The Gravel Bed Option

Is it Right for You?

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Developed By: Sean Peterson
What is a “Gravel Bed”?
A Simple Recipe.

- Bare Root Trees
- Gravel
- Water
Easy to Build?

- It can be.
- Most gravel beds can be built with minimal help in less than a day.
Siting?

- Level to 5% grade.
- Should offer some protection from the elements.
Why use a “Gravel Bed”?

- To plant or replace more trees than otherwise possible.
- To introduce more diversity through stock availability.
Why use a “Gravel Bed”?

- It Makes Fiscal Sense
  - Decreased labor cost.
  - Decreased per tree cost.
  - Increased community engagement makes $en$e.
Why use a “Gravel Bed”?

- Healthier Trees!
  - Increase in fibrous roots = Lessened transplant shock.
  - Bareroot stock allows for easy correction of disfunctional or underdeveloped root systems.
What tree would you rather plant?
What would you rather plant?

- Okay, trick question, this is the same tree after 12 weeks in a gravel bed.
That’s not typical though. Right?
Small seedling stock.
Gravel Bed Myths & Misunderstandings:

- Gravel beds are used to GROW trees.
- This system is doomed to fail (trees need soil).
- Gravelbeds are expensive.
- Fun concept, not practical.
- Too much work!

- Too much money!
Sure you can do this....
But, this works just as well.
Too much money?

Well, it doesn’t HAVE to be. Ask Yourself:

- What are your needs?
  - How many trees do you plant annually?
  - What is your planting budget?
  - Are you seeking “added value”?
- What are Your Resources?
  - What is your planting budget? (I know, it’s a repeat)
  - What are your “material resources” (i.e. “free stuff”)!
What are we really paying for with more “traditional” stock types?

- **Additional Labor**
  - More people, more machines and more back pain...

- **One Time Use Materials**
  - Baskets, burlap and twine.
  - Nursery pots which usually end up in the landfill.

- **Fuel**
  - Shipping accounts for the greatest portion of stock pricing differences.

- **Less Biodegradable Plant Materials!**
Too much work! Really??

Photo: houstonherald.com
Isn’t this MUCH better?
Making the Decision. “Utilitarian” or “Value added” gravel beds?
Material considerations should be made on “utility” of your gravel bed. Do you want your gravel bed to:

- **“Added Value” gravel bed**
  - Aesthetically pleasing gravel bed, in a public location. The addition of signage can also draw support.
    - Higher costs may be offset by increased volunteerism and sway of “political will”.
- **Utilitarian?**
  - If yes, use a “low value” site.
    - Poor or no soil.
    - No other practical use.
      - Very low cost, same benefit to trees.

*Easy access to water and limited direct exposure to the elements are best for ANY gravel bed.*
A Value Added Model:

- Education

- Community Engagement
  - Affects Policy
  - Increases Volunteerism
  - Lends to a Positive, Progressive Community Image.
Value Added Model in Action!
Some Examples of “Utilitarian”

- Low value location.
- Easy Access to Water.
- Machine Access.

Rochester, MN.  
Fargo, N.D.
What to Expect:

- **Size & Space Requirements:**
  - How many trees do you plant annually and of what size?

<table>
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<tr>
<th>Gravel Bed Size</th>
<th>2'x10' Pressure Treated Quantity-Length</th>
<th>4&quot;x4&quot; Pressure Treated Quantity-Length</th>
<th>3&quot; Galvanized Lag Screws</th>
<th>Geotextile Fabric</th>
<th>Pea Stone (cubic yard)</th>
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<tbody>
<tr>
<td>10'x10'</td>
<td>8-10'</td>
<td>2-10'</td>
<td>48</td>
<td>210sf 70' of 3'roll</td>
<td>5cy</td>
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<td>10'x20'</td>
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<td>4-10'</td>
<td>72</td>
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<td>9cy</td>
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<td>10'x30'</td>
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<td>5-10'</td>
<td>96</td>
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<td>14cy</td>
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<td>10'x40'</td>
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<td>6-10'</td>
<td>120</td>
<td>660sf 220' of 3'roll</td>
<td>19cy</td>
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<td>10'x50'</td>
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<td>8-10'</td>
<td>144</td>
<td>810sf 270' of 3'roll</td>
<td>23cy</td>
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Table 1. Sizing of gravel bed.

Table 2. Materials list for traditional gravel bed with treated lumber.
In Short, Be Creative!

Morris, Minnesota

Rochester, Minnesota

Bemidji, Minnesota

Royalton, Minnesota

Hutchinson, Minnesota

Fargo, North Dakota
Experienced gravel bed users and advocates are available for advice!

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Free gravel bed primer available @ trees.umn.edu on “Products” page.