April 15th you take a look at how, "Okay, how much do we need?" If we have more than our demand or drought requires then we turn that water over to the fish.

Seney: Right. And let that out at the time it's needed?

Burns: And it's up to them. They have to operate however they want to use it for the fishery.

Seney: And they would what, they'd call the federal watermaster and say "We want it now?"

Burns: Yeah. There's a memorandum of understanding, I believe, between the Fish and Wildlife, State, and California Fish and Game,

the Bureau, and the tribe. They would know how, they will get together on how to operate it.

Seney: Now, so at Stampede is there only 7,500 acre-feet of firm water and all the rest is non-firm credit water?

Burns: Yeah and there's, there's fish water. (Laugh)

Seney: That's [inaudible].

Burns: There's all the other. Yeah. There's fish water, because *all* the water in there, under their water right I guess is fish water, because they've, the court has said that, "You will use the entire reservoir for the endangered and threatened species. So, whenever you have filled Boca and Independence and you're storing water under their license, and that water becomes fish water. (Seney: Ah.) But, then they can build that up, you know, pretty much, but the 7,500 stays there. We got it. There's that firm.

Seney: That has to stay there?

Burns: That stays there and then that's . . .

Seney: I see. Now obviously the tribe, the tribe has the authority, the right, to say to Sierra Pacific Power, "You can have our fish water this year because it's a drought year," and so you can

take water?

Burns: Well no, we have to build up. We have to have it identified as credit water, M&I credit water. (Seney: Ah.) So, they get some [inaudible] fish, but we have to build up.

Seney: And how does that work?

Burns: Well, again, the same, sort of the same way, and like with Floriston Rates if you don't need [inaudible] the Floriston Rates [inaudible] this 200 acre-feet. Well, we ended up storing it in Stampede (Seney: Ah.) and if it's above the firm–that's non-firm, so we have to build up.

Seney: I see.

Burns: And have it.

Seney: Those changes are what, you build the . . .

Burns: And then we'd bring water down from Independence that they have, California Fish and Game may want a certain amount of flow, so you have two cubic feet per second, sometimes they want twenty or twenty-five. We'll release that water from Independence and it's captured in Stampede. Well, that was Sierra Pacific water released for fish purpose but captured in Stampede therefore that becomes

credit water that we could–(Seney: Ah.) so its just sort of keeping track. (Seney: Right. Uh huh.) of all the, of all the, sort of the limits.

Seney: Is it as difficult as it sounds?

TROA Is So Detailed it Will Require Good Measurements and Record Keeping

Burns: No. Well no. Well, they've got so many details in TROA, no, it's not, you just simply have to just keep track of it. It where they're going to need *very* good measurements.

Seney: Right. Right. Right.

Burns: Keep right on top of it. (Seney: Ah.) No, if they can, you know it can be done. And it's, I (Seney: Right.) I think the watermaster's office right now, Jeff is working on that.

Seney: Who's the watermaster now? No longer Garry Stone? Is Garry Stone still there?

Burns: Garry's still there, I think so.

Seney: Yeah. I guess . . .

". . . the model has sort of evolved and I keep adding things to it. . . . Stampede . . . we operated that and found out we *could* get a yield of about

110-125,000 acre-feet for Sierra Pacific Power Company. . . . Put it together with the water, *and* the water rights we purchased, the water rights, we'd get 125,000 acre-feet of firm yield for Sierra Pacific. That was sort of the basis for . . . TROA, they say, 'Well, TROA, Sierra Pacific can develop up to 119,000 acre-feet, all this stored water will *support* the water required for the 119,000.' . . ."

Burns: No, I think Garry is still there. But anyway, so I, again the model has sort of evolved and [we] keep adding things to it. For example, back in the, we got as far as Stampede that the Carson Conservancy District had signed a contract in 1965 where they went to fifty-seven percent of the water and twenty-six percent goes to the, or maybe six percent goes to fish and then we operated that and found out we *could* get a yield of about 110-125,000 acre-feet for Sierra Pacific Power Company. And that was, that was with this yield 22,000 acre-feet. Put it together with the water, *and* the water rights we purchased, the water rights, we'd get 125,000 acre-feet of firm yield for Sierra Pacific. That was sort of the basis for the 119,000. Now, in TROA, they say, "Well, TROA, Sierra Pacific can develop up to 119,000 acre-feet, all this stored water will *support* the water required for the 119,000." That came out of the studies based on–we wouldn't have this amount of water if we had Stampede. (Seney: I see.) So,

that was, and looking back, and tonight frankly I forget, we were at 125,000 somehow, for some reason ended up 119,000. [Cough] Excuse me. I remember them coming out and it ended up 119,000.

Seney: Right. Now this was, now this was–the 119,000 for growth above what was then being consumed?

"The total. . . . TROA would support with these water rights, additional purchase water right plus the stored water then Sierra *could* build up to 119,000 acre-feet. . . ."

Burns: No. The total. There's to be–TROA would support with these water rights, additional purchase water right plus the stored water then Sierra *could* build up to 119,000 acre-feet.

Seney: I see. Total?

Burns: Total. (Seney: Ah.) But, there are, there's some other water that they can develop *above* the 119,000.

Seney: I see.

Burns: But anyway, our target was TROA. (Seney: Ah.) It was 119,000, but that came out of the studies on Stampede. So, there's sort of a basis.

Seney: But once you do all the studies you say, "Well, this will generate a 119,000 acre-feet. No problem."

Burns: Well, that's what we, our target. (Seney: Yeah. Yeah.) How are we going to get that and then supply needs for the fish?

Seney: Right. Right.

". . . Bob Pelcyger and Sue Oldham. They're both very bright. And, you know, they just feed off each other. But Sue is extremely important. Sue is sort of the driving force of where we are today. . . . we have Bob for the tribe's side. . . when we started working on the Orr Ditch litigation Sue had just started as an attorney for Sierra Pacific. . . . she was right on the ground floor when we starting working on it. . . . Sue could make decisions. . . ."

Burns: You know, there's a couple things I thought are kind of important, (Seney: Sure.) I think, and we've mentioned Bob Pelcyger and Sue Oldham. (Seney: Right.) They're both very bright. (Seney: Right.) And, you know, they just feed off each other. But Sue is extremely important. Sue is sort of the driving force of where we are today. And so, we have Bob for the tribe's side, because you go back and the things that happened along, like with Sue, when

we started working on the Orr Ditch litigation Sue had just started as an attorney for Sierra Pacific. I think there were three attorneys. But, she was right on the ground floor when we starting working on it. And so as we went long, as things developed, Sue could make decisions.

For example, whenever that first bill was back in Congress, Senator Laxalt was pushing, she got a call that the Office of Management and Budget was balking at her because they said, OMB said that we have a cap of $34,000[,000] that could go to the tribe [in this year's budget]. I think the [inaudible] in the settlement is $75,000[,000]. My numbers may be a little wrong. So, they said, "Well, they said they wouldn't support the Laxalt bill." Sue called and so said, "Get back," and said, "We can do something." So, the next thing we're on a plane back to Washington. As soon as we got back to Washington, made the rounds, trying to get [Senator] Bradley and all of them. Because then they said, "All right, let's just spread out the payment for five years. And the present worth of the $75,000[,000] in five years that's $34,000,000. (Seney: Right.) Thirty-four, yeah, thirty-four million. (Seney: Right. Right.) So we made the rounds of all the offices and said, "Hey, you can make it five years then you can satisfy OMB." So again, Sue could make a decision. And then we're getting pretty

dry, in like ‘80s and all, and TROA wasn’t coming along.

“. . . Sierra Pacific, ‘We need TROA for our water supply.’ They weren’t making very much progress. ‘Well, can we get some stored water in the interim, an Interim Storage Agreement?’ . . . Sue called them and asked . . . ‘How much do we need in storage?’ Well, we said, ‘Five thousand acre-feet.’ . . . So, she went back in and . . . got them to agree that because of the Interim Storage Agreement we could credit store up to our five thousand acre-feet. . . .”

Sierra Pacific, “We need TROA for our water supply.” (Seney: Yeah.) They weren’t making very much progress. “Well, can we get some stored water in the interim, an Interim Storage Agreement?” And Sue called them and asked and said, “Well, here’s what we’re talking about. We really need some additional water. How much do we need in storage?” Well, we said, “Five thousand acre-feet.” And they got Rod [Hall] to verify that was a good number. So, she went back in and said, then got them to agree that because of the Interim Storage Agreement we could credit store up to our five thousand acre-feet. But, I think Janet Carson later negotiated with them on the final agreement, the Interim Storage Agreement, very good for in terms of if they could–again they

agree to credit store whenever they can, up into Stampede. (Seney: Right.) Get a credit storage.

So again, *but*, when you get to the April 15th you will have no more than 5,000 acre-feet in regular years, of this credit storage. So again, even today, TROA in effect is being operated. You're actually operating under some of the TROA guidelines, (Seney: Ah.) and here we're limited to 5,000 acre-feet, instead of turning the water over. But, and I think Janet negotiated this, then in the dry period, you don't turn any water. You continue to develop credit storage. So, in the Interim Storage Agreement that could build up to 14,000 acre-feet of stored water. And again, extremely valuable in a drought. (Seney: Right.)

". . . when it's a drought . . . Sierra Pacific can continue to add to the credit storage. They can get up to 39,000 acre-feet of credit storage. . . ."

And that's the same thing in TROA, when it's a drought, and Sierra Pacific can continue to add to the credit storage. They can get up to 39,000 acre-feet of credit storage. (Seney: Right. Right.) So anyway, the Interim Storage Agreement, this was Sue. "Hey, we've got a problem, 5,000 acre-feet," and that was the 5,000 and it came in and is being operated today.

Sierra Pacific Filed for 275 Cubic Feet per Second of Water–the Unappropriated Water on the Truckee System

Then the other thing of interest, as we went along, again Sue, the unappropriated water. The tribe, you know, were pushing that, "We want to get all the unappropriated water, the Orr Ditch appropriated water in Nevada, and we should be entitled to all the *unappropriated* water." And talking to Sue it suddenly dawned on us, nobody had filed on that unappropriated water. So, we talked to Sue and said, "How much?" She said, "Let's make it 275 cubic feet per second."

". . . Sierra Pacific *filed* on the unappropriated water ahead of the Indians. This is a good bargaining chip. . . ."

The next day then she had filed with the state engineer, so Sierra Pacific *filed* on the unappropriated water ahead of the Indians. This is a good bargaining chip. We said, "Hey, if we don't get TROA then we're going to exercise that unappropriated, we're going to use every filing we have." They said, "We will want to use the unappropriated water." So, there was a bargaining chip, as far as negotiations. Okay, Sierra Pacific agreed to *forego that* [inaudible] just by filing.

Seney: Ah. I need to use your restroom again, if I may. [Tape Paused] You know, one of the, you were mentioning Sue Oldham's ability to make a quick decision. I was wondering, I notice in interviewing various parts of all of this is that Sierra Pacific Power has had a very ;united view on what they want. (Burns: Yes.) And, they do make decisions quickly. I mean, that seems to be a big advantage in all of this for them?

Burns: Oh, definitely. And that's why, in working with them, there's no question we were able to make studies, meet with them, and we got involved, like their water treatment plants helping them to decide, held their public hearings, (Seney: Right.) and going to the state engineer and the state engineer signing off on the additional developments. "Here's the water supply." and prove it [to] the state engineer, "Here's the water supply." (Seney: Right. Right.) But they can make decisions. They have good people (Seney: Right. Right.) and then just let them make decisions.

Seney: Very different, I would think, than working with TCID?

Burns: Yeah. TCID just, Lyman, he was their attorney, (Seney: Right. Right.) and Lyman became the general manager, (Seney: Right.) and Lyman was very good but I'm not sure Lyman if the

board really grasped, "Hey, here's a wonderful opportunity." (Seney: Right. Right.) And, they just, they'd squeeze, and squeeze, and squeeze.

Seney: Well, they had to deal with their constituency and all the time on it.

". . . that one time, years ago, they negotiated with the Bureau and said, 'Hey, we will accept 340-some-thousand acre-feet,' and the board was recalled. . . ."

Burns: They sure did. And that one time, years ago, they negotiated with the Bureau and said, "Hey, we will accept 340-some-thousand acre-feet,' (Seney: Right. Right.) and the board was recalled.

Seney: Yeah. Yeah. A deal they would dearly love to have now?

Burns: Yeah.

Seney: Yeah.

TCID and Donner Lake Water Company

Burns: But, you still, you could still work with them. For example, at Donner, the Donner Lake Water Company, whenever the, Sierra Pacific and TCID *purchased* stored water they agreed that

they would permit Donner Lake Water Company to divert enough water for their economic development. So, it comes, "Hey, this is pretty important. How much water can they take?" So, they said, "We better get together with them." So, we negotiated, got together with the Donner Lake Water Company and again we found out that all the lots they had on the map were subdivided. So, we got together, "How much water are you using?" and we got an agreement that it would be 990 acre-feet, because we took every lot and [allocated 0.4 acre foot per lot.] ~~forecast an acre-foot.~~ It really worked out very well, but they have lots that there's the snow slides, there's avalanches take those out. (Seney: Right.) And so, we were able to negotiate and they would work very good with TCID. And we went out, you know, "Here's what we negotiated," and TCID, again we met with the board and they agreed and signed off. We've been able to work [with] them.

Seney: I guess with Donner Lake Water Company those are year-round residents, are they?

Burns: There are a lot of them.

Seney: Are there?

Burns: Now.

Seney: Ah.

Burns: Yeah. But now they can divert the nine hundred, I guess 990 acre-feet. And so that's built into TROA, so that negotiation becomes part of TROA.

TCID and Diversion of Sixty Cubic Feet per Second to Sierra Valley

And then the other type negotiation we got involved with that TCID was sort of onboard with, is Sierra Valley. There's a diversion from the Little Truckee River into Sierra Valley, sixty cubic feet per second. (Seney: Yeah.) And that's been adjudicated, gone to [Federal] ~~water~~ court, I think, in 1958. They came down and said they have an 1870 right to make that diversion. Well then comes a question, Sierra Pacific was looking for additional water and we took a look at Sierra Valley, above ground water or maybe use some water over there, and it was interesting, some really didn't like that but Gordon VanVleck, he's in charge of the State ~~Sector 8~~ Resources [Agency], butt he VanVleck family, in cattle they farm much of the Sierra Valley and they have big farms down by Plymouth. (Seney: Ah.) And anyway, we met with him and he said, "That's *our* water. We will negotiate." So, we negotiated with them and we ended up with, that we set the criteria

that whenever the water rights earlier than 1870 in the Truckee Meadows, if they're being met, but if you go beyond 1870, then when do you cut the water off going to Sierra Valley. So, we were able to negotiate with Gordon VanVleck, the people there, and the criteria, we set criteria *in* TROA. And, it did work in one of the dry years that, you take a look at the water rights up to 1870, when they could take water and go beyond that, then they cut off. So they did. They were cut off in one year.

Seney: Oh, they were?

Burns: But, you know, and TCID is sort of aware of this. (Seney: Right.) But, that's really important here. There's another thing out of the way.

Seney: Yeah. Sure. Have they developed groundwater sources over there [inaudible]?

Burns: And this sixty-second feet, that's quite a bit of water going over.

Seney: Is it?

Burns: Yeah, there's groundwater there and I don't think they'll ever touch it, with the county of origin in California. We're really looking at all water sources.

Seney: Sure. Sure. Well, that's the only out-of-basin diversion allowed, isn't it, to the Sierra Valley?

Burns: Yes.

Seney: Right.

Burns: And then there's a small one down at Echo Lake.

Seney: Right.

Burns: You have that. Yeah.

Seney: Right. That goes to PG&E (Burns: Yes. Correct.) for their power. (Burns: Yeah.) Right. Right.

Burns: So anyway, but, you know, TCID is aware of this. (Seney: Right.) But anyway, I just, the– TCID and where they are, I think it's a shame.

Seney: Yeah. Yeah. They have a hard time coming to terms with, with the realities.

Burns: Yes. And just making a decision and having – well like we've gone back to Fred Girard, (Laugh) and many of us feel that Fred Girard (Seney: Right.) felt like Fred was very . . . (Seney: Right.) But, they've done nothing but lose.

Seney: But, have they really been that negatively impacted by OCAP and these other things? They're getting the water they need, are they not, to farm?

Burns: Because then the court, the Alpine [Ditch decree], the court came in and said, what's bench and bottomlands. And the court resolved that. But the type of thing that I find a little bit, I think perhaps the tribe's pushing a little too hard and the Fallon Naval Air Station. Whereas they irrigate there about 7,500 acre-feet of water. (Seney: Right.) But there is now a [inaudible], at least my understanding, dealing with earlier, '87, well, "We want the irrigation land because if a plane crashes we're on fire."

". . . I think . . . the tribe is getting eighty-five-, ninety-percent of the water in the Truckee River now. . . ."

But anyway, they came back and [inaudible] to where the Navy has to find alternate ways to free up 7,500 acre-feet more to go over to the tribe, and to me I think that's–the tribe is getting eighty-five-, ninety-percent of the water in the Truckee River now.

Seney: Oh, are they?

". . . take the hydrology that we have, operate

under TROA and say that the full 119,000 acre-feet is being used that you'll end up with probably eighty-five to ninety percent of the total flow coming into Nevada goes to Pyramid Lake. . . ."

Burns: Yes. They take the hydrology that we have, operate under TROA and say that the full 119,000 acre-feet is being used that you'll end up with probably eighty-five to ninety percent of the total flow coming into Nevada goes to Pyramid Lake. So they're, they're getting the water. (Laugh) (Seney: Right. Yeah.)

Determining What Flows the Endangered Cui-ui Needed in the Truckee River

And another thing, but when making the earlier studies we got started with Stampede and all, what did the fish require? And at the time the river species about 60,000 cui-ui don't know whether female or total population. And they said "with it going rapidly we're going to lose them." And so Joe Gremban said, "Well, fine, let's get the data, the original data," and Sierra Pacific [offered to pay] ~~paid~~ to go out, you know, they [inaudible] population, and no way. (Laugh) And, I guess no data is better sometimes. (Seney: Yeah.) I think they were gathering some information. But, at that time, I think Chet Buchanan and Tom Strekal, involved in putting the criteria "What do we need?" We

were ending up, gosh you had to had thirteen degree Celsius temperature, fifty-seven degree water down there, "How much water do you have to go down there?" And it ended up that they've got to have at least 2,500 cubic feet per second, have that amount of water, in the Lower Truckee River for temperature, and we have [inaudible]. That's 5,000 acre-feet a day. But, at that time, in all the negotiations we were looking at criteria up to 2,500 cubic feet per second. With temperature we were looking at temperature. How about attraction flow. We had to have so much water *early* to attract the cui-ui to get them to make a run. (Seney: Right.) So, we added in attraction flows. All sorts of criteria Chet and Tom Strekal were working that, and with Rod trying to model that. But, we were trying to meet all those criteria. So, in a lot of the earlier negotiations we had *very high* criteria for the fish, but we wanted to get more information, we couldn't get more information. We couldn't get information on the endangered species. It was closely guarded. (Seney: Yeah.) And they indicated, "Well, they don't spawn below Numana Dam."

". . . the optimum flow, down there's a thousand cubic feet per second, *not* 2,500. And now, there is spawning below Numana, a lot of spawning. . . ."

Well since then, now with [inaudible] everybody agreeing to how much water they're going to get. We're down to where the optimum flow, down there's a thousand cubic feet per second, *not* 2,500. And now, there is spawning below Numana, a lot of spawning. So, this last year they had what, just over two million.

Cui-ui Population Has Increased from 60,000 to over 2,000,000

They have over two million cui-ui instead of 60,000 in the lake, because I talked to the head of Fish & Game. I wondered, "Well, where are we today?" (Seney: Right. Right.) And they have over two million, way over two million, in the lake. And, they have two million in, this year, in [inaudible]. Two million. So, are we endangered?

Seney: Well, I know that . . .

Burns: Well, anyway . . .

Seney: I know there's questions raised about whether or not they're . . .

Burns: Well, they're making a study now, I understand to delist them.

Seney: Oh, are they?

Burns: Yeah.

Seney: Yeah.

". . . the tribe . . . their stated goal and Pelcyger's stated goal is to 'cut off the Truckee River entirely' . . ."

Burns: Which is fine, but here TROA is set, people have agreed. (Seney: Right.) The court has said, "Stampede will be used." All the criteria are built around and supporting. (Seney: Right.) That's the law. (Seney: Right.) So, if the tribe is getting–and it does, and their stated goal and Pelcyger's stated goal is to "cut off the Truckee River entirely," (Seney: Right.) so no water goes over it. (Seney: Right.) And, I find that's a little . . . (Laugh)

Seney: Well, there hasn't been water going over it the last couple of years, has there?

Burns: Oh, there's water. Yeah. Because they have enough water.

Seney: Right.

There Is Agriculture Dependent upon the Truckee Canal from Derby Diversion Dam to Lahontan

Reservoir and the Town of Fernley's Groundwater Supply Is Recharged by the Canal as Well

Burns: But, right now they can't let more than twenty cubic feet per second [spill at the end of the Truckee Canal.] ~~go.~~ But they have to have water in the canal for the agriculture that is there, but it's difficult to operate without some water spilling in.

Seney: You mean, this would be for the Truckee Division?

Burns: Truckee Division.

Seney: They have to let some go through?

Burns: And water.

Seney: Yeah.

"I think the tribe's objective is and has been, and that would be Pelcyger, 'Cut the Truckee Canal off.' . . ."

Burns: But, they limit it. They cannot, as I understand it, let more than twenty cubic feet per second spill at the [end of Truckee Canal.] ~~dam.~~ I checked the other day and its at about twenty. But no, they don't, if they don't need the water, because Lahontan is full. (Seney: Right.) So,

they don't take water over it. (Seney: Right.) I think the tribe's objective is and has been, (Seney: Right.) and that would be Pelcyger, "Cut the Truckee (Seney: Right.) Canal off." So, anyway, I feel pushing, TCID, how far do you push?

Seney: Yeah. Well, Joe Ely told me that it won't matter if the cui-ui are delisted because they're covered in Public Law 101-618. Is that your understanding too? That even if the cui-ui is delisted that they're still going to get that kind of water?

Even If Delisted, Public Law 101-619 and TROA Assure Water for the Cui-ui

Burns: Oh yes. Yeah. We signed, we agree with TROA. (Seney: Right.) They're getting that then, but at Stampede if they come back and if they, I guess, go back to the court and the court has to come back and say, "*If* they are no longer threatened or endangered, then the secretary can then allocate water in Stampede for other purposes." (Seney: Ah.) But, like talking to Chet, what is, what is, how do you say, "They have to be protected for two hundred years (Seney: Right.) in order to be out of the, you know, the endangered list." Well, how do we know (Laugh) if they are? (Seney: Ah.) But it's built into the settlement, that *if* they are

more than delisted, and they are not required to be protected then the secretary *can* use the water in Stampede for other purposes.

Seney: But that may be way down the road, (Burns: I think it's beyond . . .) [inaudible].

Burns: That's way down the road. (Seney: Uh huh.) But, I think the fish are in great shape. The tribe has done a great job on their Lahontan cutthroat trout. But you go back to when we were negotiating all of this, all the pressures, and the requirements, because you'd operate the model and Rod would see that and we'd talk, and Chet, how many, they'd have to set the criteria. "If you have such a flow you have so many female spawners. You'll have so many, you know, come down." So, we'd (Seney: Ah.) operate trying to maximize how many fish. So, all the initial studies and negotiations are based on those studies.

Seney: Right. Did you put the, return the trees to the Lower Truckee into the model as well, the shade canopy that was, the Army Corp cut down a number of years ago?

Burns: No. As such, no, the temperatures are sort of taking care of (Seney: Right.) themselves. And before, we had 2,500, now we're down to a 1,000. They're finding, at least my impression

is, that temperature is not all that critical. (Seney: Ah.) But, I know they did try to keep, plant trees down there. (Seney: Right.) But, and you try to protect the trees but I think the cattle, the tribe's cattle, got them–ate them. (Laugh) So, no, and they did clear, but they are working now on a lot of the reaches. Now, how far down they go, (Seney: Right.) but the city, and county, and state they're working on trying to reestablish sort of some old channels and all. (Seney: Ah.) So, they're doing a great deal of work. (Seney: Right.) So, I don't know whether getting the canopy down on the reservation, that's a long way off. (Seney: Right.) But, they do operate now for ways to irrigate the cottonwoods. So, that's part of the operation step, the Fish and Game and they get together and the provisions have been made to get water up for the cottonwoods they've planted. (Seney: I see.) So, you're operating for cottonwoods. You're operating for the cui-ui, for the endangered species. (Laugh)

Streamflow Requirements on the Little Truckee River Between Independence and Stampede Reservoirs

For, and in California (Seney: Right.) all the criteria to instream flows, like they do want twenty-five second feet out of Independence instead of two. All right, make that release but

then we can capture that water downstream.

Seney: This is in the stream both between Independence and Stampede? (Burns: Yes.) They want a certain flow, right? (Burns: Yes.) And, isn't there, don't they want a certain flow between Stampede and Prosser, or Boca as well?

Burns: Yes. And I think it was thirty cubic feet per second and that is being met. But also, now we have criteria, a whole series of criteria in TROA that when you have certain division you can release more water . . .

END SIDE 2, TAPE 1. SEPTEMBER 25, 2006.
BEGIN SIDE 1, TAPE 2. SEPTEMBER 25, 2006.

Seney: His home in Lake Tahoe, California. Today is September 25, 2006. This is our second session and our second tape. And, we may have lost a little bit on the, my question about the, when [Lake Tahoe] ~~it~~ goes below the [natural rim of the] lake ~~level~~.[3] I was wrong in thinking that some water still infiltrates into the river.

Burns: Right. Because it's very small. But, there is right below Fanny Bridge. The local drainage comes in just above where they make the

3. Note that the edits here were provided by Mr. Burns to clarify the question to which he responded.

measurement. (Seney: Ah.) There's a concrete lip down there where the USGS makes the measurement. So, you may get down to five, ten cubic feet per second, but part of that sometimes is just local runoff. (Seney: I see.) But there, and I, the record is very, very small. There could be a little bit coming up. But generally what people *did do*, they put small pumps on in the lake and put plastic pipe and brought water down to where those fish are just below the dam, near Fanny bridge. (Seney: Right.) So, they were pumping some water down to try to keep those fish.

Seney: Was that okay with everyone? Or . . .

Burns: Sure. (Laugh)

Seney: Yeah. Right.

Burns: Yeah.

Seney: Because those are . . .

Burns: No, no one objected.

Seney: Yeah. I mean, they're really, (Burns: Yeah.) yeah, that's quite a sight to see, (Burns: Yeah.) those big fish. Right.

Burns: But no, there's very, very little water, virtually

no water coming out. (Seney: Right.) Because it's just, like I said before, we had 1903 survey, 1970 we went out and resurveyed, and it just–its same as 1903. (Seney: Ah.) The big question, is the natural rim there? So again, you get data. Well, we went out and surveyed it. We had the 1903 plane table survey exactly. It just had not (Seney: Right.) changed.

Seney: You know this, one of the years I've been working on this, and its been a lot of years, it was down to the natural rim. (Burns: Um-hmm.) When was that recently?

Burns: In '92, maybe it was at '92, and I forget my years. It went over two feet below the rim. (Seney: Right.) So, it was down 2.2 feet.

Seney: Well, it must have been '92 then that I remember that.

Burns: I think it was '92.

Seney: Yeah.

Burns: I think that.

Seney: Right. Right.

Burns: Yeah, it was down two, 2.2 feet below. So, one of the questions you come up with and is

addressed in TROA, "If we can credit store some water in Tahoe and if you have credit water in there, what if it goes below the rim? (Seney: Right.) Is that credit water still there?"

Seney: Is it?

Burns: Yes. (Laughter) So, it comes back.

Seney: You just has to wait until then.

Burns: By their criteria, yeah.

Seney: Oh.

Burns: So, anyway.

Seney: Whose credit water is that that's so durable?

Burns: Well, it depends on who has, if Sierra Pacific has credit storage, (Seney: Oh.) if it's fish water, or some other . . .

Seney: Oh, it depends on who's taking it, in other words?

Burns: Who's taking it. Yeah.

Seney: I see. I see.

Burns: So, can you keep track of all the water? Yes

you can, but they have to have very good measurements, and that's, that's a real – (Seney: Yeah.) so much, I really think we should have stopped four or five years ago on TROA. (Laugh)

Seney: Why is that?

Burns: Well, we're getting so many little nits in here (Seney: Yeah.) and getting *so* difficult to really track it through. And, you go to try to operate. It's going to be operated as to "Here are our objectives, and you start keeping track of the water you're going to go to meet those objectives. But, the number and amount of detail in here is really (Seney: Ah.) fantastic to try to unravel it. And here someone can object to.

Seney: And if they object they would then object to the, what, Orr Ditch court?

Burns: To the administrator, or if they're not getting their water, go to the watermaster, or/and the Orr Ditch court. (Seney: Right.) You know, they have, they will be protected.

Seney: Right. So then I guess all the detail, if it's over-detailed what matters is perhaps the rapport between the watermaster and the Orr Ditch court?

Burns: And the records detail.

Seney: And the records?

Burns: Do you have good enough records? And, they're going to have to come back (Seney: Right.) and really get some better records. (Seney: Right.) I've referred to working in the last fourteen years down in Imperial Irrigation District, and there they're, you know, taking water, a 100,000 acre-feet to Metropolitan Water. San Diego's coming in to get 200,000 acre-feet. And, are they going to get their water? Well, just getting *good* data down there. So, we really emphasize good measurements, you know, good measuring devices, and they have a system where they have about 150 sites that get readings every fifteen minutes. The data comes in every day, it's scrutinized, is it good data? (Seney: Ah.) So, that's the type of thing they have to have and I think they're getting there.

Seney: Well, that, down there that has to do with the fact that since Arizona is beginning to exercise its call on the Colorado, California is getting less. (Burns: Right.) So, they want to make use of the . . .

Imperial Valley Water Issues and San Diego

Burns: In the settlement, the Colorado, the overall settlement, (Seney: Right.) Imperial is entitled to get three million acre-feet of water. Then they, they, that [inaudible] water district with the water conservation they have, they get 100,000 acre-feet *if* we'd say "Yes, they are conserving that water." San Diego now has a contract to get 200,000 acre-feet, but that means that then IID [Imperial Irrigation District] has to back off on the water they can take. (Seney: Ah.) So they can save the 300, three million, maybe it's 2,800,000.

Seney: And then that 200,000 then goes to San Diego?

Burns: If they delegate, they save it. They'll save, like fallowing land, "Okay, we're not going to irrigate, therefore that, how much of that water then can we save and go to San Diego." It gets very, very complicated. (Laugh)

Seney: I'm sure. Now, is, with the water users in the, in the irrigation district down there, the Imperial Irrigation District, do they own the water rights as they do on TCID, or are they water rights that belong to the Imperial Irrigation District?

Burns: There's some argument. (Laugh) (Seney: Ah.) on that. It's a combination, because there is some irrigation there before they came in with Hoover Dam, (Seney: Ah.) and but it's, the

farmer's own, in fact, the district sort of owns the water. (Seney: Yeah.) But, there's some controversy to that. (Seney: Right.) But, I think that the district sort of has the rights.

Seney: Right. Well that's . . .

Burns: But, the farmers then they, you know, have been farming and getting, you know, so much water on of their land. (Seney: Right. Right.) So, they're going back through the records. "Okay, if I can save by not irrigating, I use so much water, now if I back off how much water am I saving?" They're in the process of working on that.

Seney: Ah. You know, as an aside, can they sell these water rights to L.A. and San Diego?

Burns: Yeah. They've–yes.

Seney: How much per acre-foot?

Burns: The Metropolitan, in their agreement, paid $125 per acre-feet for conserved water.

Seney: For conserved water?

Burns: Then when it comes in to San Diego it's probably about $400 an acre-foot.

Seney: That's *cheap*.

Burns: Well, it is cheap. (Laughter) At $125 an acre-foot it worked out pretty well. But the farmers in the initial MWD [Metropolitan Water District]/IID program, the farmers didn't get the money. What the money went into, to improve the system, (Seney: Uh huh.) improve the measurements, putting in lined reservoirs.

Seney: Line the canals, I understand.

Burns: Line some canals. But what they also did was, the way they got water before, if you're going to irrigate a field you'd order water, say, five cubic feet per second for this field. You'd order it. You'd take it for twenty-four hours. But, did you need it for twenty-four hours? So that they built into the IID/MWD program, if we can get good data and get good operations, and get more closely tied into the operations, (Seney: Right.) a farmer could then say, "I only want water for twelve, twelve hours." But, you have to be able to cut that water off and back it out. So, TCID was paying $50 an–I beg your pardon. Metropolitan (Seney: Right.) was paying $50 per acre foot that was backed out and paying for extra *zanjeros* to do the job to back it out. (Seney: Ah.) So, the *big* savings is the farmers can order water twelve hours, or twenty-four hours, they can cut it off earlier. Now, if you

can manage that water, instead of just twenty-four hours going out the drain. (Seney: Right.) So, that twelve-hour delivery and ability to operate that way has helped down there tremendously. (Seney: Ah.) And the farmers have much better operations. They like it. (Seney: Right.) Because whenever you have those seed beds down there it's a real art when you have the lettuce and the carrots. How much water, when do you put it on, and sprinklers, when do you sprinkle. It's a real art. (Laugh)

Seney: I'll bet. Yeah.

Burns: But anyway, down there, but data, you come back. (Seney: Right.) They have really set up and Metropolitan paid for an operations center, a new operations center, new radios. And, they need the same thing up here, (Seney: Right.) and I think they'll get it.

Seney: Right. Well, there's been a much better, thanks to OCAP, a much better measuring job on TCID, is there not?

Burns: Oh yes. That was a requirement.

Seney: Yeah.

Burns: Yes.

Seney: And they have new gauges?

Burns: New gauges, and management. That's great. (Seney: Yeah.) No, I think that, and with all they're putting in, (Seney: Right.) you know, where they get good measurements. No, I think that . . .

Seney: You know, in my interviewing of the farmers out there they complained about all of this stuff, of course, but none of them have said to me that they're getting less yield as a result of this.

"They'll get better management and better operations. . . . farmer . . . never likes data, they're afraid you're going to use it against them. . . ."

Burns: They'll get better management and better operations. And that farmer that never likes data, they're afraid you're going to use it against them. (Seney: Right.) But, in Imperial Basin they didn't like it, they fought it, but they found out is they can add [inaudible] their operations. And now, with the San Diego contract, now they're going to start getting paid for water. They didn't get it in the initial MWD/IID because all that money went into improvements in their system. (Seney: Ah.) It improved their operation. They know it. (Seney: Right.) They would not want to go back. (Seney: Ah.) And now they use it. You

know, it's something like down on our San Joaquin Valley, (Seney: Yeah.) with our projection of water and snow melt. (Seney: Right.) They didn't use the data. Down there those farmers, they're highly-sophisticated farmers.

Seney: I would think so. Right. I would think so.

Burns: Big farms and (Seney: Right.) . . .

Seney: Right. Very profitable?

Burns: Very, and it's a gamble.

Seney: Yeah. Always.

Burns: You get a frost or something. (Laugh)

Seney: Yeah. Right. Right.

Burns: It'll ruin his crop. They make it big, but they can also lose it big.

Seney: That's right. That's right.

Burns: No, but they, they wouldn't want, did not, would not want to go back.

Seney: That's interesting.

Burns: Because the more data, (Seney: Yeah.) the better you have, the better operation (Seney: Yeah.) you can have. And they, (Seney: Right.) they bought into it. (Seney: Right. Right.) And the same thing's going to happen here.

Seney: Is there some feeling on TCID among any of the farmers that this is worked to their advantage at all?

Burns: I don't know. (Seney: Yeah.) I think it has to, but I don't know.

Seney: Right. Right. I mean, like as in freeing up water for them to sell and the rest of that?

Burns: Yeah.

Seney: Because they're getting $3,000 an acre-foot, plus or minus, aren't they, over there?

Burns: I think so. (Seney: Yeah.) I think so.

Seney: Yeah. The Imperial Irrigation District guys would love to get that wouldn't they? (Laugh)

Burns: They'll come out and they'll do pretty well.

Seney: Yeah. Yeah.

Burns: But anyway, with TCID it just, well, they're

where they are.

Seney: Right. Right. Exactly.

Burns: And now the big issue, and one of the last issues of course, as you know, in talking to the others, is the credit storage for Newlands Project.

Seney: Right.

Burns: Built in. And, I think they finally got a way to get around the OCAP, because I understand from Betsy Rieke the Interior that the OCAP has to set separate from the TROA. So, they're going to operate under OCAP and they *can* store water under OCAP. But also, if OCAP is changed or goes away, they have a default that if that goes away then they have a whole section now they're negotiating in TROA that will come into play and you'll develop credit storage under TROA. (Seney: Ah.) So, they're trying to finesse the OCAP and TROA.

Seney: Ah. How does credit storage work under TROA or OCAP if they (Burns: Then you can . . .) if the tribe, but if the tribe gets its wish and the canal is dried up permanently?

Fernley Wants Water in the Truckee Canal and the Pyramid Lake Paiute Tribe Does Not Want Water in the Canal

Burns: Well, if it dries up then there's no water going–you know, they bought out. (Seney: Right.) They bought out of all of that. And part of the argument now with Fernley, Fernley wants water to stay in the Truckee Canal, (Seney: Right.) because they get a benefit because it's recharging groundwater. (Seney: Right.) Well the tribe, of course, wants to take it out of the Truckee River but you don't get credit (Laugh) (Seney: Right.) now that you're getting recharge. So, that was the, the last two issues on TROA, Fernley, and Newlands Credit Water, and OCAP.

Seney: Are you working closely on the Fernley thing?

Burns: I'm just–no.

Seney: Yeah.

Burns: I'm just sitting, I sit in on the edges (Seney: Right.) the TROA.

Seney: Right. Because my understanding, I interviewed the mayor last week, Mayor Stix of Fernley (Burns: Yeah.) that they had come to an agreement which was going to leave water in the~~, in the~~ canal.

Burns: Well, that's great.

Seney: Yeah. Yeah. He was very pleased, from their point of view. I think it's, they figure, 8,400 is their, what they can take out of there, the state engineer tells them.

Burns: Well, that's fine, if they, that's . . .

Seney: And then they're getting another 7,000 from stored.

Burns: If that's, if they agree with it. Tribe's getting the water. (Seney: Yeah.) You know, how far, (Seney: Yeah.) how far do you push? (Laugh) I think it's time for–and I think, and I, in talking with the tribe people the last couple of meetings they're very much aware you could lose everything. (Seney: Right. Right.) And I think the tribe itself, the tribal people they say, "We have to get this done."

Seney: Well I, I've been told in an interview recently with a very important player in all of this that there is some sense that the tribe has pushed too far and wanted too much and that there is a little developing weariness with . . .

Burns: Oh, very definitely, I talked with them the last two meetings and they know, definitely they know, (Seney: Yeah.) that's what I was trying to tell Bob. Like Joe Ely told Bob, "Hey Bob, we made a decision. We're in. That's enough."

(Seney: Right.) [inaudible].

Seney: Is Norm Harry likely to do that, do you think?

Burns: Yes.

Seney: Yeah.

Burns: Yes.

Seney: Yeah.

Burns: No, I think with the OCAP, trouble with–in talking with, you know, my position is they better darn well get this thing done. (Seney: Right. Right.) And they agree. (Seney: Yeah.) "Hey, we need to get this approved."

Seney: Does it look like it's close to you?

Burns: Oh yes. (Laugh) (Seney: Yeah.) It's been close before but (Seney: I know.) but these two items, they just have to (Seney: Yeah. Yeah.) sign off on them. And if they've got Fernley taken care of that's great.

Seney: Well, the mayor seemed happy about it, and (Seney: Yeah.) I don't know that, where the tribe stands on that. And . . .

Burns: Well, I think the mayor was at one of the

meetings, and said, "Well, we'll negotiate." It's time to stop negotiating. (Seney: Yeah.) And the State of California is very good, that, oh, that represents the [counties.] ~~company.~~

Seney: Carol Hamon?

Burns: Carol. (Seney: Yeah.) Carol's great. "Hey, we've gone far enough." (Seney: Right.) Maybe you heard some of this last week?

Seney: You know, I , my timing was impeccable. I came in about two seconds before Betsy Rieke said, "Well, let's wrap it up." (Laugh)

Burns: Oh, well, that's good.

Seney: I overslept. (Laugh)

Burns: That's where Carol, at that point, "Hey. Enough is enough."

Seney: Right.

Burns: "Where do we sign off? Who signs off? How do we get this done?"

Seney: Right.

Burns: And a whole series of things have to be met before, you know, (Seney: Right.) it really goes

into effect. (Seney: Right.) So, Carol was very good to really press. (Seney: Right.) But Fernley, he said, the mayor had earlier said, "Well, we got to neg . . ." "We can't." (Seney: Yeah.) "We have to draw the line."

Seney: Yeah. I don't know who the mayor met with, I guess Betsy Rieke among others.

Burns: And they used four former state engineers in working with them.

Seney: Taggert [phonetic]?

Burns: No. Okay, I'll think of it. (Seney: Yeah.) Yeah, he just, before Hugh Ritchie. (Laugh)

Seney: I'm trying to . . .

Burns: I don't know, because they move so very much.

Seney: Is it . . .

Burns: Turnipseed.

Seney: Turnipseed. I was going to say Culpepper. (Laugh), but Turnipseed.

Burns: [inaudible]. So, I was working with him.

Seney: I see. And then they've got Paul Taggert

working with them, who used to work with the State of Nevada?

Burns: The State, yeah. Oh, I think they just have to (Seney: Yeah.) get it signed off, and (Seney: Right.) . . . so anyway, we'll see where that, where that–but, I guess my main thought here . . .

Seney: Anything else, you made a, thoughtfully made a list here?

Burns: No. Just the idea that this was a progression of Sierra Pacific needing a water supply, and everybody being onboard every step of the way, and the litigation sort of progressed things, (Seney: Right.) and then they got into very detailed TROA. So, everything was kind of a progression. (Seney: Right.) And then the building up. No, I think those were the . . . Oh, I think one thing that was sort of part of the buildup that, how does Sierra Pacific get the water rights if all the water rights are adjudicated? They're privately owned. And that's where, when we came up with, "Hey if we're short of water?" (Seney: Right.) And then the cities came out that the water rights if you wanted to develop a parcel of land you had to acquire a water right. (Seney: Right.) And then turn that over to Sierra Pacific, (Seney: Right.) and Sierra Pacific then operate the

reservoirs for storage and all, and then that came down to Rule 17, where the state engineer ruled that, and that if you're going to have that water right you had to bring the water, you know, supply in. (Seney: Right.) And that's where the so-called fifty-eight percent came. We've made studies of, in probably 1993, '4. The maximum amount of water that you could get on an irrigation right in that drought was fifty-eight percent of the face value. (Seney: Ah.) So, in hearings, and that fifty-eight percent yield from irrigation right translated into the 1.72 acre-feet. If you wanted an acre-foot of water the state engineer said you had to bring in 1.72 acre-feet of right (Seney: Ah.) in order to get one acre-foot of delivered water.

Seney: Given the experience of the '34 drought?

Burns: Right. And so the state engineer put that in so that's where the 1.72, because we said it was fifty-eight percent yield. (Seney: Right.) So that's, in order to get an acre-foot of water delivered from Sierra Pacific you had to bring in a right of 1.72. But that went on for–anyway, there's some other criteria in TROA. It went on for a while and the criteria in addition that had been .11 acre-feet. So, all of that's sort of built in. (Seney: Right.) But, those are the types of, you know, studies that went in and got sort of built into TROA.

Seney: You know, my understanding is that the, when the city voted, and I guess Washoe County too, subsequently, voted to require that people who want to develop bring the water rights with them, that their objective really was to limit development? Do you recall that? And then rather than doing that, what they've done, I think, instead is make these things more orderly and more predictable. If you have to bring the water rights with you, of course, the water, a marketing thing grew up, consultants come out (Burns: Yeah.) of the woodwork. They find the water rights. They say to the homeowner, "Here's how much we'll pay you for your water rights, and those go to Sierra Pacific," or TMWA (Burns: Yeah.) I guess, which has stopped doing that. TMWA doesn't do that, do they? And Sierra Pacific used to have water rights.

Burns: And used to purchase them?

Seney: Right, okay. And then say, "Okay, well here they are."

Burns: Yeah. And they've done–had a pot.

Seney: Right. Exactly.

Burns: And [inaudible] in and then they would take it out of that (Seney: Yes.) pot. (Seney: Right.)

Gosh, they were paying $50 an acre-foot years ago, (Seney: Right.) acquiring rights. (Seney: Right.) Right. So yes, that sort of evolved. Again, the big demand and the growth, the amount of growth (Laugh) (Seney: Yeah.) is just amazing. So that put the pressure on.

Seney: From your point of view, is there a difference between TMWA and Sierra Pacific?

Truckee Meadows Water Authority (TMWA) Came out of Sierra Pacific Power

Burns: No. I don't know–yes there is a difference, because Sierra Pacific, you said, are small, compact, you could make a decision (Seney: Right.) the president of the company. You'd go. Well now you have Reno, Sparks, Washoe County sitting on the board in a political appointment, which is fine, but how long . . .

Seney: It is different though, isn't it?

Burns: It is different. (Seney: Yeah.) How knowledgeable are they? And, can, is TMWA free to say, "We have to do this to ensure our water right." (Seney: Right.) We have to keep everybody (Seney: Right.) sort of intact and aware.

". . . for a long period of time on the water

resource plans, Washoe County was at odds with Sierra Pacific, because Washoe County wanted to develop outside the Sierra Pacific service area, South Truckee Meadows. . . ."

And it was interesting, for a long period of time on the water resource plans, Washoe County was at odds with Sierra Pacific, because Washoe County wanted to develop outside the Sierra Pacific service area, South Truckee Meadows. And so, and the Public Service Commission hearings on the water resource plans–Washoe County will always come in on opposition to Sierra Pacific. *Always* opposed, *always* questioned (Seney: Ah.) everything that was being done, challenging them. They're onboard now, (Seney: Right.) because they're a part of it.

Seney: They're a part of it. Right.

Burns: They're a part of it. (Seney: Right.) But for many years they were the loyal opposition. (Laugh)

Seney: Interesting.

Honey Lake as a Source of Water

Burns: But they went out, and they bought some water rights in some of the valleys to the north, then

Honey Lake issue came up and (Seney: Right.) now they're, developing the South Truckee Meadows area. But I'm sure the legislature, it sounds like legislature is going to put them all together.

Seney: Yes. Right into Northern Nevada.

Burns: Yes. And that makes sense.

Seney: Yeah. Does that make sense to you?

Burns: Yes.

Seney: My understanding is that that's a move the developers are supporting largely because TMWA hasn't been as responsive as they'd like it to be, especially when it comes to, you know, the water rights business. I guess the, the county, what the county had some water rights? Was that the one?

Burns: Yeah, the county has some.

Seney: And they auctioned them off not so long ago. (Burns: Yeah.) They went for $40,000 an (Burns: Yeah.) acre-foot. (Burns: They did.) And, the . . .

Burns: There was the lid.

Seney: Yeah. Right.

Burns: One was a $50,000 purchase.

Seney: Is it?

Burns: And one of them was for a one-acre foot, $50,000.

Seney: Good lord.

Burns: Yeah.

Seney: That just seems to me . . .

Burns: So, I really don't know (Seney: Yeah.) where TMWA is (Seney: Yeah.) now [inaudible]. Before (Seney: Right.) yes I knew, because we would meet with the city councils, the Washoe Board of Supervisors. They were *very* much onboard (Seney: Right.) all of them. Now I don't. Now you have your, the politicians and so I don't know (Seney: Right.) how it's working.

Seney: Right. Have you been involved in the Honey Lake business or the Honey Lake Lite, as it's now called?

Burns: Years ago, yes. That, they had a lot of hearings, (Seney: Yeah.) and the question about Franklin

Jeans was the gentleman who (Seney: Right.) was pushing that. And, yeah, you know, concern that they didn't just strip the water out there. So, Sierra was interested. And, if more water came in Sierra would be interested in it. (Seney: Right. Right.) But, I think Franklin Jeans tried to [inaudible] and I guess they do have now what you call a . . .

Seney: Well, I guess Bob Pelcyger's term, "Honey Lake Lite."

Burns: Lite.

Seney: Yeah.

Burns: Less water. Before they tried to come across the Bureau, oh, of Land Management (Seney: Right.) and couldn't get a permit (Seney: Right.) to bring it in. But, Sierra is sort of looking at, "Hey, if that's additional water, bring it into [inaudible] Valley and some of the areas, fine, if that's (Seney: Right.) you know, we'd be interested in the water." So I, you know, but, you know, they weren't like opposing it, but were certainly very much interested in it. (Seney: Right.) But I think Franklin Jeans was trying to – and he missed out on the big dollars. (Laugh)

Seney: Yes. Right. Right. He was something of a

wheeler dealer.

Burns: Oh, he was.

Seney: Yeah. Yeah.

Burns: Which, you got to admire these guys. They . . .

Seney: Yeah. That's what built America, right? That's what [inaudible].

Burns: Washoe County purchased some, some springs and wells, oh just north, and they spent a lot of money. And, I just don't know how much water they can develop out of that. (Seney: Right.) They paid a great deal of money.

Seney: What about the Aquatrac on the other end, out toward Fernley? Are you familiar with that recent attempt to drill some wells up in, above Winnemucca, and in the basin up there and bring the water down into the Fernley area?

Burns: No.

Seney: Okay.

Burns: I'm sure it's coming.

Seney: Yeah. Right. Every drop they can get.

Burns: Yeah. Yeah, they did have some plans of bringing it in. I know Sierra is interested in some of the [inaudible] when they come in, (Seney: Right.) and come in from the east on some of those. (Seney: Right.) Oh, I'm sure that's probably coming. (Seney: Right.) But, I don't know the relationship that TMWA and the local developers and all, but I know there's pressure on them to, "Hey, find more water." (Seney: Right. Right.) And that's a, and Murray, Burns, and Kienlen, MBK is working with them on that right now, and MBK's interest is to make sure there's water there. That's always been our interest. (Seney: Right.) And the ability to say, "No. Hey, that won't work."

Seney: Yeah. Why did, why did Sierra Pacific divest itself of the water utility?

Unclear on Why Sierra Pacific Divested Itself of the Water Utility Because Sue Oldham Had Told Him it Was the Money Maker

Burns: You know, I, I don't know because in Sue's, talking with Sue, it was the money maker. Water made money. (Seney: Right.) But, I don't know if, but they would, you never made money on the books I don't think because everything, the power, they had everything was put it together. Now, this is my impression.

(Seney: Right.) And, why they, or they just wanted to be important. I don't know.

Seney: When I interviewed Joe Gremban I asked him about it.

Burns: Yeah. What did he say?

Seney: Well he, you know, because there were always rumors that they were going to, you know, sell it or something. (Burns: Yeah.) And he said, "Well no. No, not really. He said, that, you know, in my, part of my question was, "I would think you would want to be able to control the water because that impacts your major, you know, business of selling electricity?" He said, "That's absolutely right." (Burns: Right. Right.) We control, you know, if we can bring the water in we can, you know, figure out how much building there's going to be, (Burns: Right. Right.) and it's electricity we really want to sell. So, I was just kind of surprised, but it came after Nevada Power took over Sierra Pacific, didn't it?

Burns: Yeah. I guess when Nevada Power got involved, (Seney: Yeah.) and then they were off up in the Northeast trying to acquire PGE. PGE up there was Portland General Electric. (Seney: Right.) And *all* that was going on. (Seney: Right.) And so, I don't know who was

managing Sierra Pacific. They had new people. (Seney: Right.) But I, I don't know why they sold it. (Seney: Yeah.) Maybe they just thought they'd be better off with–I think . . .

Seney: Maybe they needed the money, who knows.

Burns: Because Joe Gremban was right. We, just as in development, we help control the [inaudible]. (Seney: Right.) It's power. It's what we want to sell–power.

Seney: Let's talk a little about Stone & Webster. Because, you know, before we started the tape you said that they were involved in the building of the Tahoe City Dam, even.

Stone and Webster and Sierra Pacific Power

Burns: Oh, very much so.

Seney: And, of course, they controlled Sierra Pacific Power for a while, and the executive, Joe Gremban came out of Stone & Webster. So did Neil Plath. (Burns: Uhm-hmm.) So, what, what do you know about Stone & Webster? They're kind of interesting.

Burns: Well, not a great deal other than I knew when the, whenever they, Sierra Pacific purchased the dam in 1908 that Stone & Webster was involved

in the studies, Stone & Webster was in the powerplants below, and then when they went to build a dam the first half of the dam, in 1909, Stone & Webster–and I, all the, in the files of TCID, Stone & Webster was very much involved in the design. The Reclamation Service had a resident engineer. So, it was almost a joint effort. (Seney: Ah.) And so, in that very much Stone & Webster was involved. But, they built the first part in 1909, and then built the second half in 1912. And I, other than that I don't know, but I knew Stone & Webster was involved with the, (Seney: Right.) the powerplant and the power company.

Seney: Did you know that Neil Plath and Joe Gremban had come out of Stone & Webster?

Neil Plath and Joe Gremban Came out of Stone and Webster

Burns: I knew Neil Plath, but I didn't know Joe Gremban, (Seney: Right.) I didn't know that.

Seney: Right. Right. He went to work for one of their utilities in Illinois to begin with, and then, came out to Sierra Pacific Power.

Burns: I'm surprised. I never did ask and never did know.

Seney: Yeah. Neil Plath actually worked in, it seems to me, the Caribbean before that?

Burns: Yeah. I knew Neil Plath.

Seney: Yeah. And had worked around for them (Burns: Yeah.) and done various things, and then come out as president, I think. Gremban didn't quite have the breadth of assignments, I think, that Plath had (Burns: No.) for whatever reason.

Burns: No, he didn't.

Seney: And, but they were both very interesting, very, very capable individuals.

Burns: Oh I, in knowing Joe Gremban I have a great deal of respect for him.

Seney: Right. Right.

Burns: I mean he, you know, asked questions. I equate him with William Warne in the state, Director of the State Department of Water Resources. (Seney: Ah.) They knew what they wanted, (Seney: Right.) and they expected you to perform. They wanted to ask you a question and you better . . .

Seney: Better know the answer?

". . . Joe Gremban had a good grasp of the community. Very much community oriented. . . ."

Burns: If you didn't know it, say "I'll find out." (Seney: Yeah. Yeah.) And I think Joe Gremban had a good grasp of the community. Very much community oriented. (Seney: Right.) An example, down here at Truckee where as you drive in you've already dropped down into Truckee, all the playing areas now. There's softball fields and all of that.

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BEGIN SIDE 2,TAPE 2. SEPTEMBER 25, 2006.

Seney: I think it [the tape] missed the part about the ball fields, and whatnot.

Burns: Yeah, and then Sierra Pacific owned where the ball fields are up on the bluff there, and Sierra Pacific wanted, they were going to put a power substation there. But at the time, we were coming back with data, we wanted good data to operate like Donner and wanted to put in, [inaudible–telemetering?] readings so we could know what the lake level was because for floods and all, so just the operation. So, we negotiated and with the USGS just put a very small building up at the upper end of the lake in which we get the lake level and we get temperature, we'd have a precip gauge up on the top of it,

and a satellite so that goes up to the satellite and we get the information out of it. (Seney: Right.) And, we wanted to put that in, (Laugh) it's just a small building but there were [inaudible–people saying, well?] "This will, you know, *impact* the visual serenity of Donner Lake." (Laugh) So, we ended up doing – and Joe Gremban said, "No way was he going to be able to put a sub, power station." So, what happened, they had a swap, in effect. We put this real small building at the north end, inobtrusive yet, and then (Seney: Right.) turned this property over to the Town of Truckee.

Seney: And let them build the ball fields and whatnot?

Burns: And I look back at, you know, used trucks and all, he would always turn them over to the community. So very, very community oriented. Some of the later people running Sierra weren't that community oriented. I overhead some of them make the statement, "Our objective is to make money." (Seney: Yeah.) Joe Gremban had, but he also was really community oriented.

Seney: Well, that's smart stuff that he did, you know.

Burns: Oh he, he protected the community. (Seney: Right. Right.) And here, he . . .

Seney: Built support for his company?

Burns: And TROA, (Seney: Yeah.) and a water supply. They have a water supply, another thirty or forty years of water supply (Seney: Right.) because he took the initiative and recognized that it needed to be done.

Seney: I, I was very impressed with him. He was a very impressive individual to talk to. And, you could see the kind of, the quality of the vision he had, and what not.

Burns: Well, he had a vision of this, and he used to have it about this power, the whole series of powerplants (Seney: Right.) up there. And I think that is going to come. (Laugh)

Seney: Yeah. Well, there's one out there, isn't there?

Burns: Well, they have one, they built one. But then, this was further out. He had a vision of building a whole complex for all of the southwest. (Laugh)

Seney: Oh, I wasn't aware of that.

Burns: Yeah, the powerplant, the coal-fired plant at . . .

Seney: I've seen that one, (Burns: Yeah.) wherever it is. Right.

Burns: Yeah. So Joe Gremban believed they'd put that

in. And, Lori Williams, who now is the general manager of TMWA she was the chemist out there. (Seney: Ah.) She worked out there, and worked as the company chemist on water quality issues." So, Lori is very knowledgeable about the details of water. (Laugh) (Seney: Right. Right.) Have you . . .

Seney: No, I haven't interviewed her. Huh-uh.

Frank Dimick

Burns: Yeah. One other person you may want to talk to, Frank Dimick. Dimick. Frank, have you talked to Frank? He was in charge of the Carson City Office for the Bureau for four or five years . . .

Seney: Right. I haven't actually, but someone else has interviewed him on these questions. (Burns: Okay.) Yeah. Right.

Burns: Because Frank was involved when we were trying to get the data set together, and trying to pull what goes into TROA. He was very much involved.

Seney: Right. And then he was later head of the Mid-Pacific Region, wasn't he?

Burns: Well no, he went down for *work* at Mid-Pacific,

as an assistant to the director. (Seney: I see.) And then he was back in Washington for a couple of years as the liaison between the district and Washington. But he's quite knowledgeable about it. (Seney: Right.) He was working up on the Humboldt (Seney: Right. Right.) where the, all the water, the dam up on the Humboldt is going to change over to the local district, Frank's working on all of that.

Seney: Ah. Yeah. He was interviewed by the senior historian of the Bureau, (Burns: Oh.) and interviewed on these matters. (Burns: Oh. Okay.) It wasn't necessary for me to (Burns: Okay.) go and (Burns: Well, then he's . . .) interview him again. Right. Right.

Burns: He has insight.

Seney: Yes. Right. Right. Well, I interviewed a number of the people about it, Ann Ball and her predecessor. Well, we're not doing well on names here, (Burns: Yeah.) are we? Her predecessor as area manager [Edward Solbos], and his name escapes me. And, I'll add it in later. And I've also interviewed Betsy Rieke when she was, about being assistant secretary. (Burns: Yes.) I have not interviewed her again since she's been area manager.

Betsy Rieke

Burns: Yeah. Really, it was a surprise when Betsy came out (Seney: Yeah.) as regional manager. But, well it's helpful now, I think, yet. But, she did a good job before as assistant [secretary], trying to get the people together in (Seney: Right.) that earlier session where we had the facilitator and all. (Seney: Right.) They came so close.

Seney: I know. That's what I understand. Yeah.

Burns: They stepped out. And, the way it was worked it was very good. They just had certain ones speak for each group, you know. So, we didn't have a cast of thousands. (Seney: Right. Right.) The Environmental Defense Fund, and I'll think of his name. (Seney: Right.) And, then Environmental had a group, and Sierra Pacific.

Seney: Larry Werner?

Burns: Yeah.

Seney: Was it Larry Werner we're we thinking about?

Burns: No. Anyway. (Seney: Yeah.) Anyway, but that worked, that worked very well. We got right down. Apparently this would work. And, Bookman-Edmonston was consultants for

TCID. They stepped out to caucus and wouldn't (Seney: Yeah. Yeah.) somebody called in from the old boys and it wouldn't go.

Seney: I've had some of them tell me, maybe more than one, that they began with Lyman McConnell sitting back as a staff sort of person and the closer he got to the table the more difficult it got to making an agreement.

Burns: I would agree with that.

Seney: Yeah.

Burns: I would agree with that.

Seney: Is there any difference now, do you think, that he's gone and Dave Overvold has taken over?

Burns: Do you *know* I didn't know Dave had taken over.

Seney: Yeah.

Burns: When did Lyman . . .

Seney: This has been several months ago that Dave (Burns: Oh, I didn't know that.) is now the General Manager and Lyman is . . .

Burns: Because Dave worked with the people down in

the Carson City on all this stuff. (Seney: Right. Right.) So, Dave was very much involved in all the local–getting the data and what have you. (Seney: Right.) And, then he–I was pleased that Dave went up there.

Seney: Yeah.

Burns: Well this, I think that, I think it will be a plus, and I like Lyman.

Seney: Right. Have you, have you had any contact with the new Churchill County manager, Brad Goetsch?

Burns: No.

Seney: Well, he's the former Commander of the Naval Air Station.

Burns: Oh, he is?

Seney: A retired naval Captain, and a very interesting man.

Burns: Oh, that's interesting.

Seney: Yeah.

Burns: I think that could be a plus.

Seney: Yes. I think it is.

Burns: We won't get back to the "old boy." (Laugh)

Seney: Yes. I think it is a plus.

Burns: Good.

Seney: I think he has a, you know, he has a different sort of view and you may or may not know that the county and the tribe are actually working together on some questions up on the Upper Carson. (Burns: Yeah.) So, they've found a mutual interest there.

Burns: Well, that's interesting.

Seney: Which is kind of an interesting development.

Burns: Well, that *is* interesting.

Seney: Yeah.

Burns: I think it's a plus.

Seney: Right. Right.

Burns: Because a lot–and I'm pleased, you know, the measurements that are coming in, you know, up to speed, and (Seney: Right.) doing nothing but help them. It'll be better for them.

Seney: Right. Anything else you want to add that you think we . . .

Burns: No.

Seney: There's a million things we didn't talk about, of course.

Burns: You have the background of talking to everybody. (Laugh) [inaudible]

Seney: Well, everybody has something different. I mean, you haven't really repeated (Burns: Yeah.) anyone. I mean, just, your perspective is quite different. It's absolutely essential.

Burns: No, I think where we are as far as the modeling, like Rod Hall, I'm very sorry you weren't able to (Seney: Right. I am too.) interview Rod because he was very good. And another was, Mike Archer, in Murray, Burns, & Kienlen. He had worked–one way we worked, I think, worked pretty good with Rod, all the modeling and all, everything he did came through me, Burns and Kienlen, (Seney: Right.) and we kind of filtered it to make sure we have all the pieces. Because Rod was . . .

Seney: Who did Rod work for?

Burns: Sierra Hydrotech. They're a two-man firm.

(Seney: Ah.) Jack Hanaford and Rod Hall. (Seney: I see.) Just the two of them. (Seney: Right.) And so, but Rod worked for MBK on all of this, then at the very, the year 2000, when they started working the EIS/EIR [Environmental Impact Statement/ Environmental Impact Report] and on [inaudible] studies and all, and part of the time Rod worked directly for the Bureau.

Seney: I see. Yeah. But, he was very highly regarded?

Burns: Oh yes.

Seney: Really highly regarded. regarded.

Burns: Rod was very highly regarded.

Seney: Yeah.

Burns: But, they started always with the details and Ron would try to tweak things. (Laugh) I mean, people would, "One month in a hundred years we may have something happen we better take care of it in TROA." (Seney: Right.) We don't–that's, (Laugh) anyway Rod would try to and was very, very good (Seney: Yeah.) at being able to put all this together. Right now, we're, MBK is doing work they have a young lady. She worked a couple years with Rod and Mike Archer down in Sacramento. We're

making the studies now for TMWA. (Seney: Ah.) And we're going to meet Wednesday and try and do it and make all the analyses on the water supply, and where they're headed.

Seney: So obviously you're still working on all of this?

Burns: Yeah. I still, I'm sort of on the side. (Laugh) But I'm still, as far as these studies that, with TMWA, I'm pretty familiar with Rod, (Seney: Sure.) and with him, and trying to make sure, "Where are we?" And so I think TMWA is, I don't know where it's all going to end up. (Seney: Right.) I'm pretty sure they should merge the Washoe County, because Washoe County developed the South Truckee Meadows Project and I'm not sure there's a water supply there or not. (Seney: Yeah.) And let's put it all together.

Seney: Apparently, it looks like a done deal. It's Northern Nevada Water Authority.

Burns: Is it?

Seney: That's what I understand. There's a lot of (Burns: It's probably . . .) support for it.

Burns: I think it's a good idea.

Seney: Yeah. Apparently there's a Southern Nevada

Water Authority.

Burns: Because it's so . . .

Seney: And people wanted . . .

Burns: Everything's tied together.

Seney: Yeah. Right.

Burns: So, I hope they, I hope they do that. No, I don't know of anything else that I think is . . . (Laugh)

Seney: All right. Okay. Well, thank you very much. I really appreciate you giving us time.

Burns: Oh, I enjoyed it.

Seney: All right. Good.

END SIDE 2, TAPE 2. SEPTEMBER 25, 2006.
END OF INTERVIEWS.

Appendix 1: Joseph I Burns Résumé from MBK Website
November 10, 2010

MBK ENGINEERS

JOSEPH I. BURNS

PHOTO NOT YET AVAILABLE

EDUCATION

- Stanford University
  - BS in Civil Engineering, 1948
  - MS in Civil Engineering-Hydraulics, 1949
  - Degree of Engineer, Civil Engineering-Hydraulics, 1952

PROFESSIONAL LICENSES and SOCIETIES

- Registered Civil Engineer in California and Nevada
- Registered Agricultural Engineer in California
- Fellow, American Society of Civil Engineers
- Member, Tau Beta Pi, Honorary Engineering Society
- Board of Directors, United States Committee on Irrigation and Drainage

EXPERIENCE

1992 - Present	MBK Engineers, Sacramento, CA Consulting Civil Engineer Water supply, water rights, hydrology, irrigation, ground water and related issues.
1967 - 1991	Murray, Burns & Kienlen (MBK Engineers), Sacramento, CA Principal Practice predominantly in fields of hydrology, hydraulics, drainage, flood control, water supply, and economics of water resource development. Qualified as expert witness before Superior Courts of the State of California and United States District Court.
06/66 - 02/67	Claims Appeal Board, California Department of Water Resources, Sacramento, CA Member Reviewed, investigated, conducted hearings and made recommendation on construction contract claims for State Water Project.
1963 - 1966	Leedshill-DeLeuw Engineers, Dacca, East Pakistan Chief Engineer Consultants to East Pakistan Water and Power Development Authority on planning, design, construction, and operation and maintenance of Coastal Embankment Project and Brahmaputra Right Bank Flood Control Project.
1961 - 1963	California Department of Water Resources, Sacramento, CA Assistant to Chief Engineer Assisted Chief Engineer in planning, directing, and supervising technical and engineering activities of the California Department of Water Resources.

1952 - 1961	California Department of Water Resources, Sacramento, CA Hydraulic and Water Resource Engineer (to Principal Engineer level) Conducted planning, hydrologic and hydraulic studies throughout California in the fields of irrigation, drainage, flood control, water supply and watershed analysis. Also operation and maintenance of flood control projects and development of flood and water supply forecast procedures.
1949 - 1952	California Division of Water Resources, San Diego, CA Hydraulic Engineer Investigation of current water use and ultimate water requirements, Coachella, Palo Verde, and Imperial Valleys, California. (Excluding nine months graduate study, Stanford University).

PROFESSIONAL ACTIVITIES

- Member, United States Working Committee on Rehabilitation & Modernization of Water Projects for the International Committee on Irrigation & Drainage.
- Chairman, Surface Water Committee, Division of Irrigation and Drainage, American Society of Civil Engineers (1980-81).
- Member, Task Committee on Collection and Publication of Basic Water Resources, Data, Division of Irrigation and Drainage, ASCE.
- President, Sacramento Section American Society of Civil Engineers (1973); Officer and Board of Directors for 15 years; Secretary, Treasurer, Chairman of Professional Objectives, Professional Conduct, Finance, Program, Legislative Affairs, & Society Affairs Committees.
- Member, Dean's Policy Advisory Committee, University of California at Davis, College of Agriculture and Environmental Science (1980-82).
- Member, Industrial Advisory Board - School of Engineering and Computer Science, California State University, Sacramento.
- Instructor, Hydrology for Engineers, University of California Extension Service.
- Member, Association of California Water Agencies.
- Member, Western Snow Conference.
- Member, Nevada Water Resources Association.

Representative Services

1. Since 1975 - expert witness in Federal District Court on actions related to water rights, water supply, endangered species, and historical operations of Truckee-Carson Rivers system. Assisted in developing operations analyses of Truckee River System used as technical basis for negotiations which culminated in passage by Congress of Public Law 101-618, 101st Congress (Negotiated Settlement). This law provides allocation of waters on the Truckee and Carson Rivers between California and Nevada; water right settlements for Pyramid Lake Paiute Tribe and Fallon Paiute-Shoshone Tribes; a recovery plan for endangered and threatened fish in Pyramid Lake; additional water and protection for Stillwater Wildlife Management Area; protection of Orr Ditch water rights and a drought water supply for the Reno-Sparks Metropolitan Area. Currently representing Sierra Pacific Power Company on committees developing operating criteria to implement the Negotiated Settlement.

2. Developed historic Lake Tahoe water surface elevations assuming outlet at Lake Tahoe in its natural condition (Fogerty et. al. vs State of California et. al., County of Placer No. 48281).

3. Developed historic Clear Lake water surface elevations assuming outlet at Clear Lake in its natural condition (County of Lake et. al. vs M. Maroni Smith et. al., County of Lake No. 17806).

4. Developed historic natural flows for the American River for California State Lands Commission.

5. Developed historic natural flows for the San Joaquin River and defined water surface elevations for historic conditions from Friant Dam to US Highway 99 for California State Lands Commission.

6. Since 1955 - consultant and expert witness on levee failures and flooding on Sacramento, Feather, Yuba and San Joaquin Rivers. Studies involved analyzing historical events and developing impacts of historical floods absent development of levee systems or upstream reservoirs.

7. Conducted hydrologic and hydraulic studies and prepared a flood control master plan for Tulare County (1971).

8. Since 1972 - provide water supply forecasts to water users and districts for the Kings, Kaweah, Tule and Kern Rivers. Analyze runoff from these basins on current basis for the districts. Work coordinated through the Watermasters on each of the rivers.

9. San Joaquin River Flood Control Association. Worked with U. S. Corps of Engineers, California Department of Water Resources, and local districts to improve the reservoir operation criteria to develop most efficient operation for San Joaquin Valley.

10. Conducted hydrologic analyses and developed concept and plans for the Lower San Joaquin Flood Control Project. Project subsequently constructed by the State of California. Project consists of over 400 miles of levees on San Joaquin River and bypass channels from confluence of San Joaquin River with Merced River upstream to above the City of Mendota.

11. Represent Corcoran Irrigation District on development and management of designated floodway by State Reclamation Board on Kaweah River System.
12. Since 1967 - consultant to Tulare Lake Basin Water Districts. Coordinate flood operation of upstream reservoirs and downstream flood control projects on the San Joaquin River and Tulare Lake Basin streams during high runoff periods.
13. Review and advise Tuolumne River landowners downstream from New Don Pedro Dam on operation of New Don Pedro during 1983.
14. Murray, Burns and Kienlen Principals served as Water Consultants to San Joaquin County.
15. Responsible for investigation of Cross Delta Facilities concept for State Water Project in San Francisco Bay and Delta Investigation (Biemond Plan).
16. Consultant and expert witness on levee failures and flooding in Sacramento-San Joaquin Delta. Included Brannan-Andrus litigation resulting from levee failure on Andrus Island in 1972; Lower Jones Tract litigation from levee failure in 1980; and McDonald Island levee failure 1982.
17. Consultant to United States on hydraulic characteristics of the Yuba River. (State of California vs Yuba Goldfields)

Engineering Papers, Articles, and Publications

- "Small Scale Topographic Effects on Precipitation Distribution, San Dimas Experimental Forest: Presented 1952 at Annual Meeting of the American Geophysical Union, Washington, D.C.", Published in Transactions AGU - 1953
- "Effects of Floods on Agriculture: Presented at ASCE Hydraulic Division Meeting", University of Wisconsin, 1956
- "Graphical Forecast Errors" (Co-Author). Published in Proceedings of Western Snow Conference, 1957
- "Hydrology and Flood Control Features of Oroville Dam" Presented at National Conference of American Society of Civil Engineers, Reno, Nevada, 1960; Published in ASCE Transactions 1961
- "Coordinated Flood Operations in California" Presented at ASCE Hydraulic Division Meeting, University of Illinois, 1961
- "Development of Deltaic Areas - East Pakistan" Prepared for Chief Engineering Advisor, Government of Pakistan. Published in Proceedings International Committee on Irrigation and Drainage, New Delhi, India, 1965
- "Coastal Embankment Project - East Pakistan" Published in ASCE Waterways and Harbors Division Journal 1967

- "The Cooperator's Use of Basic Data and Forecast" Presented at Fifteenth Annual Meeting, California Cooperative Snow Survey Program, 1968
- "Flood Control Master Plan for the County of Tulare", 1971
- "Retention of Riparian Vegetation, Sacramento River, Tisdale Weir to Hamilton City", 1978
- "Sierra Pacific Power Company, 1985-2005 Water Resources Plan", 1985
- "Water Resource Plan - 1988-2008, Westpac Utilities, a Division of Sierra Pacific Power Company", 1989 (co-author).
- "Impacts of the Safe Drinking Water Act, Treatment Plant Requirements, and the Proposed Chalk Bluff Treatment Plant", Sierra Pacific Power Company, March 1991
- "Surface Water Treatment Rule Compliance Plan", Sierra Pacific Power Company, August 1991
- "UEPA Document for the Chalk Bluff Water Treatment Plant", Sierra Pacific Power Company, May 1991
- "UEPA Document - Raw Water Supply for the Chalk Bluff Treatment Plant", Sierra Pacific Power Company, December 1991
- Editor – "Proceedings from the USCID 14th Technical Conference on Irrigation, Drainage and Flood Control," Phoenix, Arizona, June 1998.
- "Verification - Based Planning for Modernizing Irrigation Systems" (J. Burns, G. Davids, A. Dimmitt, J. Keller, 2000 USCID International Conference, Fort Collins, Colorado, June 2000.