

Who would like to collaborate with AFT to develop a Whole Farm Conservation Easement and tailor the Ecosystem Services Valuation Tool for your state?

April 23, 2025

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Stacking Conservation Outcomes Session
Saving America's Working Lands Conference
Dallas, Texas



Whole Farm Conservation Easement - A Pilot Project

November 13, 2024

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MINNESOTA
LAND TRUST


American Farmland Trust
SAVING THE LAND THAT SUSTAINS US



Available Resources



1. Conservation Easement
2. Management Plan
3. Contract
4. Ecosystem Services Valuation Tool
5. AFT white paper for MLT on additionality & stacking with public & private payments
6. This presentation in pdf

Access via: Zoom & NALN Platform

An aerial photograph of a rural landscape. In the center is a large, rectangular field with a brown, tilled appearance. To its right is a green field, and to its left is another green field. A small cluster of white buildings is situated in the center of the brown field. The bottom of the image shows a dense forest with trees in various shades of green, yellow, and orange, suggesting autumn. A stream or river flows through the forest, with several small, irregular pools of water visible. The text "How do we convince landowners to include farmland in MLT conservation easements?" is overlaid on the left side of the image.

How do we convince
landowners to include
farmland in MLT
conservation easements?

Sauk River Farm

Total Property: 178 acres

Protected property: 127 acres

- Farmland: 3 acres (food plot)
- Shoreline: 14,315 feet

Formation of the MLT-AFT Project

- MLT wanted to:
 - Include farmland within their natural lands easements
 - Reward farmers for the ecosystem services already providing
 - Incentivize additional practice adoption on farmland
 - Use a private source of funding creatively
- AFT said: Great! We'll try because:
 - Government cost-share programs are oversubscribed, use a pay for practice approach, & still not reaching many farmers
 - Ag carbon markets not paying enough nor earning farmer trust
 - Wanted to explore the ecosystem services approach to value the environmental benefits farmers are creating
- Project Goal: Farmers get compensated for permanent protection of their farmland & receive extra funds for achieving conservation outcomes



Evolution of MLT's Farmland Preservation Efforts



Protect farmland
with no conditions



Require riparian
buffers in
conservation
easement



Require in-field
conservation practices
in management plan
& contract

Whole Farm Easement

- Ecosystem Services (ES) Valuation Tool
 - Generates payments derived from ES associated with practice changes
- Conservation easement
 - Expanded ag section contains baseline terms
- Management Plan and Contract
 - 10-year term – contains agreed upon terms leading to payments



Ecosystem Services Valuation Tool

What are Ecosystem Services?

Why Value Ecosystem Services?

We can value the outcome of the practices instead of the practice itself, allowing farmers more flexibility

Difficulties with Valuing Ecosystem Services

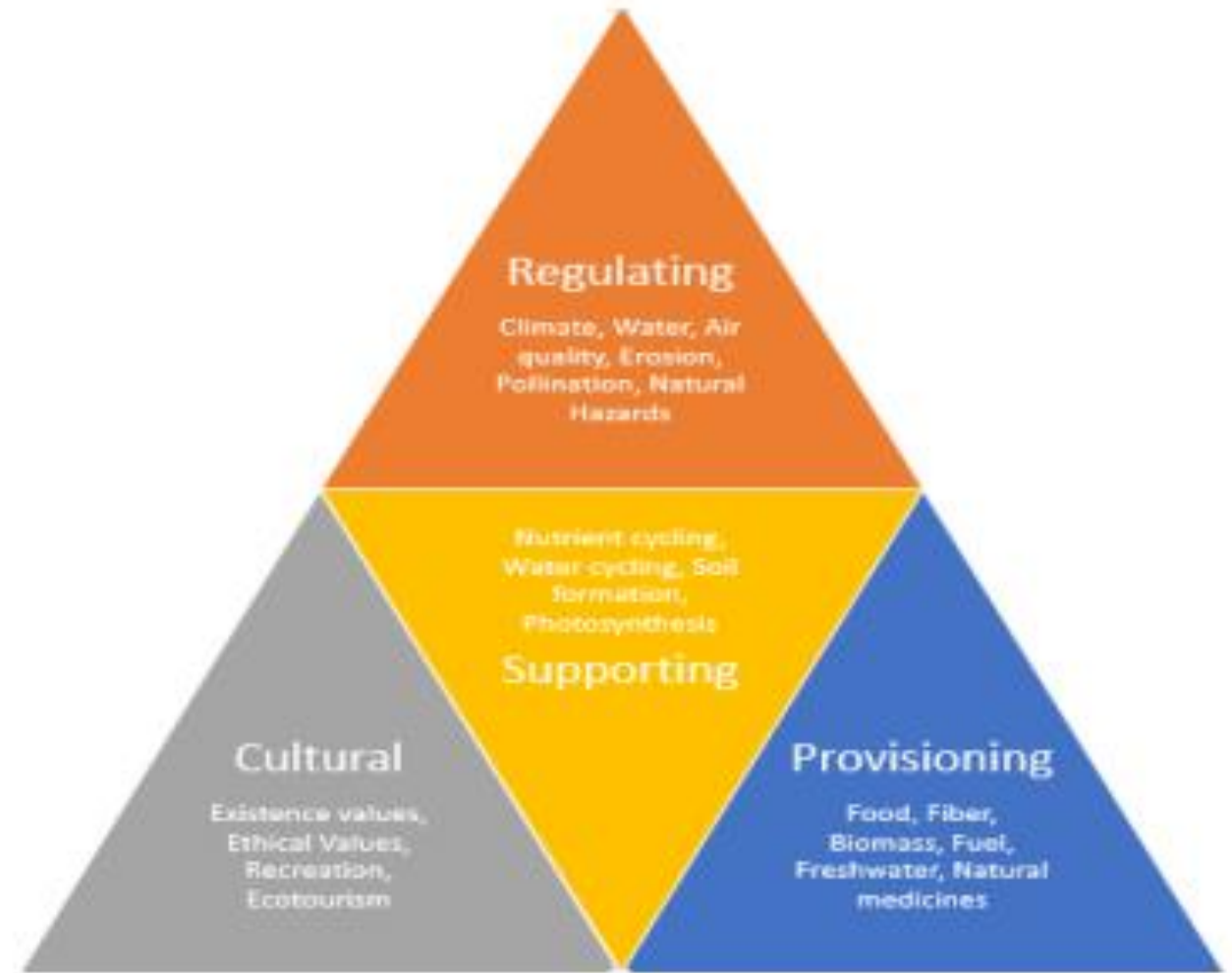
Need to communicate a new idea with stakeholders

Difficult to quantify Ecosystem Services

Hard to monetize Ecosystem Services

Our Solution

Limit the tool to Greenhouse Gas (GHG) reduction and Water Quality Benefits



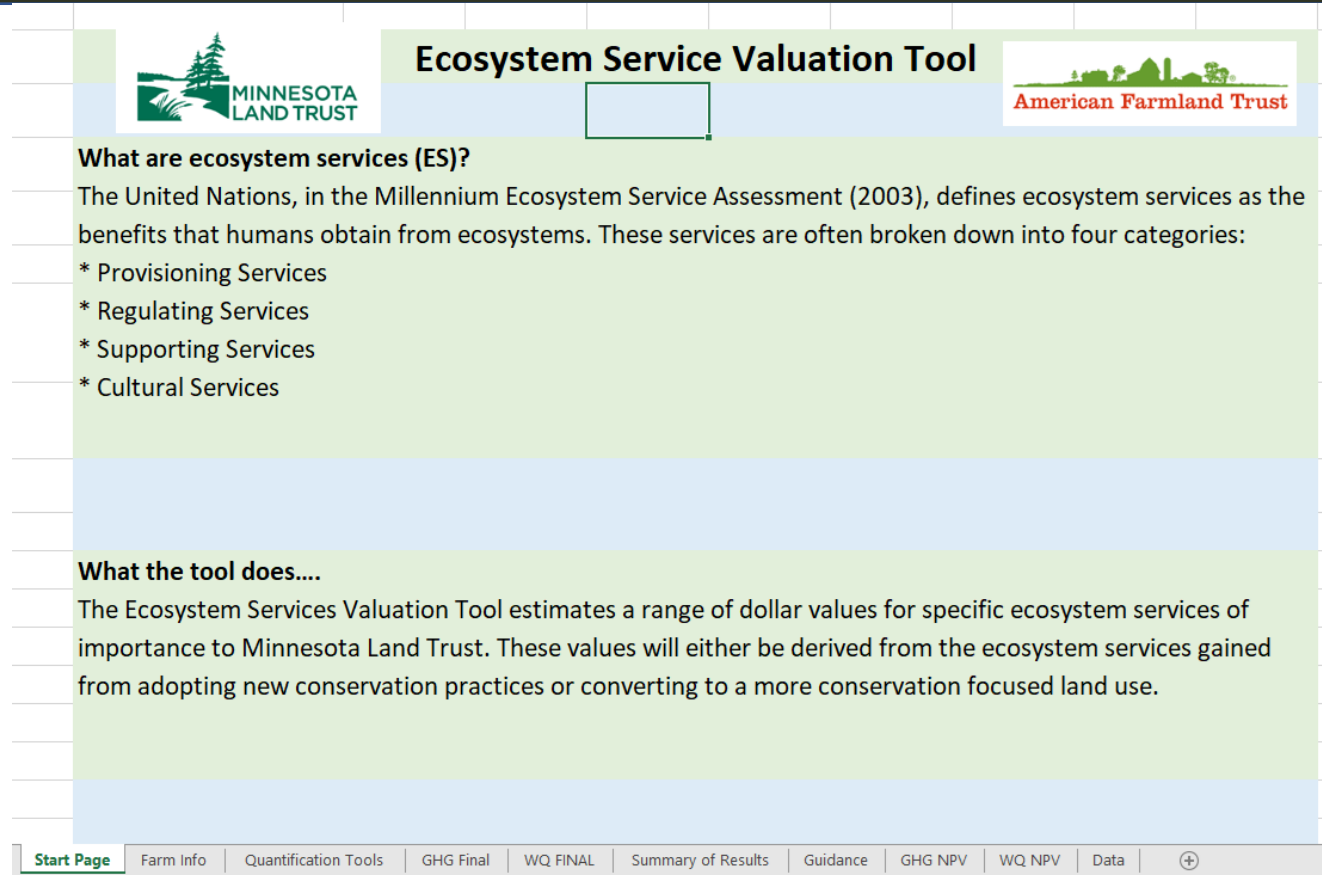
From: Acheampong 2020

Ecosystem Services Valuation Tool



- Found 5 publicly available tools to quantify the changes in GHGs & water quality
 - 2 for GHG: **COMET-Planner** & COMET-Farm
 - 3 for water quality: **MN's Watershed Pollutant Load Reduction Calculator Tool**, Nutrient Tracking Tool, & PTMApp
- Within these tools there are various options
 - State vs national tools
 - Simple and quick tools vs detailed tools
- Pilot: MLT staff chose simple, quick tools

Ecosystem Services Valuation Tool - Excel



Start Page Tab

Farm Info

Tab

Quantification Tool
Tab

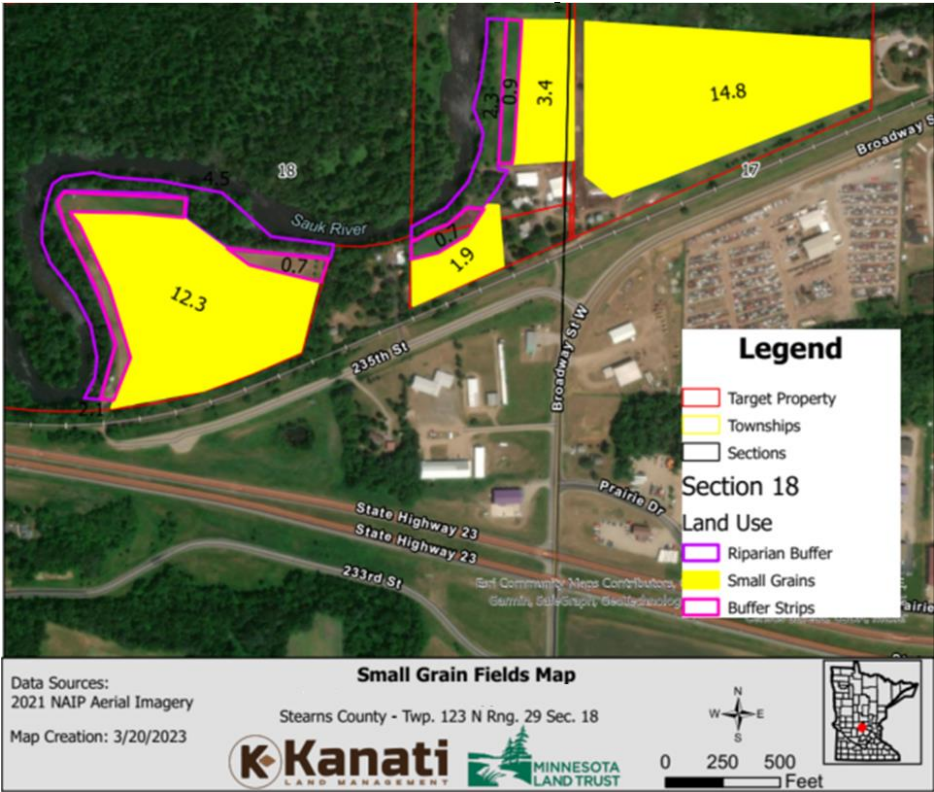
GHG & Water Quality
Input Tabs

Data Tabs

Summary Results Tab

COMET-Planner Report: Estimates for Carbon Sequestration and GHG Emission Reductions (metric tons)

Location: Stearns Co, MN
 Project name: Sauk River Farm



NRCS Conservation Practices	Acreage	Carbon Dioxide	Nitrous Oxide	Methane	Total CO2 Equivalent
Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass/Legume Cover	4.79	6	1	0	7
Restore Degraded Riparian Areas by Planting Woody Plants	11.54	25	0	N.E. **	25
Intensive Till to No Till or Strip Till (CPS 329) + Add Legume Seasonal Cover Crop (CPS 340) (with 50% Fertilizer N Reduction) on Irrigated Croplands	32.26	15	4	0	19
Intensive Till to No Till or Strip Till (CPS 329) + Add Legume Seasonal Cover Crop (CPS 340) + Replace Synthetic N Fertilizer with Compost (CN ratio 25) (CPS 590) on Non-Irrigated Croplands	9.6	7	1	0	8
Totals	58.19	53	6	0	59

Sauk River Farm - Ecosystem Services Tool

GHG Values

	Metric Tons of CO ₂	Metric Tons of CH ₄ e	Metric Tons of N ₂ Oe	Metric Tons of CO ₂ e
Change in GHG	53	0	6	59
	<u>Carbon Programs (CO₂e)</u>			<u>Social Cost of Carbon</u>
				Discount Rate
				3% Average
				2.5% Average
				3% 95th Percentile
\$/Ton CO ₂ e	\$15	\$20	\$25	\$/Ton CO ₂
				\$/Ton N ₂ O
				\$/Ton CH ₄
Average Payment	\$1,015	\$1,353	\$1,691	\$3,514
Total Cost	\$10,146	\$13,527	\$16,909	\$35,142

N and P Pay-for-Performance (PfP) Program Values

	Nitrogen		Phosphorus	
Change in N and P	271 lb/ac of N	18.5 lb/ac of P		
	<u>Old Woman Creek</u>	<u>Ohio River</u>	<u>Milwaukee</u>	<u>River Raisin</u>
	<u>Pay-for-Performance</u>	<u>Basin Trading</u>	<u>River Pay-for-Performance</u>	<u>Pay-for-Performance</u>
	<u>Program</u>	<u>Program</u>	<u>Program</u>	<u>Programs</u>
Target Nutrient	\$/lb N	\$/lb P	\$/lb N & P	\$/lb P
Program Price	\$10	\$35	\$10	\$25
Average Payment	\$3,076	\$735	\$3,550	\$586
Total Cost	\$30,759	\$7,349	\$35,498	\$5,859

Social Cost of Nitrogen

	Change in N fertilizer applied		
	0 KG of N fertilizer		
	<u>Social Cost of NO₃</u>		
\$/KG of N Fertilizer	\$0.01	\$0.03	\$0.05
Average Payment	\$0	\$0	\$0
Total Cost	\$0	\$0	\$0

MLT decided to offer the pilot farmer the following amounts:

- \$/Ton CO₂e Payment Range: \$35,142-\$103,432 (Divided into 10 annual payments) or \$60 - \$178/ac/yr
- \$/lb N and \$/lb P Payment Range: \$35,498 - \$38,105 (Divided into 10 annual payments) or \$61 - \$64/ac/yr

Legal Framework



CONSERVATION
EASEMENT



AGRICULTURAL
PRACTICES
MANAGEMENT PLAN



AGRICULTURAL
PRACTICES
MANAGEMENT PLAN
CONTRACT

Conservation Easement

- Delineates Conservation Values
- Rights and Restrictions
- Agricultural Use
 - Location
 - Types of Use
 - Buffers
- References Ag Management Plan



Management Plan



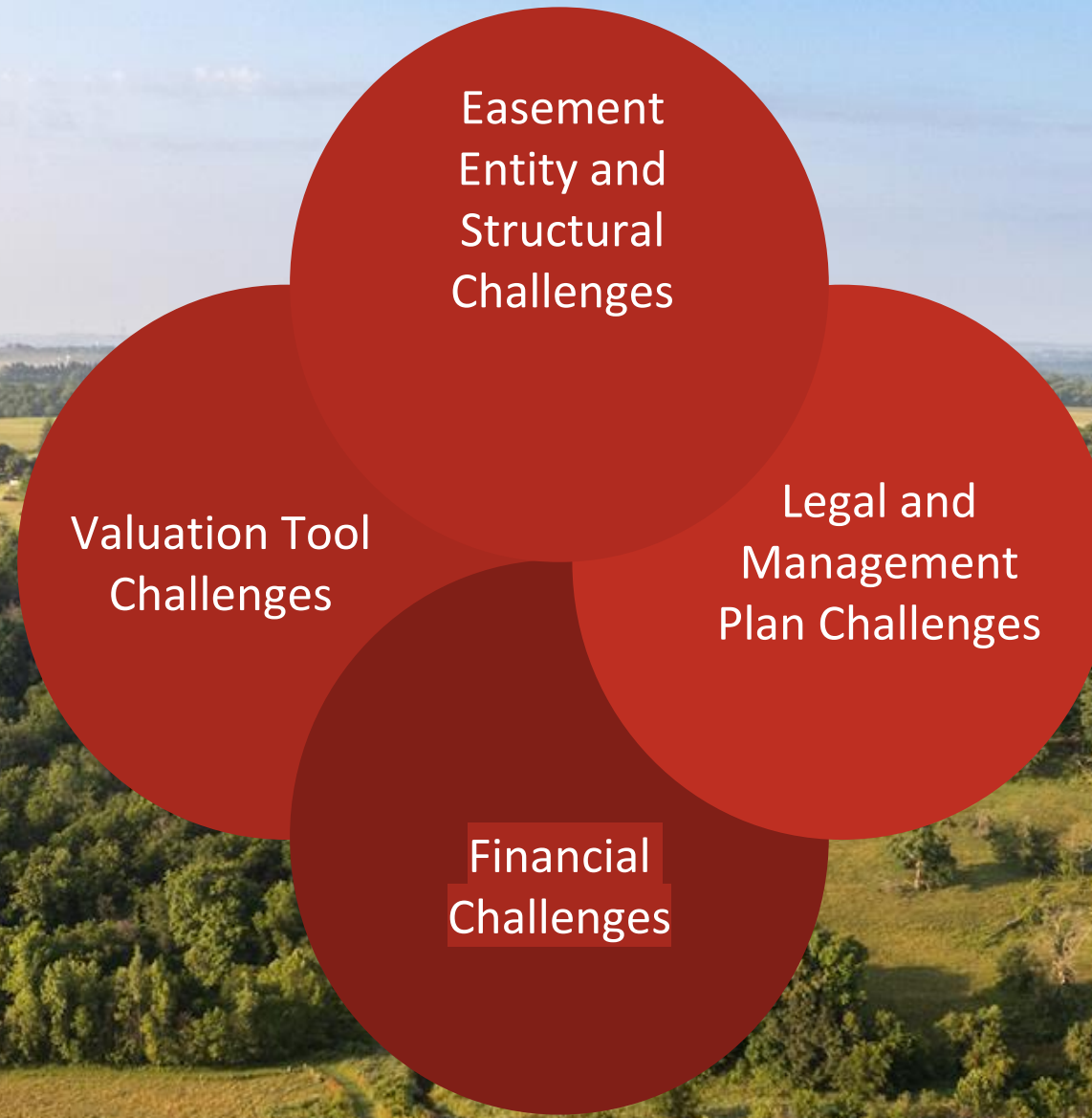
- Sets forth NRCS practices negotiated between MLT and the landowner intended to, over time:
 - Build and maintain soil health, conserve soils, and sequester carbon;
 - Improve water quality;
 - Support biodiversity;
 - Improve pasture and wildlife habitat.
- 10 year term, unless earlier revised or replaced by an updated Plan

Management Plan Contract (Agreement to Produce Ecosystem Services)



- Legally Binding Agreement
 - Sets forth management practices which landowner agrees to implement which will produce or realize certain desired ecosystem services, including:
 - Reduction of nitrogen, phosphorus, and sediment in water;
 - Reduction of GHG emissions;
 - Improvement of soil health; and
 - Other benefits
- MLT obligated to compensate landowner for the estimated ecosystem services from the practices
 - Value of estimated ecosystem services calculated using Valuation Tool

Lessons Learned



Easement Related Challenges



- Land trust cataloging issue - had to manually comb thru files to find information about farmland within conservation easements
- Permanence of easements
- Practices are not in the easement and need to be revisited every 10 years
- Carbon credits concerns - conclusion to extinguish rights to credits in the easement text
- Additionality issues - Can landowners still enroll in carbon markets?

Legal and Management Plan Challenges



Questions We Haven't Answered:

- After the first 10 year contract, do we continue to pay for the ES benefits?
- What happens if the two parties can not come to an agreement over the new management plan?
- What is the best way to structure the payments?
- What constitutes noncompliance and what are the penalties?
 - Some situations are clearcut, e.g., not planting cover crops
 - While others are harder, e.g., failure to get cover crops in due to poor weather

Financial Challenges

- Funding Sources

- Pilot project had private funds = flexibility
- Explored USDA Regional Conservation Partnership Program (RCPP) to fund easements & practices

Challenges:

- Matching funds requirement is high
- Misaligned timeframes: Easements take 2 -4 y while RCPP needs measurement of outcomes within 5-yr RCPP project

- Stacking Payments

- White paper conclusions, if a farmer wants to join:
 - **NRCS programs:** MLT can pay for same practices paid for by NRCS because NRCS is paying for practices while MLT is paying for ecosystem services
 - **Ag carbon markets:** Each market has its own rules about stacking private & public payments that the farmer must investigate



Ecosystem Services Approach / Valuation Challenges



- Water quality and habitat payments
 - Difficult to find appropriate values
 - Are the values we could find appropriate to use?
 - Water programs are not from Minnesota
- Should we use Ecosystem Services (ES) as a foundation?
 - ES are a flow and constantly occurring, what about benefits before and after the 10 year window?
- Additionality?
- Money is not the only thing that moves the needle

Land Trusts Best Fit for This

- **Ideally, land trusts that are best fit for this have:**
 - A focus on ag lands
 - Farm conservation practice staff expertise or consultants
 - A pot of funds for easements & for conservation incentives or fundraising capacity
 - Organizational commitment to trying something innovative



Recommendations for Land Trusts

- Please use these resources
 - Hire your own ag economists to adjust the ES Valuation Tool to your state
- Project ideas:
 - Consider using the ES Valuation Tool with landowners with existing easements
 - Since the valuation tool does not set a price but is used to inform negotiations, try using a reverse auction to help distribute your project funds more efficiently



Thank you!
Please stay for extended discussion

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