SOUTH COAST RAIL PROJECT COST COMPARISON

SUMMARY: Southeastern Regional Planning and Economic Development District (SRPEDD) recently conducted a basic analysis of total project costs for South Coast Rail (SCR). The intent of the work was to provide context for SCR’s price tag. The analysis compares the project’s costs to those of a comparable commuter rail investment, the MBTA Greenbush Line\(^1\), which opened in 2007. SCR Base Year (2012) total costs were compared to inflation-adjusted Greenbush total costs on a per-mile basis. The analysis revealed that the projects’ costs are nearly identical: SCR costs $35 M per mile while Greenbush costs $33.4 M per mile, for a difference of 4.8%. Moreover, this is not an “apples to apples” comparison, because SCR’s preferred alternative utilizes electric trains whereas the Greenbush line runs diesel trains. A “diesel to diesel” comparison indicates that a diesel SCR alternative, at $30.1 M per mile, would be 9.9% cheaper than Greenbush.

PROCESS AND RESULTS: SRPEDD gathered necessary information from the MBTA, the U.S. Army Corps of Engineers (USACE), Vanasse Hangen Brustlin, Inc. (VHB), the U.S. Bureau of Labor Statistics, and MassGIS. This data provided necessary inputs for project costs, new miles of track, and inflation adjusted 2007 dollars for SCR Base Year (2012). The basic calculations, which were reviewed by VHB, are depicted in Table 1: Greenbush/SCR Comparison, below.

Table 1: Greenbush/SCR Comparison

<table>
<thead>
<tr>
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<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total Construction Costs (x000)</td>
<td>New Miles</td>
<td>Total Costs Per Mile (x000)</td>
<td>Difference with Greenbush (2012)</td>
<td>Percent Difference with Greenbush (2012)</td>
</tr>
<tr>
<td>Greenbush Diesel (2007 dollars)</td>
<td>$534,000</td>
<td>17.7</td>
<td>$30,169</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Greenbush Diesel (2012 dollars)</td>
<td>$591,310</td>
<td>17.7</td>
<td>$33,407</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SCR Electric (2012 dollars)</td>
<td>$1,817,405</td>
<td>51.9</td>
<td>$35,017</td>
<td>$1,610</td>
<td>4.8%</td>
</tr>
<tr>
<td>SCR Diesel (2012 dollars)</td>
<td>$1,561,995</td>
<td>51.9</td>
<td>$30,096</td>
<td>-$3,311</td>
<td>-9.9%</td>
</tr>
</tbody>
</table>

\(^1\) SRPEDD chose Greenbush as a comparable project because it is nearby, recent, and within the same MBTA system; it also had similar baseline conditions with regards to rights-of-way. SRPEDD considered further comparisons to national and international projects, but concluded that introducing different labor markets, permitting procedures, and legal environments would complicate what was intended to be a simple “back-of-the-envelope” exercise to provide context for SCR.
The analysis reveals that the SCR Electric Stoughton Route Alternative is only 4.8% more per-mile than Greenbush in same-year, 2012 dollars. (Please note that the SCR Diesel analysis, which shows an even more favorable comparison with Greenbush, should only be used for reference as it is not the USACE or the Commonwealth’s preferred alternative.)

SRPEDD also created a basic calculation that imagined the Greenbush project (and its associated costs) expanded to the same scale as SCR. This calculation is available in Table 2: Extended Greenbush Comparison, below.

Table 2: Extended Greenbush Comparison

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
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<tbody>
<tr>
<td>Greenbush 2012 Cost (x000)</td>
<td>SCR is 2.93 times longer than Greenbush</td>
<td>Scaled Greenbush 2012 Costs (x000)</td>
<td>SCR Electric 2012 Costs (x000)</td>
<td>Difference with Scaled Greenbush 2012 and SCR Costs (x000)</td>
<td>Percent Difference with Scaled Greenbush</td>
</tr>
<tr>
<td>$591,310</td>
<td>$1,733,841</td>
<td>$1,817,405</td>
<td>$83,564</td>
<td>4.8%</td>
<td></td>
</tr>
</tbody>
</table>

This second analysis allows a simple visualization of the fact that SCR’s relative overall length is the key factor in its price tag. This graphic is presented below in Figure 1.

Figure 1: Extended Greenbush Comparison (2012 dollars)

Greenbush

$591 M

17.7 miles

Greenbush Extended

$1,733 M

51.9 miles

SCR Electric

$1,817 M

51.9 miles

4.8% difference
CONCLUSION: SCR’s costs are comparable to Greenbush on a per-mile basis; its overall price tag is due primarily to the project’s scale. After nearly 60 years of discontinued service, this project will restore commuter passenger rail from Boston to the Gateway Cities of Taunton, Fall River, and New Bedford – the only three cities in Eastern MA without such connectivity to the jobs, services, and amenities of metro Boston. SCR therefore presents the clearest opportunity to invest in all of Southeastern MA to promote not just transportation efficiency, but also smart growth and equity.

RESOURCES:

Massachusetts Bay Transportation Authority. *Inflation Worksheet, South Coast Rail Project, Alternative 4B - Electrified Commuter Rail to South Station via Stoughton.* 2012.


United States Army Corps of Engineers. *Final Environmental Impact Statement/Final Environmental Impact Report on the South Coast Rail Project proposed by the Massachusetts Department of Transportation.* 2013.