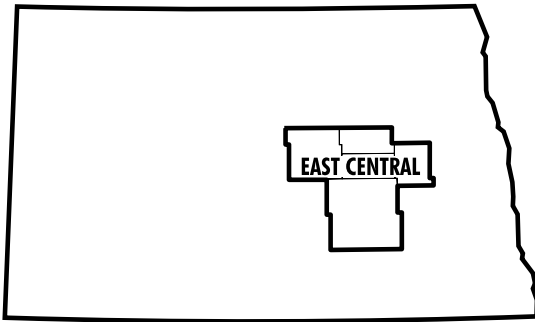




FARM MANAGEMENT PLANNING GUIDE

December 2018

Projected 2019 Crop Budgets



East Central North Dakota

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Note: This region consists of five counties:
Eddy, Foster, Griggs, Stutsman and Wells.

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The 2019 crop budgets provide an estimate of revenues and costs for selected crops. Each set of budgets are developed for a multi-county region. There is considerable variation in soil type and productivity, weather conditions, as well as management and production practices within each region. Therefore, **THESE BUDGETS ARE ONLY INTENDED TO BE USED AS A GUIDE. EVERY INDIVIDUAL IS HIGHLY ENCOURAGED TO DEVELOP HIS/HER OWN BUDGETS!**

The profitability budget accounts for full economic opportunity costs for land and machinery investment, regardless of farm operator equity position. The bottom line is the return to labor and management. This is the expected "payment" to the producer for the labor and managerial efforts required by the crop enterprise. Each individual must make the decision whether it is sufficient.

The budget can be changed to conform to the more common definition of accounting profit (return to unpaid labor and management, and owner equity) by

replacing the machinery investment and land charge cost items with your per acre interest and rental expense of machinery and land, and real estate tax if land is owned.

The budget can be used for long run decisions if the revenues and costs are realistic for several years. (Crop prices, direct costs, and the land charge are best estimates for only the 2019 crop year, but crop yields are historic averages and machinery ownership costs are an average for the total length of ownership). If the budget shows a high return to labor and management, and is representative for several years, increased acreage and corresponding investment should be considered. However, if long-run returns to labor and management are unsatisfactory the best decision may be to exit the crop enterprise and employ the machinery and land investment, and labor and management, in a different enterprise or investment.

For short-run planning decisions you can omit the indirect costs if the land and machinery required to produce the different enterprises are in place. Simply compare the crop enterprises by calculating return over direct costs. Labor requirements and risk should also be considered. Insurance is not available for some crops.

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The budget can be used to estimate cashflow by making a few modifications. Machinery depreciation should be omitted and the machinery investment number replaced with your per acre principal and interest payment on machinery debt. For owned land, the land charge should be replaced with your per acre real estate tax and principal and interest payment on land debt.

The 2018 Farm Bill continues the Price Loss Coverage (PLC) and Agricultural Risk Coverage (ARC) support programs. PLC and ARC payments have been omitted from the budgets because those payments, if any, are tied to historic farm program base acres, not to current crop selection or production.

Primary Assumptions:

Crops are planted on dryland recrop ground. Costs of moving crop to local market/storage are included.

Market Price: Best estimates of NDSU extension economists. The greater of projected market price and marketing loan rate is used.

Market Yields: Average yield for the 7 year period 2011-2017, after the low and high yield years are removed. Yields for safflower, yellow mustard, buckwheat, millet, rye and chickpeas are from NDSU extension agronomists and industry sources.

Fertilizer: Cost of fertilizer applied, based on soil test, to meet yield goal. N fertilizer can be reduced if previous crop was soybean, dry bean, field peas or lentil.

Soil test - recrop:
 Nitrogen - 35 lb
 Phosphorus - 8 ppm
 Potassium - 280 ppm

Fertilizer prices:
 Nitrogen - .43/lb
 Phosphorus - .45/lb
 Potassium - .31/lb

Seed Prices:

Spring Wheat	10.25/bu
Durum	11.50/bu
Barley	8.25/bu
Corn GM	2.67/thou.kern.
Soybean GM	.33/thou.kern.
Dry Beans	.68/thou.kern.
Oil Sunflower	1.50/thou.kern.
Conf. Sunflower	2.70/thou.kern.
Canola	11.50/lb
Flax	16.00/bu
Field Peas	14.00/bu
Oats	6.50/bu
Mustard	2.10/lb
Buckwheat	.40/lb
Millet	.28/lb
Winter Wheat	9.50/bu
Rye	7.75/bu

Fuel prices:

Diesel	2.20/gal
Gas	2.45/gal

Lubrication charge: 15% of fuel cost

Crop Insurance: Revenue Protection was used for all wheat, barley, soybeans, corn, canola, sunflowers, field peas, dry beans and lentils with a 75% coverage level and enterprise units. APH insurance was used for other crops for which 70% coverage and optional units were assumed.

Miscellaneous: soil testing, machinery rent and custom work.

Operating Interest: Direct costs charged 5.85% interest for 6 month period.

Misc. Overhead: Machinery housing and insurance at .5% and .85%, respectively, of average machinery investment. Also, liability insurance and license fees of trucks. In addition, \$4.00 per acre is assumed for general farm utilities, farm publications, meetings, dues, income tax preparation, legal fees, etc.

Land charge = average cash rent.

Machinery investment: 4.5% real interest rate, over the years of machine ownership, is charged on average machinery investment. The real, or inflation adjusted, rate is the commercial rate minus the inflation rate. Ave. mach. investment = (Purchase price + Disposal price)/2

Depreciation = (Purchase price - disposal price / years ownership)

Spring Wheat

Durum

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	54	_____	50	_____
Market Price	5.66	_____	6.04*	_____
MARKET INCOME	305.64	_____	302.00	_____
DIRECT COSTS				
-Seed	17.94	_____	20.13	_____
-Herbicides	22.50	_____	22.50	_____
-Fungicides**	17.00	_____	17.00	_____
-Insecticides***	0.00	_____	0.00	_____
-Fertilizer	79.04	_____	72.19	_____
-Crop Insurance	7.10	_____	9.10	_____
-Fuel & Lubrication	14.45	_____	14.26	_____
-Repairs	19.91	_____	19.80	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	5.25	_____	5.16	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	184.68	_____	181.64	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.60	_____	8.53	_____
-Machinery Depreciation	22.94	_____	22.73	_____
-Machinery Investment	13.48	_____	13.37	_____
-Land Charge	67.00	_____	67.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	112.02	_____	111.62	_____
SUM OF ALL LISTED COSTS	296.70	_____	293.26	_____
RETURN TO LABOR & MANAGEMENT	8.94	_____	8.74	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	3.42	_____	3.63	_____
-Indirect Costs	2.07	_____	2.23	_____
-Total Costs	5.49	_____	5.87	_____

Wheat notes:

*Durum price is for milling quality. There is high risk of lower quality and lower price.

**Includes seed treatment, an early season foliar fungicide, and a late season fungicide which is recommended when conditions are favorable for fusarium head blight (scab).

***Cereal grain aphid insecticide would cost about \$4.

Malting Barley

Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	69	_____	128	_____
Market Price	3.21*	_____	3.30	_____
MARKET INCOME	221.49	_____	422.40	_____
DIRECT COSTS				
-Seed	14.44	_____	84.11*	_____
-Herbicides	19.70	_____	26.00	_____
-Fungicides	17.00**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	60.07	_____	98.59	_____
-Crop Insurance	5.30	_____	11.40	_____
-Fuel & Lubrication	15.07	_____	21.58	_____
-Repairs	20.09	_____	26.65	_____
-Drying	0.00	_____	23.04	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	4.48	_____	8.57	_____
SUM OF LISTED DIRECT COSTS	157.64	_____	301.44	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.94	_____	11.85	_____
-Machinery Depreciation	24.03	_____	38.62	_____
-Machinery Investment	14.09	_____	22.03	_____
-Land Charge	67.00	_____	67.00	_____
SUM OF LISTED INDIRECT COSTS	114.06	_____	139.49	_____
SUM OF ALL LISTED COSTS	271.70	_____	440.92	_____
RETURN TO LABOR & MANAGEMENT	(50.21)	_____	(18.52)	_____
LISTED COSTS PER BUDGET UNIT	bu):		(bu):	
-Direct Costs	2.28	_____	2.35	_____
-Indirect Costs	1.65	_____	1.09	_____
-Total Costs	3.94	_____	3.44	_____

Barley notes:

*There is risk of not making malting barley quality. Use \$2.40 for feed barley.

**Includes seed treatment, an early season foliar fungicide, and a late season fungicide which is recommended when conditions are favorable for fusarium head blight (scab).

Corn notes:

*GM corn with herbicide tolerance and above ground insect control traits.

Soybeans

Drybeans

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	33	_____	1700	_____
Market Price	8.10	_____	0.21	_____
MARKET INCOME	267.30	_____	357.00	_____
DIRECT COSTS				
-Seed	64.10*	_____	56.10	_____
-Herbicides	28.00	_____	46.90*	_____
-Fungicides	0.00	_____	20.00**	_____
-Insecticides	4.00**	_____	0.00	_____
-Fertilizer	8.30	_____	46.18	_____
-Crop Insurance	5.90	_____	8.90	_____
-Fuel & Lubrication	12.26	_____	16.07	_____
-Repairs	18.78	_____	23.18	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	5.00	_____	13.00	_____
-Operating Interest	4.28	_____	6.74	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	150.62	_____	237.07	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.23	_____	9.28	_____
-Machinery Depreciation	22.34	_____	28.30	_____
-Machinery Investment	12.95	_____	16.63	_____
-Land Charge	67.00	_____	67.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	110.52	_____	121.21	_____
SUM OF ALL LISTED COSTS	261.14	_____	358.27	_____
RETURN TO LABOR & MANAGEMENT	6.16	_____	(1.27)	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(lb):	
-Direct Costs	4.56	_____	0.14	_____
-Indirect Costs	3.35	_____	0.07	_____
-Total Costs	7.91	_____	0.21	_____

Soybean notes:

*GM soybeans with herbicide tolerance. The cost includes \$8 for inculant and fungicide treatment in addition to seed expense.

**Soybean aphid and/or spider mite insecticide.

Drybean notes:

*Includes dessicant prior to straight cutting.

**Fungicide for white mold. A second treatment may be necessary. Fungicide for rust at \$4-\$12 plus application maybe necessary.

Oil Sunflower Confection Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1700		1350	
Market Price	0.167		0.23	
MARKET INCOME	283.90		310.50	
DIRECT COSTS				
-Seed	33.00		51.30	
-Herbicides	27.70		29.90	
-Fungicides	0.00*		0.00*	
-Insecticides	5.00**		10.00**	
-Fertilizer	45.42		33.33	
-Crop Insurance	9.30		13.70	
-Fuel & Lubrication	15.05		14.51	
-Repairs	20.15		19.84	
-Drying	5.10		4.05	
-Miscellaneous	9.50		17.50	
-Operating Interest	4.98		5.68	
	=====		=====	
SUM OF LISTED DIRECT COSTS	175.20		199.80	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.21		9.00	
-Machinery Depreciation	25.19		24.60	
-Machinery Investment	15.53		15.23	
-Land Charge	67.00		67.00	
	=====		=====	
SUM OF LISTED INDIRECT COSTS	116.93		115.83	
SUM OF ALL LISTED COSTS	292.12		315.63	
RETURN TO LABOR & MANAGEMENT	(8.22)		(5.13)	
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.10		0.15	
-Indirect Costs	0.07		0.09	
-Total Costs	0.17		0.23	

Oil Sunflower notes:

*Fungicide for rust would cost \$4 plus application.

**One spraying for head feeding insects (red seed weevil, lygus bug and banded moths). Custom application cost of \$8 is under "Miscellaneous."

Confection Sunflower notes:

*Fungicide for rust would cost \$4 plus application.

**Two sprayings for head feeding insects (red seed weevil, lygus bug and banded moths) at about \$5 per application. Each custom application cost of \$8 is under "Miscellaneous."

Canola

Flax

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1610	_____	19	_____
Market Price	0.161	_____	9.61	_____
MARKET INCOME	259.21	_____	182.59	_____
DIRECT COSTS				
-Seed	57.50	_____	16.00	_____
-Herbicides	23.10	_____	24.70	_____
-Fungicides	0.00*	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	69.10	_____	25.05	_____
-Crop Insurance	8.90	_____	9.20	_____
-Fuel & Lubrication	13.90	_____	13.72	_____
-Repairs	19.61	_____	20.37	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	5.66	_____	3.23	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	199.27	_____	113.78	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.34	_____	8.41	_____
-Machinery Depreciation	23.46	_____	23.72	_____
-Machinery Investment	13.44	_____	14.06	_____
-Land Charge	67.00	_____	67.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	112.25	_____	113.19	_____
SUM OF ALL LISTED COSTS	311.51	_____	226.97	_____
RETURN TO LABOR & MANAGEMENT	(52.30)	_____	(44.38)	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(bu):	
-Direct Costs	0.12	_____	5.99	_____
-Indirect Costs	0.07	_____	5.96	_____
-Total Costs	0.19	_____	11.95	_____

Canola notes:

*Fungicide for white mold would cost about \$18 plus application.

Field Peas

Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	35		78	
Market Price	6.00		2.16	
MARKET INCOME	210.00		168.48	
DIRECT COSTS				
-Seed	42.00		13.00	
-Herbicides	32.30		5.40	
-Fungicides	1.50		0.00	
-Insecticides	0.00*		0.00	
-Fertilizer	10.20		57.77	
-Crop Insurance	6.10		9.00	
-Fuel & Lubrication	14.43		16.86	
-Repairs	21.04		21.59	
-Drying	0.00		0.00	
-Miscellaneous	9.50		1.50	
-Operating Interest	4.01		3.66	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	141.07		128.78	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.70		9.47	
-Machinery Depreciation	25.15		26.25	
-Machinery Investment	14.46		15.54	
-Land Charge	67.00		67.00	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	115.30		118.26	
SUM OF ALL LISTED COSTS	256.37		247.04	
RETURN TO LABOR & MANAGEMENT	(46.37)		(78.56)	
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	4.03		1.65	
-Indirect Costs	3.29		1.52	
-Total Costs	7.32		3.17	

Field Pea notes:

*Foliar insecticide for cutworms and/or pea aphids would cost about \$4 per acre plus application.

Yellow Mustard

Buckwheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	850	_____	950	_____
Market Price	0.32	_____	0.184	_____
MARKET INCOME	272.00	_____	174.80	_____
DIRECT COSTS				
-Seed	25.20	_____	20.00	_____
-Herbicides	14.00	_____	11.80	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	6.00*	_____	0.00	_____
-Fertilizer	26.70	_____	18.61	_____
-Crop Insurance	0.00**	_____	9.30*	_____
-Fuel & Lubrication	13.17	_____	13.36	_____
-Repairs	19.46	_____	19.58	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	3.10	_____	2.75	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	109.13	_____	96.90	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.24	_____	8.34	_____
-Machinery Depreciation	22.57	_____	22.81	_____
-Machinery Investment	13.62	_____	13.74	_____
-Land Charge	67.00	_____	67.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	111.44	_____	111.89	_____
SUM OF ALL LISTED COSTS	220.56	_____	208.79	_____
RETURN TO LABOR & MANAGEMENT	51.44	_____	(33.99)	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.13	_____	0.10	_____
-Indirect Costs	0.13	_____	0.12	_____
-Total Costs	0.26	_____	0.22	_____

Yellow Mustard notes:

*Insecticide seed treatment for flea beetles.

**Crop insurance is not available in this region.

Buckwheat notes:

*Crop insurance is not available in most counties of the region.

Millet

Winter Wheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1700	_____	53*	_____
Market Price	0.07	_____	4.85	_____
MARKET INCOME	119.00	_____	257.05	_____
DIRECT COSTS				
-Seed	7.00	_____	11.40	_____
-Herbicides	3.40	_____	24.50	_____
-Fungicides	0.00	_____	9.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	28.18	_____	77.33	_____
-Crop Insurance	0.00	_____	7.00	_____
-Fuel & Lubrication	14.73	_____	12.34	_____
-Repairs	20.34	_____	17.54	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	8.00	_____
-Operating Interest	2.20	_____	4.89	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	77.35	_____	171.99	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.65	_____	7.97	_____
-Machinery Depreciation	23.94	_____	20.47	_____
-Machinery Investment	14.33	_____	11.40	_____
-Land Charge	67.00	_____	67.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	113.92	_____	106.83	_____
SUM OF ALL LISTED COSTS	191.27	_____	278.82	_____
RETURN TO LABOR & MANAGEMENT	(72.27)	_____	(21.77)	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(bu):	
-Direct Costs	0.05	_____	3.25	_____
-Indirect Costs	0.07	_____	2.02	_____
-Total Costs	0.11	_____	5.26	_____

Winter Wheat notes:

*Yield is per harvested acre. There is some risk of acreage abandonment in spring.

Rye

	Per Acre	Your Figures
Market Yield	47	
Market Price	4.60	
MARKET INCOME	216.20	
DIRECT COSTS		
-Seed	9.30	
-Herbicides	6.50	
-Fungicides	0.00	
-Insecticides	0.00	
-Fertilizer	67.06	
-Crop Insurance	15.30	
-Fuel & Lubrication	12.10	
-Repairs	17.10	
-Drying	0.00	
-Miscellaneous	8.00	
-Operating Interest	3.96	
	=====	=====
SUM OF LISTED DIRECT COSTS	139.32	
INDIRECT (FIXED) COSTS		
-Misc. Overhead	7.90	
-Machinery Depreciation	20.19	
-Machinery Investment	11.38	
-Land Charge	67.00	
	=====	=====
SUM OF LISTED INDIRECT COSTS	106.47	
SUM OF ALL LISTED COSTS	245.79	
RETURN TO LABOR & MANAGEMENT	(29.59)	
LISTED COSTS PER BUDGET UNIT	(bu):	
-Direct Costs	2.96	
-Indirect Costs	2.27	
-Total Costs	5.23	

2019 Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
FWA 150HP Tractor	138400	400 hr	20	43309	11.89 /hr	10.22 /hr	13.67 /hr	
FWA 190HP Tractor	182000	500 hr	15	52235	17.30 /hr	10.54 /hr	17.98 /hr	
4WD 370HP Tractor	259500	500 hr	15	74521	24.66 /hr	15.03 /hr	14.65 /hr	
SP Combine (base unit)	295100	250 hr	12	71234	74.62 /hr	32.97 /hr	46.49 /hr	
Tandem Truck (used)	39900	150 hr	15	12700	12.09 /hr	7.89 /hr	8.17 /hr	
Semi & Trailer (used)	46800	150 hr	10	13300	22.33 /hr	9.02 /hr	10.13 /hr	
Pick-up Truck	33600	300 hr	10	7700	8.63 /hr	3.10 /hr	3.85 /hr	
Swather 30 ft	31100	1000 ac	20	7354	1.19 /ac	0.86 /ac	0.50 /ac	13.1
Sprayer 90 ft	40100	5000 ac	10	19912	0.40 /ac	0.27 /ac	0.51 /ac	42.5
Chisel Plow 38 ft	46300	3000 ac	15	27018	0.43 /ac	0.55 /ac	1.03 /ac	19.6
Field Cultivator 48 ft	53500	3000 ac	15	31240	0.50 /ac	0.64 /ac	0.94 /ac	24.7
Tandem Disk 28 ft	35500	800 ac	20	10145	1.58 /ac	1.28 /ac	0.90 /ac	13.6
Heavy Harrow 70 ft	32000	2000 ac	20	18712	0.33 /ac	0.57 /ac	0.36 /ac	39.7
Air Seeder 40 ft	183500	2400 ac	10	93777	3.73 /ac	2.59 /ac	6.35 /ac	17.0
Planter 16-30	116500	1400 ac	15	48419	3.24 /ac	2.65 /ac	4.83 /ac	14.2
Corn head 8R w/chopper	83900	800 ac	12	24043	6.22 /ac	3.03 /ac	1.94 /ac	6.8
Grain head w/pu	19000	800 ac	20	1840	1.07 /ac	0.59 /ac	0.29 /ac	10.2
Grain str. cut 35 ft	31300	1000 ac	15	6522	1.65 /ac	0.85 /ac	0.41 /ac	11.9
Head w/sunf pans	37700	600 ac	20	3945	2.81 /ac	1.56 /ac	0.50 /ac	11.9
Flex head 35 ft	45800	1000 ac	20	4361	2.07 /ac	1.13 /ac	0.61 /ac	11.9
Rock picker	23000	50 hr	20	7340	0.52 /ac	0.46 /ac	0.34 /ac	29.1
Grain Cart	37200	100 hr	20	6300	15.45 /hr	9.79 /hr	8.75 /hr	
Grain auger	13700	50 hr	20	790	12.91 /hr	6.52 /hr	5.10 /hr	

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