

# POULTRY CENTERED REGENERATIVE AGROFORESTRY A SYSTEM-LEVEL DESIGN



**Reginaldo Haslett-Marroquín**  
Main Street Project  
[reginaldo@mainstreetproject.o](mailto:reginaldo@mainstreetproject.o)



# NO VISION EVER MATERIALIZES WITHOUT THE RIGHT PEOPLE INVOLVED

## OUR MINNESOTA-BASED TEAM



# A jungle fowl).



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Red jungle fowl (*Gallus gallus*).

Painting by Murrell Butler



ANCESTORS OF MODERN POULTRY.

Foreground: The Red Jungle Fowl (*Gallus ferrugineus*).

Background: The Grey Jungle Fowl (*Gallus sonnerati*) and the Ceylon Jungle Fowl (*Gallus latifans*).  
The Red is generally considered the progenitor of our domestic poultry.

# Energy-based, Poultry-Centered Regenerative Agroforestry

## Regenerative Agriculture Capturing the Endless Cycles of Energy

### Upper Canopy Trees

Provides Shade, Protection from Predators,  
Reduces Runoff, Builds Soil, Contributes Fuel & Timber

### Middle Canopy Trees

Provides Shade, Protection from Predators,  
Reduces Runoff, Builds Soil, Contributes Food & Fiber

### Annual Vegetables

Provides Shade and Protection,  
Increases Production, Absorbs Nutrients,  
Feeds Chickens, Food Security

### Lower Canopy Shrubs

Provides Shade, Protection from Predators,  
Reduces Runoff, Builds Soil, Contributes Food & Fiber

### Poultry

Controls Insect &  
Weed Pressure,  
Builds Soil & Nutrients,  
Meat & Egg Production

### Perennial Ground Cover

Forage for Poultry, Ground Cover,  
Accumulates Nutrients

**Sprouted Grain**  
Nutrient Rich Grazing Feed

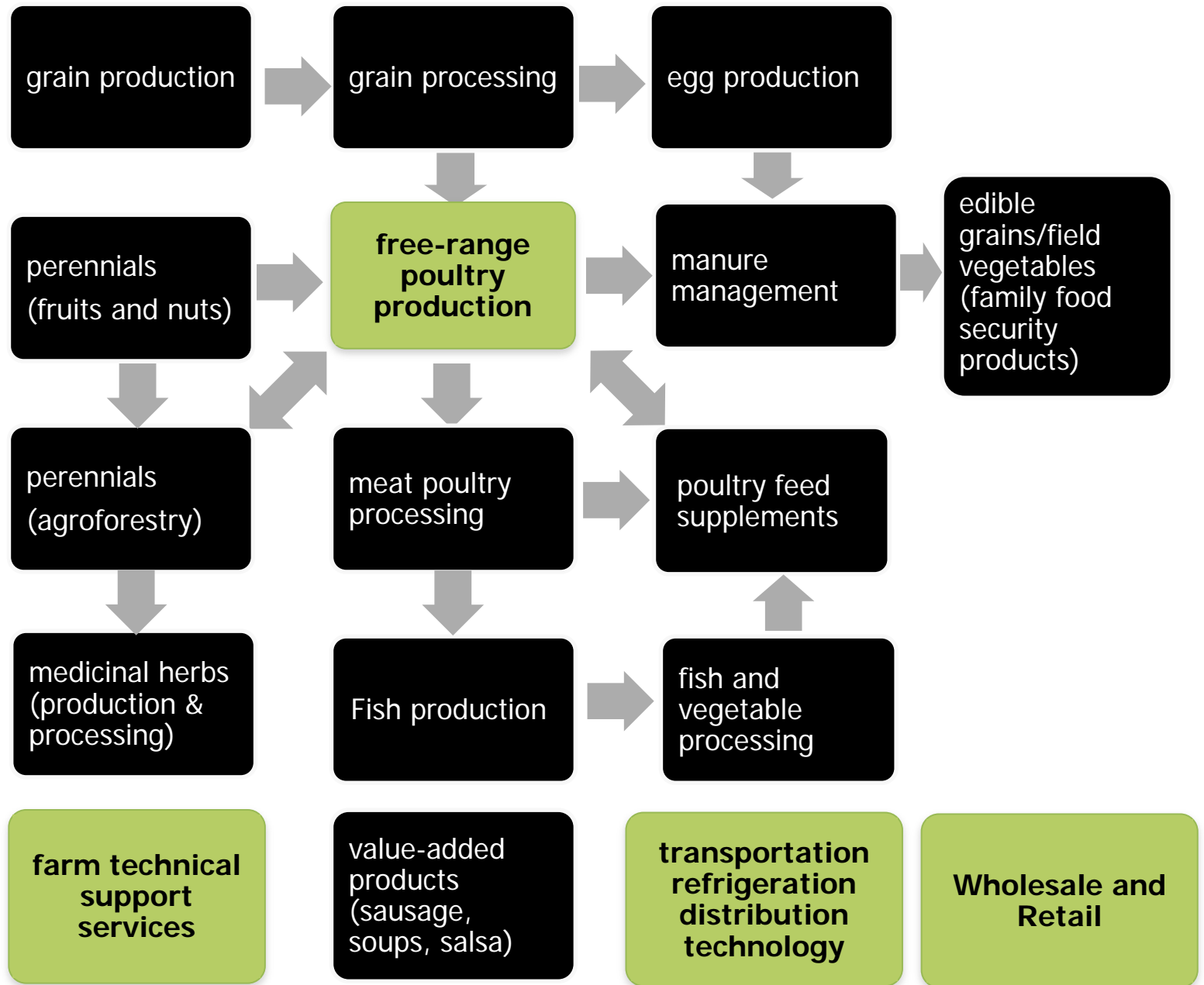
**Poultry Manure**  
Nitrogen Rich Nutrients  
Builds Soil Microbial Web

**Straw & Mulch**  
Ground Cover, Soil Builder  
Erosion & Runoff Reduction



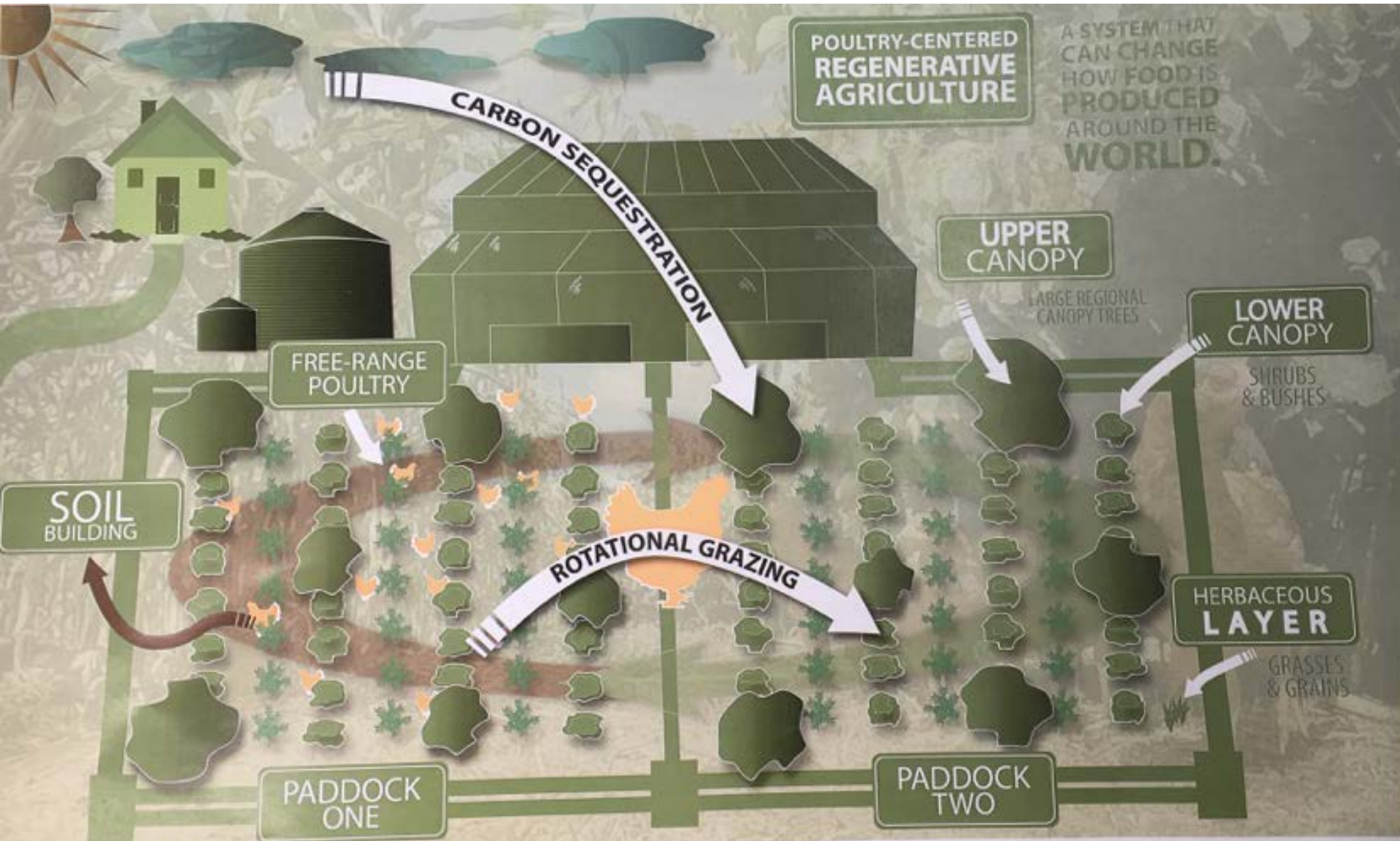
# System Level Enterprise Sectors

## Integration



# Production Unit and Energy Flows

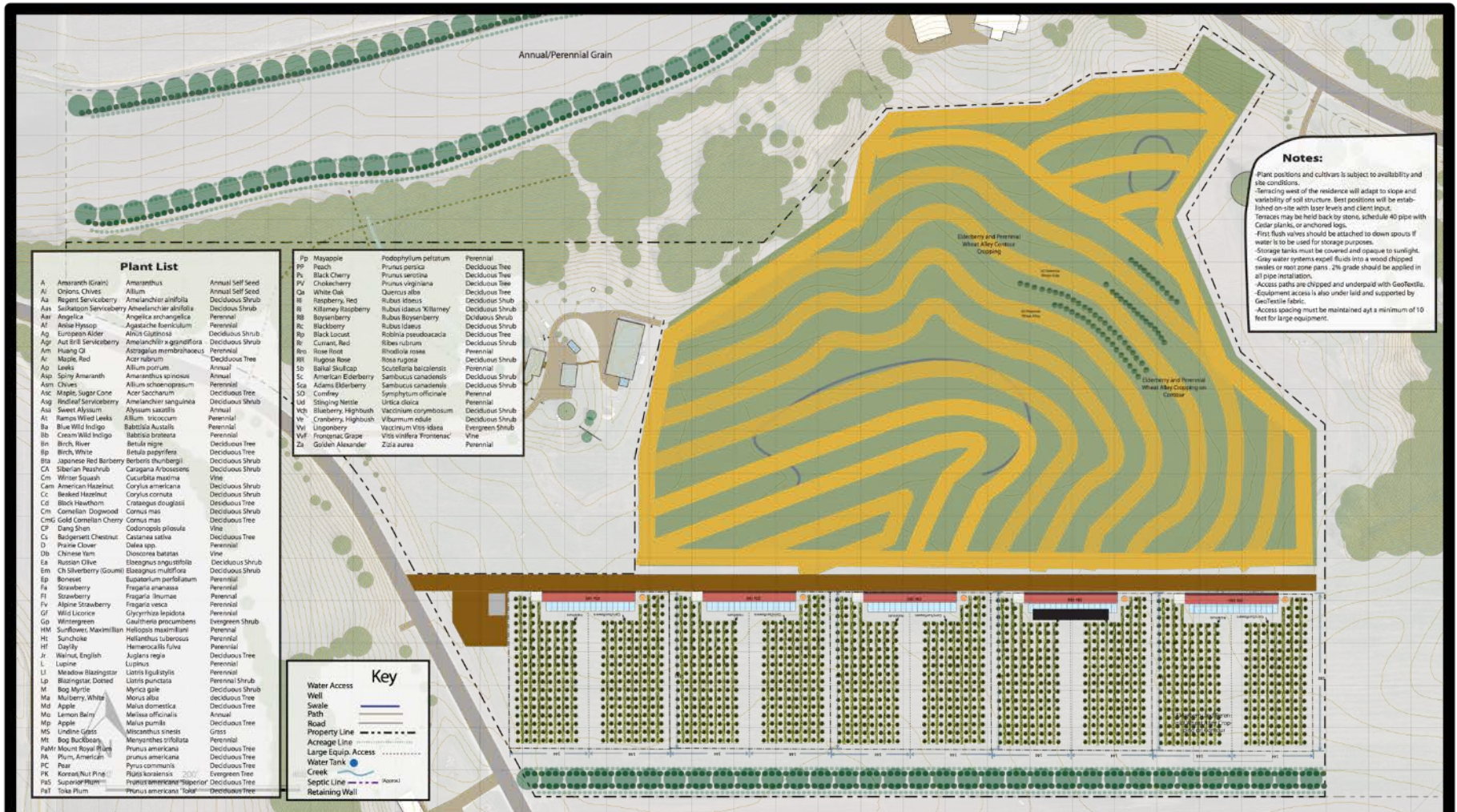
## Engineering



# THE PROTOTYPE PU



# FARM-LEVEL COMMERCIAL PROTOTYPE



**Designer:**  
Daniel Halsey  
Halley Creative Services, Inc.  
17766 Langford Blvd, Prior Lake, MN 55372  
612-720-5001, 800-455-9884

**Project:** Regeneration Farms  
Faribault, MN



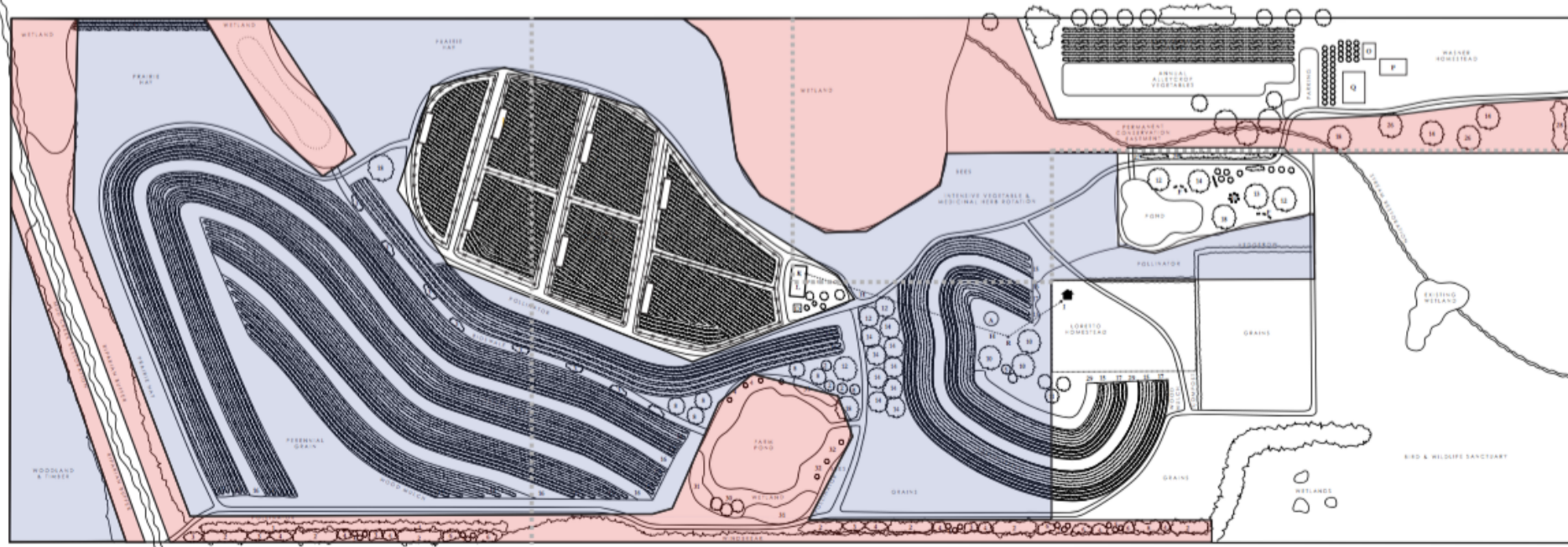
Climate: Humid Continental (Cool Summer)  
Landform: Lowland Plains  
Soil Type: Silt Loam  
pH: 5.8-6.7  
Growing Zone: 4b  
Latitude: 44.3°N  
Elevation: 1100'-1186'  
Annual Precipitation: 32.6"  
Prevailing Winds: Northwest

**Date:** May 2016  
**Scale:** 1 in = 40 ft  
**Working Concept**



# MAIN STREET FARM TRAINING CENTER AND R&D

MAIN STREET PROJECT'S DEMONSTRATION FARM



# MAPPING OUT A SUB-REGION



# A 12 State Midwest Alliance for Regenerative Agroforestry



# PRODUCTION UNIT FINANCIALS



09 20 20



# PERENNIAL CROPS AS A BY-PRODUCT OF THE PRODUCTION UNIT



09 23 2013

# **Poultry-Centered Regenerative Agroforestry System**

## **A Scalable Business Opportunity**

### **Profile of a Meat Production Unit (1.5 acres)**

- 1,500 birds/3 flocks/year = 4500 birds.
- 18,000 lb/year/PU
- Gross market value of chickens \$58,500
- Farmer's gross income at farm-gate \$33,750
- After establishment (5 years) 951 hazelnut bushes x 2.5 lbs in-shell nuts/bush Harvest = 2160 lb.
- Farm-gate value of in-shell nuts = \$1 = \$2160/year
- Total estimated gross income per PU = \$35,910

# **Poultry-Centered Regenerative Agroforestry System**

## **A Scalable Business Opportunity**

### **Profile of an Egg Production Unit (3 acres)**

- 3,000 egg layers = 175 dozen/day
- Total production per year = 63,875 dozen
- Estimated farm-gate value of eggs per dozen = \$2.90
- Estimated gross farm-gate value per PU = \$185,237
- Hazelnuts planted per egg PU = 1,585
- Production of in-shell nuts per PU = 3962 lb.
- Estimated gross value of hazelnut production per PU = \$3962
- Estimated gross farm-gate production value per PU = \$189,199
- Estimated gross income per acre \$63,066