Farmstead Planning

Why spend time planning for your farmstead?

- To have more time off
- To reduce labor requirements
- To get more product to market
- To reduce risk when investing in growing and provide multiple stage approach for expansion
- To provide separation between farm & family areas

What do I need to do?

- Know what you have:
  - A map or drawing of the farmstead’s layout
  - Inventory of resources (land, water, power, buildings, permanent equipment, feed/grain storage)
  - Useful life remaining on structures & equipment
  - Anticipated annual crop and livestock production numbers

- Know what you need:
  - Write down short and long term needs
  - Provide a list of anticipated new buildings & equipment

How do I create a layout of my farmstead?

- Creating the as-is drawing:
  - Drawing on graph paper
  - Aerial Photo: ask FSA or NRCS to print one
  - Aerial Photo: print one yourself with Google maps, etc…
  - Computer Drawing or GIS

- Adding options for future structures:
  - Create lots of copies
  - Trace paper
  - Cut-outs to represent expansion that can move around
  - Computer to move/modify a new structure

What if I am creating a new farmstead?

- Six Critical Factors
  - Zoning
  - Local Terrain
  - Roads and Farm Drives
  - Water Supply
  - Electricity
  - Manure Utilization Suitability (for farms with livestock)

How do I know what works and what does not work when developing on my farmstead plan?

https://www-mwps.sws.iastate.edu/
How large should my farmstead be?

<table>
<thead>
<tr>
<th>PUMPS &amp; PIPING COMPONENT</th>
<th>40 GPM</th>
<th>60 GPM</th>
<th>100 GPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigation 500 ft radius</td>
<td>$120</td>
<td>$180</td>
<td>$300</td>
</tr>
<tr>
<td>Hoses</td>
<td>5</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Sprinklers</td>
<td>100</td>
<td>150</td>
<td>250</td>
</tr>
<tr>
<td>Manifolds</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Valves</td>
<td>20</td>
<td>30</td>
<td>50</td>
</tr>
</tbody>
</table>

Water Source and Quality
- Does it need to be developed
- Account for present and future needs

Water Billing Rates
- Effective for all bills rendered based on meter readings made on and after December 1, 2009.
- Monthly Minimum Charges
- Commodity Charges

Electricity
- Central installation location
- Size for future growth
- Consider underground placement for lines (keep detailed notes on placement of lines)

Farm Drives - Entry
- Visibility
- Turning Radius
- Fairly Level Ground
- Include Sign By Road
- Set Gates Back From Road

Farm Drive - Spacing
- Drives: 8-12 feet wide
- Branch drives can also reduce some traffic near the farmstead

Table 1. Approximate space needs for farm buildings & equipment areas.*

<table>
<thead>
<tr>
<th>BUILDING</th>
<th>SPACE NEEDS</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barn</td>
<td>100 ft x 50 ft</td>
<td>Large barns require more space.</td>
</tr>
<tr>
<td>Silo</td>
<td>50 ft x 50 ft</td>
<td>Silos should be placed away from buildings.</td>
</tr>
<tr>
<td>Chicken Coop</td>
<td>20 ft x 20 ft</td>
<td>Adequate space is needed for chicken coop.</td>
</tr>
</tbody>
</table>

Water Billing Rates
- Proposed Rate
- Water use: $0.00 to $0.02 per cubic foot
- Water use: $0.021 to $0.04 per cubic foot
- Water use: $0.041 to $0.08 per cubic foot

Central installation location
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Farm Drive - Good Foundation

Farmstead Layout: Zone Planning

All Zones are 100-200 foot concentric circles
- Zone 1: Home/Farm Center
- Zone 2: Machine Shop
- Zone 3: Grain/Feed Storage & Small Livestock Area
- Zone 4: Major Livestock Area

Zone 1: Home/Farm Center

Considerations
- Aesthetics
- Good Visibility
- Close to Road
- High Ground
- Water Source
- Septic Setback
- Low Impact of Dust, Odor, Insects & Farm Machinery

Zone 2: Machine Shop

Considerations
- Good Drives
- Parking Area
- Utilities
- Fuel & Chemical Storage to the Outside of the Zone
Zone 3: Grain/Feed Storage
Small Livestock Areas

Considerations
- Access
- Electricity
- Wind Speed & Direction

Zone 4: Major Livestock Areas

Considerations
- Access
- Low Visibility
- Wind Speed & Direction
- Manure Storage Location
- Mortalities

Central vs Satellite Sites: Grain & Livestock

Centralized Site
+ Efficient year-round management of product
+ Simpler delivery of inputs
+ Better security
+ Newer technology-more expensive components
+ One electricity/fuel service
+ Less equipment required
+ Less drive maintenance

Satellite Sites
+ Shorter transportation distances seasonally
+ Biosecurity
+ Product segregation
+ Crop loss prevention
+ Lower animal numbers reduces regulations
+ Existing structure available with land lease/purchases

Interactive Exercise
Interactive Exercise

Current Operation
Cow-Calf Pairs: 40
Hay Used: 240
Hay Sold: 380
Total Hay: 620
Hoop Barn Capacity: 276 Rolls
2.25 Barns req’d

5 Year Goal:
Cow-Calf Pairs: 90
Hay Used: 540
Hay Sold: 580
Total Hay: 1040
Hoop Barn Capacity: 276 Rolls
3.75 Barns req’d

Interactive Exercise

5 Year Operation
Cow-Calf Pairs: 90
Hay Used: 540
Hay Sold: 580
Total Hay: 1040
Hoop Barn Capacity: 276 Rolls
3.75 Barns req’d

10 Year Goal:
Cow-Calf Pairs: 90
Backgrounders: 60
Hay Used: 600
Hay Sold: 1200
Total Hay: 1800
Hoop Barn Capacity: 276 Rolls
6.5 Barns req’d

Final Thoughts

- Don’t expect farmsteads to be perfect: planning decisions are always a balancing act
- There are always multiple good options for a farmstead layout
- Prioritize concerns on your farm and have a plan for when to address them
- Do not spend money placing an expansion or new structure in location in order to utilize a structure you don’t wish to keep

Questions?

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