

**ORAL HISTORY INTERVIEW
WILLIS F. HYDE**



NEWLANDS PROJECT ORAL HISTORY PROJECT



August 11, 1994
Fallon, Nevada



**STATUS OF INTERVIEW:
OPEN FOR RESEARCH**



Interview Conducted by:
Donald B. Seney
Bureau of Reclamation



Oral History Program
Bureau of Reclamation

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INTRODUCTION

In 1988 Reclamation hired a historian to create a history program and work in the cultural resources management program of the agency. Though headquartered in Denver, the history program was developed as a bureau-wide program. Since 1994 the senior historian has been on the staff of the Commissioner, Bureau of Reclamation, in the Program Analysis Office in Denver.

Over the years, the history program has developed and enlarged, and 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); and making the preserved data available to researchers inside and outside Reclamation. It is also hoped that the oral history activity may result in at least one publication sometime after 2000.

Most of Reclamation's oral history interviews focus on current and former Reclamation employees. However, one part of the oral history program has been implementation of a research design to obtain an all-around look at one Reclamation Project -- the Newlands Project. Focus on the Newlands Project, one of Reclamation's oldest projects, was suggested to the senior historian in consultations with Roger Patterson, the Regional Director in the Mid-Pacific Region, in which the Newlands Project is located. The Newlands Project was selected for several reasons: its relatively small size makes it manageable for this project; and the issues on the Project are complex and varied thereby providing a good mix of current issues faced by Reclamation in the arid West. This interview is one part of a research design to develop a comprehensive look at the entire constellation of interests and participants affected by the Newlands Project in western Nevada.

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

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ORAL HISTORY INTERVIEW: WILLIS F.HYDE

FAMILY AND EARLY LIFE AND EDUCATION

Seney: This is August 11, 1994. My name is Donald Seney, and I'm with Willis Hyde at TCID [Truckee-Carson Irrigation District]¹ Headquarters in Fallon. Good afternoon, Willis.

Hyde: Good afternoon.

Seney: Why don't you just start by telling me about your mother and father and where they came from and when you were born and your early life a little bit.

Hyde: My mother and father are native Nevadans. My father was born in a place called Metropolis, my mother was born in Elko, Nevada. I was born in Elko, Nevada, on December 26, 1944. The only time that I've left Nevada was for a short period while I was in the armed forces and I've spent the balance of my life here in Nevada. I'm now fifty years old -- I guess the mathematics would tell you that -- nearly fifty. I went to school, for the first part of my schooling, in a small school in Wells, Nevada. My graduating class was sixteen people.

Seney: From high school?

Hyde: No, from grade school. Two of those people are nuclear physicists today. I was handicapped at the beginning of my grammar school period of time: I had what they call nowadays, dyslexia. Fortunately, I was in a small enough class that the teacher recognized that there was some problems in my reading ability, and the way that I learned to put letters together was in the reverse and upside down so that in a mirror,

1. Unless otherwise indicated; material in brackets was inserted by editor.

it looked perfect. But, at that time they didn't know much about that particular handicap.

Shortly after my freshman year in high school, we moved.

Seney: Let me just stop you a second. You mean she understood that you had a problem and was understanding and helpful to you, even though she didn't know the term, maybe, for it?

Hyde: All of my grade school teachers spent a lot more time with me than they did anybody else, because they recognized that I had some kind of a learning disorder, but they didn't know exactly what the name of the disorder was at the time.

Seney: So did you ended up pretty much keeping pace with your classmates as a result of the extra attention?

Hyde: I failed back one year in the grade school years because of the problem. My mother recognized the problem because whenever I'd bring a piece of art work home, you could put it in front of a mirror and it would read perfectly, but to look at it head on, it looked like it was upside down and backwards.

So I had a difficult time in my grammar school years and when I got to the point where I was in high school, I continued to have that difficulty. It was a handicap for me for a long period of time. I finished the sophomore year in high school, I dropped out, I went to work for the Nevada State Highway Department in about, it seems like it might have been 1962. I worked for them for about three years and decided that it was time for me to make some decisions, so I went in the Army for two years during 1963 to 1965 -- November of those two years.

MILITARY SERVICE

Seney: Where did you serve in the Army?

Hyde: I served most of my time in a place in Fort Ord, California. Just prior to going in the Army, I applied for a Shoal Security clearance for the Atomic Energy Commission, which was here in Fallon. At that time it was boring some holes for an atomic blast testing site here in Fallon, Nevada. I got my security clearance to work for this Shoal Project, at that time as whatever they needed at the time. Then there was some things that made me decide that I needed to go into the Armed Forces, so I went in for two years.

Seney: Let me stop you for a second. Did they actually set off nuclear blasts here around Fallon?

Hyde: Yes, they did -- outside of town here about probably thirty miles out.

Seney: How many did they set off?

Hyde: Two or three, I'm not sure exactly how many they set off, but they were underground tests. And then they relocated from here down to the site in [Las] Vegas.

Seney: Do you know why they relocated?

Hyde: No, I don't.

Seney: Did that affect the water table here?

Hyde: I don't know. I suppose there's still people that are monitoring those kinds of things but [I don't know].

Seney: I guess I'm not thinking so much of contamination as I am of fractures and compromising the aquifer and so forth (Hyde: Right.) but in your work here, you don't have any indication that that's the case?

Hyde: No.

Seney: So you were going in the Army?

Hyde: Then I went in the armed forces for two years, and at that time I applied to my Commanding Officer to get my high school degree. And at that point in time he agreed that it would be important, and agreed to let me pursue that while I was in the Army. I went and I received my GED [general equivalency degree] while I was in the Armed Forces. I ~~came back out~~ [was discharged]² in November of '65. I was married by July 30 of 1966. I had my first of six children approximately two years later.

GOING TO WORK FOR THE SOIL CONSERVATION SERVICE

In January 1966, going back to that, I was seeking employment directly after I was discharged from the Army -- and I didn't know anything about Soil Conservation Service or any other government entity at that point in time -- but I stopped at the Soils Office that was located on the main street of Fallon and asked them if they had any work.

The people that were in that office started asking me questions about what I had been doing and where I had been. I told them that I had been just released from the armed forces. So they sent me down to the District Conservationist's office and he interviewed me and gave me an application to fill out. So I started out there as a career conditional Federal employee, employed by the United States Department of Agriculture, Soil Conservation Service.

Seney: Let me just stop you for a second. At what point did you overcome your problem

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2. Clarification provided by Mr. Hyde.

with dyslexia?

Hyde: I'm not sure that I have totally overcome it at this point in time, but I still have a tendency whenever I open a magazine in a doctor's office or a dentist's office, to go the back page and read the book from the back page to the front page so I think I'm still kind of in that syndrome. I don't notice it anymore, I don't have any problems with it to speak of anymore.

Seney: But little things that maybe suggest to you that [you still have a problem]. Because I noticed your desk is covered with papers filled with numbers, there's no problem there?

Hyde: No, no. In fact, that's probably my strong point. My strong suit is that math; reading and writing was the difficulty, but mathematics was not a difficulty, and I was always able to keep up with everybody in mathematics, but reading and writing was always a problem for me. To this day, I am not a good writer in the sense of penmanship, but I print clearly and correctly and accurately.

Now, going back to when I went to work for the Soil Conservation Service, this was probably one of the most important times in my life, because I went to work for them under a civil engineer, his name was Thomas MacIntyre [phonetic spelling] and he was a graduate civil engineer. He was blind in one eye from some sort of an accident, and his other eye was failing him, so I became his "seeing eye dog," in a sense, and he taught me everything that he could possibly teach me about application of engineering -- in reality, not in theory. I had that opportunity to work with him directly as his seeing eye dog, in a sense, for about ten years. [During] the ten years that I worked with him, he was very patient and very understanding and he

taught me more at that period of time than I think that I could have ever learned anywhere else.

Seney: When you are in contact with a civil engineer who's had the more traditional college education in civil engineering, how do you feel you stand up there?

Hyde: I don't have any problems conversing with civil engineers about anything that they want to talk about, but most of the civil engineers that I deal with aren't heavy structural design people, and we don't talk about things that those kind of people would talk about. Most of the civil engineers that I talk to are more related to hydrology, irrigation, and other such practices which I feel comfortable [discussing].

Seney: And that's essentially what your apprenticeship was in.

Hyde: Exactly.

Seney: That was a very fortunate circumstance for you.

Hyde: Yeah. The ten-year period in my life that stands out the most was the apprenticeship that I had in serving under Thomas MacIntyre. He was unable, at that time, to work with instruments such as transits, levels, things of that nature, so he trained me to do it.

Seney: So you would do this for him.

Hyde: I would read all of the vernier readings and he would note those in a notebook, and he would guide me and direct me in what he needed to do his work.

ATTENDING COMMUNITY COLLEGE

Seney: You probably never would have gone to college, I take it? Do you think you would have?

Hyde: Well, he encouraged me at that time. I think it was about 1967 or '68, and that was about the time that the community college program was coming on-line, and he encouraged me to go to the community college and take some courses and try to take classes that would be beneficial to my progress in the field that I was working in, and try to leave out those things that would not be of importance to what I had to do. So I completed about forty-eight units of community college classwork in mathematics, mainly. I did take some social studies and some humanities studies just to fill-in some time because I was being reimbursed under the GI program. I did that for about six or seven or maybe even eight semesters, trying to work through some kind of a program to where I'd get an Associate's Degree -- I never did get an Associate's Degree -- but the mathematics that I did learn there was of great importance to me at this point in time.

Seney: It turns out, as I'm sure you know, that people with dyslexia tend to have high intelligence as well, there's a correlation between the two. I always found school hard enough without a learning disability! What was your attitude as you started out knowing that you had this disability? That must have taken a lot of discipline and effort. Did it? or no?

Hyde: It didn't seem to be a problem for me. I recognized that there was other people or other children in school that were advanced beyond where I was at, and I was always in special reading programs and the teachers always took special care of me throughout my grammar school years. But, in high school it had become very disappointing because I couldn't keep up with all of the students, and the teachers in the high school level classes couldn't take the time to give me the extra time that I

needed to keep going.

Seney: And did all of them recognized that this was some sort of handicap, do you think?
Or did they think that maybe you were kind of a dim bulb?

Hyde: I think they all knew, but I don't think they were trained to deal with the problem.

Seney: What was your experience like when you went to the community college? Did you do okay?

Hyde: I did alright, I did fine. I didn't take any classes that were real tough classes. I took a lot of math and I always did well in math -- that didn't seem to be a problem for me, as far as a handicap was concerned. It was pretty straightforward to me and I understood it well. With every class I took, I passed the class. I wasn't an "A" student, but I did fairly well. There were some classes that I liked better than other classes.

I always had a yearning to complete a college curriculum -- not for the fame and fortune of it -- but more for the knowledge that I would gain from getting a degree. It just seemed that it didn't fit into my life. I was trying to raise a family and work, and gain enough knowledge to be able to provide for my family, and it just didn't fit real well. When I first started out working for the Soil Conservation Service, my annual salary was about \$4,500 dollars a year. My wife and I struggled, like a lot of people do struggle when they're first married, and we had four children in four years, once we got started, we couldn't shut them off.

I recognize now, in fact, I almost feel obsolete because I'm not up with the new generation of graduate students. They have so much more capabilities as far as computers [are] concerned and I suppose a lot of the older engineers have the same

feeling that they may be a little obsolete in today's work force.

Seney: All of us in the academic world feel that way! (chuckles)

Hyde: The younger generation is smarter, brighter, have a better understanding of computer operations, and maybe it's time for me to start considering retirement here within the next ten years.

DUTIES AT THE SOIL CONSERVATION SERVICE

Seney: What did you do for the Soil [Conservation Service]? As you were learning all these things, what were your duties?

Hyde: We did a lot of land leveling, which entailed earth volume work, being able to make balances between cuts and fills.

Seney: Was that here on the Project?

Hyde: Yes, here on the Project. There was a lot of earth movement taking place during that time period. We would go out and grid off areas on 100-foot grid spacing. We would take level notes on all of the staking, and then we would go back to the office and compute the [earth]³ yardage involved in that particular land leveling job (Seney: See how much you had to move and where you had to move it?) and where the material had to be moved to.

Seney: If I'm a farmer out on the Project, do I call you and say, "Listen, I think I need your services out here." Are you going around looking and saying, "Oops, here's a field we should look at."

Hyde: No, the Soil Conservation Service is service-oriented. People call and ask for their services and we would go out and do the engineering for them that they would ask

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3. Clarification provided by Mr. Hyde.

for, as long as they were a cooperator in the program and had a farm plan or were in a process of completing a farm plan.

Seney: What does that mean, "a farm plan"?

Hyde: It's a plan of how you're going to manage the soils, the lands that are involved in your particular farm unit; how you're going to level your fields; how you plan to level them; how you plan to irrigate those fields; what kind of an irrigation system you're going to have.

Seney: What kind of crops you're going to grow?

Hyde: And it gets down to as far as that, how are you going to rotate your crops.

Seney: So if I want your services, I have to have a farm plan. I mean, you're trying to encourage me to make sure we don't have soil erosion here and that I'm using the soil properly.

Hyde: Exactly.

Seney: What does it cost me to have you come out and do this leveling?

Hyde: It doesn't cost anything, it's a Federal service. At that time it didn't cost anything, and as far as I know, it doesn't cost anything today.

Seney: But to have the leveling done, I'd have to have somebody come and pay for that, but I'd have the engineering plans thanks to you guys, to do that with.

Hyde: Yes. And they had to become a cooperator and all it entailed to become a cooperator is you had to sign a little form applying to be a cooperator with a particular Soil Conservation District.

Seney: What does it mean to be a cooperator?

Hyde: Just cooperate in all of the activities of soil conservation. It has a board that

represents the people in a particular district, like this particular district, they call it the Lahontan District. Most of the farmers in the Lahontan District are cooperators -- the ones that aren't, don't believe in Federal services or Federal involvement in their particular enterprise.

Seney: Kind of a political judgement on their part?

Hyde: Yeah. A lot of Farm Bureau people don't belong to the Soil Conservation districts.

Seney: Why is that?

Hyde: I don't know.

Seney: For the same reason?

Hyde: Same reason, political.

Seney: What percentage of the land in the Project has availed itself, do you know, of the Soil Conservation Service's services?

Hyde: I would supposed that probably eighty-five to ninety percent of the lands in this Project are involved in Soil Conservation Service activities.

Seney: What's the benefit to me as a farmer to have my field leveled?

Hyde: Probably the most direct benefit is that your application of your waters that you have available to you are applied in a lot more efficient manner. It gives you an opportunity to evaluate your farm's production in a lot more accurate manner, and account for the water supply that you have available for that farm unit, more accurately.

Seney: Likely to make me more productive?

FIELDS AND DITCHES IN THE EARLY DAYS OF THE PROJECT

Hyde: And likely to be more productive. When I first started with SCS [Soil Conservation

Service], a lot of the lands in this valley were chopped up into real small irregular-shaped fields. You might have a forty-acre parcel of ground that might have five or six small irregular shapes, small fields, that each got irrigated individually. And through the course of work with the Soil Conservation Service, they were all brought into one field that irrigated a quarter of a mile in length and utilized 100-foot wide borders. It made it much more efficient for their water use.

Seney: This would still be several owners of this one field? (Hyde: Yes.) And they would know, obviously, where their area was, it would be marked.

Hyde: Well, it wouldn't be several owners, no, it would be one owner but he'd have a series of ditches running down through a forty-acre parcel, which would service real small fields.

Seney: How did that small-field system grow up?

Hyde: Well, I think that kind of came from the early days, prior to the ability to move large volumes of earth efficiently. They were established as easy and economical as they could establish those fields and get them irrigated.

Throughout the valley, I believe that the only thing in those days that they had to level those fields with was what they called a Fresno Scraper that was pulled by a team of horses, and it would move about maybe a half a cubic yard of material in one movement. So they couldn't move it very far and they couldn't move the volumes that they needed to move in the timeframe that they had to do it in. They just tried to get the ground to irrigate the easiest and most economical way they could get it to irrigate.

A lot of the fields used old china dam-type operations where they would put a

canvas in a ditch and block the water and cut a ~~little hole~~ [outlet]⁴ in the ditch bank to turn the water out of the ditch, in the early days -- they didn't have a lot of concrete available for them to pour concrete [control]⁵ structures.

Seney: Are most of the headgates that flow into the fields concrete structures?

Hyde: Yes, now.

Seney: So you're talking about before that you'd line it with canvas.

Hyde: No, they put what they called a canvas china dam in front of the water where they wanted to turn the water out upstream. They had a pole that they put across the top of the ditch and draped the canvas dam over it and then they put dirt along the edge of the canvas and then upstream from that, they'd just dig outlets from their ditch banks wherever they wanted the water to go out. There's still some of that in the Lovelock area; that's exactly the way they do it, only they use a couple bails of straw to turn the water in the direction that they want. They didn't have a lot of materials available for concrete and forms for putting in concrete structures, they just had to do it the best way that they knew how to do it and to get the ground irrigated, and that was the best way. In those days, we were probably dealing with flows of from 3 cfs [cubic feet per second] to 8-9 cfs of water. So if they had eight or nine [cfs], they would come into their forty acres with 8-9 cfs of water, and they may take it part-way in, and then they'd take 3 cfs one way and 3 cfs the other way and they would be simultaneously irrigating the different little fields that they had within the forty-acre unit.

4. Clarification provided by Mr. Hyde.

5. Clarification provided by Mr. Hyde.

Seney: Because you didn't have enough headgate pressure? What's the term you use when the water comes to the headgate that'll flood out the whole field?

Hyde: They didn't have enough head pressure.

Seney: That's what I'm thinking, right.

Hyde: And their ability to carry a lot of water in their ditch system wasn't there, they didn't have the ability to transport twenty or twenty-five feet [cfs]⁶ of water like they do now.

Seney: That's what you'd have now is twenty or twenty cubic feet per second of water flowing though there?

Hyde: Yes. And they would use those series of little china dams to regulate the water within their system. Like I was saying, they cut ~~little holes~~ [outlets]⁷ in the ditch bank to turn that water out and sometimes it would probably take them maybe two or three days to get their whole forty acre irrigated. Where now it takes them about nine or ten hours with twenty-five feet of water to get that same forty acres of ground wet.

Seney: And when they're finished irrigating then they would cover up those holes they'd made in the bank?

Hyde: Yeah.

Seney: Just take a shovel and pat some dirt in there?

Hyde: A lot of them used a lot of barnyard manure to patch those holes and put them back in.

6. Clarification provided by Mr. Hyde.

7. Clarification provided by Mr. Hyde.

Seney: I understand that's a good material.

Hyde: Yeah, that's what the old-timers used was barnyard material, and they used them to start and stop their water with.

Seney: Because it's denser or something isn't it?

Hyde: Yeah.

Seney: Yeah, than dirt, right.

Hyde: It has a tendency to plug things off when it's used in the proper manner.

DESIGNING IRRIGATION FIELDS WITH THE SOIL CONSERVATION SERVICE

So we went through the process of looking at all of those fields, Tom [MacIntyre] and myself, and trying to design irrigation systems for those people that would help them out and make it so that they could get their field irrigated, and then go on to do other things; so it wasn't a long, drawn-out affair to get their forty acres irrigated. We'd spend day after day after day out there in the fields taking grid shots with our levels and doing typography work to try to estimate what it was going to take to level this ground and put it into a reasonable system of irrigation. So we spent almost every day throughout the [winter and]⁸ summer doing those kind of things out there: concrete ditch-lining design and all of those works.

Seney: If you had a field that was 100 feet by 100 feet and the water would be flowing in, let's say, at one corner, how much lower would the far corner be when you got through? Did you do that, did you grade them? (Hyde: Yes.) I take it that's what we're talking about correct? (Hyde: Yes.) What would be the fall on that, in 100 feet?

8. Clarification provided by Mr. Hyde.

Hyde: Most of the design work that we did was, from one-tenth per hundred feet [$1/10$ per 100 ft.] up to two-and-a-half tenths per hundred feet [$2\ 1/2$ per 100 ft.].

Seney: This is a tenth of a foot or two-tenths of a foot?

Hyde: Tenth of a foot, yes. And the side fall, we tried to keep those level, so the end fall would have about a tenth to two and a half tenths per hundred. So a lot of the fields in the valley are about a quarter of a mile around or 1,320 feet. So depending on what kind of grades that we had to work with and what kind of soils we were going to cut into in our cut areas, we always had to evaluate that -- along with everything else, to determine what we were going to end up with if we cut a particular area one foot in depth, what were we going to have after we had taken that material off? Was it going to be still suitable for irrigation and for farming, or are we going to get into some coarse textured sands that were going to be worthless when we got done? So we always had to look at those things ~~along with~~ [in] our process [of design]⁹.

During that early period of time, the Soil Survey Team was in the process of working on the soil survey throughout the valley, mapping and doing all the soils work, in conjunction with everything else. We needed that soils information to tell us what was there and what could potentially be there and what would be there if we went in and ~~made~~ [designed]¹⁰ a gigantic leveling job and leveled them all out.

Seney: So this was someone else's job to do this? (Hyde: Yes.) So before you went out to a field, you'd have this "profile," or whatever you would call it, of the soils.

Because I guess some of them you'd want to make a little steeper fall, some of them

9. Clarification provided by Mr. Hyde.

10. Clarification provided by Mr. Hyde.

you want to make a little more shallow fall depending (Hyde: Right.) upon how the soil would absorb the water as it went along, huh?

Hyde: Yeah, a lot of times, what we'd do, if the particular area hadn't been mapped and the soil scientist hadn't looked at it, we would complete our design process and then we would go get a soil scientist and we'd go out with the soil scientist.

END OF SIDE 1, TAPE 1.
BEGINNING OF SIDE 2, TAPE 1.

Seney: You were telling us about soil mapping. Now if you didn't know what the soil was, you'd go ahead and make a plan for it?

Hyde: Yeah, we'd make a plan. I guess I should say there were several different jobs in the Soil Conservation Service: they had planners, which is what they called the soil conservationists. Then they had engineers, and they were more involved in irrigation and design.

Seney: And that would be what you did, the engineering part?

Hyde: Yes. And then they had soils people that were trained and schooled in soil science. So all three of the parties worked hand-in-hand in trying to accomplish what the cooperators wanted to get accomplished on his particular farm unit.

Seney: What would the planner do?

Hyde: First of all, usually an engineer would go out and take a look at the farm unit. He'd give some ideas as to what could be done, and if he couldn't give an accurate description of what could be done, then he would do a typography map on it and then he'd look at it from an engineering aspect as to what could be done. Then he would go to the planner and tell him what he saw that could be done on that particular farm unit. Then the planner would work directly with the cooperators in

putting together a farm plan, and he would tell the cooperators what could be done and what it would entail to get that particular field leveled, and whatever application he wanted to make on that field.

And so we all kind of worked hand-in-hand, and when we had a question about soils problems, we went to soil scientists. And the planner always worked with soils people to try to get a description of all of the soils on that farm unit in the farm plan so that the cooperators knew what he had to deal with, which soils were his better soils, which were less than adequate to farm certain crops. On lots of lands, the only thing that they could grow on them was pasture lands because of some soil's problem. So it all worked hand-in-hand.

Seney: Did you get to be a pretty good soils man after a while? Did you get to where you could understand and look at the soil and make a fair initial judgement yourself?

Hyde: Yeah, I learned a lot about soils just from what they would tell me. If I'd go in and ask them a question, they'd pull up the aerial photography and show me the mapping, and they would explain to me the reason why a particular soil wasn't good, it may have been just a drainage problem, but after that problem was solved, then the soils would be alright. They classed them in Class 2 through 5, and that's the way they class those soils. And then you get down to [Class] 4 and 5, then they were soils that had problem. It could be just a profile problem -- you could have a foot of good topsoil and under those topsoils nothing but coarse sands.

Seney: What's the problem with a field like that?

Hyde: Water-holding capacity was the biggest problem. The coarser sands didn't have the ability to hold water for the plants' use, and that was the problem with that particular

[sandy]¹¹ soil.

Seney: So you'd have to irrigate more frequently on that kind of soil?

Hyde: Yeah, and usually your plant root would be limited to the top one foot of soil, so a lot of those type of soils would be planted to pasture, something that didn't root deep.

THE BEST SOILS FOR ALFALFA

Seney: Alfalfa roots pretty deep, doesn't it?

Hyde: Four-foot roots, some of them.

Seney: So do you need four foot of topsoil, or at least what's under the topsoil should be able to hold moisture for the roots?

Hyde: No, because that's where it's getting about seventy percent of its water supply, from the top two foot. As you go down to the third and fourth foot then it's not so critical as far as water-holding capacities. Usually by the time you hit your third to fourth foot, you'll be in the water table in this area. Like right now, if you went out and looked at a lot of the soils and augured to static water level, you'd probably find it within three feet.

Seney: When we went down three feet and pulled the auger out, we'd actually see water puddling there at three feet?

Hyde: Yeah, if you let it stand for one day, there would actually be water at the bottom of the hole.

Seney: Is that too high a water table? I guess not, for alfalfa.

Hyde: No. If you can maintain it down at that level, you're in pretty good shape.

11. Clarification provided by Mr. Hyde.

Seney: How high did it get before the drainage system was in where it would saturate the fields and you really couldn't grow anything anymore?

Hyde: The way I understand it, a lot of the fields, the water table was right at or near the top of the ground level, and it purged all of the salts to the surface of the ground and turned the ground all white.

Seney: That's why when you drive around you'll see these white spots from time to time?

Hyde: From time to time. There's just poor drainage, the salts aren't being pushed down through the soil profile. That's one of the things I learned from soil scientists, that a lot of people think that you can just take salts and constituents that aren't good for crops and wash them off the top. But the reclamation process is to push all of those constituents down and then they'll travel out. I learned that from soil scientists, and when you get down so deep, there's what they call a "salt bulge," that's where your salts is most concentrated, and they'll hold at that level until that water table starts purging back up again, and it'll push all of those salts back up to the surface if you don't have adequate drainage. So you've always got that salt bulge area down there at some level under your [field].

Seney: How far does it range?

Hyde: Usually it's about from thirty-six inches to four foot. They can tell you where it's at just from auguring a hole and taking some samples.

THE NEED FOR A DRAINAGE SYSTEM

Seney: Let me ask you about the drainage system, because I see it. You look on one side of the road and there's the canal, the other side will be the drainage ditch. How deep do you have to make those drainage ditches to work? because they're deeper than

the canals, are they not?

Hyde: Yeah they are. The drainage work is always designed from your outlet end, upstream, in reverse of a [canal]¹² tributary system that comes and services the surface lands. If you look at a lot of the maps in engineering, you'll find out that all of the stationing on canals and laterals starts from the top and declines as you go down [stream]¹³ from Point "A" to Point "B." All of your drainage work starts from the outlet end or wherever you can disperse drain waters, and the stationing works from the bottom to the top.

Seney: Where you find that the water will distribute, that's your lowest point of your drainage ditch? (Hyde: Right.) And you work up gradually from there?

Hyde: Work up from that point. They always try to get those drains in the ground as reasonably deep as they can get them into the ground to get the best effects from them, so that they'll draw water from maybe a quarter of a mile out and have a cone-shaped draw into those drains. You might have a drain and out here at some point, you'll have a water table at three feet, and then as you get closer to the drain, your water table declines to the drain. It's the hydraulic gradient from your highest point out at some point in the field to that particular deep drain.

Seney: The top of the cone will be in the middle of your field and then it will decline into the drain.

Hyde: Yes.

Seney: How deep are the drains at the outlet point?

12. Clarification provided by Mr. Hyde.

13. Clarification provided by Mr. Hyde.

Hyde: Down at the bottom they're very shallow, most of them, but they're probably still, I would say, six foot deep.

Seney: But that's because, if I may, the soil itself has gotten lower there, hasn't it? I mean that's the gradient so the earth is down. If the earth had stayed flat, they'd be very deep wouldn't they at that point?

Hyde: The general contour of the valley yields about a tenth to the hundred [1/10 per 100] fall, the natural grade of the valley, and that's what we would try to get in our drainage works, is a gradient of about one-tenth per hundred-foot run. And that's a good slope, because at that slope, the water stays flowing in a velocity that keeps the aquatic weed growth down. Aquatic weed growth likes stagnant, standing, stale water.

Seney: The drain water?

Hyde: Yeah. So if we can keep them running with that kind of slope, the way we would design them to run, then they would have a tendency not to grow those kind of plants in the bottom.

Seney: Because that will slow the water up and cause you problems, right?

Hyde: Right. So I would say generally the drainage works in the valley is from six to eight feet, and there are areas where they wouldn't be that deep, relative to the surrounding ground. If you were going through a low area with the drain ditch, it may be that the drain was only two foot below the field level and therefore it wouldn't be as effective as it would be if you were four to eight feet below field level.

Seney: I see, so some fields, as you go along, are not going to be as effectively drained

because they're going to be low to begin with. (Hyde: That's right.) And to keep your drain running the proper way, you've got to keep it at this steady slope. So when you go by a low field, you don't drop it way down because (Hyde: That's right.) you'd cause yourself nightmares, wouldn't you?

Hyde: Right.

Seney: It wouldn't work.

Hyde: It wouldn't be effective. And under those circumstances where you have a particular piece of land that you're unable to get adequate gravity-type drainage to, then there are other methods of going in and putting in tile French drains, putting it into a sump and then lifting that drain water to a level that's suitable for your needs.

Seney: Is there much of that here? What is a tile French drain? Explain that to me.

Hyde: The actual old French drain that you hear referred to is an installation where they took terra-cotta-clay pipe -- and I'm assuming you know what a terra-cotta pipe is -- they had short, maybe eight-inch sections, that they laid in a trench and they enveloped that with a coarse material, and they left a small joint opening along that French drain. A lot of times what they would do is, they would blind that.

Seney: "Blinding" meaning?

Hyde: They put in their envelope material and then they put a blind on, a lot of people would use either straw or some other material that would keep the fines from filtering down through their envelope material. Some people used just regular roofing tar paper or something that would keep the fines from trickling down.

Seney: "Fines" meaning?

Hyde: Soils, just sediment-type fine soils.

Seney: Because that would then defeat the purpose of the drain, wouldn't it?

Hyde: That would plug up your drain. The [drain pipe]¹⁴ materials that is used now is a plastic corrugated ribbed pipe that has holes in it that are susceptible to drain water inflow it is installed by a trenching machine that lays the pipe, lays the filter material, and backfills it all in one course of work, which is basically the same as the old French-type drains.

Seney: The effect of those drains, then, is to transport the water away at the same time it's letting it flow out into this material?

Hyde: Most of those-type drains in this valley are just interceptor-type drains. They're installed in areas where there's a District canal or lateral located next to a field that has the soils that allow seepage out in to the field causing drainage problems and the farmer would put an interceptor French-type drain that would [intercept ground]¹⁵ water and carry it on out to a drainage outlet.

Seney: Again, this would be the condition of the soil [that] would let a lot of that canal water come and just seep right out into the fields and saturate them (Hyde: That's right.) and make them unproductive.

Hyde: So a lot of those practices we were directly involved in at the Soil Conservation Service.

Seney: Sounds like interesting work -- was it?

DOING SNOW SURVEYS FOR THE SOIL CONSERVATION SERVICE

Hyde: It was probably the most important thing that ever happened to me in my career,

14. Clarification provided by Mr. Hyde.

15. Clarification provided by Mr. Hyde.

was that part. I worked in that for about ten years, from '66 to '76. I left Fallon for a short period of time and I accepted a job in Reno for the snow surveys.

Seney: Why did you do that?

Hyde: Well, I wanted to get involved in the snow/water aspect of the Soil Conservation Service.

Seney: This was part of the Soil Conservation Service, their snow survey part, I see.

Hyde: That's right.

Seney: So it was a transfer within the Agency then?

Hyde: Within the Agency. I went to Reno and worked with the snow survey staff in Reno for about two winters. We measured all of the snow on the Sierras for two winters, and then I took a transfer to Elko County and I did snow surveys in Elko County for two years.

STARTING TO WORK FOR TCID

As soon as I got to Elko County, the manager from Truckee-Carson Irrigation District called me and asked me if I would be interested in moving back and going to work for TCID.

Seney: How did you know him?

Hyde: He was a local farmer here in the valley, that was a [member of the] board director[s] of TCID that was the Manager for a short period of time in between professional management, and he was aware of my work and what I had done here in the valley, and he wanted me to come back to go to work for the Truckee-Carson Irrigation District.

Seney: What did he think you could offer the District?

Hyde: Well, I think one of the things [was] that I had traveled throughout the Project area and I knew all of the people in the Project. I knew where every farm, every ranch, every ditch, every canal was located. He knew that I had a pretty good background in engineering, he knew that there wasn't anything that the District would be doing that I couldn't design or engineer for him at that time. He just felt like I would be the guy to fill the job. But unfortunately, I had just made the move, and under a Federal government move you have to sign a contract that you'll stay with them for one year after you've moved. So I told him that I couldn't do that, because I had to stay ~~up there~~ [in Elko]¹⁶ one year. I said, "If you're still interested in one year, then give me a call." And I left it at that.

The year went by fast, the year was over, and he had me back on the phone and still wanted me to come to work for TCID. So I came back to Fallon and he interviewed me and he asked me if I'd like to be the Project Engineer for the District. I said, "Well, I'd sure like to try it. I can give you the best I've got to offer and we can see how it works out." So I came back.

Seney: Let me ask you: I don't know how things work at the District -- I mean I have a suspicion that hiring is done because people know people and they don't hire unknown quantities, generally speaking. Did your own personality have something to do with the fact he wanted you to come to work?

Hyde: Probably, yeah.

Seney: Somebody who could get along with other people and do the job.

Hyde: [Someone who] knew who they were and where their farms were at and what their

16. Clarification provided by Mr. Hyde.

problems were.

Seney: Sober, reliable guy who could do the work and that kind of thing.

Hyde: So I come back as the Project Engineer. At that point in time, it was nothing like it is now.

Seney: We're talking about, what, 1977?

Hyde: We're talking about sixteen years ago. And the difficulties in the District were nothing like what they are now.

Seney: Is this a pay raise for, you by the way, did they give you more money?

Hyde: It was a pay raise. I had to make the sacrifice, because I moved from a Federal retirement to a State PERS [Public Employees Retirement System] retirement.

Seney: Now this is not as good, the public employment retirement system here in Nevada?

Hyde: No, it's as good or better. But I lost that time, in a sense. I accepted the job, and at that point in time, the engineering aspects of the job weren't that difficult.

Seney: How have things changed? You say they're very different now then they were then. Give me a sense of what you mean by that.

Hyde: I think one of the things that's really changed the whole engineering part of the job is that the growth in the valley was at the minimum at that point in time. We had to keep records of all of the land divisions, and go through basically the same process that the county clerk goes through in keeping a record of ownership and how lands are divided, so that we can assess the people. It was very minimal at that period of time, compared to now: the valley is growing in leaps and bounds and there are a lot more parceling of lands taking place.

Seney: So the Project ownership has been sub-divided, you've got more names on your

assessment list now?

Hyde: That's right. And not only that, but we've been trying to work through a process of water right transfers. We were in the process of trying to get everybody legal so that the lands that they're irrigating are legally water-righted lands and have a right to the water. It's just become a big job in the Engineering Department.

Seney: Are you still involved with that part of it now?

Hyde: No, I'm not. There was a watermaster here by the name of Harold Sole [phonetic spelling] and he retired, it must have been around 1968, sometime in the late 60s, early 70s.

Seney: Had he been here a long time?

Hyde: He had been here for a very long time. They didn't have anybody, to speak of, to replace him and so they were having a real difficult time keeping watermasters. They were going through watermasters just clickety, click.

Seney: What was the difficulty?

Hyde: Well, I think the biggest difficulty is they didn't understand the valley and they didn't understand the Project, and they didn't understand a lot of things about running water.

Seney: Had these people run water in other places?

Hyde: No.

BECOMING WATERMASTER AT TCID AND THE IMPORTANCE OF THE DITCH RIDERS

Seney: I would think running water in this Project, from what you told me the day that we went and toured the Project, would be a very demanding sort of thing to do.

Hyde: It is, it is. So in 1984, after I'd been in the Engineering Department, the job come

open again, and the Project Manager at that time asked me, because of the difficulties involved with the job and personnel problems and all of the other things that come with the watermaster's job -- he asked me if I would consider going from the Project Engineer to the watermaster.

Seney: What do you mean, "personnel problems"?

Hyde: Well, my staff of people, that just deal with making sure the water gets to where it needs to be, is about fourteen people. In order to be a ditch rider or somebody that deals with water, it's a demanding job, it's a twenty-four-hour-a-day job. It's hard to keep reliable people on staff that will take that as a part of their life and make a science out of it, in a sense, and become a water scientist, a person that deals with water for eight months out of the year every day, day and night, and lives with that water. It's hard to find the people that will be that, what's the word I want to use?

Seney: "Dedicated," maybe?

Hyde: Dedicated, yeah. You have to become just like a scientist: you have to study it, you have to work with it, you have to make it do what you want it to do. There are a lot of people out there that can't do that, and they don't want to do that, and so they have to be very choosy when you chose the people that fill those positions.

Seney: What do they do the other four months of the year?

Hyde: They generally clean up their District, they do a lot of weed abatement.

Seney: So it's a full-time, year-round job?

Hyde: Yes, it is. I wouldn't want to have it any other way, because once you get a good ditch rider in an area, you don't want to lose him, because it's a difficult task to train a new ditch rider for a particular area. In fact, most of the people that I hire,

especially young people, if I ever hire really young people, I tell them that the first four years as a ditch rider, it would be a lot easier for you to go through a four-year curriculum at college, because it's going to be demanding, it's going to be a big part of your life -- if not half of it, maybe three-quarters of your life. So I try to sort out the people that I think will be dedicated enough to fulfill the job. I found, through experience, that a forty-year-old man is good, but a fifty-year-old guy is better, and a fifty-five-year-old guy will be here for ten years. Where a thirty-year-old guy, he may be here for four years, but probably not.

Seney: What's makes the fifty-year-old guy better than the forty-year-old and so forth?

Hyde: What makes it different is because the job just is not conducive to family life, because it entails all of his time. It entails that he be there on-call twenty-four hours a day, every day, seven days a week. He's on for twenty-five days and off for five, and then he gets three days of comp[ensatory] time that he can take during the winter months.

So the fifty-year-old guy, probably by the time he's fifty, most of his family are raised and they flew from the nest. A forty-year-old guy, he might still have a couple at home, but he's been around the block, so he knows what's good and what's bad. And if he agrees to take the job then he'll usually stay. The thirty-year-old guy is kind of "iffy." He hasn't been around the block yet. (laughter) And so I've learned from experience that I'd much rather hire a guy from forty-five to fifty than one twenty-five to thirty. And it works better, and it's just not a conducive job to family living. But I do try young people every once in a while: if I find an outstanding individual that looks like it might be up his alley, I'll try him.

Seney: How is the pay? In terms of local economy, is it good?

Hyde: In terms of local economy, I think it is good. I think there's some benefits from the retirement program, the pay is not bad, we furnish a house in most districts, if there's a house there, that's located where it makes it easy for them to take care of their particular district.

Seney: Over the years the District has acquired houses in every one of these [subdistricts]?

Hyde: No, it was set up that way from the beginning. The Federal government had little plots of ground throughout the valley that were ditch rider stations. In the early days I understand that they rode horses back and forth, up and down the ditches and canals, and checked them in that manner.

END OF SIDE 2, TAPE 1.
BEGINNING OF SIDE 1, TAPE 2.

WHAT THE WATERMASTER DOES AND HOW THE IRRIGATION SYSTEM WORKS

Seney: [This is August] 11, 1994. My name is Donald Seney and I'm talking with Willis Hyde at TCID Headquarters in Fallon. I'm not sure where to start here. As we both know, you were kind enough to take two of us from this Oral History Project on a tour of the District from the beginning to the end, really. It was fascinating to see the canals and how extensive the system is. It gives an outsider, like myself, an appreciation for the difficulties of managing the flow of water and so forth. I don't know exactly quite know how to begin questioning here. I think the best thing to do would be just to ask you to explain to me how the system itself works, and what the watermaster does and what the ditch riders do.

Hyde: I guess I could start by talking a little bit about what my job is. We have two

decrees that are guiding lights for the water uses in the valley that kind of give us direction as to who qualifies for the water, and who gets that water, and what portion of the water that you have available is of concern. My job is mainly to be able to account for the water and how it's utilized valley-wide through a process of gauging stations and record keeping that I keep in my office and keep it updated from year-to-year.

Seney: Are you talking about the OCAPs now, the operating criteria procedures?

Hyde: No, I'm just talking in general.

Seney: Okay.

Hyde: Up until 1986, irrigated water rights weren't really known at that point in time. We knew ~~approximately~~¹⁷ how many acres of water-righted lands we had in the valley, but we didn't know how many acres of those lands were being irrigated. So we were proceeding under the assumption that the water rights guided the allocation of water to each farm water user. So that if he had 100 acres of water-righted land and he had a duty of 3 1/2 acre feet per acre, then he had a block of water that satisfied his 100 acres of land. At that point in time, prior to 1987, that's the way that we looked at the water, and we assumed we had a right to divert the water to satisfy those requirements.

Seney: What happened in 1987 to change that?

Hyde: In 1984, the OCAP process started to begin: the process of preliminary OCAPs, and finally in 1988 we got down to the final OCAP. And when those documents came down, we kind of had an idea that we were going to have a problem because

17. Clarification provided by Mr. Hyde.

we knew that we weren't irrigating the 73,000 acres of land that we had assumed that we were irrigating. And in fact, we found out we were irrigating somewhere around 60,000 acres.

Seney: Was there a survey done of the lands that were being irrigated? How did you now know?

Hyde: The Bureau of Reclamation was in the process of looking at the lands, aerial photography-wise, and satellite imagery was coming into play, and they were getting to the point where technologically they could do a pretty good job of defining what was irrigated and what was water-righted.

So we had a big problem with those types of problems, and I wasn't too deeply involved in those problems. We had a bench/bottomland problem, and most of those were engineering functions, and by that time I had left the Engineering Department and became a watermaster. My job was basically to make sure that the entitlement got to the water user as efficient as it could get to the water user, and that's one of the things that OCAP mandated, was a higher degree of efficiency on the Project. So a lot of the transactions of water out in the field were taking place, and the watermaster was actually right out there in the field with his ditch riders, giving them instructions as to the direction they wanted the mainstream flow to go.

In '87, it started to become more and more apparent that the watermaster was more important at the desk in the office than he was out there making sure the water got to where it was supposed to go. So I was given the authority to hire an assistant to work out there in the field, under my direction, and supervise the ditch riders and direct the flow of the water.

Seney: What were you now doing in the office that you didn't have to do before?

Hyde: What am I now doing in the office?

Seney: Right. At this point, you say it became clear that you needed to be in the office rather than out in the field.

Hyde: Most of what I do in the office from day-to-day is evaluate how we're progressing on our water movement and how efficient we are utilizing the supply available. I have two staff members in the office that collect a lot of gauge data throughout the valley. We monitor about sixty gauges throughout the valley and collect data from those gauges.

Seney: These are new since the OCAP came in, these gauges?

Hyde: Not all of them, I think we've graduated up about fifty percent. Prior to '87 we were probably monitoring about thirty gauging stations -- now we're monitoring about sixty. So I look at the mathematics of the water operations more than the physical, outdoor operations. We have key locations throughout the valley where target flows have to be maintained to correlate to downstream demand. So when my assistant's out there, that's what he's doing, is monitoring a lot of the key locations to make sure the target flows are being maintained.

Seney: When I came to the office this morning, and I came over Harrigan Road, I guess it is, it seemed to me that the canal, is that a lateral there that comes along Harrigan Road? (Hyde: Yeah.) A main or a lateral?

Hyde: It's a lateral if it's paralleling Harrigan Road.

Seney: Then it's Wildes Road.

Hyde: Wildes Road is a canal, yes.

Seney: That looked to me like it was really flowing today.

Hyde: Yeah, today.

Seney: What's going on there today?

Hyde: They're probably moving water downstream for some other use on down below where you saw that water. That was a hard thing for a lot of people in the valley to understand, is that prior to 1986 there was a lot of waste probably taking place, what could be classified as waste -- it was waters that didn't have a destination. It was flowing in a "seat of the pants" manner, there wasn't any destination for some of the waters that would have passed by the key locations. Now we've transitioned into a time where all of the water we see in the canals has a destination -- it's going someplace to be utilized in the most efficient manner that we can utilize it. Where before, it was kind of a seat of the pants type operation, now it's more of a mathematical operation and it's designed to flow in the direction and in the manner that we want it to flow.

Seney: So when I see that canal full, the gate's open and it's roaring along, I know that's going to end up out in fields and it's not going to go out to the end and [be wasted].

Hyde: Yeah, at some point downstream it's going to be delivered to somebody.

Seney: When the delivery is over, that canal is going to fall back down?

Hyde: It will change, uh-huh.

Seney: There will be very little water in it at that point? You'll keep some flowing through it, I take it?

Hyde: That's right.

Seney: Yeah, you can't completely shut them off, I guess.

Hyde: No.

Seney: Why not?

Hyde: Because the makeup of the structures aren't positive enough to completely cut off everything. There's always some leakage, they're not water-tight type structures. There's always some leak-by, because of the structure itself.

Seney: If you could completely empty that canal, would you do that when you're finished delivering water down it, or is there any reason to keep just a little bit of flow going through it?

Hyde: The canal that you're referring to ~~has an outlet into it, and what it does is, it's transporting along with water service on the main canal:~~ [is used to transport water and provide service to water users].¹⁸ If you follow that canal on down, you would see that maybe a portion of that water was going into Harmon Reservoir for Stillwater usage. So sometimes we'll be transporting fifty csf of water to Harmon Reservoir because the "S" line system over on the other side is at capacity. So we use both the "L" line and the "S" line to transport waters to the Stillwater District. The Stillwater District has a large block of large farmers down at the bottom end of the Project that have the same rights to the water as anybody at the top end of the Project. We try to maintain the flows into the different sub-districts according to their demands, and what the water order demand is for that particular district.

Seney: You have, what is it, four reservoirs now on the canals that you can shunt water into and then take it back out of and send it down?

Hyde: We have four, what we call, re-regulating reservoirs in the system. We're only

18. Clarification provided by Mr. Hyde.

operating with two of those now, and one of them, we've reduced the capacity of that particular reservoir by two-thirds. It's only at one-third capacity now. One of our biggest reservoirs was Sheckler Reservoir which had a capacity of about 12,000 acre feet of water, and we haven't used it probably since 1991.

Seney: No need to use it?

Hyde: We haven't had a need to use it, but we were forced by two different things to discontinue the use of it. One of them was the OCAP and the other one was the drought. We would have probably, without OCAP, discontinued the use of it through the drought anyway, to conserve water. So you can't lay the blame on either one -- it was probably caused from both of them, equally.

Old River Reservoir, we've discontinued the use of it, we've got along fine without it. It was probably being operated more as a convenience than anything else. There was a lot of convenience operations in the Project prior to '86. The water was a little more convenient than it is now -- it's not as quite as convenient. You have to place an order, we take orders here in the office, every day except Saturday and Sunday, from seven to five o'clock. Every day the ditch riders come in, they meet with me or my assistant, we talk about water-related activities, they collect their orders, they go out and they schedule those orders and they coordinate the water activities. Then every day, early in the morning, they have two locations that they meet with my assistant and they talk about water early in the morning, like at four-thirty in the morning at Stillwater and factory district, and then they meet out at Skips on the highway about six o'clock, from six to seven. There's a lot of coordinating that takes place in the operations of the water works in the valley.

Seney: What are you doing then? Give me a sense of how you coordinate that.

Hyde: Here again, the water to the water users was pretty convenient prior to '86 and it was pretty convenient for the ditch riders prior to '86. Now, we are more involved in ditch rider activities. We know more about who has ordered water, how much water they've ordered, and all of the numerical aspects of the water system.

In the afternoons, when they come in here to meet, a ditch rider may say, "I'm going to need another 30 cfs of water tomorrow at some time tomorrow when it's convenient for you to give me that 30 cfs of water." Well, my assistant is familiar enough with what's taking place out there in that particular district to know whether he needs that thirty feet of water or whether he can wait for twenty-four hours and then reapply for it. But he is working on a much higher level than the water user is. The water user is requesting his water, and then the ditch riders are requesting water from my assistant to service that water user.

Seney: The user, of course, has got a very narrow perspective. The ditch rider's looking at a district, your assistant's looking at the whole Project.

Hyde: The whole Project, exactly. And so he's out there working with that water and trying to determine whether or not he needs the thirty feet of water. He may have specific questions to ask the ditch rider.

Seney: What would he ask him?

Hyde: He would ask him things like -- generally he would know everybody in his district that was running -- he would ask him where he was going to utilize that water, and who it was going to go to, and how long it would be in use. So he'd say, "Where are you going to use that water?" And the ditch rider would say, "I'm going to use it on

A-9." He would say, "How many hours?"

Seney: "A-9" is a lateral?

Hyde: Is a lateral. He would say, "How many hours do you have on that lateral?" And he'd say, "Forty-two" or "thirty-six" or "seventy-two."

Seney: "Hours on the lateral," meaning you've got a bunch of fields to flood, how many hours are you going to need water in A-9 to meet the needs of those people off of the A-9 lateral?

Hyde: Right. And then he might ask him, "You've got three heads working down there now. Do you have a place for those to go when they're finished?" And he might ask him some questions about those particular streams of water.

Seney: "Three heads," meaning?

Hyde: Three streams of water.

Seney: Coming into the "A" Canal or into A-9 you mean?

Hyde: No, on down the "A" Canal at some different locations down from the A-9 Canal.

Seney: Other laterals? (Hyde: Other laterals.) Maybe A-11 or A-12. (Hyde: Yeah.) Okay, so he says, "I need it on A-9." And your assistant says, "Wait a minute, you're working these other canals too."

Hyde: Yeah, and he might ask him a series of questions about these other streams of water that he's got running, and then he might look at his last three days' worth of orders on the computer printout. He'd say, "Yeah, okay, I agree with you. We'll try to have it to you tomorrow at ten o'clock because we have a stream of water that's

coming off up above you that we'll just shuttle [that water]¹⁹ on down to you."

Seney: He'll say, "We can get that into the 'A' Canal because we don't need it in the 'S.'"

Hyde: Yeah. And it works in the opposite: The ditch rider would call up my assistant and say, "I need twenty-five feet of water taken off of me tomorrow at twelve o'clock noon."

Seney: Meaning, "I'll be finished with it."

Hyde: Yeah, he'll be finished with it. So he knows that that twenty-five feet of water is going to be available for somebody else, so he's coordinating where that additional twenty-five feet of water is going to go. Somebody that evening prior to that might say, "I'm going to need twenty-five feet of water at such-and-such time." So that twenty-five feet will come back in the "V" line canal system and may trickle down to either the Saint Clair [phonetic spelling] District or the Smart District or somebody below that needs [it]. So all of these activities and water exchanges are being coordinated out there.

Seney: And if nobody needs that, we'll tighten the screws at Lahontan and slow the flow down.

Hyde: Yeah, that's right, exactly.

Seney: What if I'm a farmer and I call you up and I say -- I guess I'll have to have about twenty-four hours notice on this?

Hyde: Forty-eight.

Seney: So I say, okay, this is Thursday, I guess, "Could I get it on Saturday?"

Hyde: This is Thursday and you want it on Saturday?

19. Clarification provided by Mr. Hyde.

Seney: Yeah, could I get it on Saturday?

Hyde: Our answer to that would be, we'll work with you as close as we can, and if it's possible and fits the schedule, then we'll do that.

Seney: Would you say to me, "Wait a minute, instead of taking it Saturday, can you take it Friday because we've got a bunch of other people we're flooding down there (Hyde: Yeah.) and it will work out for us. If you can do it, can you do it?"

Hyde: Well (chuckles)

Seney: I mean, what I guess I'm getting at is, when you say to the user, "Gee, we'd rather not give it to you that day, can we give it to you a day later?" Probably not a day earlier, (Hyde: That's right.) but a day later and they'd say, "Yeah, okay, sure."

Hyde: That may occur, and it may be early -- it may be a day earlier than what you wanted it. It's a lot like Chinese Checkers in a sense, we try to move marbles around and try to get them into the hole that we want them in.

Seney: I take it the ditch rider, he's certainly going to have a sense of who's flooding (Hyde: Exactly.) and who's ready. So if he gets an order, he may go from this farmer and he may go to the next one and say, "Listen, you're about ready here, why don't you take a delivery today because I've got this other guy going and it will be more efficient."

Hyde: A ditch rider that's been out there for twenty years in his particular district knows every trick that's in that district. He can almost tell you the day a particular water user is going to order his water. A ditch rider that's been out there twenty years, his actual day's work is probably only about five hours a day of physical work, and he has scientifically learned that district -- all of the little problems with that district, he

knows it all.

Seney: So when you have your meetings, say Monday morning, he'll say, "Well, I know So-and-So's going to want water by Friday." (Hyde: Yeah.) Or Monday, or Thursday, and then you can begin to adjust (Hyde: Yeah, that's right.) what you're doing here. It sounds like interesting work.

Hyde: Well, I can tell you that my ditch riders, the professionals, by the end of four months, they want to go back to running the water -- that's just their life.

Seney: When the season's getting ready to start again, they're ready to start?

Hyde: Yeah. And that's the way you can tell a good ditch rider, when he starts really getting antsy to turn the water on, you know, "When are we going to turn the water on? Let's get it turned on, let's get it going here." Because they enjoy the four months of relaxed period, but they're professional people, just like you're a professional, I'm a professional -- well, they're professional people too, and they like to run water. My good ditch riders like to run water, and they like to deal with water, and they like the job.

SAVING WATER UNDER THE OCAP AND THE IMPACT ON THE WETLANDS

Seney: You know, you used the term, "relaxed," it used to be a little more relaxed just a little more convenient before the '86, '87 OCAP came in. How much water do you think you're saving by being less relaxed, more careful?

Hyde: Probably 50,000 acre feet of water a year.

Seney: That's a considerable saving isn't it?

Hyde: Yeah.

Seney: That's twenty-five percent saving?

Hyde: Yeah. But the impact that has had, has been to the wetlands and wildlife people -- it's a direct impact to them. And that's what precipitated the purchase of water for the wetlands and wildlife.

Seney: That is one of the problems, isn't it? All this is so interlocked. (Hyde: Yes.) If you save the water for the upstream uses (Hyde: Right.) -- Pyramid Lake particularly -- then you've cut it for the end-of-the-line use, which would have been the Stillwater Marsh and the wetlands at the end of the line. Did anybody suspect this?

Hyde: No, I've told them about it right from the beginning.

Seney: You knew that this was going to happen?

Hyde: I knew it was going to happen, yes. So did all of the wetlands/wildlife people know it was going to happen, and it was going to be a significant impact on their water supply. On a number of different occasions, I made it perfectly clear what was going to happen. I didn't know how severe it was going to be to them.

Seney: How severe has it been?

Hyde: I think, in my own mind, it's been a loss of about 70,000 acre feet of water to them, annually.

Seney: That's a big loss.

Hyde: Yeah.

Seney: Now they've purchased back some of that water haven't they?

Hyde: Yeah, they've purchased somewhere close to 9,000 acre feet of water right now.

OPERATING EFFICIENCIES ON THE PROJECT

Seney: How much water do you have to let out of Lahontan to get 9,000 acre feet out into the marsh? I guess I'm asking you about the loss.

Hyde: We're operating right now at about sixty-two percent efficiency, Carson Division-wise. So we've got about a thirty-eight percent loss to get the water to where it's supposed to go. It's kind of difficult to say what efficiencies you could achieve delivering water from Point "A" to Point "B:" Point "A" being Lahontan Dam and Point "B" being the wetlands. We just don't know that much about it.

Seney: Are you making more efforts to measure what the losses are?

Hyde: Yeah.

Seney: How do you do that? How do you measure them?

Hyde: Generally, the way we measure them -- and that's another thing that's a big problem, is that the ditch rider has a lot of information out there in his head, that we don't have down on paper. He can tell you that if I released 30 cfs of water down at any particular location down that particular lateral, he has a pretty good feel for how much water he's going to lose from where he diverged it to where he's going to deliver it. A lot of good ditch riders will know that if you put 30 [cfs] of water in at the headworks of a particular lateral, that half-way down that lateral you're only going to end up with 28 [cfs]. At the bottom of that lateral you might only end up with 26 [cfs], so you've got a 4 cfs loss from top to bottom and mid-way it's only a half of that. So there's a lot of information out there in these professionals' minds that have been out there doing the job year-in and year-out that's not recorded on paper.

Seney: Is this information good enough for the people you have to account to? Can you say to whomever, the Bureau [of Reclamation] or whomever you have to account to, for trying to increase the efficiency of the system, that, "Bob out here says that we're

loosing 4 cfs from the start of A-9 to the end of A-9." Are they going to say, "Oh, alright"? Or do they want something out there that measures that more?

Hyde: The Bureau seems to want to operate more on theory, than they do physical, on-site, real-world type losses.

Seney: Have they sent people out to consult with you on [this].

Hyde: They do. Yeah, they do.

Seney: What's your take on this? [Are] these people helpful to you?

Hyde: Yeah, they have been. There's no real frictions between us and the local office here across the street.

Seney: This is the local OCAP Office that's [right next door].

Hyde: Yes.

Seney: You deal with them on a daily basis, do you?

Hyde: No, I don't, but there's a guy that does current meter work that's out in the field working with my ditch riders all the time; current metering water and telling them what the flow rates are.

Seney: Current metering? "Current," meaning is how it moves.

Hyde: Yeah.

Seney: As opposed to current, at the moment.

Hyde: Yeah.

Seney: So you put something in the water.

Hyde: Yes, velocity meter in the water and it tells them how fast that water is moving in that cross-section, and they compute the flow rate. When you really analyze the whole spectrum of the District's problems with the Federal government, it's at a

much higher level than it is down here where we actually go out and deliver the water. From my level on up, it's more of a political problem, than it is a real-world problem. We know what the real world is down at my level and sometimes those people on up, higher echelon, don't understand the real world. We have to make funny comments all the time too. (laughter) It's always a big joke to say, "It doesn't matter what they want us to change, when they leave, it'll go back the way it was." (laughter)

Seney: I guess what you're indicating with that remark, is there is some resistance then on the part of the people here on the operating arm as to what the Bureau may want? I mean I can certainly understand that.

Hyde: I don't think it's a matter of resistance, I think it's a matter that sometimes we all get a little bit lazy, and if it's easier to do it one way, then that's the easiest way to get the job done. You can understand what I'm saying?

Seney: Sure. What have they asked you do that you said, "Oh sure, we'll do that." And then as the dust settles as they're heading to back to Carson City, you flip the switch back to the old way. What kind of things are we talking about?

Hyde: One of the things that's in the OCAP document that just -- when I talk to my ditch riders about it, it's not achievable. One of the things they want you to do is keep track of the water to the closest minute.

Seney: What does that mean?

Hyde: For example, if a ditch rider has a water order on a lateral system, and that water service is down here at some point on down that system, and we come up here and we open this gate to release twenty feet of water, at whatever time you want to put

on it, and we go down here and the water runs down our lateral system. It gets down to this take-out here, and the ditch rider puts it in this take-out and he takes a measurement here and he knows what he's got up here and he knows what he's got down there. This gate here is opened at a specific time, so it took it about forty-seven minutes to get from there down to here and it took (chuckles) that amount of time for the ditch to get full. So we opened this gate forty-seven minutes after we opened this one here and we started delivering water to the water user. He started at that time, forty-seven minutes after this one, and when he got done, there wasn't anybody else that had to order below him, but we had forty-seven minutes' worth of water in this lateral. Well, when we shut this off, we shut it off at this specific time.

END OF SIDE 1, TAPE 2.
BEGINNING OF SIDE 2, TAPE 2.

Seney: The tape ran out, so go back to where you're talking about you've got forty-seven minutes' worth of water in that canal. You've shut off the lower one, the take-out, but you haven't shut off at the top, so there's what, still forty-seven minutes worth of water there?

Hyde: Yeah, there's forty-seven minutes' worth of water here, and so if that water is in that lateral system and we know there's forty-seven minutes of water there, then we have to try to figure out how much benefit that water user is going to get from that forty-seven minutes' worth of water. And maybe he might get twenty-three minutes worth of water, half of the time that it took to fill that. So we sat and [figured], well, yeah, maybe you get half of it. So whatever the "time on" and the "time off," we've got to add twenty-three and a half minutes onto that. (laughter)

Seney: You've opened a lateral, and you've filled it up. Now you open the take-out?

Hyde: We open the take out..

Seney: Because you need the head pressure there to get it to flow.

Hyde: That's right, yeah.

Seney: So now you've closed the take-out, but the lateral's full.

Hyde: No, we don't do it in that manner. What we do is, we leave the lateral open, and we try to judge how much water, what benefit that that water user's going to get from that forty-seven minutes' worth of water. So we shut it off at the top, (Seney: At the lateral.) there's forty-seven minutes' worth of water in it to fill it. We have to try to determine how much water he is going to get benefit from that forty-seven minutes.

Seney: So in other words, you know it's taking forty-seven minutes to get down to the take-out to fill up?

Hyde: Yeah.

Seney: Now the field is full, so you go back and you turn off the lateral.

Hyde: Up at the top.

Seney: Now that water, that forty-seven minutes' worth of water, some of that's going to flow onto his field (Hyde: Yeah.) and what you're saying is, you've got to figure out how much?

Hyde: Yeah.

Seney: And that's one of the things they want you to do?

Hyde: When you get down to those kind of specifications -- I guess would be the proper word to use -- they don't understand that in the real world, it doesn't work that way. The way it works is, we turn it on, fill the ditch, [with] forty-seven minutes' worth

of water, the guy knows that he can get honest benefit from twenty-three minutes of that water so he's agreeable to accept the twenty-three minutes of charge after the top is shut off. So he will call us and tell us when to shut the top off. So we shut the top off, we add twenty-three minutes onto the back end of the order, plus the "time on" and "time off."

The bulk of our water orders will be in the fifteen-minute category. It's a nightmare to get out there to try to figure out to within a minute. A lot of our activities are direct conversations between water users and the ditch riders out there. We try to do the best job we can, but we can't do it to the one-minute recommendation. And if we did do it, all we would be doing is fraud -- we'd be putting down numbers on the one-minute mark, just to show that we were doing it. Do you understand what I'm saying?

IRRIGATING PARTICULAR FIELDS

Seney: I understand what you're saying. Let me try to ask you a question this way: I know that field sizes vary considerably, but what would be an average-size field that's going to be flooded? If I call up and say, "I want you to come and give me some water," are we talking 100 by 100 or . . . ?

Hyde: We average about 11,000 water orders a year, and our average water order is for about fifteen acre feet of water. That would irrigate about thirty acres of land.

Seney: That's a thirty-acre parcel in a particular field? (Hyde: Yeah.) So I call up and I say, "Okay, I want you to come out." And I've got one of these thirty-acre fields. How many times are you going to irrigate me over the year's growing season?

Hyde: Probably about six to seven times.

Seney: Now I've got bottomland, so I get 3 1/2 acre feet per acre. So you're going to divide that up so you make sure I've got enough, and obviously you've got a record of coming out and flooding me. How much are you going to put on that first time? Do I tell you, do I stand there and I say, "Okay, I shut off my headgate." Do I get to open and close my own off the lateral?

Hyde: Some people do and some people don't. It depends on who they are and where they're located.

Seney: The Bureau doesn't want them to do that, though, do they? (Hyde: The Bureau doesn't want them to do that.) They want your ditch rider out there.

Hyde: Yeah, they want a ditch rider out there to make every change, but that's not possible.

Seney: That isn't practical, because they've got too much to do.

Hyde: It's not, no.

Seney: It's too far from the lateral to the headgate here, or ?

Hyde: A lot of them they do make, and a lot of them they don't. I would say it's probably fifty-fifty. Any mainstream changes that are on a main canal -- you know what I mean by a main canal.

Seney: The "S" or the "R" canal.

Hyde: Yeah. A lot of those changes are made by the ditch rider, because he doesn't want to foul-up the ditch rider below him, so he wants to make sure that when he's moving a stream of water from one location, up or downstream; if he's moving it from upstream, to downstream, he wants to make sure the water is down to that point before he diverts it, because he don't want to foul-up the ditch rider below him. That's become more and more critical, that those kinds of transactions on main

canals are made by the ditch riders, so that there isn't problems with the lower people's rights to the water.

Seney: What about on the lateral off the main canal? Would the ditch rider make most of those changes?

Hyde: He'll make a lot of the changes. He will make the changes if he just doesn't have the confidence in that particular water user.

Seney: This is something that's handled informally, (Hyde: Yes.) if he's got confidence in me and he knows I need water next Tuesday, he's going to say, "Well [take care of it]."

Hyde: If you've been a farmer out there for the last forty years and you know more about that particular lateral than he knows about it, then he'll probably say, "I'm going to turn the water in at four-thirty in the morning and you make sure that everything is set up down there at your take-out so that that water gets there." The water user will go out to that particular lateral, he'll drop in the check boards at the check gate and he'll open his gate. So at four-thirty in the morning, the ditch rider gets out of bed and he goes over to the main canal and he puts the water in the lateral.

Seney: Knowing that everything is prepared?

Hyde: Knowing that everything from that point on down to that water user is ready to go.

MEASURING THE WATER FLOWS ONTO THE FIELDS

Seney: Now when the water flows into my field, do you measure it or do you depend on me to say, "Okay, that's enough, turn it off, I've had enough." Will you know how much has gone on into my field at that point?

Hyde: No, that's kind of the responsibility of the irrigator in that particular field, to keep us

posted as to when he wants that water shut off. He might call a ditch rider and say, "If this water that I've got now, that I'm diverting now, is not going to go on downstream and you need an hour's worth of notice to shut it off at the top, then I am giving you that hour's worth of notice to shut that water off right now." So the ditch rider will go out and shut the water off, and whatever runoff there is, it's already been agreed to what he'll get charged for as far as runoff is concerned.

Seney: So I'll know, I'll be flooding my field and I'll call the ditch rider up and I'll say, "Listen, unless you're going to ship it further on down the lateral, cut me off at four o'clock."

Hyde: Yeah, off now.

Seney: Okay, or an hour or whatever, because I'll know.

Hyde: And he'll figure he's going to get about thirty minutes' worth of runoff.

Seney: And that thirty minutes' worth of runoff will be what I'll figure on. I'll know that if you cut me off at four o'clock, by four-thirty or whatever, I'll have enough in there and the lateral will have dropped below my take-out and that will be the end of it for me.

Now, how do you know how much water has gone onto my field? I've got, say, a thirty-acre field here. I've got 3 1/2 acre feet per acre water duty, I'm going to take it out seven times. How do you know how much I put in there that time? Because of what you're letting out at the [top]?

Hyde: Yeah, that's what I was referring to before: the ditch rider knows, my assistant knows, and a lot of it I don't know, but my assistant knows, the ditch rider knows, that when he diverts that twenty-eight [cfs] -- or whatever he diverts up here --

there's going to be a loss down to this particular water user's gate. So if he turns in thirty up here, he knows he's going to end up with 28 cfs down there.

Seney: And I need four or five, eight hours, ten hours to get me my first shot of water for the season, and so much for the second and what not?

Hyde: Yeah. And all they're responsible for is for the flow and the time and the date on the water order, that's all they record. The computer system charges for the total acre feet of water used for that run.

Seney: So, in other words, if you say you're giving me seven hours at 28 cfs, the computer then computes how much water has gone onto my property?

Hyde: Yeah. On the water order there's a place where it says "start" and you write down the time he started and the date he started. Then it says "finish" and you write down the time and date it finished. And you add on all of those little extras right within your time elements. You don't specify that it took an hour to fill a ditch and he got a half an hour's runoff or any of that. We try to keep it as clear-cut as possible. I don't know why! (laughter) Because! (sarcasm) we don't want anybody to know what we do! (laughter) He records the flow and then the girl in the office just types the information in the computer and it automatically records and posts the acre feet of water used for that particular run.

But if he has forty-two inches of water -- which is 3 1/2 acre feet -- and he applies seven inches per irrigation, then he's going to get six irrigations. If he applies six inches, he's going to get seven irrigations, it's just as simple as that. And if he's real cautious about the way he operates that farm unit, that's plenty of water for him to get accomplished what he needs to get accomplished, but he can't be

wasteful. He knows that we're out there keeping time and we're pretty accurate on our measurements, he knows that now.

Seney: Over the years since '86 you've had to be more [accurate], right?

Hyde: So he knows he can't let too much of that water get away from him and run off the end of the field, or it's his loss.

Seney: Do you feel like overall the users are pretty honest about these kinds of things, and they're doing right?

Hyde: I think those that we might consider to be dishonest are people that just don't know. They've been looking at a stream of water and thinking for thirty years that it was only 20 cfs, cubic feet per second, and now all of a sudden, it turns into twenty-seven or twenty-five.

Seney: Because now you've had accurate measurements?

Hyde: Yeah, that's right. If you put yourself in their shoes and you're going along, you've been farming all these years and you've been getting used to being charged 20 cfs for ten or twelve, or how many ever hours you use that water, and all of a sudden 1986, '87, '88 comes, and we start transitioning into this accuracy problem and all of these efficiency problems, and all of a sudden the 20 cfs that you've been dealing with for forty years turns into twenty-five. It still takes the same amount of time, but now you're getting charged for a larger stream of water. That's kind of hard for them to take.

Seney: I can understand that.

Hyde: And it's not something that was only here, it's typical for other districts as well. I'm sure most watermasters would recognize that. There's not as much water going off

the end of the fields. There's not as much water that's mismatched.

Seney: When you say, "mismatched," you mean?

Hyde: You don't have any place to go with the water but the drain. They're little one-hour splirts of water where they get away from you and they go into the drain and the beneficiary is the wetlands. All of those things are curtailed and limited and restricted and stopped. The result is that the wetlands are impacted by 60,000 to 70,000 acre feet of water, or more.

WATER QUALITY

Seney: What impact have these conservation and better management practices had on water quality?

Hyde: That's one of the things that the Bureau is really taking a close look at right now. There's a person out here from Denver today that's concerned about that impact, and he's setting up a study to try to foresee what the problem is going to be.

Seney: Is there a problem, do you think? Do you see one out there?

Hyde: I think there is going to be a problem, yeah.

Seney: As the flows are cut down in the Project. (Hyde: Yeah.) What will the problem be, do you have any idea?

Hyde: I think one of the problems that might happen is that we always have what we call a salt balance problem. In other words, we're transporting salts in the main supply, there are salts moving all the time, and you have to make sure those salts are moving out at the same rate that they're moving into the Project. That could be one problem.

Seney: Where are the salts coming from, you mean down from the Truckee, and from the

Carson?

Hyde: Yeah, coming from all different areas. There's still a lot of irrigation up on the Carson River and irrigation in Truckee Meadows where these salts are percolating and coming back into the main stream along with other constituents.

Seney: So if you cut down the volume, and I suppose the speed too, you may not be washing the salts out quickly enough.

Hyde: Might not be moving them out.

Seney: Any indication that that's happening?

Hyde: Not at this point, no. But maybe we don't have enough information.

Seney: I guess one indication would be reduction in crop production, that kind of thing?

Hyde: Yeah. I think there's a real concern over mercury at this time. I think the mercury levels are concerning people. Others aren't so concerned. I know the wetlands and wildlife people aren't so concerned about mercury.

Seney: That's really coming from the old mining operations, isn't it, out of the Carson River?

Hyde: Yeah. Selenium hasn't been a problem here, we don't know that it's a problem, we don't think that it's a problem. Boron, other things, we know they're here, but we know also that they're natural to most irrigation districts.

I think generally the concerns that we have is that the out-flowing waters get to the point where they're no longer usable by the wetlands people. Maybe they're going to get to the point where they're going to say, "We don't want those waters. We don't need those waters." And so you go into the problems of how do you dissipate those waters and how do you manage them?

Seney: They must be testing out in the wetlands for these concentrations.

Hyde: They are, yeah.

Seney: But so far they haven't indicated any alarm over what they see happening?

Hyde: On one drain they have, what they call the "TJ" Drain, there's been a lot of concern about that particular drain because there's some bad things coming from that drain and we're all aware of it.

Seney: What things are coming from that drain? When you say, "bad things," I just wonder what you meant.

Hyde: I think it's got a selenium problem. It's newly constructed, it's constructed through an area that hasn't been drained before, and I think those constituents are in the soils, but they just don't start moving into the water until you open those soils up and let them start draining down, and then they start moving out. But there's other things that are in it that are bad, and I'm not totally familiar with all of them. But, the U.S. Fish and Wildlife [Service] is concerned about them.

The thing that's kind of tough about it, it was a drainage system that was constructed exclusively for the tribal irrigated lands.

Seney: That's the "TJ" Canal?

Hyde: Yeah, "TJ" Drain. I'm sure that they don't want to see the drainage system covered up, but I think they're going to end up covering that particular drain up, if the U.S. Fish and Wildlife has its way.

Seney: And that will have a negative impact on agriculture out on the Indian reservation, without the drain?

Hyde: Yeah. Drainage is a very important function of irrigation and the reclamation

process. I always thought that Reclamation knew all about that, because that's what their name was, you know? (laughter)

Seney: Well, it turns out they built this Project before they put the drains in, didn't they, and only did that in the tardy fashion! (laughter)

Is there anything else I should understand about how you move the water around the District, that I haven't asked?

THE IRRIGATION SYSTEM ON THE PROJECT LOOKS COMPLEX

Hyde: It looks real complex to most people that just look at it from the outside and say, "My God, how do they do that?"

Seney: That's how it looks to me.

Hyde: When I go down to San Joaquin and travel from Tracy all the way to the San Luis Dam and all the way down that system, I have the same opinion, I say, "My God, how do they do it?" But it's not really that difficult, it just takes trained people that are dedicated people that do it for you. It's like standing up on top of Mount Rose and looking down and looking at all of them skiers going all different directions, you say, "My God, how do they do it without running into each other?" You know? Well, it's much the same thing: When you get trained people that know what they're doing, it's not that difficult. We make mistakes, everybody makes mistakes, nothing is perfect. I have learned that from raising six kids, that six kids don't turn out perfect. (laughter) It takes a lot of patience to deal with people. I guess that's one of the things I must have or I wouldn't be here. I listen to complaints day after day after day, and some people I can help and some people I can't. Some people I can give good advice, and some people I wouldn't want to give them advice.

Drought years are harder than full supply water years. We make it through every year. I tell all of my ditch riders, "Before you know it, it'll be Thanksgiving, and you'll be having your Thanksgiving dinner and it'll all be over with. It will be just another year behind you." It always turns out that way. It doesn't matter how bad the water year is, what the drought situation is, we always make it from one year to the next. I guess that's what a career is, is one year at a time, thirty times. When we finish this year, then we'll start worrying about next year -- but we can't worry about next year until we finish this year. It's not that difficult. It just takes patience, concern. It concerns me when I have a short water supply. I want to be as efficient as I can with the water supply that's available, because those people out there, the majority of them, are dependent on that water for their life, for their career, for what they're trying to accomplish. And I'm dependent on them to do a good job so they can pay the assessments and so that they can pay my salary. Sometimes we all get down and out I guess, but it's a good job, I enjoy it.

Seney: It seems interesting to me with a lot of challenges.

Hyde: Yeah, every year is a different year. It's not like you're working on an assembly line where you're doing the same thing day after day after day. Every day is different. That's why my ditch riders are professionals, you either like it or you don't like it, and if you don't like it, you can't do it. But if you truly do like it, every year will be a new experience for you. I've got people that have been here for twenty years. But I've learned that it's the same way with any job, I think, is that if you like it, you can do it, if you don't like it, you'll never do it.

HOW THE DISTRICT OPERATES

Seney: Do you enjoy working here?

Hyde: Yeah. It's a good place to work.

Seney: It strikes me that in speaking to Mr. [Ted] de Braga, that the Board is very active in the administration of the District. Would that be so? Does he like to stick his head in your door and say, "Hey, Willis, I need to talk to you."

Hyde: I think they want to know what's going on. I think sometimes I feel like that they're a little more deeply involved in management than they should be, but you have to learn to live with those things. Any board of directors is going to stick their nose in where it shouldn't be.

Seney: Especially when they're water users probably?

Hyde: Yeah. But I've grown accustomed to that, and anything that I'm doing, I'm not embarrassed about it and I'll tell them what I think, and sometimes they don't like what I think, (chuckles) I guess. If they really didn't like me, I don't know why they would have kept me around for sixteen years. I do the best I can do with the tools and facilities that I have to do it with. I know that high-tech is out there and high-tech is available and we would love to have a lot of that high-tech but I'm not sure we can afford it yet, you know?

Seney: Farmers are conservative individuals, they reuse things and what not. I expect that attitude spills over in the way they think the District should be administered. I noticed that your computer that runs your programs has the lid off it so it will stay cool, it won't overheat, and that seems to work fine. I guess that would be kind of the way a District like this would be run, without maybe the latest equipment, and run -- I don't want to say "cheaply," but frugally.

Hyde: You need to understand that water users and farmers are conservative people. They are very conservative, and sometimes I look around [at] what's happening to the District and it's not the way it used to be. It's mushrooming and growing personnel-wise, demand-wise -- everything. But the Board has changed also: they've changed along with it, gracefully. Sometimes we've had to tug them and pull them a little bit. Ted's been on the Board for twenty years, he's a native Fallonite, he's seen a lot of progress take place. I don't know of any other place that I'd rather be than where I'm at today. I guess that's some form of happiness, isn't it?

Seney: Yes, I think so.

We really appreciate your explaining these things. Knowing how these things operate from the perspective of someone in your position -- which is a very high position, as far as I'm concerned -- is very important in terms of getting a picture of the entire water Project and I appreciate your taking the time to tell us about it. On behalf of the Bureau, I thank you.

Hyde: Yeah. I think probably one thing that disturbs me more than anything is, I would kind of like to have it so that I could deal with one problem until that problem was solved. But a lot of times I might have several different problems throughout the day and never get one of those problems solved that particular day and that sometimes bothers me. Sometimes I just feel like I get hit by too many questions without answers, and it kind of bothers me. Sometimes I think it's an infringement on my capabilities. (laughter) "I just can't answer anymore questions today, call tomorrow!"

Seney: I suppose that's in the nature of your responsibilities (Hyde: Yeah.) and having as

many bosses, in a sense, as there are water users.

Hyde: Then prior to '86 and back in those good old days, that wasn't there. And the watermaster spent a lot of time out in the field, he spent a lot of time out there with his ditch riders, he didn't need an assistant. But it's not that way today.

Seney: Do you miss being out in the field?

Hyde: I sometimes have a yearning to be out there to see what's going on, and sometimes I'll just jump in my truck and go out and take a look around and see what's going on. But I am totally confident in the people that I have to do the job and that makes it good for me and it makes it good for the whole company. I don't know anybody out there that's dissatisfied with the way that we run the water. I have individual complaints come in about specific things. Sometimes I can fix them and sometimes I can't fix those problems.

But I think it's really important to recognize that any good supervisor has a good staff. Any good watermaster has a good staff, and his staff is what keeps him going and if he can't maintain a good staff of people that enjoy what they're doing, that like their supervisor, that like the way the organization is run, then the watermaster's going to have big problems. I think it's that way in any institution, isn't it?

Seney: I think so. Well, this is pretty sensitive, dealing with the things you deal with and you're lucky to have attracted a good staff.

Hyde: Yeah.

Seney: Thank you, Willis, I really appreciate it.

END OF SIDE 2, TAPE 2.

