

WEST EXTENSION IRRIGATION DISTRICT IRRIGATION COMPONENTS

There are three components to irrigating your property.

- 1) Delivery rate of irrigation – how much water you are putting on your property at any one time.
- 2) Duty of your water right – how much water you are allowed during the season.
- 3) Water requirements of the plants and crops you are irrigating.

To be an effective irrigator, you should know and pay attention to all three components.

1. DELIVERY RATE:

The District allows 8.5 gallons per minute (gpm) per acre for sprinkler irrigation. The easiest method of knowing how much water you are applying is to use a meter. If you don't have a meter on your system, the following calculations will help you determine the number of sprinklers that you can irrigate with at any one time in order to stay with the district allotment. For those on a three times per week schedule and under five acres of water rights, you may use a variable allotment as follows:

- < 2.0 water right acres = 2 times your allotment
- 2.1 – 3.5 water right acres = 1.75 times your allotment
- 3.6 – 5.0 water right acres = 1.5 times your allotment
- > 5.0 water right acres = Allotment remains at 8.5 gallons per minute per acre

There are four things that you will need to know to complete this form:

- 1) Your water allotment based on the water right acres on your property.
- 2) The amount of pressure that you have on your system.
- 3) The size of your sprinkler nozzles.
- 4) How many sprinklers you irrigate with at one time.

A. Water Allotment:

Amount of water right acres _____ times 8.5 gpm = _____ X variable (above)_____.

B. Water Pressure on your irrigation system: _____ pounds per inch (psi).

C. Size of your sprinkler nozzles. Use the actual size, not the number stamped into the sprinkler, as they may be worn. Use a drill bit inserted into the nozzle for actual size. _____

D. How many sprinklers you are running at a time _____.

Using the chart on Page 2, list the gpm that your sprinklers are putting out times the number of sprinklers that you are using at one time. The additional lines are for various sized nozzles since many systems have more than one size.

gpm _____ times number of sprinklers _____ = _____.

TOTAL USED: _____

GALLONS PER MINUTE (gpm): Using the chart below, figure how much water each of your sprinklers is putting out. If you have a double sprinkler head, measure each size. If your nozzle is not on this list, or you need help, please call the district office.

Sprinkler Nozzle Size	Gallons Per Minute (gpm)				
	20# psi	30# psi	40# psi	50# psi	60 # psi
3/32 inch	1.1 gpm	1.4 gpm	1.6 gpm	1.8 gpm	2.0 gpm
7/64 inch	1.5 gpm	1.9 gpm	2.2 gpm	2.4 gpm	2.7 gpm
1/8 inch	2.0 gpm	2.5 gpm	2.8 gpm	3.2 gpm	3.6 gpm
9/64 inch	2.5 gpm	3.1 gpm	3.6 gpm	4.1 gpm	4.6 gpm
5/32 inch	3.1 gpm	3.8 gpm	4.5 gpm	5.1 gpm	5.6 gpm
11/64 inch	3.7 gpm	4.6 gpm	5.4 gpm	6.1 gpm	6.7 gpm
3/16 inch	4.2 gpm	5.4 gpm	6.4 gpm	7.2 gpm	8.0 gpm

If you need further assistance with this, please contact the office to set up an appointment with the ditchrider. Please let us know if we can help you in any way.

2. DUTY

The duty for District water is 4.5 acre-feet for sprinkler irrigation. This equals 54 inches of water. Most irrigators in the WEID use 3.2 to 3.8 acre-feet per year.

3. WATER REQUIREMENTS FOR YOUR CROP

The monthly average requirement was found for each crop grown in the WEID. Following is a table from the WEID Water Management and Conservation Plan showing the average inches of water required for crops grown in WEID. The table was prepared by District Engineers, JUB, using USBR's AgriMet and Hermiston Weather Station data. It is based on the period 1994 – 2011. Since precipitation in the Basin is low, we assume the water will be from irrigation.

Monthly Average / Inches of water required per month

Crop	Mar	April	May	June	July	Aug	Sept	Oct	Total
Pasture	1.15	3.08	4.78	6.15	7.54	6.45	3.69	0.77	33.60
Alfalfa/Hay	1.04	4.23	7.02	9.07	11.09	9.53	5.82	1.58	49.37 *
Corn	0.00	0.57	2.68	6.38	10.86	8.74	1.28	0.00	30.51
Potato	0.13	1.33	4.62	8.23	9.71	4.63	0.00	0.00	28.66
Onion	0.37	1.89	4.36	8.26	10.95	4.94	0.09	0.00	30.84
Beans/Peas	0.00	0.02	1.17	6.28	10.21	5.45	0.21	0.00	23.33
Mint	0.18	1.73	5.58	8.55	8.74	0.00	0.00	0.00	24.78
Spring Grain	0.45	3.30	6.93	8.89	5.71	0.09	0.00	0.00	25.37
Apple/Peach	0.25	2.28	6.32	8.77	11.06	9.39	4.02	0.27	42.36
Melon/Berry	0.00	0.00	0.86	4.80	7.40	3.42	0.00	0.00	16.48
Lawn/Non-Ag	1.47	3.70	5.62	7.26	8.87	7.63	4.65	1.26	40.46

Highest peak demand / inches of water per month

Crop	Mar	April	May	June	July	August	Sept	Oct	Total
Pasture	1.79	3.01	4.59	7.11	8.56	6.56	3.80	0.90	36.32
Alfalfa/Hay	1.95	4.39	6.75	10.49	12.57	9.72	6.09	1.89	53.85 *
Corn	0.00	0.50	2.63	7.36	12.35	8.86	0.75	0.00	32.45
Potato	0.00	0.82	3.97	9.40	11.23	5.60	0.00	0.00	31.02
Onion	1.24	2.30	5.37	10.44	11.97	1.89	0.00	0.00	33.21
Beans/Peas	0.00	0.00	0.68	6.75	11.92	6.66	0.00	0.00	26.01
Mint	0.22	1.77	5.51	9.88	9.19	0.00	0.00	0.00	26.57
Spring Grain	1.17	4.22	6.75	9.51	1.52	0.00	0.00	0.00	23.17
Apple/Peach	0.00	1.61	5.95	10.11	12.52	9.62	4.17	0.26	44.24
Melon/Berry	0.00	0.00	1.12	5.94	8.18	3.07	0.00	0.00	18.31
Lawn/Non-Ag	2.31	3.52	5.41	8.41	10.04	7.77	4.90	1.50	43.86

* Does not account for “down” time to cut and bale hay and alfalfa.

RESOURCES:

Check out the resources on these pages to help you know how much water you need for crops and to find water saving tips.

The District’s Webpage:

www.westextension.com

Check “resources” area for links to other sites.

Current 7-day crop requirements:

Irrigators can go on-line to find the 7-day water requirements for crops.

www.irz.com/DotCOM/nin_view.htm