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For
General B. B. Moore
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CHINO VALLEY IRRIGATION DISTRICT

WILLOW CREEK PROJECT

[Signature]
12/26/33

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CHINO VALLEY IRRIGATION DISTRICT.

Chino Valley, Ariz.

December 15, 1933

Mr. Homer R. Wood, Chairman,
Public Welfare Board and
Civil Works Administration, Yavapai County,
Prescott, Arizona.

Dear Sir:

In response to your suggestion, we submit a brief account of conditions in connection with the project of the Chino Valley Irrigation District on which we are asking aid under the C.W.A. program.

This is a proposal to lay concrete tile in the sixteen miles of canal that leads the water from the storage reservoir in Lake Watson to the lands now under irrigation in Little Chino Valley.

From experience over a period of seventeen years, during which the irrigation project has been in operation we place the loss by seepage and evaporation, by reason of carrying the water in the open ditches through earth and sand as they are at present constructed, at not less than 40% of the amount of water stored.

By lining the canals or laying the concrete tile as proposed, this loss will be almost completely eliminated. Situated as we are in a climate of low humidity the evaporation in open ditches is excessive, and the plan of concrete tile, from our experience proves the most effective means of combatting this loss, both from evaporation and from seepage. This has the added advantage of utilizing a maximum of material ready at hand in the way of sand and gravel aggregate, leaving only the cement to be purchased, and making the bulk of the expenditure for labor, which is under our present conditions, highly desirable.

On the project, which this work will benefit, there are some fifty families that are struggling in the face of adverse conditions to keep from losing their homes. The addition of this amount of water, which the work proposed would conserve, constitutes a factor that would prove their salvation and make all the difference between success and failure.

It remains only to explain the nature of the community that is asking this assistance under the Public Works Program. The Chino Valley Irrigation District is a regularly constituted municipality, organized and chartered under the laws of the State of Arizona. During the past several years, it has suffered from excessive draught and shortage of water stored, which makes the loss through seepage and evaporation in the canals above referred to, all the more serious.

This is an earnest and sincere presentation of facts and conditions such as are all too obvious to us who are struggling for a way out, and we are honest in our belief that the lining of these canals as proposed is the most workable solution of our difficulties.

May we ask that your earnest consideration be given to our request for aid at this time through the C. V. A. program?

Respectfully submitted,

CHINO VALLEY IRRIGATION DISTRICT

(Signed) Carl Rees
Carl Rees, President

(Signed) R. Frank Cooper
R. Frank Cooper, Director

(Signed) Warner Kurth
Warner Kurth, Director

PL/a

M E M O R A N D U M

CHINO VALLEY

42 Total Registration

37 men and 5 women

DUE TO THE FACT THAT THERE IS NO VISIBLE MEANS OF MAKING A LIVING IN THIS DISTRICT IT HAS BEEN IMPERATIVE THAT THE MAJORITY OF THE FAMILIES BE TAKEN CARE OF BY FEDERAL EMERGENCY RELIEF. THE PRINCIPAL REASON FOR THEM NOT BEING ABLE TO MAINTAIN THEMSELVES THIS YEAR IS DUE TO A VERY DRY SEASON WHICH HAS MADE FARMING PRACTICALLY IMPOSSIBLE. THESE FAMILIES ARE QUITE LARGE AND A GREAT NUMBER OF CHILDREN ARE INVOLVED.

(Signed) W. E. Brett
W. E. Brett, Clerk.

WILLOW CREEK

Prescott, Arizona.

February 26, 1931.

TO THE AGRICULTURAL COMMITTEE OF THE YAVAPAI COUNTY CHAMBER
OF COMMERCE

Gentlemen:

The following is an attempt to summarize data and opinions relating to the Willow Creek Dam project.

Official reports on this project have been made and are on file, but the writer was unable to secure access to copies. The reports are:

1. Girand's Report,
2. Small's Report to the State Certification Board,
3. Walter's Report to the State Land Board,
4. Private and brief expression of opinion by
G. E. P. Smith, University of Arizona.

It is suggested that the conclusions of these reports be included in a report.

The present bond issue is for \$85,000 and is intended to cover the following items:

Cost of dam (Second lowest bid received Girand estimate \$38,000)	\$48,000
Due Hassayampa Farms Co.,	6,000
Due Lester Ruffner	6,000
Due Deming	2,500
Due Girand	2,000

Due	Norveil	\$2,000
Due on	Bottle Neck Wash a/c	5,000
? Cut from	Watson to Willow Creek	<u>10,000</u>
	Total	\$81,500

This will mean a lien of approximately \$34 per acre against the land of this project.

It would appear that the present total of recorded mortgages against the property within the district at the present time is between 70 and 75 thousand dollars, of which, approximately 43,000 is Federal Farm Loan. This amounts to a present lien of about \$30 per acre in the project.

On a basis of 6% the new lien would demand for the first 10 years an interest payment of approximately \$2.00 per acre per year and after that time an additional \$1.70 per year on principal; the interest however decreasing as principal is reduced.

The water assessment for 1930 was \$1.58 per acre, so the total charge (for first ten years) would be about \$3.50 per acre.

The chief difficulty in the way of calculating the feasibility of this project is the lack of definite figures of the run-off of Willow Creek.

It might be of some value to consider the results that have actually been obtained in the storage of water in Lake Watson. The following table is copied from one prepared by the Water Board of the Chino Valley Water Users' Association:

<u>Year</u>	<u>Precipitation Figures by Milton Updegraff</u>	<u>Precipitation figures from Prescott Dry Farm</u>	<u>Notes on Water Supply in dam By Water Board</u>
1915	19.95	16.46	Full - filled in July.
16	22.03	16.11	" - great run off.
17	16.65	12.87	" - filled in April.
18	22.08	15.89	Filled - run again in Feb.
19	30.27	21.	Half full.
20	18.17	13.10	Filled - great run off.
21	16.11	17.17	Less than half full.
22	24.13	15.90	Full - great run off.
23	22.68	14.69	Seven-eighths full.
24	15.02	7.58	Full.
25	18.69	12.89	Not much.
26	23.01	14.99	Full - filled in April.
27	28.84	15.95	Full - great run off.
28	13.38		2/3 Full.
29	17.39		Not much.
30	27.08		1/3 to 1/2 full.

The above precipitation figures are presented for the purpose of showing the wide variation in local rainfall and as possibly indicating the precipitation on the Willow Creek watershed. The recording station at the home of Mr. Updegraff is the nearest we have to that district.

From these figures apparently the dam filled 9 times in the past 16 years. It appears further that there was a heavy run off four times in this period.

The total capacity of Willow is approximately 8000 acre feet or about twice that of Watson, which is given as somewhat over 4000 acre feet.

It is conceded the watershed of Willow is much smaller than that of Watson but is contended that the run-off of Willow during the summer rainy season is heavier than of Watson, though during the winter season it is said to be lighter.

In this connection, attention might be called to the fact that the timber growth in the Granite Mountain district is considerably greater than in many other sections, which indicates a greater total rainfall.

In the absence of figures we may record an opinion that the heavier summer run-off coupled with the larger reserve capacity, which would be filled during such years as 1916-20-22 and 27 would make the net delivery from Willow equal to that from Watson. There is no proof for such a statement, but it is admitted that the past 10 years have been on the average drouthy ones.

If it be accepted that Willow will, over a period of years, deliver water equal to Watson and in wet seasons twice as much the situation might be considered as follows - merely an opinion.

(1) In wet years, ample water for all purposes.

(2) In average years water reasonably ample for field crops but for reduced acreage, and not for truck crops (with some exceptions).

(3) In lean years there would be water for field crops of a limited acreage perhaps 50%.

From this it would appear that the addition of Willow Creek would create a good field crop proposition, but would not insure truck possibilities in those lines that require ample water during May and June. However, by means of storing water in the soil the amount of pump water required would be considerably reduced.

As a result of recent water developments it might be argued that there is an underground supply of considerable proportions. But unless this is an outstanding exception the supply should be carefully used as auxiliary to other waters, rather than as a complete supply in itself. Protection should be afforded to those men who have pioneered the work of developing artesian water. There would seem reason for hope that this underground water would make feasible the development of the truck industry on as large a scale as would likely prove practical.

It may be pointed out that attempts to confine production to truck crops only under the irrigated conditions of the Southwest has not proven successful. A rotation with field crops appears to be necessary. Examples of this are found in the Salt River and Imperial Valleys.

On such a basis the Chino district would do well to attempt development on a basis of both general field and truck crops. The three sources, Watson, Willow and wells would seem to offer possibilities of doing this.

It must be borne in mind that ample water for a full acreage every year is not necessary to make the project a

The most serious and in fact the only real objection offered to the construction of the Willow Creek dam is that during especially dry years the increased assessment against the land would constitute a burden. It appears to be generally conceded that an increased flow of water would be made available and that during years of good rainfall the assessments could easily be met. To meet this situation in a way that would both lessen the burden on the water user and at the same time further protect the bond holders the following plan is suggested.

The Water User's Association would work out a plan of building up a "reserve assessment Fund". On a well considered basis the Board of Directors of the association would apply a sliding scale of assessments. During the years of ample water supply the assessment would be made to cover, not only the amount needed for that year, but an extra amount that would be placed in a reserve fund. When the supply was lower but still of fair amount, the assessments would be made to cover actual needs and in years of insufficient supply the assessments would be reduced below actual requirements, the deficiency being made up from the reserve.

There is nothing new in this idea, it is merely a matter of applying recognized business principles to the subject of levying assessments. The legal questions involved in working out any such plan would of course have to be passed upon by those versed in legal matters.

Concluding it may be said that the proposed bond issue of \$85,000 is an attempt to save an investment already between a quarter and half million dollars in a district where living conditions generally are highly desirable and where the soil and water are both above average quality.

Respectfully submitted,

E. S. Turville,
COUNTY AGRICULTURAL AGENT.

District Organized (date)	July 23, 1925
Area of project	2570 acres
Watson Dam completed	1914
Height of Watson Dam	82 feet
Capacity of Watson Reservoir	4000 plus ac. ft.
Total number of miles of canal	11
Total amount of Bonds voted for Willow Creek	\$35,000
Canvass of votes - total 33; for 30; against 3	
Proposed Willow Creek Dam.	
Location - one-half mile west of Willow Creek Bridge	
Height	65 feet
Area of dam site	400 acres
Capacity of Reservoir	8000 plus ac. ft.
Additional miles of canals needed with Willow Creek Addition	0
Ditch loss figures for 1918 (the only year recorded)	
Delivery of water at Reservoir	4020 ac.ft.
" " " " Ranches	<u>3316</u> " "
Loss	704 " "
Percent Loss	17.5

(Figures by R. S. Cookinham, Engineer)

UNITED STATES SENATE
Committee on Appropriations

November 1, 1933

Miss Grace M. Sparkes, Secretary
Yavapai County Chamber of Commerce,
Prescott, Arizona.

My dear Miss Sparkes:

I went down to the Public Works Administration this morning with a whole list of Arizona projects to see if I could ascertain their status. I finally found the engineer who has the Willow Creek Dam (docket no. 1320) under consideration.

There is a strict rule against giving out any information while a project is "in progress", but the engineer told me that from his study he thought the design of the dam would have to be modified, which change will probably result in an increased cost of about \$15,000, making a total of about \$100,000.

It occurred to me you would be interested to know that with the hundreds and hundreds of projects from all parts of the United States, on file in the P.W.A. there was actually someone giving his attention to Willow Creek Dam.

Please do not give any publicity to this letter because I would not want to get the engineer into any trouble for a violation of the regulations.

With cordial good wishes, I am,

Yours very sincerely,

(Signed) Carl Hayden.

November 18, 1933

Honorable Carl Hayden,
U. S. Senator from Arizona,
Washington, D. C.

Dear Senator Hayden:

Referring to your letter of November 1st, re the Willow Creek Dam, may I ask that you advise us, by return what further action is necessary in order to assure approval of this important project. We want to see this go through, and must rely on you as we have in the past, for action. I appreciate the fact that we annoy you with many details and requests but it is absolutely necessary that this be done.

We are all worked to death, and I can tell from your letters that you are in the same frame of mind as myself. The only difference is that we have four to five thousands unemployed at our heels personally every day.

With kindest wishes, and best thanks for your continued help and co-operation, I am

Sincerely,

Grace M. Sparkes,
Secretary and
Immigration Commissioner.

GMS/a

November 29, 1933

Mr. James B. Girand,
Phoenix, Arizona.

My dear Jim:

I have your letter relative to the Willow Creek dam and beg to say that some few days ago I made inquiry relative to the application of the Chino Valley Irrigation District, which is docketed in the Public Works Administration under No. 1320. Herewith you will find a letter from Major Crawford, which states that progress is being made.

While at the Public Works Administration this morning, I talked with Captain Tunis, whose duty it is to expedite consideration of application of that character and the Captain assured me that he was expecting a favorable report on it in the very near future. I have strongly urged the adoption of that project and hope it will come out of the mill before very long.

With kindest personal regards, I am,

Yours very sincerely,

UNITED STATES SENATE

November 29, 1933

Miss Grace M. Sparkes, Secretary,
Yavapai County Chamber of Commerce,
Prescott, Arizona.

My dear Miss Sparkes:

I have received your letter relative to the Willow Creek project and inclose herewith copy of a letter I have just written to Mr. James B. Girand respecting its status. I have told the officials of the Public Works Administration that I consider the project to be highly meritorious and asked that it be given preference in order to bring about prompt action on it.

With kindest regards, I am,

Yours very sincerely,

(Signed) Carl Hayden.

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

STATE ADVISORY BOARD

HOWARD S. REED
State Engineer, P.W.A.

319 Professional Bldg.
Phoenix, Arizona
December 1, 1933

Miss Grace M. Sparkes, Secretary,
Yavapai County Chamber of Commerce,
Prescott, Arizona.

Dear Miss Sparkes:

Replying to your letter of November 27th, I would advise that all data pertaining to the Chino Valley Irrigation District, which, of course, includes the Willow Creek project has been forwarded to Washington.

Thanking you for your offer of assistance, I am

(Signed)

Very truly yours,
Howard S. Reed
HOWARD S. REED
State Engineer, P.W.A.

HSR:HB

December 8, 1933

Honorable Carl Hayden,
U. S. Senator from Arizona.
Washington D. C.

Dear Senator Hayden:

This will acknowledge receipt of your letter of recent date, enclosing copy of letter which you wrote to Mr. James B. Girand respecting the Willow Creek project, docketed in the Public Works Administration under No. 1320.

We will deeply appreciate having you keep us advised as to the progress of the Willow Creek Dam project.

Frankly, Carl, there is nothing which will add to your prestige in Yavapai County, like the furtherance of this meritorious project.

Mr. Howard S. Reed, State Engineer, P. W. A. has advised us, under date of December 3rd, that copies of all data pertaining to the Chino Valley Irrigation District, which includes the Willow Creek Project has been forwarded to Washington.

With kindest personal regards, I am

Sincerely,

Grace M. Sparkes,
Secretary and
Immigration Commissioner.

GMS/a
cc Ex. Committee
Mr. Reed.

NIGHT LETTER

December 14, 1933

ISABELLA GREENWAY
U S Congresswoman from Arizona
Washington, D. C.

IMPERATIVE ACTION BE HAD ON WILLOW CREEK DAM APPLI-
CATION CHINO VALLEY IRRIGATION DISTRICT DOCKETED PWA
NUMBER THIRTEEN TWENTY MUCH DISSENSION ARISING
THROUGHOUT STATE OVER ROOSEVELT IRRIGATION PROJECT
SUBMITTED CWA PERIOD CHINO VALLEY REPRESENTS
EXTREMELY WORTHY PROJECT URGE AND REQUEST PWA TAKE
IMMEDIATE ACTION IN ORDER MAKE CERTAIN IT CAN GO
FORWARD AS PWA AND IF NOT THAT IT BECOMES ELIGIBLE
FOR CWA

Grace M. Sparkes Secretary

Chamber of Commerce

Same to: Sen. Carl Hayden,
Washington, D. C.

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

STATE ADVISORY BOARD

Dec. 14, 1933.

Mr. Howard S. Reed,
PWA, Phoenix, Arizona.

Dear Mr. Reed:

The impression seems to prevail here that if the Chino Valley project were thrown out of the PWA then the CWA would catch it before it hit the ground and work could begin at once on the project.

As this is something I know nothing about and never even heard of till a few moments ago, I write to see what YOU know about it.

If you do know anything, will you not share the information with me.

Very truly yours,

M. B. Hazeltine.

PRESCOTT, ARIZONA

DECEMBER 15, 1933

HON. ISABELLA GREENWAY
U S CONGRESSMAN FROM ARIZONA
WASHINGTON D C

RE TELEGRAM WILLOW CREEK IRRIGATION PROJECT PWA
NUMBER THIRTEEN TWENTY PLEASE CONSTRUE THIS TO MEAN
FARMERS ANXIOUS AND WILLING PROJECT BE APPROVED AND
GO FORWARD IMMEDIATELY AS PWA BUT IF TURNED DOWN FOR
ANY REASON THEY WANT ACTION THROUGH CWA TIME IS IM-
PORTANT ELEMENT PLEASE CONFIRM THIS TELEGRAM SENATOR
HAYDEN

GRACE SPARKES

December 15, 1933

P.W.A. 1320

Mr. Howard S. Reed,
State Engineer,
Public Works Administration,
Phoenix, Arizona.

Dear Mr. Reed:

Re Willow Creek Application, Chino Valley P.W.A. No. 1320, we are very anxious here, to learn as soon as possible the exact status of this project.

Senator Hayden has advised us, as you already know, that action should be had very shortly.

I should like to talk with you Saturday about Chino Valley. I will be at the Hotel Adams. Will you please give me a ring?

Sincerely,

Grace M. Sparkes,
Executive.

GMS/a

S N WASHINGTON DC 521 PM DEC 15, 1933

Miss Grace M Sparkes

SECY CHAMBER OF COMMERCE PRESCOTT
REPLYING YOUR LETTER DECEMBER EIGHTH AND TELEGRAM OF
TODAY MY INFORMATION IS THAT THE WILLOW CREEK DAM
APPLICATION MADE BY CHINO VALLEY IRRIGATION DISTRICT IS
PRACTICALLY READY FOR APPROVAL BUT THAT PREFERENCE IS
BEING GIVEN TO APPLICATIONS FROM STATES UNDER QUOTA
STOP IT IS NOW APPARENT THAT A NUMBER OF STATES WILL BE
UNABLE TO MEET THEIR QUOTAS BEFORE JANUARY FIRST AND WE
ARE THEREFORE HOPEFUL THAT IT WILL BE POSSIBLE TO ALLOT
MONEY FROM SUCH SAVINGS TO WILLOW CREEK DAM.

CARL HAYDEN

4PM