



Calculating Crop Damage Payments in Natural Gas Pipeline Negotiations

Considering these simple steps for determining crop damage payments is a good place to start negotiations.

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During natural gas pipeline easement negotiations, agricultural landowners should be asking for compensation for crops damaged during pipeline construction. This is a quick tutorial for calculating a damage payment. The basic mathematical formula is as follows:

Lost Yield x Commodity Price x Disturbed Acres = Potential Damage Payment

We use the term 'potential damage payment' since the final payment will be determined via negotiation with the company land agent or 'landman'. Some land agents will accept any reasonable crop damage estimate; others may use your damage estimate as a starting point for negotiation. Whatever the agreed-upon damage payment is, make sure the amount is provided to you in writing prior to signing the agreement.



Determining Lost Yield

Lost yield - or expected crop yield - is ideally calculated from your farm records. Since you are trying to determine an expected yield, it is reasonable to use a recent running average for the farm or the impacted field; excluding atypical years such as drought or flood. If you're struggling to determine a reasonable expected crop yield, your local Extension educator may be able to provide some guidance.

During pipeline negotiations, it is common to assume full crop loss the year of construction and then some loss (yield drag) over the right-of-way for several years after the site is restored due to soil disturbance and compaction. Many people have used a '100%-50%-25% formula' as described below. For our example, we have a corn field with a documented five year average yield of 175 bu/acre and we expect a full loss during the year of construction, 50% loss the second year, 25% loss the third year and no loss accounted for in years four and beyond. So our total yield lost is:

Total lost yield: 175 bu + 87.5 bu + 43.8 bu = 306.3 bu/acre

Picking a Commodity Price

Commodity prices are, of course, quite variable over time. It is up to the landowner to pick a realistic commodity price as a starting point for the negotiation with the landman. You could choose to use the current market price for your crop, a futures price for the anticipated date of pipeline construction, an average historical price, or some combination of these prices. Regardless of which price you use, be sure you can provide justification for the price if requested. For our example we will use a current December 2016 futures price of \$4.08 per bu.

Calculating the Impacted Acreage

Impacted acreage can be determined by: $[\text{length} \times \text{width}] / 43,560$

Before calculating impacted acreage, it's important to understand the difference between the permanent easement and the temporary construction easement. The permanent easement describes the width of the final restored easement on the property. Permanent easements are generally 50' wide; although they can vary significantly from pipeline to pipeline. The construction easement indicates the width that will be disturbed by excavation or heavy equipment during construction. For the purposes of crop damage estimates, we want to use the construction easement width as that will be the area initially disturbed (or damaged) during pipeline construction.

A 'typical' construction easement is 100' wide but be sure to ask the landman (and make sure it's in the contract) because these widths can vary. For example, the acreage of an easement that is 2,000' long with a construction width of 100' is 4.59 acres. Note the number of square feet in an acre is 43,560:

Impacted Acreage: $[2,000 \times 100] / 43,560 = 4.59$ acres

Calculating the Final Potential Damage Payment

So our final potential damage estimate calculation is as follows:

Lost Yield x Commodity Price x Disturbed Acres = Potential Damage Payment

In our example, using the data above, we can calculate a potential damage payment:

Potential Damage Payment: $306.3 \text{ bu} \times \$4.08 \times 4.59 \text{ acres} = \$5,736.14$

It needs to be stressed that this is an example 'potential damage payment'. A final crop damage calculation should be based on your farm or impacted field and is subject to negotiation with your landman.

For more information about pipelines and rights of way visit: [Negotiating Pipeline Rights of Way in Pennsylvania](#)

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