Cosgrove Tunnel Redundancy Project

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Water Transmission System
Cosgrove Tunnel

- Single supply line
- Needs repair work

Wachusett Aqueduct

- Off line
- Gradeline Aqueduct: Cannot supply CWTP
Water Transmission System (Wachusett Res to Weston)
• Pressurize Wachusett Aqueduct

• Construct Pump Station at Terminus of Wachusett Aqueduct
Cosgrove Redundancy Alternatives
Typical Aqueduct in Earth Section

120” Pipe in Aqueduct Alignment
Carroll WTP Site

Wachusett Aqueduct

Proposed Pump Station/Records Center

Wachusett Aqueduct Extension

Hultman Connection

Cosgrove Tunnel

MWWST Connection

Ozone Building

Shaft D
## Comparison of Alternatives

<table>
<thead>
<tr>
<th>Alternative Description</th>
<th>Capacity with Wachusett Reservoir Full and No Filtration at the CWTP* (MGD)</th>
<th>Capacity with Wachusett Reservoir Full and Filtration at the CWTP* (MGD)</th>
<th>Estimated Construction Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gravity Aqueduct &amp; Pumping Station</td>
<td>240</td>
<td>240</td>
<td>$48M</td>
</tr>
<tr>
<td>96-inch Pressurized Wachusett Aqueduct</td>
<td>278</td>
<td>248</td>
<td>$156M</td>
</tr>
<tr>
<td>108-inch Pressurized Wachusett Aqueduct</td>
<td>339</td>
<td>303</td>
<td>$169M</td>
</tr>
<tr>
<td>120-inch Pressurized Wachusett Aqueduct</td>
<td>394</td>
<td>351</td>
<td>$203M</td>
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</tbody>
</table>
Pumping Station Capacity – 240 MGD

- Average day demand: 185 – 212 mgd
- Maximum day demand: 251 to 287 mgd
- Unrestricted redundant supply of fully treated water for at least eight months during the lower-demand fall/winter/spring period
- During high-demand periods
  - substantial demand reductions
  - mandatory restrictions on outdoor use
  - supply limitations to some partial user communities
Historical Water Use - CWTP

CWTP Daily Demand

mgd


CWTP

240 mgd
## Construction Schedule

### Redundancy (Wachusett Reservoir to Shaft 5 Weston)

<table>
<thead>
<tr>
<th>Project</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumping Station</td>
<td>7/2013</td>
<td>6/2015</td>
</tr>
</tbody>
</table>