HJ 35 Committee Meeting
Impact of Commodity Prices on Valuation
March 19, 2020

HJ 35 Ag Info

V= (productivity x commodity price x crop share) ÷ cap rate

Commodity price is the only component that changes each cycle.

Other components are relatively static.

Spring wheat price has been declining in recent years, resulting in an expected lower average price for 2021. Spring wheat is used to calculate the minimum value for irrigated land thus decreasing the minimum value.

⬇ 2.5% in 2019 and ⬇ 5.31% estimated in 2021

At the same time alfalfa price:

⬆ 13.92% in 2019 and ⬆ 7.94% estimated in 2021

and private grazing fee:

⬆7.17% in 2019 and ⬆ 7.44% estimated in 2021

Spring wheat is used to calculate the irrigated minimum value so declining spring wheat price results in more irrigated acres being valued above the minimum value (calculated values using the alfalfa hay price). The department will be implementing HB24 in the 2021 cycle and use the maximum $50 water cost deduction in valuing all irrigated land.

V= ((productivity x commodity price x crop share) - $50) ÷ cap rate

Base period: Prices are gathered from the USDA Montana Agricultural Statistics for the most recent 10 years for the three commodities, spring wheat, alfalfa hay, and private grazing fee.

The 2015 legislature amended this from a 7-year base period to a 10-year base period.

Agricultural Commodity Price Estimates

2021 Olympic Average	Indicates price not included in average		
Commodity	**Spring Wheat**	**Alfalfa @80%**	**Private Grazing Fee**
2019	4.85	116.00	24.50
2018	5.37	118.40	24.50
2017	6.21	113.60	24.50
2016	4.76	107.20	24.00
2015	4.80	101.60	23.00
2014	6.08	101.60	23.00
2013	6.70	112.80	21.00
2012	8.39	116.80	20.50
2011	8.36	78.40	19.40
2010	6.87	63.20	18.40
~~2009~~	~~5.72~~	~~76.80~~	~~18.00~~
~~2008~~	~~7.36~~	~~93.60~~	~~18.10~~
2021 Estimated Average	**$6.16**	**106.00**	**$22.49**
2021 Average	$6.16	$106.00	$22.49
% change from 2019	-5.31%	7.94%	7.44%
2019 Average	$6.50	$98.20	$20.93
% change from 2019	-2.55%	13.92%	7.17%
2017 Average	$6.67	$86.20	$19.53
% change from 2017	4.9%	12.7%	8.0%
2015 Average	$6.36	$76.50	$18.08
% change from 2015	5.1%	12.9%	8.0%

2019-2020
Examples of the Agricultural Land Productivity Valuation Formula

Per 15-7-201, MCA the formula used to determine the per-acre value of agricultural land is V=I/R where:

V	=	productivity per-acre value of agricultural land
I	=	per-acre net income associated with agricultural use[1]
R	=	capitalization rate. The rate converts an on-going income stream into value; the rate is 6.4%

Summer Fallow Farm land

Avg. price for spring wheat	= $6.50/bu.
Productivity	= 23 bu/ac
Gross Income/ac. = $6.50 * 23 bu/ac	= $149.50/ac
Net Income = $149.50 * 0.125	= $18.69
$18.69/.064	**= $291.99 Productivity Value/acre**

Non-Irrigated Hay land

Avg. price for alfalfa	= $98.20/ton
Productivity	= .71 tons/ac
Gross Income/ac. = $98.20/ton * .71 tons/ac	= $69.72/ac
Net Income = $69.72 * .25	= $17.43/ac
$17.43/.064	**= $272.35 Productivity Value/acre**

Grazing Land

Avg. private grazing lease	= $20.93/aum
Operating Expense/aum = $20.93 * .25	= $5.23/aum
Adjusted Gross Income/aum = $20.93- $5.23	= $15.70/aum
Statewide Average Productivity	= .21 aum/ac
Net Income/ac. = $15.70/aum * .21 aum/ac	= $3.30/ac
$3.30/.064	**= $51.51 Productivity Value/acre**

Irrigated Land

Avg. price for alfalfa	= $98.20/ton
Productivity	= 3 tons/ac
Water cost	= $37.00/ac
Gross Income/ac. =$98.20 * 3 tons/ac	= $294.60/ac
Net Income/ac = $294.60 * .25	= $73.65/ac
$73.65 – Water Cost ($37.00)	= $36.65/ac
$36.65/.064	**= $572.66[2] Productivity Value/acre**

CC Farm land

Avg. price for spring wheat	= $6.50/bu
Productivity	= 23 bu/ac
Income/ac. = $6.50 * 23 bu/ac	= $149.50/Ac
Net Income = $149.50 * .25	= $37.38
$37.38/.064	**= $583.98 Productivity Value/acre**

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[1] A crop share approach is used to determine the net income attributable to agricultural production. In a crop share approach, a percentage of the income from production (the share) is attributed to the landlord (owner) of the land. The remaining percentage is considered the tenant's share and includes expenses of production.

[2] Based on Legislative recommendations contained in HB658 and 15-7-201(7) (f) MCA, the minimum value of irrigated land is established at $583.98 per acre. When the valuation formula calculates a value that is less than $583.98, the minimum value is used. In the example the value of the irrigated land would be $583.98 and not the calculated value. The minimum value is determined based on the statewide average spring wheat production (23 bu/ac) and the CC Farmland crop share formula.