How Much Do Emergency Storage Loans Pay? An Economic Analysis of North Dakota's 2025 Grain Storage & Facility Rebuilder Programs

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In June 2025, a large derecho–tornado weather system damaged or destroyed an estimated 50 to 80 million bushels of on-farm grain-handling capacity across North Dakota (AgWeek, 2025). To prevent post-harvest losses and to alleviate working-capital shortfalls, the Bank of North Dakota rolled out two emergency initiatives: (1) a Temporary Grain Storage Support program and (2) a Facility Repair & Replacement program. These are collectively referred to as the 2025 Grain Storage & Facility Rebuilder Programs. This white paper uses a representative farm (1,000 acres of corn and 1,000 acres of soybeans) to simulate the benefits of the program to North Dakota farmers, as well as the fiscal cost for the State of North Dakota. We find that the programs generate large net economic gains when farms utilize the program instead of entirely foregoing on-farm storage. When farms use the programs as a substitute to privately financed loans, the programs represent a transfer from State funds to farm operations.

Background

The 2025 Grain Storage & Facility Rebuilder Programs was announced by Governor Kelly Armstrong on July 1, 2025 (Link to policy announcement). The program was created to help agricultural producers quickly replace infrastructure, especially grain storage, lost in recent severe storms. The policy is administrated by the Bank of North Dakota. The policy has two components, summarized in **Table 1**.

Table 1. Summary of 2025 Grain Storage & Facility Rebuilder Programs

Policy	Eligible Expenditures	Core Terms
Temporary Grain Storage Support program	• Baggers and extractors • Hopper bins • Rental grain facilities	• Up to $150,000 per borrower • 2% fixed rate, 24-month term • No collateral • Annual interest-only payment required
Ag Facility Repair & Replacement program	• Flat-bottom & hopper bins, grain legs, augers, grain dryers • Hoop barns, calving barns, feed barns, milk parlors • Machine shops, storage sheds • Irrigation pivots	• Up to project cost (minus any insurance payouts) • 2% fixed rate, 24-month term • Collateral may be required if loan > $500k or > 25% of net worth

Case study of representative farm

We consider the impact of this policy on a representative 2,000-acre diversified grain operation, equally split between corn and soybean production. Yield assumptions reflect three-year averages from USDA NASS data for Cass County, generating approximately 168,000 bushels of corn and 43,000 bushels of soybeans annually. Current market prices are represented by July 2025 elevator bids from Casselton, North Dakota, accessed via DTN, showing harvest prices of $3.61 per bushel for corn and $9.58 per bushel for soybeans. The model assumes this operation historically stored half of its grain production. We assume post-storage price premiums of $0.40 for corn and $0.50 for soybeans, derived from University of Wisconsin Extension research on seasonal grain price patterns over a typical five-month storage period. Following the June 2025 storms, the farm is assumed to have lost 100% of its on-farm storage capacity. Spoilage risk of 10% comes from a recent NDSU Extension publication (Link here). Storage operating costs of $0.05 per bushel monthly are based on 2024 North Dakota custom rate surveys. Program administration costs are estimated at 1% of principal, while the 5% default rate assumption draws from historical delinquency data on USDA FSA Direct Loans. The State's borrowing cost is assumed to reflect typical AA-rated municipal bond rates. These assumptions, while representing a severe damage scenario, provide a framework to evaluate the costs and benefits of the emergency storage loan program.

Table 2. Assumptions and Parameters

Category	Parameter	Value	Justification / Source
Acreage	Corn acres	1,000	Assumption. Can be viewed as diversified 2,000-acre corn/soy farm or two 1,000-acre farms.
	Soy acres	1,000	
Yield	Corn yield	168 bu/ac	USDA NASS 3-year avg for Cass County North Dakota https://quickstats.nass.usda.gov/
	Soy yield	43 bu/ac	
Harvest Prices	Corn harvest price ($/bu)	$3.61/bu	Casselton, ND elevator bids (DTN, accessed July 24, 2025)

Category	Parameter	Value	Justification / Source
	Soy harvest price ($/bu)	$9.58/bu	
Post-storage Prices	Corn post-storage price ($/bu)	$4.01/bu	Assumes seasonal price lift of $0.40 based on Extension publications: https://farms.extension.wisc.edu/articles/seasonal-grain-price-patterns
	Soy post-storage price ($/bu)	$10.08/bu	Assumes seasonal price lift of $0.50 based on Extension publications: https://farms.extension.wisc.edu/articles/seasonal-grain-price-patterns
Insurance Coverage	Coverage rate	70%	Assumption.
Storage Behavior	% of grain stored	50%	Assumption.
	% of storage capacity lost	100%	Assumption consistent with recent Ag Week reporting: https://www.agweek.com/agribusiness/recovering-from-ag-damage-of-june-storms-will-take-time
Spoilage	Spoilage rate without storage	10%	NDSU Extension: https://www.ndsu.edu/agriculture/ag-hub/wet-grain-piles-deteriorate-rapidly Assumes in absence of on-farm storage facilities, grain is piled for 1-2 weeks and exposed to rain.
Financing Terms	Program loan interest rate	2%	Bank of ND: https://bnd.nd.gov/business/ag-programs/
	Commercial loan interest rate	7%	Assumption based on a variety of sources showing private rates between 6-8%. (Federal Reserve Bank of Kansas City, 2025; Kuethe, 2025; Neeley, 2025)
	ND government borrowing rate	3.50%	Typical AA municipal bond rate: https://www.msrb.org/
	Loan term	2 years	Bank of ND: https://bnd.nd.gov/business/ag-programs/
Program Costs	Admin cost	1% of principal	Assumption of delivery and administration cost.
	Default rate	5% of principal	Based on delinquency rate on FSA Direct Loans. https://www.usda.gov/sites/default/files/documents/24fsa2016notes.pdf
Storage Construction and Operating Costs	New storage construction	$2.50/bu	https://www.agriculture.com/what-you-should-consider-before-building-grain-storage-8735512
	Monthly storage cost	$0.05/bu/month	2024 North Dakota average custom rate for on-farm storage: https://www.ndsu.edu/agriculture/sites/default/files/2024-12/custlate24.pdf

Category	Parameter	Value	Justification / Source
	Storage period	5 months	Assumed storage period.

Analysis of the Temporary Grain Storage Support program

The economic analysis evaluates the temporary grain storage loan program through two comparative scenarios that capture different baseline conditions facing storm-damaged farms. In the first scenario, we compare program participation against the alternative of not rebuilding storage capacity at all, where farmers would be forced to sell grain immediately at harvest and face significant spoilage losses from inadequate storage conditions. Under this scenario, the benefits of the temporary grain storage support program come through two primary channels: avoided spoilage losses, where proper storage prevents the assumed 10% grain loss that occurs when storing grain outside of appropriate facilities, and market timing advantages, where farmers can capitalize on seasonal price increases by storing grain for five months rather than selling immediately at harvest. Under our assumptions, corn prices increase by $0.40 per bushel and soybean prices by $0.50 per bushel during the storage period, creating substantial revenue opportunities for farms that can maintain storage capacity. **Figure 1** shows the benefits to our representative farm disaggregated across corn and soy, as well as between avoided spoilage and market timing channels. We find that access to a $150,000 loan for temporary storage facilities can generate benefits of over $40,000 on 1,000 acres of corn and over $25,000 on 1,000 acres of soybeans. These benefits primarily come from avoiding spoilage, with market timing benefits constituting 29% and 19% of benefits for corn and soy respectively.

Next, we examine program benefits relative to farmers securing private commercial financing at market rates to rebuild their storage infrastructure. In this case, benefits to farm come from the below-market interest rate of 2% made available through the program (relative to our assumed private financing rate of 7%). Benefits to the representative farm under both scenarios, as well as a rough estimate of the fiscal cost to the Bank of North Dakota of providing the loans, are illustrated in **Figure 2**. Comparing participation in the Temporary Grain Storage Support program to the alternative of no on-farm storage, we find program benefits to be four times larger than the fiscal costs. In this case, the program can be viewed as enabling credit-constrained farms to make highly profitable investments in temporary storage facilities that unlock significant agricultural and economic value. When comparing program participation to funding similar purchases through private financing, we find benefits to be slightly higher than costs, though close enough that small changes in the underlying assumptions could tip the balance in either direction. Thus, in cases where farms use the Temporary Grain Storage Support program in lieu of private financing, the policy is most accurately thought of as a transfer from the Bank of North Dakota to farms facing potentially damaging losses from the June 2025.

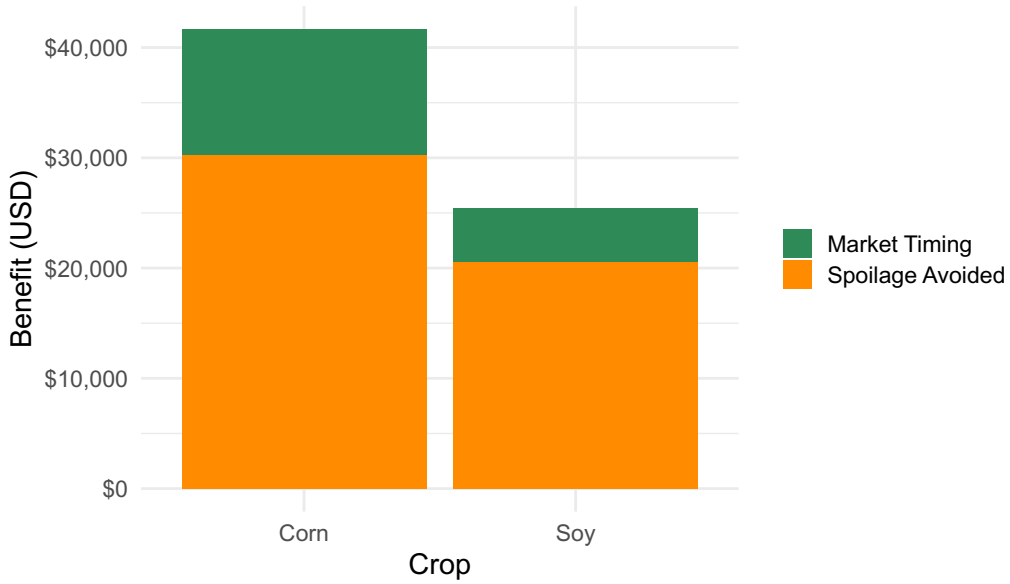

Figure 1. Farm benefits of $150,000 temporary loan relative to no rebuilding.
Source. Author's calculations based on assumptions outlined in Table 1 and the GSFR program description available at https://bnd.nd.gov/gsfr/.

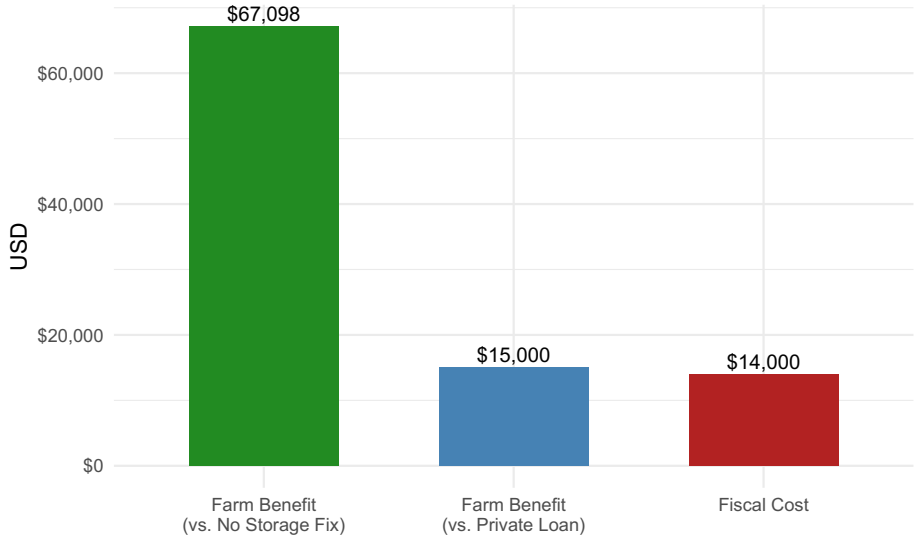

Figure 2. Temporary Grain Storage Support program farm benefits versus fiscal cost
Source. Author's calculations based on *assumptions outlined in Table 1 and the GSFR program description available at* https://bnd.nd.gov/gsfr/.

Analysis of the Ag Facility Repair & Replacement program

To analyze the benefit of our representative farm from the Ag Facility Repair & Replacement program, we assume the farm replaces all destroyed capital is replaced through either insurance payouts or program loans. The size of these loans is calculated by assuming the farm maintained sufficient storage to store 50% of their grain and that the farm had insurance covering 70% of the destroyed assets. Therefore, the benefit to the farm is calculated by comparing the cost of replacing this capital through the Ag Facility Repair & Replacement program (2% interest rate) rather than privately financed loans (7% interest rate). **Figure 3** presents the benefits and costs of the program for our representative farm. Benefits attributable to interest savings are $7,913 and program costs are calculated to be similar in magnitude at $7,621.

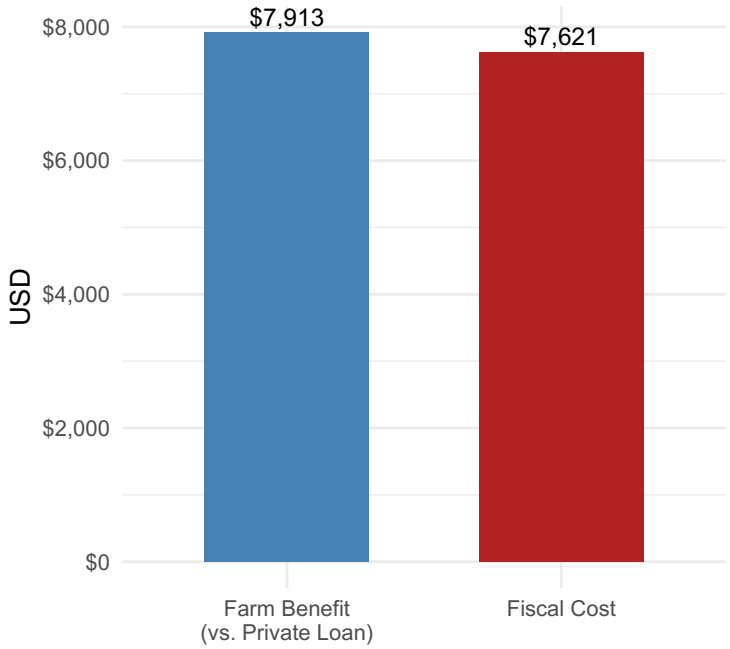

Figure 3. Ag Facility Repair & Replacement program farm benefits versus fiscal cost

Source. Author*'s* calculations based on assumptions outlined in Table 1 and the GSFR program description available at https://bnd.nd.gov/gsfr/.

Conclusions

This economic analysis demonstrates that both components of North Dakota's grain storage recovery programs generate substantial benefits for storm-damaged agricultural operations while imposing manageable fiscal costs on the state. The Temporary Grain Storage Support program provides critical short-term relief, with farm benefits reaching $67,098 when compared to no rebuilding alternative, primarily through avoided spoilage losses that would otherwise devastate farm revenues. Results are highly sensitive to assumptions around the relevant spoilage rate, which could vary dramatically based on the availability of off-farm storage (which may also be limited due to storm damage) or fall weather conditions. However, even under a very conservative assumption of 2% spoilage, the program still maintains a benefit-to-cost ratio of around 2-to-1, relative to a counterfactual where the storage capacity is not replaced. When compared to private financing options, the program delivers $15,000 in interest savings. The state's fiscal exposure of approximately $14,000 per loan represents a reasonable

investment given the substantial agricultural benefits generated. The Ag Facility Repair & Replacement program targeting longer-term infrastructure restoration generates interest savings of nearly $8,000 for our representative farm. Our analysis suggests that these agricultural disaster response programs can effectively leverage relatively modest public resources to generate substantial economic benefits for affected farming communities, supporting both individual farm recovery and broader agricultural sector stability.

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Disclaimer

This report is intended to inform discussions on the Bank of North Dakota's 2025 Grain Storage & Facility Rebuilder Programs. The findings and conclusions presented are based on available data and economic modeling and will not reflect the conditions of every operation. The author assumes full responsibility for errors or omissions. Readers are encouraged to use this analysis as a reference while considering additional sources and expert insights for policy and business decisions.

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