

Site Selection Pad Requirements

Gary Felton

Extension Agricultural Engineer

University of Maryland

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Farm-Based Manure Composting

Questions to ask yourself

Are you going to use the compost on-farm only?

Are you going to wholesale the compost?

Are you going to retail the compost?

Are you going to take in materials from off-site

Do you think expansion is a possibility?

Location, Location, Location

The *Ideal* Composting Site Paradox



Close to Materials and Markets...



...Far From Everything Else



Compromise, or Make the Best of What's Available



Location Considerations

- **Size**
- **Environmental Protection**
- **Access**
- **Buffers**
- **Zoning and regulations**
- **Cost!**

Siting Criteria

- **Transportation Impacts**
 - Transportation Distance
 - Traffic
 - Air Quality
- **Neighborhood Impacts**
 - Air Quality
 - Noise
- **Environmental Impacts**
 - Biological Resources
 - Cultural Resources
 - Hydrology and Water Quality
- **Site Costs**
 - Acquisition
 - Population & Housing
 - On-site and Off-site Development Costs
 - Utilities & Service Systems
- **Land Use Designation**
- **Visual Impacts**
- **Multi-Use Potential**

Source: Sonoma County Waste Management Authority

Space – The First Frontier:

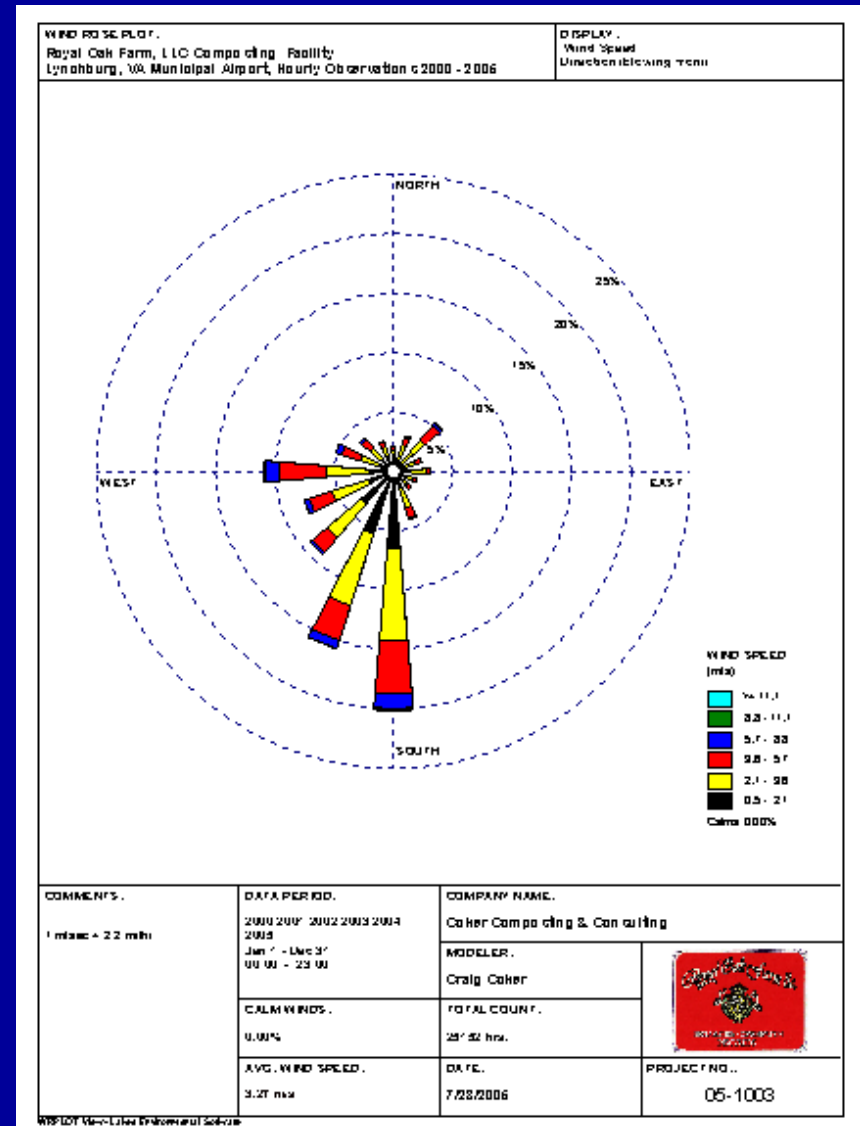
Need room (area):

- To compost
- To do other things
- For storage
- To move around
- For access and activities
- To handle water
- To breathe
- Potential expansion



Surface wind speeds & directions

- Construct from hourly meteorological data
 - 5 years data needed
- Data available from National Climatic Center, Asheville, NC
- Wind rose software from Lakes Environmental



Location Considerations

- **Size**
- **Environmental Protection**
- **Access**
 - **Road and utilities**
- **Buffers**
- **Zoning and regulations**
- **Cost**

Access: Roads and Utilities

- **Roads**

- Try to be < 5 miles from 4-lane arterial
- Avoid routing trucks through residential areas
- Don't let trucks queue onto public streets

- **Utilities**

- **Electricity** – if ASP, may need 3-phase power
 - Budget \$200/linear foot to extend 3-phase
- **Leachate management**
 - Sewer or septic field needed – avoid mixing with storm water runoff if possible

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Zoning Verbiage

- **Allowable use by right**
 - **Site zoned properly for composting facility**
 - **Example: Industrial or Manufacturing zone**
 - **Example: RA – rural, primarily agricultural**
- **Allowable use by “conditional use” permit**
 - **Site zoning OK, but permit conditions required**
 - **Example – Agricultural zone where off-farm feedstocks to be handled and compost sold off-site**
 - **Conditions – acceptable routes, limits on operating hours**
 - **Public hearings needed – Planning Commission and elected governing board**



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Layout Objectives

- **Minimize: material handling, system delays, backtracking, bottlenecks, *inefficiency***
- **Maintain flexibility**
- **Separate feedstocks, finished products**
- **Ease of housekeeping and maintenance**
- **Control access and security**



***Scale, signage, and
weather station;
Record keeping and monitoring***

Setbacks/Buffers

- Groundwater
- Surface waters
- Wells
- Property lines
- Airports
- Residences
- Sensitive receptors



Buffer Zone

- **Blocks impacts of water, noise, odor and sights**
- **Includes berms, walls, treelines**
- **Take advantage of hills, fields, woods, railroads and prevailing winds**





Pad Design

- **The surface occupied by the active compost piles**
- **Design keys:**
 - **Adequate stability and firmness for year-round access and operation...rain or shine!**
 - **Sloped to allow water to quickly flow away from windrows : 2-5%**
 - **Prevention of odor-forming conditions**
 - **Meet regulatory requirements**



Soil Pad



Problem with Soil Pads



Need “quarry run” or mixed sized to be able to compact. Still tend to get stones mixing in to compost.





Asphalt Millings



Lime-stabilized pad

Often in need of repair



Pad Construction Options

- Concrete
- Asphalt
- Lime-stabilized
- Millings
- Stone
- Compacted clay
- Soil

Durability and cost

Sometimes required by regulation





Turned rows

Wide buffer

Out of sight



Questions?