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Generalized Geologic Map for Land-Use Planning: Bath County, Kentucky

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Planning Guidance by Rock Unit Type

<table>
<thead>
<tr>
<th>Rock Unit</th>
<th>Good Foundation</th>
<th>Moderate Foundation</th>
<th>Poor Foundation</th>
<th>Damaged Foundation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limestone</td>
<td>Good to excellent</td>
<td>Moderate to difficult</td>
<td>Poor to moderate</td>
<td>Severe to moderate</td>
</tr>
<tr>
<td>Shale</td>
<td>Poor to excellent</td>
<td>Moderate to moderate</td>
<td>Poor to moderate</td>
<td>Severe to moderate</td>
</tr>
<tr>
<td>Sandstone</td>
<td>Moderate to difficult</td>
<td>Difficult to excavate</td>
<td>Very difficult</td>
<td>Severe to moderate</td>
</tr>
<tr>
<td>Clay Shale</td>
<td>Moderate to difficult</td>
<td>Difficult to excavate</td>
<td>Very difficult</td>
<td>Severe to moderate</td>
</tr>
</tbody>
</table>

Potential Geotechnical Issues

1. Water: Water can cause swelling and shrinking in shales, reducing strength and causing landslides.
2. Slope: Steep slopes increase the risk of landslides.
3. Groundwater: High water tables can cause landslides, especially in shale units.
4. Geologic Structures: Faults can affect stability and increase the risk of landslides.
5. Soils: Poor soils can contribute to landslides.
6. Vegetation: Vegetation can prevent erosion and increase stability.

What Are the Factors That Cause Landslides?

1. Water accumulation
2. Changes in soil moisture
3. Changes in temperature
4. Geologic structures
5. Human activity
6. Vegetation changes
7. Natural processes

Effect of Shale Unit 3 and Shale Unit 7 on Construction

- **Shale Unit 3**: Lies above Shale Unit 7 in roadcuts. It is moderately difficult to excavate.
- **Shale Unit 7**: Is exposed at roadcuts. It is relatively easy to excavate.

Potential Problems:

- **Shale Unit 3**: Stability issues, possibility of slumping.
- **Shale Unit 7**: Stability issues, possibility of slumping.

Conclusion:

- When constructing in shale units, consult a geotechnical engineer to assess potential problems and recommend solutions.
- Avoid steep slopes and highly saturated areas.
- Proper drainage and vegetation management can help mitigate landslide risks.

References Cited


References Cited