Why Buried Bridges?

CONVENTIONAL BRIDGES

CONVENTIONAL BRIDGES CONVERT TO BURIED BRIDGES:
- Shorter construction time/phasing means lower initial cost
- Minimal/no long term maintenance lowers overall life cycle cost
- Shorter construction time minimizes traffic disruption
- Bury utilities in backfill over structure
- Increased safety with limited/no freeze concerns & deck maintenance

BURIED BRIDGES

CULVERTS

CULVERTS CONVERT TO BURIED BRIDGES
- Complete system with headwalls, wingwalls and foundations
- Bottomless structure promotes natural aquatic habitat and fish/wildlife passage
- Maintenance-free structure lowers overall life cycle cost
- Project specific design to handle all loading requirements
- Long clear spans promote improved hydraulics while minimizing pier blockage
Featured Project: I-64 Overpass

The West Virginia Department of Highways bid a three span steel girder bridge for the replacement of an I-64 overpass over a local road. The contractor Ahern & Associates presented to the WVDOH a value engineering proposal to redesign the bridge at grade to be a buried bridge using a high profile shaped BEBO® concrete arch. The value engineering proposal provided an initial savings of approximately 30% when compared to the three span steel girder bridge bid. Future benefits include significantly reduced maintenance costs.

**BENEFITS:**

» 158 LF BEBO C-series (54’ span x 24’ 4”), 20’ of cover, set arches at night to minimize traffic disruption, precast arches set in place in ONE week

» **Significant cost savings.** Construction of the BEBO arch instead of conventional bridge under I-64, while it was still in service, accelerated bridge construction and saved $2,500,000.

» This construction method allowed four lanes of traffic to remain open. Traffic disturbance was reduced to one construction season providing a **huge safety bonus** to traveling public and the contractor.

» No future bridge deck or approach slab maintenance costs.

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**Bridge Type Comparison Chart**

<table>
<thead>
<tr>
<th></th>
<th>Conventional</th>
<th>Buried</th>
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</thead>
<tbody>
<tr>
<td>Traffic Disruption*</td>
<td>2 YEARS</td>
<td>5 MONTHS</td>
</tr>
<tr>
<td>Construction Time*</td>
<td>2 YEARS</td>
<td>1 YEAR</td>
</tr>
<tr>
<td>Initial Cost*</td>
<td>$8 M</td>
<td>$5.5 M</td>
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<tr>
<td>Typical Maintenance*</td>
<td>Deck Overlay every 15-18 years. Total Deck Replacement every 30-35 years</td>
<td>Periodic Asphalt replacement.</td>
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*Estimated

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**Maintenance Costs Add Up**

Bridge Deck Rehabilitation Approach Slab Replacement $645,811