October 29, 2009

Ms. Renee Sigel, Division Administrator
Federal Highway Administration
228 Walnut Street Room 558
Harrisburg, PA 17101-1720

Dear Ms. Sigel:

On behalf of the Pennsylvania Department of Transportation and the Pennsylvania Turnpike Commission, we are pleased to submit this supplemental information to the Phase I Application our two agencies have jointly submitted to the Federal Highway Administration for converting Pennsylvania Interstate 80 to a toll facility under the Interstate System Reconstruction and Rehabilitation Pilot Program.

The three documents accompanying this letter provide information requested by the Federal Highway Administration in recent weeks:

- Supplemental Information on the Needs and Funding Status of I-80;
- Annex A: I-80 Tolling Point Location Documentation; and
- Annex B: Financial Valuation of Proposed Rentals for Interstate 80

We are very appreciative of the continuing guidance you and FHWA's Tolling and Pricing team have provided to us, as we seek to obtain preliminary federal approval for this important state initiative. We stand ready to meet with you should you have any questions.

Sincerely,

Allen D. Biehler, P.E., Secretary
Pennsylvania Department of Transportation

Joseph G. Brimmeier, CEO
Pennsylvania Turnpike Commission

cc: Edward G. Rendell, Governor

Attachments
Supplemental Information on the Needs and Funding Status of Interstate 80 in Pennsylvania

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EXECUTIVE SUMMARY

This document provides supplemental information to Pennsylvania’s July 17, 2008 application to the Federal Highway Administration (FHWA) to toll Interstate 80 (I-80). The information provides further details on topics identified by FHWA during discussions with the Pennsylvania Department of Transportation (PennDOT) and the Pennsylvania Turnpike Commission (PTC). The Executive Summary highlights the key points of additional information concerning the I-80 project as they relate to the Interstate System Reconstruction and Rehabilitation Pilot Program (ISRRPP). Individual sections follow and provide further clarification on each topic.

The legislation authorizing the ISRRPP (Transportation Equity Act for the 21st Century [TEA-21 section 1216(b)]) allows a state to seek federal approval to toll a facility when it lacks the necessary funds to maintain or improve the facility to meet “current or future” needs. The federal legislation recognizes that the conversion of a highway to a tolled facility is a long-term commitment to meet today’s needs as well as the future needs of the facility. PennDOT and the PTC have entered into a 50-year lease agreement to meet the long-term needs of I-80 as described in this supplement. Like much of our National Interstate System, I-80 was built in the 1960’s and faces reconstruction investment costs as it approaches its 50th year of service.

Section II of this supplement contains a summary of I-80’s annual investment needs based upon the 2008 amended FHWA application, a condition assessment for I-80, a summary of statewide Interstate needs, and a summary of expected available Interstate funding. In short, the Needs and Funding assessment shows that:

- I-80 represents 24% of Pennsylvania’s non-tolled Interstate mileage and contains 11% of its Interstate bridge deck area – creating a significant current and future financial burden.

- PennDOT has prioritized investments in capital renewal of I-80 during the past 10 years. The historical annual rate of that prioritized level is $60 million – far short of the $250 million annual investment set forth in the application needed to fund current and future reconstruction and rehabilitation needs of I-80 and to meet higher expectations of toll-paying users.

- PennDOT has severe shortfalls in total available Interstate funding compared to statewide system needs. PennDOT has estimated over $1 billion per year in “targeted” needs, with approximately $500 million per year in available funding. “Targeted” needs do not include necessary long-term investments such as geometric improvements, capacity enhancements, or major interchange improvements. These necessary reconstruction costs are above and beyond the “targeted” $1 billion in identified routine maintenance/reconstruction needs.

- PennDOT must provide a greater portion of its available resources to other Interstate routes and will be unable to continue committing the same percentage of its available funds to I-80 needs.
TEA-21 authorizes the ISRRPP and requires the U.S. Department of Transportation (USDOT) Secretary, in approving an application, to determine that “the facility has a sufficient intensity of use, age, or condition to warrant the collection of tolls.” The ISRRPP authorizing legislation recognizes that use, age or condition may warrant the collection of tolls since any one of these will result in the need to reconstruct the facility now or in the future. It is noteworthy that, in the section of the TEA-21 conference report dealing with the ISRRPP, Congress specifically referenced I-80 in Pennsylvania as a segment of the Interstate System that required substantial maintenance and rehabilitation funding above available resources.1

Section III provides additional data describing current and future needs for I-80 based upon age, use and condition. This data emphasizes:

**Age/ Condition:**
- PennDOT has invested enough in surface repairs to obtain an average current IRI (International Roughness Index) of 60 for the entire facility.
- 157 miles of original pavement (40 years of age) have been overlaid for ride quality but have **not** been rebuilt, and will require full depth reconstruction.
- 90% of bridges, by deck area, are original, with an average age of 44 years.
- 63% of interchanges do not meet current geometric standards.
- Most bridges are of insufficient width to allow maintenance of two lanes of traffic per direction during construction. In order to avoid delays and minimize the risk of accidents, additional bridge width would have to be added during reconstruction.

**Use:**
- I-80 currently carries some of the highest truck volumes in Pennsylvania (approximately 10,000 trucks per day).
- I-80 serves a growing commuting pattern to and from New York City and the Pocono region – this is the section of I-80 needing significant interchange upgrades.
- I-80 is a vital commerce corridor connecting the Midwestern and New York City metropolitan markets.

**Needs:**
Based upon age, condition and use, a capital investment of $2.5 billion over the next 10 years, escalating at 4% per year thereafter is planned to adequately meet long term maintenance and reconstruction needs of the facility and to address geometric issues that toll revenues can support.

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Section IV provides a summary comparison pointing out the primary differences between a 2005 PennDOT tolling study of I-80 and the current tolling plan. The plans have very different assumptions on conversion times (nine years versus two years), initial tolling systems (cash and EZPass versus all electronic open road tolling) and differing focus of capital investment plans. Section IV details these key differences as well as other items that contribute to the differing conclusions.

Annex A: I-80 Tolling Point Location Documentation (under separate cover) provides the latest analysis of tolling locations and diversion analysis at each studied location. The current tolling locations appear most favorable based upon revenue potential, minimization of diversions and applicable site conditions. However, this analysis will continue into Phase 2 of the application process and will be updated based upon further coordination with associated planning partners, elected officials and the general public. Final locations will be established at the conclusion of the environmental documentation for the I-80 conversion.

Annex B: Financial Valuation of Proposed Rentals for Interstate 80 (under separate cover) contains a detailed financial analysis of the rents payable from I-80 tolls to PennDOT to determine if they are reasonable by market standards. The report utilizes three accepted corporate valuation methodologies: Discounted Cash Flow, Enterprise Value comparisons and Acquisition Price comparisons. The report has been prepared by Provident Capital Advisors LLC.
I. **BACKGROUND**

A. **Introduction**

The ISRRPP statute is designed to permit states to implement tolls for the purpose of reconstructing and rehabilitating Interstate highways when such roads could not otherwise be adequately maintained or functionally improved with existing resources. The program requires applicants to submit an analysis demonstrating that the facility could not be maintained or improved to meet current or future needs from the State’s apportionments and allocations, without toll revenues.

The statute provides that USDOT may select an application upon a determination by the Secretary that:

- the State is unable to reconstruct or rehabilitate the proposed toll facility using existing apportionments;
- the facility has a sufficient intensity of use, age, or condition to warrant the collection of tolls;
- the State plan for implementing tolls on the facility takes into account the interests of local, regional, and interstate travelers;
- the State plan for reconstruction or rehabilitation of the facility using toll revenues is reasonable; and
- the State has given preference to the use of a public toll agency with demonstrated capability to build, operate, and maintain a toll expressway system meeting criteria for the Interstate System.

As requested by the FHWA, this supplemental report provides additional information concerning Pennsylvania’s Interstate needs and funding; the age, use and condition of I-80; and the proposed tolling plan.

B. **History of Act 44**

In 2005, Governor Rendell commissioned an independent bi-partisan committee of government and private sector transportation experts to study Pennsylvania’s transportation needs. This committee, known as the Transportation Funding and Reform Commission, studied the Commonwealth’s highway and bridge system as well as all 73 public transit agencies. Its findings concluded that an additional funding level of $0.9 billion per year for highway and bridges and $0.76 billion per year for transit was needed to adequately maintain current systems, and $2.2 billion was needed to improve the system (in 2006 dollars). The Funding and Reform Commission recommended additional funding of $1.7 billion per year as the desired funding level.²

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The Governor in his budget address in 2007 proposed a $1.0 billion increase in transportation spending for highways and a $760 million increase for public transportation. The legislature then considered numerous funding options to meet that goal. Ultimately, the General Assembly passed Act 44 of 2007 which involved two primary funding sources: (i) increased tolls on the Pennsylvania Turnpike with significant portions of the new revenue dedicated to transit and highway (PennDOT) funding; and (ii) leasing I-80 to the Turnpike Commission, which would seek federal approval to convert it to a toll facility in order to self-finance I-80’s long term maintenance and reconstruction needs. In return for the right to collect tolls on I-80 over the 50-year term of the lease, the Turnpike Commission would operate I-80 and make annual lease payments to PennDOT, to be used for highway and bridge purposes only.

The financial estimates of the annual payments to PennDOT to be funded from Mainline Turnpike and new I-80 toll revenues were based upon a long-term, comprehensive financial model. The basis for the model was the use of identical toll rates for the Pennsylvania Turnpike and I-80 in order to provide sufficient funds for: (i) the Turnpike’s capital program and operating expenses; (ii) estimated reconstruction costs and operating expenses for I-80; and (iii) reasonable debt service estimates. Based upon this model, the legislature enacted Act 44 in July of 2007.

Act 44 established a combined payment stream from the two facilities, starting at $750 million in 2007, rising to $900 million in 2009, and thereafter increasing annually at 2.5% per year. I-80 was selected due to its length (it is the longest non-tolled Interstate route in the state), its ongoing capital renewal needs as a heavily traveled cross-state corridor, and its parallel location relative to the Pennsylvania Turnpike. By tolling I-80 at the same rate, diversion of traffic from the Turnpike to I-80 would be eliminated, thus ensuring a stable and reliable toll revenue stream.

The $750 million initial contribution in 2007 is still far less than the $1.7 billion target called for by the Transportation Funding and Reform Commission. However, based upon the projected operating and capital requirements of both the Turnpike and I-80, the legislature recognized that these funding levels were the maximum amount possible based upon reasonable toll rates. Because toll rates will increase regularly in small increments rather than through infrequent but large adjustments, payments to PennDOT will increase annually at 2.5%, thus providing some degree of inflation sensitivity. However, state policymakers acknowledge that additional steps will be required in the future to fully meet the Commonwealth’s transportation needs.

After Act 44 was signed into law by the Governor, more detailed studies were completed on I-80 to assess its capital needs, traffic projections and revenue potential. As described in this document and the initial application, many assumptions in the original model were updated. Capital investments in I-80 were substantially increased based upon a better understanding of reconstruction needs, initial conversion costs were lowered by selecting all electronic open road tolling versus less cost-effective EZ-Pass/cash options, and revenue forecasts were updated based on current traffic levels. The latest financial model, submitted by the Turnpike Commission to the Commonwealth’s Secretary of the Budget in June, 2009\(^3\), indicates that I-80 revenues can

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fund dramatically higher reinvestment in I-80 than the state Motor License Fund can, while still covering I-80 operating expenses and, together with contributions from the Turnpike, meeting prescribed Act 44 payments.

II. PENNSYLVANIA INTERSTATE NEEDS AND FUNDING STATUS

Pennsylvania’s 1,295-mile non-tolled Interstate System, like most of our nation’s Interstates, is aging and is in need of major upgrades and rebuilding. The passage of Act 44 in 2007 provides PennDOT with increased revenue ($2.05 billion through October, 2009) for both highways and transit. In addition, Act 44 and the tolling of I-80 relieve PennDOT from funding at least $80 million per year of current I-80 operating, maintenance and reconstruction costs currently borne by the state Motor License Fund.

PennDOT’s 2008 State of the Interstate Report (with updates) identifies $572 million in targeted annual roadway needs and $429 million in targeted annual bridge needs, or a total of $1.0 billion annually. Despite PennDOT’s increased prioritization of Interstate maintenance through an “Interstate MPO” process and the allocation of approximately $50 million annually in Act 44 payments to the Interstates, only approximately 50% of the targeted annual need--about $500 million/year--can be funded through existing resources.

Table 1: The Interstate Funding Gap (below), lists reconstruction needs and funding resources for Pennsylvania’s entire Interstate System, excluding I-80, which has been thoroughly evaluated and discussed in our application,. The table below reveals that a large annual funding gap exists for most of the other Interstate routes in Pennsylvania. PennDOT has dedicated a substantial portion of its limited resources to I-80 in recent years, but is now faced with the need to commit more funding to the remaining 984 miles of other tax-supported Interstates throughout the Commonwealth.

In addition to the targeted needs in the State of the Interstate Report, $750 million per year of additional improvements are desired to complete geometric improvements, add capacity to relieve congestion, and upgrade intelligent transportation systems to enhance operations and maintain security. Combining these desired improvements with the “targeted” needs results in a current total need of over $1.75 billion per year. This total need is about four times greater than the current resources, and the shortfall will increase annually with inflation. Implementing tolls on I-80 will provide a dedicated funding source for maintaining and improving the longest non-tolled Interstate route within the Commonwealth on a self-sustaining basis. Tolling I-80 will also allow for desirable improvements such as widening of bridges to accommodate two lanes of traffic in each direction during construction and completing geometric improvements to interchanges. These desirable improvements generally are deferred due to overall funding shortfalls as illustrated in Table 1.
Table 1: Interstate Funding Gap

Summary - Pennsylvania’s Additional Targeted Interstate Needs, Funding and Gap
(2008 Needs Only Excluding I-80)

<table>
<thead>
<tr>
<th>Interstate</th>
<th>Length (Miles)</th>
<th>% of System</th>
<th>IRI</th>
<th>% Needs Reconstructed</th>
<th>Mainline Deck Area (million SF)</th>
<th>% of Deck Area</th>
<th>%SD Deck Area</th>
<th>2009-2012 Interstate TIP ($ = millions)</th>
<th>Annual Needs ($ = millions)</th>
<th>Annual Funding Gap ($ = millions)</th>
</tr>
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<tbody>
<tr>
<td>81</td>
<td>233</td>
<td>18%</td>
<td>71</td>
<td>17%</td>
<td>3.0</td>
<td>11%</td>
<td>34%</td>
<td>$93</td>
<td>$133</td>
<td>$42</td>
</tr>
<tr>
<td>79</td>
<td>179</td>
<td>14%</td>
<td>53</td>
<td>4%</td>
<td>2.7</td>
<td>10%</td>
<td>25%</td>
<td>$30</td>
<td>$37</td>
<td>$29</td>
</tr>
<tr>
<td>78</td>
<td>76</td>
<td>6%</td>
<td>81</td>
<td>1%</td>
<td>1.2</td>
<td>4%</td>
<td>1%</td>
<td>$36</td>
<td>$29</td>
<td>$7</td>
</tr>
<tr>
<td>90</td>
<td>56</td>
<td>4%</td>
<td>72</td>
<td>5%</td>
<td>0.6</td>
<td>2%</td>
<td>8%</td>
<td>$7</td>
<td>$33</td>
<td>$3</td>
</tr>
<tr>
<td>84</td>
<td>55</td>
<td>4%</td>
<td>109</td>
<td>0%</td>
<td>0.6</td>
<td>2%</td>
<td>7%</td>
<td>$12</td>
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<td>$4</td>
</tr>
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<td>50</td>
<td>4%</td>
<td>70</td>
<td>12%</td>
<td>1.3</td>
<td>5%</td>
<td>10%</td>
<td>$9</td>
<td>$22</td>
<td>$12</td>
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<tr>
<td>70</td>
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<td>4%</td>
<td>65</td>
<td>35%</td>
<td>0.9</td>
<td>3%</td>
<td>27%</td>
<td>$52</td>
<td>$67</td>
<td>$14</td>
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<td>4%</td>
<td>51</td>
<td>17%</td>
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<td>$24</td>
<td>$3</td>
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<tr>
<td>180</td>
<td>29</td>
<td>2%</td>
<td>54</td>
<td>0%</td>
<td>0.4</td>
<td>1%</td>
<td>0%</td>
<td>$4</td>
<td>$23</td>
<td>$2</td>
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<tr>
<td>380</td>
<td>25</td>
<td>2%</td>
<td>84</td>
<td>10%</td>
<td>0.1</td>
<td>1%</td>
<td>9%</td>
<td>$1</td>
<td>$6</td>
<td>$1</td>
</tr>
<tr>
<td>76</td>
<td>20</td>
<td>2%</td>
<td>86</td>
<td>5%</td>
<td>1.2</td>
<td>4%</td>
<td>21%</td>
<td>$0</td>
<td>$24</td>
<td>$23</td>
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<tr>
<td>279</td>
<td>20</td>
<td>2%</td>
<td>121</td>
<td>3%</td>
<td>1.0</td>
<td>4%</td>
<td>22%</td>
<td>$14</td>
<td>$4</td>
<td>$20</td>
</tr>
<tr>
<td>476</td>
<td>19</td>
<td>1%</td>
<td>68</td>
<td>1%</td>
<td>1.5</td>
<td>5%</td>
<td>16%</td>
<td>$3</td>
<td>$3</td>
<td>$25</td>
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<tr>
<td>Others</td>
<td>78</td>
<td>6%</td>
<td>--</td>
<td>--</td>
<td>1.7</td>
<td>6%</td>
<td>14%</td>
<td>$73</td>
<td>$43</td>
<td>$57</td>
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<tr>
<td>TOTAL</td>
<td>984</td>
<td>76%</td>
<td>68</td>
<td>10%</td>
<td>24.6</td>
<td>89%</td>
<td>20%</td>
<td>$459</td>
<td>$501</td>
<td>$412</td>
</tr>
</tbody>
</table>

Act 44 calls for a fixed payment of $450 million per year from the Turnpike Commission to PennDOT commencing next fiscal year (FY2011) if I-80 is not tolled. The legislation prescribes that $250 million be deposited into the Public Transportation Assistance Fund for mass transit and $200 million be deposited into the Motor License Fund for highway and bridge programs.

Figure 1 below shows the overall funding conditions for Pennsylvania’s statewide highway and transit needs. It depicts the funding gap defined in the Transportation Funding and Reform Commission report, current sources of available and projected funds, including the $450 million from Act 44 if I-80 is not converted to a toll road. As shown, the gap is only reduced from over $1.7 billion (2010) to approximately $1.3 billion (2010) – thus still leaving a large shortfall.

The funding gap increases after next year by the drop off in the short term impact of the American Recovery and Reinvestment Act programs. While $200 million of the $450 million of Act 44 revenues under the non-tolled I-80 scenario is “new” revenue and can be used on the entire highway and bridge program, it is insufficient to even meet the basic targeted needs of the Commonwealth’s Interstate system – and that assumes that the entire amount would be dedicated to the Interstate system. Based upon state formulas for funding allocation, the $200 million would likely be used throughout the system rather than dedicated solely to the Interstate system.
Even with the recent emphasis on Interstate maintenance/rehabilitation, infusion of funds from Act 44, and a statewide focus on reducing the number of structurally deficient bridges, PennDOT’s needs far exceed available funds. Interstate roads and bridges needs, as shown in Table 1 comprise a portion of the overall statewide needs. PennDOT simply lacks sufficient resources to fund all of its system needs. The tolling of I-80 will ensure that 311 miles of Interstate highway will be self financed, freeing up Motor License Fund moneys currently spent on I-80 capital projects and maintenance for application to other highway needs.
III. AGE, CONDITION AND USE OF I-80

PennDOT has done a good job in maintaining the ride quality on I-80 with an overall IRI of 60. However, the cost to upgrade I-80 to current geometric design standards and increase capacity during construction cannot be met within existing PennDOT resources. In total, PennDOT owns 1,295 miles of Interstate highways, most of which were constructed in the 1960’s and 1970’s. I-80 is 311 miles in length or 24% of PennDOT’s Interstate system.

A. Age (See July 17, 2008 Amended Application for further details)

1. Roadway - The original roadway was built in sections between 1959 and 1970. While most of the length of I-80 has been repaved in the past, over half (54%) of the roadway itself is original and has never been rebuilt. The estimated useful life of highways is 50 to 60 years, at which point they have reached physical obsolescence and need to be rebuilt “from the ground up”. (See Figure 2 below)

2. Bridges - I-80 has 431 mainline and overhead bridges comprising a bridge deck area of nearly 3.1 million square feet. Included in the inventory of bridges are 11 overhead bridges with a vertical clearance of less than 16 feet, which is considered substandard, and four bridges with clearances of less than 15 feet, forcing oversize vehicles to divert through local roads. Approximately 90% of the bridges (as measured by deck area) are original bridges, with an average age of 44 years (1965). The remaining 10% are newer replacement bridges and have an average age of 7 years (2002).

3. Interchanges - I-80 has 59 interchanges built with the original roadway sections primarily in the 1960’s. The distance between interchanges ranges from one to 14 miles; the average is 5 miles.
B. Condition

The initial application to toll I-80, submitted to FHWA in October, 2007, contained an overview of the condition of I-80. Over the last 24 months, the PTC’s engineering team has worked closely with PennDOT to more specifically evaluate the condition of each mile of I-80. The key findings, updated to 2009, are summarized below.

1. Roadway - The Capital Plan for roadway improvements set forth in the amended application submitted in July, 2008 entails systematically reconstructing I-80 over the remainder of the 50-year lease period. Highlights of the roadway improvement program include:

   - Completely reconstructing an average of 6 lineal miles per year over the life of the lease.
   - All of the original roadway sections will be reconstructed by the end of the third decade, and the remaining roadway will be reconstructed over the final two decades.
   - Within the first decade, PTC will complete over 250 miles of reconstruction, rehabilitation, and pavement preservation work at a cost of over $1.4 billion. Over 50 miles will be reconstructed in the first decade.

Importantly, construction traffic patterns will be designed to maintain two travel lanes in each direction during peak travel periods. The construction plan involves widening bridges as they are being reconstructed, to avoid single-lane patterns during construction, which not only causes delays but is a serious safety consideration due to the high volume of heavy truck traffic.

2. Bridges – The optimal lifespan for bridges averages 75 years. Using an estimate of $650/sq.ft. for bridge replacements results in a present cost of $1.8 billion for the replacement of all I-80’s original bridges over the lease. Nearly a third of the I-80 bridges as listed in Table 2 illustrate various factors to be addressed.

The anticipated inventory of bridges with identified factors at conversion includes:

<table>
<thead>
<tr>
<th>Engineering Issue</th>
<th>Number of Bridges</th>
<th>Deck Area (Sq. Ft.)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structurally Deficient</td>
<td>15</td>
<td>134,654</td>
</tr>
<tr>
<td>Substandard Underclearance</td>
<td>11</td>
<td>81,257</td>
</tr>
<tr>
<td>Fracture-Critical</td>
<td>13</td>
<td>719,094</td>
</tr>
<tr>
<td>Weak Link</td>
<td>20</td>
<td>247,368</td>
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<tr>
<td>Functionally Obsolete</td>
<td>69</td>
<td>452,057</td>
</tr>
<tr>
<td>Total</td>
<td>128</td>
<td>1,634,430</td>
</tr>
</tbody>
</table>

* Total I-80 bridge deck area = 3.0 million sq. ft.
2.7 million sq. ft. is original construction
The highlights of the Capital Plan for bridges include:

Over the 50 year lease period, all original bridges will be replaced.

- Within the first decade, 72 bridges (26% of bridge deck area) will be replaced at a cost of approximately $725 million.
- The prioritized bridge projects in the first decade include replacing all 15 currently structurally deficient bridges, all 4 bridges with an underclearance of less than 15 feet, 11 fracture critical bridges, 19 weak link bridges, and 9 functionally obsolete bridges.
- The Susquehanna River Bridge in Columbia County will be funded and completed at an estimated cost of $72 million.

3. Interchanges - Of the 59 interchanges along I-80, 37 (63%) have geometric issues such as inadequate acceleration and deceleration lanes or turning radii. In particular, the interchanges at the eastern end of I-80 in the Pocono Mountains of Monroe County are in need of prioritized upgrading, due to the sustained traffic growth in recent years. The highlights of the first decade Capital Plan for interchanges include:

- Nine upgrades to the Monroe County interchanges at an estimated cost of over $100 million, including the completion of the Exit 308 interchange replacement.
- An additional 14 interchanges and 5 other ramp locations will be upgraded in conjunction with roadway projects at an estimated cost of over $80 million.
- Completion of the I-99/I-80 local and high speed interchanges at an estimated construction cost of $177 million is included in the plan.

4. Intelligent Transportation Systems (ITS) - PennDOT has recently been developing ITS operations plans for I-80, and has identified many opportunities to upgrade ITS along I-80. The first decade Capital Plan includes nearly $40 million for ITS upgrades that will improve motorist safety and communication, and improve the coordination with emergency service providers.

C. Use

I-80 is a heavily-traveled corridor with a high percentage of commercial vehicles. Along most of its length, trucks comprise between one-quarter and one-half of the vehicle count (approximately 10,000 trucks per day). I-80 currently carries some of the highest volumes of trucks per day of any road in the state. In 2006, there were nearly 12 million truck trips along I-80, which carried an estimated 216 million tons of freight. Approximately 60% of the freight originates and terminates outside of Pennsylvania. Much of this traffic connects New York City metropolitan markets with Midwestern markets. According to FHWA freight forecasts, it is expected that I-80 commercial traffic will more than double by 2035. I-80 from the Ohio line to I-81 will continue to be one of the largest volume truck routes in the state (see Figure 3).
Beyond the high truck volume and freight traffic, I-80 also serves a growing commuter pattern to and from the New York metropolitan area and the Pocono region. Overall current traffic volumes range from an average of 15,000 to 20,000 average daily traffic (ADT) west of I-380 to over 40,000 ADT east of I-380. This eastern section has the highest ADT on I-80 and is generally the oldest section, with a high percentage of original construction.

From a capacity standpoint, I-80 is predominately a four-lane highway in the eastern section of Pennsylvania. The four lane section extends eastward across the Delaware River Bridge and four miles into New Jersey (through the Delaware Water Gap National Recreation Area) before widening to a six lane section. Studies have been completed in the past, but no funding has been identified to address the capacity needs. All three affected transportation agencies--PennDOT, New Jersey Department of Transportation and the Delaware River Joint Toll Bridge Commission--recognize that expanding capacity at the Pennsylvania-New Jersey border must be planned and addressed cooperatively to be effective.
IV. UPDATED ANALYSIS OF THE 2005 TOLLING STUDY

In early 2005, a study was completed by PennDOT to evaluate the viability and implications of placing tolls on I-80 across Pennsylvania. Assistance was provided by PTC staff and the study built upon a 1994 feasibility study conducted by Gannett Fleming, Inc. for the PTC. The study was based on 2004 traffic data. Tolling of I-80 previously had been proposed by several Governors dating back to the 1970’s because of the historically high cost of continuing reconstruction and maintenance, and insufficient Motor License Fund resources to concurrently maintain I-80 and Pennsylvania’s other Interstates. The study noted that because PennDOT had spent an average of $46 million per year over the previous 24 years, the ride quality had improved to a level similar to some of Pennsylvania’s other Interstates.

Other key points or conclusions in the study include:

- Ten mainline toll collection plazas would be spaced across I-80 and the charges would average $0.08/mile for passenger vehicles and $0.24/mile for an 80,000 pound truck. (The proposed automobile toll rates were 36% higher than the rate per-mile then prevailing on the Mainline Turnpike.)
- Short trips using interchanges between toll plazas would remain free.
- Express electronic toll collection would be the preferred method of fare collection. However, cash lanes and/or toll collection equipment would be installed for non-EZPass users.
- Conversion costs were estimated at $665 million, which included toll collection facilities, toll plazas, maintenance facilities, and police stations.
- Approximately half of the $2.2 billion in proposed capital investment would fund capacity expansion in the eastern portion of I-80, with the balance funding limited reconstruction of other portions of I-80.
- Annual Operations and Maintenance costs were estimated to be $100 million/year.
- The tolls would be phased in across the state from west to east, with a minimum of six years needed to toll in the western section and nine years to convert the entire length of I-80 to tolls.
- A cash flow analysis over a 35 year period concluded that converting I-80 to a toll road would operate at a deficit for the first two decades, but be financially feasible over the long term. The House Appropriations Committee’s Fiscal Note estimated a 2027/28 breakeven year.
- Traffic diversions and concerns of nearby residents and truckers would create opposition.
- The benefits would include: a dedicated and new revenue source, redirection of funds from I-80 to other Interstate highways within the state, and an upgraded level of roadway design, maintenance and policing.

While the report concluded that the project ultimately would be financially self-sustaining, it recommended not pursuing conversion to tolls at that time because of the lengthy implementation process, the high cost of converting the road to a toll facility, and the distant financial break-even point.
The proposed toll conversion and operating strategy for I-80 today differs considerably from the plan set forth in the 2005 Tolling Study:

1. The anticipated toll charges would be set equal to the concurrent Turnpike Mainline toll rate. A uniform tolling policy for the Commonwealth’s two major east-west Interstates should serve to minimize diversion, help equalize wear and tear on the respective highways and be more equitable than differential rates.

2. An incentive program will be available to passenger vehicles that will allow cars equipped with transponders to travel through one tolling point free. This means trips of up to an average of 50 miles along I-80 may avoid paying tolls. The PTC’s traffic consultants estimate that 70% of passenger cars could travel toll-free.

3. The tolling policy and the proposed location of tolling gantries significantly reduces traffic diversion and avoids tolling many local trips for work, school, etc.

4. The PTC plans to install a state-of-the-art All Electronic Open Road Tolling (AEORT) program using the latest toll collection technology. AEORT involves 100% automatic collection of tolls through “reading” of vehicles at highway speed. AEORT has the advantages over the 2005 proposal of:
   • expediting the implementation of tolls along the entire length of I-80 from nine years to two years;
   • reducing the required investment in collection plazas and gates and maintenance facilities by approximately $450 million (67%);
   • saving on annual operating costs because toll collectors are not needed; and
   • minimizing environmental impacts associated with constructing multi-lane toll plazas, as contemplated in the 2005 study;
   • The estimated conversion costs, not including capital projects, are now estimated at less than 20% of the $665 million estimated in the 2005 Study.

5. Although the PTC’s first decade Capital Plan of approximately $2.5 billion is nearly the same amount as the $2.2 billion plan in the 2005 Study, the focus is considerably different:
   • In the 2005 Study Capital Plan, nearly 50% of the expenditures were targeted for the expansion of an 18-mile segment bordering New Jersey.
   • While the ultimate need to widen this section is likely, the PTC’s first decade Capital Plan now focuses on asset management including:
     o the systematic reconstruction of I-80 roadway “from the ground up”;
     o a heavy emphasis on bridges including prioritizing the replacement of 11 large fracture critical bridges;
     o enhanced safety and operations through ITS; and
     o the completion of critical projects such as the I-99/I-80 Interchange and the replacement of the 2,086-foot bridge over the Susquehanna River in Columbia County.
Since Pennsylvania has been advised by FHWA that the ISRRPP is the most suitable program under which to seek authorization for converting I-80 to a toll facility, investments will be centered on reconstruction/rehabilitation and safety-related projects rather than capacity expansion.

6. Considering the expedited schedule and the work completed, the PTC anticipates the ability to collect tolls corridor-wide within two years of Phase 1 approval from FHWA as compared to the six-to-nine year conversion time in the 2005 study. This change greatly benefits the performance of the financial model, allowing I-80 to generate more net cash flow in the early year for operating and capital costs.

7. State legislation approving the tolling of I-80 already has been enacted with Act 44.

Traffic diversions, environmental impacts, economic impacts and public concerns are of great concern to the PTC and PennDOT. All of these issues will continue to be analyzed and various actions or remediation will be considered. The incentive program for passenger vehicles and light trucks, coupled with the intensive location studies designed to minimize ease of diversions has greatly reduced local trip diversion rates - a key concern noted in the 2005 study’s conclusion not to toll.

V. CONCLUSION

While PennDOT has done a good job in maintaining the overall conditions of I-80, its most recent State of the Interstate Report acknowledges that only 50% of the targeted Interstate needs statewide are programmed and that there will be a need for reconstruction. Tolling I-80 removes approximately one-quarter of Pennsylvania's Interstate System from PennDOT's traditional financial responsibilities, thus allowing those resources to be used on other Interstate needs -- although still not leaving enough total Interstate funding to meet all identified Interstate needs. All of I-80 (311 miles) will be self-financed by tolls, thus ensuring all of its long-term reconstruction needs will be met.

The ISRRPP was enacted as part of TEA-21 as an experimental pilot program to test a new federal policy initiative. However, in the more than 11 years since its enactment, no projects have advanced. Pennsylvania is uniquely positioned to demonstrate a “proof of concept” for federal policymakers through the conversion of I-80 to a tolled facility. Over the last two years, a number of important milestones have been achieved:

- The General Assembly enacted the necessary enabling legislation through passage of Act 44.
- PennDOT and PTC have entered into a 50-year lease agreement providing for the PTC’s operation, maintenance and improvement of this vital cross-state highway.
- A comprehensive and robust reconstruction plan has been prepared that will rebuild the entire 311-mile highway over the course of the lease, and enhance safety and reliability.
• Detailed trip pattern and diversion studies have been completed by PTC’s traffic and revenue consultants.
• A tolling plan has been designed that will generate sufficient funds to undertake the needed improvements and pay operating costs, while allowing an estimated 70% of passenger vehicle trips to travel reasonable distances without charge.
• Dozens of public meetings have been held with residents, businesses, planning organizations and other interested groups, along the I-80 Corridor and throughout the Commonwealth.

This report and our previous submissions to FHWA document in considerable detail the age, use and condition of I-80, and the competing demands on limited state Motor License Fund resources that necessitate the conversion to a toll facility. Annex A to this report describes the considerations used to identify tentative locations for nine electronic gantries along I-80. Annex B contains a detailed analysis prepared by an independent financial expert demonstrating that the rents being paid to PennDOT with I-80 toll revenues are within market levels for other toll roads sold or leased under long-term concessions in recent years.

In short, Pennsylvania has undertaken considerable efforts over the last two years to meet the statutory requirements of the ISRRPP. We believe the I-80 toll conversion project satisfies the threshold requirements for Phase 1 provisional approval set forth in FHWA’s guidelines. We hope to obtain FHWA concurrence in the near future, which would allow Pennsylvania to proceed with the important environmental assessment required for Phase 2 approval.
Annex A: I-80 Tolling Point Location Documentation

The purpose of this documentation is to provide a status report on the proposed tolling locations. At this time, those tolling locations that appear most favorable have been identified; however, additional studies and public outreach needs to be conducted prior to identifying the selected tolling locations.

The tolling system is proposed to be an all electronic system in which tolling points are located at regularly spaced intervals along I-80 and only motorists passing through these tolling points pay a toll. This system is different from the current toll collection method in use on the Turnpike mainline which requires payment at all exit points. In the proposed system, tolling points are not present between every interchange, thus allowing many local trips to be untolled.

**Tolling Point Configuration**

Initially, the configurations of the tolling points were envisioned to be similar to the traditional toll barriers currently seen on the mainline Turnpike; where both cash and electronic payment is accepted. However, construction of a traditional toll barrier would have required expansion of the roadway footprint to accommodate the several extra lanes needed in order to process the cash and E-ZPass transactions. In order to eliminate the need for a larger footprint and to avoid right-of-way impacts the state-of-the-art technology called All Electronic Open Road Tolling (AEORT) was identified as the preferred method for toll collection. This method of toll collection has numerous benefits when compared to a traditional toll barrier configuration. This configuration would be much less intrusive than the traditional toll barrier. Vehicles pass under the “tolling gantry” at the posted speed and vehicles equipped with transponders are electronically tolled and vehicles without transponders are video tolled. Video tolled vehicles have an image of their license plate captured, the image is processed to identify the vehicle owner, and then an invoice is sent to the vehicle owner for the toll due. AEORT provides the ability for the motorist to pay the toll without having to stop or slow down to process the transaction and allows the PTC to collect tolls electronically, eliminating the need for cash transactions. AEORT offers several benefits including:

- Smaller roadway footprint
- No transaction delays
- No queuing or traffic delays
- Reduced vehicle emissions
- Increased fuel efficiency
- Improved safety
- Lower construction costs
- Lower operating costs
Proposed Toll Rate Structure and Business Rules

For equity purposes, the toll rates structure for I-80 will closely approximate those on the existing Turnpike. Toll rates for larger vehicles will be based on the number of axles. Each additional axle (beyond the first two) will be assessed at the two axle passenger car rate. Due to the added expense of processing video transactions, an additional fee would be added to each video transaction to cover those costs.

To further encourage continued use of I-80, toll incentive programs will be offered to both commercial vehicle accounts and to two axle passenger vehicles with transponders. For commercial vehicles, the same volume discount program that is offered on the existing Turnpike facilities will also be offered on I-80. For two axle passenger vehicles with transponders, a new incentive program will be introduced to the I-80 tolling system. Two axle passenger vehicles equipped with electronic transponders would not be assessed a toll until passing through the second tolling zone. In the event that only one zone is passed through, then no toll would be assessed for that trip. This incentive program would be applicable to each trip on I-80. It is estimated that this incentive program will result in over 70 percent of passenger vehicles on I-80 not having to pay a toll and in turn will greatly reduce toll diversions onto local roads.

Tolling Zones

Within Pennsylvania, I-80 is a 311-mile, four-lane divided highway and includes 59 interchanges. With nearly 311-miles of roadway, multiple locations for tolling points were possible. To assist in determining the location of the tolling points, tolling zones were first established. As Act 44 allowed up to 10 tolling points, the I-80 corridor was divided into 10 tolling zones; Sections A-J. These tolling zones were located to capture as many regional trips as possible, while minimizing both tolling of local trips and toll diversion.

In the process of reviewing and analyzing the 10 tolling zones, it was noted that toll zone D, which was in the Clearfield area, was redundant and simply captured regional movements that were being captured at either tolling zones C or E. As such, tolling zone D was removed, resulting in a total of nine tolling zones. Figure 1 identifies the tolling zones.
Tolling Points

Within each tolling zone, one tolling point would be constructed to collect tolls from motorists traveling both east and west. To determine where locating tolling points were feasible, the areas between each of the interchanges within that zone were reviewed for several factors including roadway geometry, propensity for traffic diversion, regional traffic and spacing between tolling points. Based on this review, two to three areas within each tolling zone were identified as potential locations for a tolling point. The yellow highlighted sections in Figure 2 identify these locations.

Figure 1: Toll Zone Locations
The factors for determining the feasibility of tolling point locations as stated above are described here in more detail:

- **Roadway Geometry** - The roadway geometry was examined to assure that there was adequate spacing between interchanges and that the installation of a tolling point and the accompanying advanced signing would not compromise the operations of the roadway. Interchanges introduce decision points to motorists (i.e. merging, diverging, lane changing, etc.); placing a tolling point close to the interchange could compromise the roadway operations and overload drivers with information (particularly with the toll signing overlapping with the interchange signing). To avoid compromising the interchange operations, it was desired not to have a tolling point within one mile after an interchange or within two miles before an interchange.

- **Traffic Diversions** - It is understood that any tolling point would experience some amount of traffic diverting to avoid the toll. However, the locations dismissed for the reason of traffic diversion would experience a greater degree of diversion as compared to the areas retained for further study and/or the diverted traffic would significantly impact the surrounding communities. Locations where attractive alternative routes to I-80 were present were avoided to minimize the loss of revenue and the impacts to those alternative routes and/or communities.
- Regional Traffic - As with establishing the tolling zones, the primary goal when considering the location of the tolling points was to capture as many regional trips as possible.

- Spacing between Tolling Points - As noted above, the goal is to capture regional traffic while minimizing the impact to local trips. One way to assure that goal is achieved is to have tolling points regularly spaced along the roadway. As the I-80 corridor is approximately 311 miles long, a spacing of roughly 35 miles between each tolling point was desired. If the tolling points were located too close together, the likelihood of non-regional trips (i.e. local users) being tolled increases which leads to increased traffic diversion.

The reasoning for dismissing locations within the tolling zones (the blue areas of I-80 on Figure 2) are briefly noted below. The range of the mileposts shown represents the areas between the interchanges.

- **Zone A: Milepost 0 to 29**
  - Ohio State Line (MP 0) to MP 4: *Retained for further study.*
  - MP 4 to MP 15: *Retained for further study.*
  - MP 15 to MP 19: Dismissed due to traffic diversion. US 19, US 62, I-79, PA 58 and several other roadways in the area offer motorists alternatives around a potential tolling point and to their destination. With utilization of these routes, traffic patterns in and around the Mercer area would be altered.
  - MP 19 to MP 24 and MP 24 to MP 29: Dismissed due to regional traffic patterns. As the tolling point would be east of I-79, the major movements using I-80 between I-79 and the Ohio border would not be captured.

- **Zone B: Milepost 29 to 70**
  - MP 29 to MP 35 and MP 35 to MP 42: Dismissed due to traffic diversion. PA 208 directly parallels I-80 offering an easy bypass around any potential tolling point on I-80.
  - MP 42 to MP 45: *Retained for further study.*
  - MP 45 to MP 53: Dismissed due to roadway geometry and traffic diversion. Sections of I-80 in this area have sharp horizontal curves which limit the sight distance and the tangent areas needed for the advanced signing and gantry installation. Traffic diversion was a concern as motorists could utilize PA 478, PA 38, PA 208, PA 338 and SR 2007 (Canoe Ripple Road) as a diversion route to avoid a toll on I-80 and introduce significantly increased traffic volumes in the town of Knox.
  - MP 53 to MP 60: *Retained for further study.*
  - MP 60 and MP 62 and MP 62 to MP 64: Dismissed due to roadway geometry. The distance between interchanges in both areas is approximately two miles.
  - MP 64 to MP 70: Dismissed due to traffic diversion. US 322 could be readily utilized to avoid a potential tolling point in this area.
• **Zone C: Milepost 70 to 111**
  - MP 70 to MP 73: Dismissed due to roadway geometry and traffic diversion. The distance between interchanges in this area is approximately 3 miles. Also US 322 provides a direct parallel alternative to I-80 thus creating an increased potential of traffic diverting.
  - MP 73 to MP 78: Dismissed due to traffic diversion. An easy and direct parallel alternative route is provided via US 322.
  - MP 78 to MP 81: Dismissed due to roadway geometry and traffic diversion. The distance between interchanges in this area is approximately 3 miles. Traffic diversion was a concern as motorists could utilize US 322 as a diversion route to avoid a toll on I-80 and introduce a significant increase in traffic volumes to the town of Brookville.
  - MP 81 to MP 86: Dismissed due to traffic diversion. US 322 provides an easy and direct parallel alternative for motorists to divert to/from I-80.
  - MP 86 to MP 90: *Retained for further study.*
  - MP 90 to MP 97: *Retained for further study.*
  - MP 97 to MP 101: Dismissed due to traffic diversion. Traffic diversion was a concern and motorists could utilize US 219 and PA 255 to avoid a toll on I-80 in this area. This diversion would also introduce a significant increase in traffic volumes in the urban area of Dubois.
  - MP 101 to MP 111: *Retained for further study.*

• **Zone E: Milepost 111 to 147**
  - MP 111 to MP 120: Dismissed due to traffic diversion and spacing between the tolling points. US 322 provides an easy and direct diversion route. This diversion would also introduce a significant increase in traffic volume in the town of Clearfield. The spacing between the tolling points was a concern because if the third option in zone C (MP 101 to MP 111) was selected the spacing between the tolling points would be approximately 10 miles.
  - MP 120 to MP 123: Dismissed due to roadway geometry, traffic diversion and spacing between the tolling points. The distance between interchanges in this area is approximately three miles. Also, US 322 provides an easy and direct alternative to I-80 making it an attractive diversion route. Finally the spacing between the tolling points was a concern because if the third option in zone C (MP 101 to MP 111) was selected, the spacing between the tolling points would be approximately 15 miles.
  - MP 123 to MP 133: *Retained for further study.*
  - MP 133 to MP 147: *Retained for further study.*

• **Zone F: Milepost 147 to 185**
  - MP 147 to MP 158: Dismissed due to traffic diversion and spacing between the tolling points. PA 144 provides an attractive diversion route for motorists to avoid a potential tolling location on I-80. This diversion would also introduce an increase in traffic volume in the town of Milesburg. The spacing between the tolling points was a concern because if either of the tolling points in zone E were selected the space between the tolling points would be about 10 to 20 miles.
  - MP 158 to MP 161: Dismissed due to roadway geometry, traffic diversion and spacing between the tolling points. The distance between interchanges in this area is
approximately three miles. Traffic diversion would be anticipated in the area, particularly on Alternate US 220, PA 150, PA 550 and I-99. Utilization of these diversion routes would introduce additional traffic to areas in and around Milesburg and Bellefonte. Also, the spacing between the tolling points was a concern because if the second option in zone E (MP 133 to MP 147) was selected the spacing between the tolling points would be approximately 20 miles.

- MP 161 to MP 173: Retained for further study.
- MP 173 to MP 178: Retained for further study.
- MP 178 and MP 185: Dismissed due to traffic diversion and spacing between tolling points. Close parallel diversion routes are present north and south of I-80 via PA 477 and PA 880, respectively. The spacing between the tolling points was a concern because if either of the tolling points in zone G were selected the space between the tolling points would be about 10 to 20 miles.

- Zone G: Milepost 185 to 215
  - MP 185 to MP 192: Dismissed due to traffic diversion and spacing between the tolling points. PA 880 provides an attractive diversion route for motorists to utilize to avoid paying a toll. Also, the spacing between the tolling points was a concern because if either of the tolling points in zone F were selected the space between the tolling points would be about 10 to 20 miles.
  - MP 192 to MP 199: Retained for further study.
  - MP 199 to MP 210: Retained for further study.
  - MP 210 to MP 212: Dismissed due to roadway geometry, traffic diversion and spacing between the tolling points. The distance between interchanges in this area is approximately two miles. Also, traffic diversion was a concern as there is a high diversion potential onto the local bridge crossings in Watsontown and Milton. Finally, the spacing between the tolling points was a concern because if the first option in zone H (MP 215 to MP 224) was selected the spacing between the tolling points would be approximately 10 miles.
  - MP 212 to MP 215: Dismissed due to roadway geometry, traffic diversion and spacing between the tolling points. The distance between interchanges in this area is approximately three miles. Traffic diversion was a concern as an easy diversion route is present via PA 254 and PA 147. Also traffic volume increases would occur at the river crossing in Milton. In addition, the spacing between the tolling points was a concern because if the first option in zone H (MP 215 to MP 224) was selected the spacing between the tolling points would be approximately 10 miles.

- Zone H: Milepost 215 to 256
  - MP 215 to MP 224: Retained for further study.
  - MP 224 to MP 232 and MP 232 to MP 236: Dismissed due to traffic diversion. US 11 is an attractive diversion route to motorists. Utilization of this diversion route would introduce increased traffic volume to the cities of Danville and Bloomsburg.
  - MP 236 to MP 241: Retained for further study.
  - MP 241 to MP 242: Dismissed due to roadway geometry and traffic diversion. The distance between interchanges in this area is approximately one mile. An attractive
A diversion route is present north of I-80 and increased traffic volume would be expected on the local bridge crossing and in Mifflinville.

- MP 242 to MP 256: Retained for further study.

• Zone I: Milepost 256 to 277
  - MP 256 to MP 260: Dismissed due to traffic diversion, regional traffic patterns and spacing between the tolling points. PA 93 and I-81 create an attractive diversion route around a potential tolling point in this area. In addition, motorists traveling eastbound on I-80 to I-81 southbound and the reverse (I-81 northbound to I-80 westbound) could avoid the tolling point by utilizing PA 93. Also placing a tolling point in this area, which is immediately west of I-81 would capture traffic patterns similar to those in zone H. Also the spacing between the tolling points was a concern because if either of the tolling points in zone H is selected the space between the tolling points would be about 10 to 20 miles.
  - MP 260 to MP 262: Dismissed due to roadway geometry, traffic diversion and spacing between the tolling points. The distance between interchanges in this area is approximately two miles. PA 309 and I-81 create an attractive route around a potential tolling point in this area. Also motorists traveling westbound on I-80 to I-81 northbound and the reverse (I-81 southbound to I-80 eastbound) could avoid the tolling point by utilizing PA 309. Finally, the spacing between the tolling points was noted as a concern because if either of the tolling points is selected in zone H, the space between the tolling points would be about 10 to 20 miles.
  - MP 262 to MP 273: Retained for further study.
  - MP 273 to MP 274: Dismissed due to roadway geometry and traffic diversion. The distance between interchanges in this area is approximately one mile. Also, an attractive diversion route is present north of I-80 and increased traffic volume would be expected in the town of White Haven and on the local river crossing.
  - MP 274 to MP 277: Retained for further study.

• Zone J: Milepost 277 to 311
  - MP 277 to MP 284: Dismissed due to traffic diversion, regional traffic patterns and spacing between tolling points. North of I-80, PA 940 offers an easy, short, and attractive diversion route. As the tolling point would be west of I-380, the major movements between I-380 and New Jersey would not be captured. Also, the spacing between the tolling points was a concern because if either option in zone I was selected the spacing between the tolling points would be approximately 5 to 10 miles.
  - MP 284 to MP 293: Dismissed due to regional traffic patterns and spacing between tolling points. As the tolling point would be west of I-380, the major movements between I-380 and New Jersey would not be captured. The spacing between the tolling points was noted as a concern as the distance between a tolling point in this location and to either of the options in zone I would be approximately 10 to 20 miles.
  - MP 293 to MP 298: Retained for further study.
  - MP 298 to MP 299, MP 299 to MP 302, MP 302 to MP 303, MP 303 to MP 304, MP 304 to MP 305, MP 305 to MP 306, MP 306 to MP 307, MP 307 to MP 308, MP 308 to MP 309, and MP 309 to MP 310: All of these areas were dismissed due to roadway geometry. For each area the distance between the interchanges is
approximately one to three miles. In addition, MP 298 to MP 299, MP 299 to MP 302, and MP 302 to MP 303, were dismissed due to traffic diversions onto PA 611. MP 305 to MP 306 and MP 306 to MP 307 were also dismissed due to traffic diversion on Business US 209. Utilization of Business US 209 would also impact the traffic patterns in and around the Stroudsburg area.

- MP 310 to New Jersey State Line (MP 311): Retained for further study.

Tolling Points - Retained for Further Study

As explained above, the areas between the interchanges within each tolling zone were reviewed to determine if locating a tolling point in the area was feasible. Based on this review, two to three areas within each tolling zone were identified as potential locations for a tolling point (the yellow areas of I-80 in Figure 2). The range of the mileposts shown represents the areas between the interchanges.

Currently, final tolling points have not been selected; however, in most cases one location appears more favorable at this time. Factors in determining the preferred locations are briefly noted below. Please note, that it is understood that any tolling point would experience some amount of traffic diverting to avoid the toll. However, the locations retained for further study have a smaller degree of diversion as compared to the areas that were dismissed for the reason of traffic diversion.

- **Toll Location A – Figure 3**
  - A1 - Ohio State Line (MP 0) to MP 4 (Most Favorable at this time): This area is preferred as fewer local diversions are anticipated and regional traffic into and out of Ohio can be captured. Concern with this area was noted in the eastbound direction with having the tolling point and the necessary tolling signage placed prior to the advanced signing for the Exit 4 interchange.
  - A2 - MP 4 to MP 15: This area also offers the benefits of capturing regional traffic into and out of Ohio, but due to its location it would not capture a portion of traffic utilizing PA 60. Placing a tolling point in this area would generate a significantly greater amount of diverted traffic as compared to MP 0 to MP 4 (A1). Several different diversion routes including PA 318, US 62 and US 19 would be anticipated to be utilized and traffic patterns to the towns of Mercer and Sharon would be significantly altered.

- **Toll Location B – Figure 4**
  - B1 - MP 42 to MP 45: Similar to the areas in zone B that were dismissed west of this area (MP 20 to MP 35 and MP 35 to MP 42), PA 208 also provides a relatively easy diversion around a potential tolling point. However, this location was retained for further study as it provides a more ideal spacing between the tolling points in zone A. When compared to the area between MP 52 to MP 60 (B2), this option has a significantly greater amount of diverted traffic. Traffic volume increases would be seen in the town of Emlenton and on the local river crossing in the area. Concern was also noted with the roadway geometry as the spacing between the interchanges is approximately three miles. This limited area would require additional design and
coordination to assure the interchange operations are not compromised by the tolling point.

- **B2 - MP 53 to MP 60 (Most Favorable at this time):** A tolling point in this area is preferred as the diversion route is longer distance and therefore a lower estimate of diverted traffic is anticipated when compared to other areas.

- **Toll Location C – Figure 5**
  - **C1 - MP 86 to MP 90 and C2 - MP 90 to MP 97:** Tolling points between MP 86 to MP 90 (C1) and MP 90 to MP 97 (C2) were further reviewed as both these areas do not have the presence of an adjacent diversion route; west of these areas US 322 parallels I-80. The diversion routes that are in the area are slightly longer and anticipated to attract less traffic than US 322. C1 and C2 have similar ranges of diversion, both of which are greater than the diversion for the tolling point in the area of MP 101 to 111 (C3), which is approximately 500 vehicles a day.
  - **C3 - MP 101 to MP 111 (Most Favorable at this time):** The roadways surrounding the area between MP 101 and MP 111 (C3) do not provide very attractive diversion routes to motorist. Travel to avoid a tolling point would require more distance and greater time. As such, anticipated diversion in this area is less than compared to area between MP 86 to MP 90 (C1) and MP 90 to MP 97 (C2) and therefore is the preferred location.

- **Toll Location E – Figure 6**
  - **E1 - MP 123 to MP 133:** West of this area from MP 111 to MP 123, US 322 travels adjacent to I-80 thus allowing the roadway to serve as a parallel diversion route. As MP 123 to 133 (E1) does not have US 322 paralleling the entire area, this section was further reviewed for a tolling point. Traffic diverting from this area would likely utilize PA 970, US 322, SR 2030 (Bigler Cutoff Road) and PA 53 to loop around the tolling point. When compared to the anticipated diversion for the tolling point in the area between MP 133 to MP 147 (E2), this area has a significantly greater amount of diverted traffic.
  - **E2 - MP 133 to MP 147 (Most Favorable at this time):** As this area has a significantly less amount of diverted traffic as compared to the area between MP 123 to MP 133 (E1), this area has been identified as the preferred location for the tolling point in zone E.

- **Toll Location F – Figure 7**
  - **F1 - MP 161 to MP 173:** For areas west of this location (from MP 147 to MP 161) the spacing between the tolling points was a concern. This area was retained for further study as it provides approximately 25 to 40 miles between tolling points. However, placing a tolling point in this area would generate a significantly greater amount of diverted traffic as compared to the area between MP 173 to MP 178 (F2). PA 64 creates a fast and easy bypass around a potential tolling point and PA 26 provides an alternative route for motorists destined to the Lock Haven area.
  - **F2 - MP 173 to MP 178 (Most Favorable at this time):** A tolling point is preferred in this area as adequate spacing is provided between tolling points in zone E and G and
diversions are minimized. The roadways in this area that would be utilized to bypass a tolling point are longer in distance and would require additional travel time.

- **Toll Location G – Figure 8**
  - G1 - MP 192 to MP 199 (Most Favorable at this time): This area offers a very limited number of roadways that could be utilized as a diversion route. T-349 (Tea Springs Road) and SR 1010 (Sugar Valley Road) are really the only roadways that could provide a connection between MP 192 and MP 199. However, sections of the roadways are narrow in width, weight restricted and unpaved. Due to the limiting conditions of the roadways, the route is not an attractive diversion route and as such the volume of diverted traffic is anticipated to be low.
  - G2 - MP 199 to MP 210: Placing a tolling point in this area would generate a significantly greater amount of diverted traffic as compared to the area between MP 192 to MP 199 (G1). Diversion would be anticipated at a local level with motorists utilizing SR 1010 (White Deer Pike) to travel around the tolling point. Also some motorists to/from the State College area would adjust their travel patterns to utilize PA 45. Concern was noted with the relative close proximity of this area with the first potential tolling point in zone H (MP 215 to 224). If this tolling point was selected, the space between the tolling points would be about 10 to 20 miles.

- **Toll Location H – Figure 9**
  - H1 - MP 215 to MP 224: To avoid a tolling point in this area, motorists could utilize several diversion routes including PA 642, PA 45, PA 254 and PA 54. With several options for diversion, the overall amount of diverted traffic is slightly higher than the area from MP 242 to MP 256 (H3). When compared to the area from MP 236 to MP 241 (H2) the overall diversion volume is slightly less; however the amount of diverted commercial vehicle traffic is nearly doubled. In addition to the traffic diversions, the spacing between the tolling points were noted as a concern because if the second option in zone G, MP 199 to MP 210 (G2), was selected the spacing between the tolling points would be approximately 10 to 20 miles.
  - H2 - MP 236 to MP 241: Similar to the areas in zone H that were dismissed prior to this area, MP 224 to MP 232 and MP 232 to MP 236, US 11 also provides a relatively easy diversion route around a potential tolling point. However, this location was retained for further study as its diversion route is slightly less direct than the ones in the other areas; utilization of PA 487 and travel through Bloomsburg is required. Even though the diversion route is less direct when compared to the other dismissed areas, the diversion route is more attractive when compared to the other areas retained for further study. In addition to a higher diversion volume, significant change would be expected in the travel patterns accessing Bloomsburg and utilizing US 11.
  - H3 - MP 242 to MP 256 (Most Favorable at this time): A tolling point in this area is preferred as the estimated amount of diverted traffic is anticipated to be less when compared to other sections.

- **Toll Location I – Figure 10**
  - I1 - MP 262 to MP 273 (Most Favorable at this time): This area of zone I is anticipated to have significantly less diverted traffic as compared to MP 274 to MP
The diversion routes in this area are longer in length and will require additional travel time. As such, this area has been identified as the preferred tolling location. It was noted that this tolling point only provides about 20 miles between this tolling point and the preferred tolling point in zone H. However, based on regional travel patterns and the I-81 connection between the two zones, the overriding goal of capturing regional traffic is still met.

- **I2 - MP 274 to MP 277**: PA 940 is an attractive diversion route for motorists wanting to loop around I-80 and avoid a tolling point in this area. In addition, PA 940 connects with I-476 which also allows traffic to/from I-476 to easily divert and avoid the tolling point. As such, a greater amount of diversion is expected in this area as compared to the area between MP 262 to MP 273 (I1). Concern was also noted with the roadway geometry as the spacing between the interchanges is approximately three miles. This limited area would require additional design and coordination to assure the interchange operations are not compromised by the tolling point.

- **Toll Location J – Figure 11**
  - **J1 - MP 293 to MP 298**: This area offers the benefit of capturing regional traffic into and out of New Jersey and attempts to capture traffic traveling to/from I-380. However, due to its location several different diversion routes would be anticipated to be utilized including PA 115, PA 715, PA 611, PA 191, PA 940 and I-380. With several different routes available, diversion is anticipated to be significantly higher in this area compared to the area between MP 310 to MP 311 (J2).
  - **J2 - MP 310 to NJ State Line (MP 311)** (Most Favorable at this time): The tolling point for this area is proposed to be placed just west of the Delaware Water Gap Toll Bridge which is owned and maintained by the Delaware River Joint Toll Bridge Commission (DRJTBC). Currently the DRJTBC collects a one-way toll in the westbound direction at this river crossing. By placing the tolling point in this area, not only is the regional traffic into and out of New Jersey captured but the level of diverted traffic is anticipated to be less than that of the area between MP 293 to MP 298 (J1). The roadways surrounding this area are not attractive diversion routes as they are more circuitous, require additional travel time and in some cases are restricted (width restriction on PA 611). Also, the nearest river crossing which is located south of I-80 between Portland, PA and Columbia, NJ is also a tolled crossing. Concern with this area was noted with regards to DRJTBC coordination and signing conflicts between the PTC tolling point and the advanced signage for interchanges and the signage between the DRJTBC’s tolling point. As studies progress, combining the toll collection efforts of the DRJTBC and the PTC will be pursued in order to allow motorists to pass through only one tolling point.
Annex B:
Financial Valuation of Proposed Rentals for Interstate 80:
Analysis and Conclusions

October 29, 2009

Provident Capital Advisors LLC
Baton Rouge, Louisiana
Mr. Barry Schoch  
McCormick Taylor, Inc.  
5 Capitol Drive  
Harrisburg, PA  17110  

October 29, 2009  

Dear Mr. Schoch:  

In July, 2009, Provident Capital Advisors was engaged by McCormick Taylor to prepare a market valuation of the proposed lease rentals payable to the Pennsylvania Department of Transportation (PennDOT) from Interstate 80 (I-80) toll revenues pursuant to the lease authorized under Pennsylvania’s Act 44 of 2007. The research and analysis was requested in connection with the joint application PennDOT and the Pennsylvania Turnpike Commission to the Federal Highway Administration (FHWA) for approval to convert I-80 to a toll facility under the Interstate System Reconstruction and Rehabilitation Pilot Program.  

The first part of our work involved describing our proposed methodology and presenting our credentials for performing the study. PennDOT and the Turnpike Commission shared that report with FHWA in September, 2009. In October, 2009, FHWA indicated its general concurrence with the proposed methodology.  

This report constitutes the second part of our engagement, in which we present our financial analysis following the methodology concurred with by FHWA.  

While this report is intended to be self-explanatory, we would be happy to meet with FHWA, PennDOT and the Turnpike Commission to discuss any questions concerning our findings and conclusions.  

Yours truly,  

Patrick R. Mooney, CFA  
Managing Director
Financial Valuation of Proposed Rentals for Interstate 80: Analysis and Conclusions

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Provident Capital Advisors LLC (Provident) has prepared a financial valuation of the proposed annual rents payable from Interstate 80 (I-80) tolls under the Act 44 lease agreement between the Pennsylvania Department of Transportation (PennDOT) and the Pennsylvania Turnpike Commission (PTC). The study was commissioned by PTC’s project manager for the toll conversion, McCormick Taylor, Inc., pursuant to discussions with the Federal Highway Administration (FHWA) following its determination as reflected in its September 11, 2008 memorandum that the application by the PTC and PennDOT to convert I-80 to a tolled facility lacked sufficient evidence that the projected lease payments bore a rational relationship to market levels. Specifically, the Interstate System Reconstruction and Rehabilitation Pilot Program (ISRRPP) under which Pennsylvania is applying limits tolls to valid operating costs, debt service and a reasonable return to private investors. The FHWA confirmed in its September 11, 2008 memo that it considers rent to be an operating cost for purposes of the ISRRPP. However, such rents cannot exceed reasonable (market) levels to be considered a valid and eligible use of toll revenues under the ISRRPP.

Provident performed a market valuation of the projected lease payments from I-80 tolls (Rent), as reflected in the PTC’s latest long-term financial plan. In our opinion, Rent is analogous to the upfront concession fees or acquisition prices paid by private concessionaires for toll roads such as Chicago Skyway, Indiana Toll Road, Toronto 407 ETR and Dulles Greenway. For purposes of the analysis, Rent does not include the value of the substantial capital outlays proposed in the application to reconstruct and rehabilitate I-80 itself, which costs are expressly authorized under the ISRRPP.

Provident analyzed the level of I-80 Rent using three accepted corporate valuation methods:

1. **Discounted Cash Flow (DCF):** The projected net cash flows from I-80 were discounted at the project’s weighted average cost of capital to determine the value to an investor of leasing the road through 2057 (the term of the I-80 lease).
2. Market Comparables (Enterprise Value): The market capitalizations of four North American toll roads were compared to I-80’s value, relative to each project’s earnings before interest, taxes, depreciation and amortization (EBITDA), a widely-accepted financial metric.

3. Market Comparables (Acquisition Prices). The transaction values for changes in ownership of eight North American toll roads were compared to I-80’s value, in relation to each project’s EBITDA.

Using the revenue and expense assumptions in the current financial plan for I-80, our analysis yielded the following findings:

Provident performed a discounted cash flow analysis and determined that a private concessionaire would be willing to pay $5,110 million for a lease extending through 2057, before taking into account the scheduled Rent. The present value of the Rent was determined to be $4,970 million (Implied Value of Rent), or 97 percent of I-80’s pre-rent market valuation. That is, the Rent on I-80, in present value terms, is slightly lower than the value of I-80’s cash flows to a private investor. On this basis, one can conclude that the Rent is within market ranges.

It is to be expected that the Implied Value of Rent will be close to the market value of I-80 (within 3%), since the PTC’s long-range financial plan sets tolls at the lowest level sufficient to fund operations (including payment of Rent), pay debt service and meet capital spending requirements. The discounted cash flow model calculates the amount that a private concessionaire likely would be willing to pay. But because this method ultimately is a financial estimate, it is useful to examine market comparables to cross-check the results.

To facilitate comparisons with other toll roads, we compared the Implied Value of Rent to I-80’s projected EBITDA for the first year of toll operations (2012). Based on projected 2012 EBITDA of $361 million, I-80’s “Rent-to-EBITDA” multiple is equal to 13.8x. This multiple is based on the existing lease agreement between PennDOT and the PTC, which runs until 2057. When adjusted to the equivalent lease terms of the other toll roads in the peer group (up to 99 years), I-80’s Rent-to-EBITDA multiple ranges from 12.0x to 17.6x.

The Enterprise Value-to-EBITDA ratios for the other toll roads ranged from 29.0x to 39.7x, while the Acquisition Price-to-EBITDA ratios for the other toll roads ranged from 12.5x to 95.5x. The higher the EBITDA multiple, the greater is the relative amount of prepaid rent or purchase price. The Enterprise Value multiples, which reflect a current “mark-to-market” valuation, generally are much lower than the original Acquisition Price multiples, which date from 1999-2007. This is attributable
to the fact that the economy and credit market conditions are much less favorable today than in the period prior to 2008. Both the Enterprise Value and Acquisition Price EBITDA multiples provide valuable supplementary market data for evaluating the reasonableness of the Rent.

In summary, the Discounted Cash Flow approach indicates that the Implied Value of Rent is slightly below the intrinsic market value of I-80’s cash flows, and I-80’s Rent-to-EBITDA multiple is lower than the market multiples for other toll roads using Enterprise Values and Acquisition Prices. Viewed in the aggregate, these three valuation tools represent the most appropriate basis on which to value Rent and, in our professional opinion, support the conclusion that the level of Rent is within market parameters. Therefore, we believe the level of Rent is a valid operating cost of I-80, and should be an eligible use of toll revenues under the ISRRPP.
I. Background

In July, 2007, the Commonwealth of Pennsylvania General Assembly enacted P.L. 169, No. 44 (Act 44). Among other things, Act 44 authorized the Pennsylvania Department of Transportation (PennDOT) to lease that portion of Interstate 80 (I-80) within the Commonwealth to the Pennsylvania Turnpike Commission (PTC), and authorized the PTC to convert I-80 to a toll road for the purpose of reconstructing, maintaining and operating it.1

PennDOT and the PTC entered into a 50-year lease agreement in October, 2007 pursuant to which the PTC would reconstruct, maintain and operate I-80 upon conversion to a tolled facility. The plan of finance for I-80 calls for increasing the average level of capital spending on rehabilitating and reconstructing the highway from approximately $60 million per year to an average of $250 million per year over the first decade. Under Act 44, the PTC is required to make annual contributions to PennDOT through Fiscal Year 2057. Payments are to be made both from rentals derived from I-80 toll revenues (Rent) and funds from the existing mainline Turnpike System (Transfers).

Under federal law, the Federal Highway Administration (FHWA) must approve any conversion of a federally-assisted highway to a tolled facility. Act 44 directed the PTC, with the cooperation of PennDOT, to apply for such approval. In August, 2007, PennDOT and the PTC (together, the Applicants) submitted an Expression of Interest to FHWA seeking guidance on which of FHWA’s several tolling programs would be most suitable for I-80. In September, 2007, FHWA directed the Applicants to the Interstate System Reconstruction and Rehabilitation Pilot Program (ISRRPP)2 as the appropriate federal tolling program. The ISRRPP allows up to three states to collect tolls for the rehabilitation of an existing Interstate highway, but limits the use of tolls to paying debt service, a reasonable return on investment for a private investor and costs necessary for the improvement, proper operation and maintenance of the facility. FHWA has issued guidance establishing a two-phase approval process. Phase 1 (provisional approval) is granted when FHWA determines that the application meets the threshold eligibility criteria for the ISRRPP. Phase 2 (final approval) can be granted only after all environmental requirements have been met.

1 P.L. 169, section 8915.1.

2 The ISRRPP is one of several federal programs under which Interstate highways may be tolled. It was established under Sec. 1216(b) of the Transportation Equity Act for the 21st Century (P.L.105-85), enacted in 1998 (TEA-21).
In October, 2007, the Applicants submitted a formal Phase 1 application to convert I-80 under the ISRRPP. In December, 2007, FHWA responded with a series of questions seeking clarifications and further information on the reconstruction program, tolling plan, and plan of finance. In July, 2008, the Applicants submitted an amended application containing additional information including a detailed schedule of capital improvements and potential electronic tolling locations. On September 11, 2008, FHWA sent the Applicants a memorandum stating that their application could not be advanced at that time. It noted that, while rent is an eligible cost of operations under the ISRRPP, the application failed to address how it could be determined that the Rent proposed for I-80 was reasonable by market standards, and therefore represented a permitted use of toll revenues.

In a meeting among representatives of FHWA, PennDOT and the PTC in June, 2009, the parties discussed FHWA’s concern regarding the reasonableness of the Rent. If the Rent could be shown to bear an appropriate relationship to market-level rentals, the FHWA agreed that it would demonstrate that such payments reflect reasonable lease rentals and therefore are legitimate and valid operating costs. It was determined that the Applicants should retain an independent expert to analyze the Rent relative to market levels. The parties agreed that the study should be presented to FHWA in two stages. The expert first would provide FHWA with an overview of the proposed methodology and its credentials to undertake the analysis. Upon FHWA’s concurrence with the conceptual approach, the expert would undertake the second stage, involving a detailed financial analysis, and present its findings.

In July, 2009, our firm was engaged to perform the analysis of the Rent. On September 11, 2009, the Applicants provided FHWA with the first stage work product: Description of Proposed Rent Valuation Methodology for Interstate 80. In a conference call in early October we had with FHWA, PennDOT and representatives of the PTC, FHWA concurred in general with our approach, and requested certain further clarifications regarding the discount rate and date of calculation. This report, which contains the results of the financial analysis based on the agreed-upon methodology along with the requested clarifications, represents the second stage of our work product.
II. Overview of Rent Valuation Methodology

We used corporate valuation techniques to assess how the Rent compares to market benchmarks. In corporate finance analysis, the following three approaches represent the most widely-used methods for determining the estimated market valuation of a commercial enterprise:

- **Discounted Cash Flow.** This approach involves calculating the present value of expected net cash flows after expenses of the company in question, discounted at a rate reflecting the cost of capital for acquiring that company;

- **Enterprise Value Comparisons.** This approach involves comparing the “enterprise values” of peer group companies (market capitalization of publicly-traded common stock plus outstanding debt, minority interest and preferred shares, minus total cash and cash equivalents) relative to their financial performance; and

- **Acquisition Price Comparisons.** This approach involves comparing actual transaction prices of different peer group companies that have undergone a change in control, relative to their financial performance.

Each of these approaches can convey meaningful information on what a commercial enterprise is “worth”. In this case, the industry sector is toll facilities. Interstate 80, of course, is not a private business. But the PTC does intend to manage I-80 as a commercial enterprise, where revenues from customers (tolls) are designed to cover both capital and operating costs of “running the business,” including rental payments to PennDOT.

It is important to recognize that no single valuation technique is capable of capturing all the nuances driving financial value. As we note in Section V, each approach has its strengths and weaknesses. The numerical results require some subjective interpretation, since they are dependent upon the specific attributes of the enterprises being examined and the various assumptions being employed. And in the toll road sector specifically, there is a risk of “false precision” in relying too heavily on any one technique or data point, given the relatively limited number of other toll road transactions and enterprise values. However, in our professional opinion, these three valuation tools, looked at collectively, can serve as market-based measures for assessing the reasonableness of the Rent.
III. Analytical Considerations in Applying Various Methodologies

A. Rent as a Proxy for Market Value.

While market rent comparisons are used routinely for comparing real estate assets (lease rate per square foot, etc.), there is no similar benchmark for determining the rental value of a highway. Absent tolling, a highway asset from a financial perspective can be viewed as having negative value, since it consumes dollars for operating, maintenance and capital requirements without any corresponding revenue production. However, if a highway can be converted to an earning asset by charging tolls, it should be possible for an owner (typically a state DOT) to charge rent for its use by a public or private operator.

The acquisition price or upfront franchise fee that an operator would pay for the long-term operating rights to a toll facility reflects the financial value of managing the business and receiving its net cash flows over the relevant holding period. In the case of I-80, the lease payments anticipated from toll receipts may be viewed as reflecting the price an independent operator (PTC) is willing to pay the owner (PennDOT) for the right to manage the enterprise (the I-80 toll facility) and receive its net cash flows over the term of the lease.

We evaluated the Rent as projected in the most recent (June, 2009) financial plan of the PTC for meeting its payment obligations to PennDOT, as required under Act 44 (the FY 2010 Financial Plan) 3. The purpose of the financial plan is to set forth the reasonable expectations for financial performance of I-80 and the Mainline Turnpike based on such factors as current traffic projections, toll rates, operating and capital spending requirements and interest rates. We accepted as given all the assumptions used in that report, and focused exclusively on the plan’s projected Rent payments. The Act 44 aggregate annual payments from PTC to PennDOT in the form of Rent and Transfers are fixed (e.g., $900 million due in FY 2010). However, the separate contributions from the Mainline turnpike (Transfers) and I-80 (Rent) will vary from year to year over the forecast period, as set forth in the current financial plan. This projection will be modified in future years, depending on the respective financial performance of the two assets.

Our analysis focused only on that portion of the aggregate Act 44 payments representing Rent (i.e., amounts paid to PennDOT funded from I-80 toll receipts—or in certain years, from bond proceeds backed by I-80 toll receipts—after meeting other I-80 operating and maintenance expenses, reserves, capital outlays and debt service on I-80 construction bonds). Our analysis did not consider that portion of the Act 44 payments funded from Transfers of resources from the Mainline Turnpike system, since those funds are not subject to the provisions in the ISRRPP. We understand that, under the lease, PennDOT is required to deposit 100 percent of the Rent into the state Motor License Fund. Such moneys are restricted to highway and bridge purposes eligible under U.S.C. title 23.

B. Converting Annual Rent to an Upfront Equivalent.

The three corporate valuation tools referenced above—Discounted Cash Flow, Enterprise Value, and Acquisition Price—express value as an upfront amount. In contrast, Rent is a series of annual payments (remitted in quarterly installments) over 50 years. Accordingly, it is necessary to express the Rent as a similar upfront sum—the amount that an investor would be willing and able to prepay—in order to draw comparisons with these corporate valuation methodologies. This can be accomplished by discounting future periods’ Rent at the appropriate discount rate and within a financeable capital structure.4

Since the purpose of this financial analysis is to determine the relationship of the Rent to the market value of toll road leasehold interests, we believe the discount rate should reflect the weighted cost of capital for a private concessionaire, similar in nature to the companies that we examined for other toll road facilities as described under “Peer Group Facilities” below. Specifically, we determined the prepayment value of the Rent (set forth in the FY 2010 Financial Plan) by calculating the value of the I-80 leasehold interest to an investor both with and without the rental payment stream. The difference between the two should represent the financeable fair market value of the annual Rent under Act 44 (Implied Value of Rent). This upfront figure, then, can be used as the benchmark for the Enterprise Value, Transaction Value and Discounted Cash Flow analyses.

While an argument could be made that the Rent should be discounted at a rate reflecting PennDOT’s ability to borrow on a tax-exempt basis, doing so would be inconsistent with evaluating the reasonableness of Rent. Such an approach would not accurately reflect the market value to a private investor of the I-80 leasehold interest,

4 Simply discounting the rental stream set forth in the financial plan at the weighted average cost of capital would not accurately reflect the realizable present value, since that figure would fail to reflect required debt service coverage ratios and other financial parameters needed to produce a “monetized” sum prepaid upfront.
which FHWA is seeking to determine. Only a governmental “buyer” could access financing at tax-exempt rates, rather than at the cost of taxable debt and equity. In addition, simply applying a discount rate against the Rent stream would not reflect the amount that actually could be financed. Under Act 44, the Rent is subordinated to capital outlays, debt service and other operating expenses. A governmental issuer would need to allow for a substantial debt service coverage factor on these subordinated Rent payment cash flows to be able to borrow against them. Finally, financial analysis typically uses a uniform discount rate for comparing alternative investment options. It would be inconsistent to use a tax-exempt discount rate for the rental streams but a corporate cost of capital for the other comparisons. For these reasons, we believe it is more suitable to apply a concessionaire’s discount rate to the Rent in comparing it to general market levels.

C. Capital Improvements to I-80.

The primary objective of the tolling plan is to provide sufficient resources to fund current deficiencies in I-80’s infrastructure, and to completely rebuild the highway over the term of the lease. These “leasehold” capital improvements are quite substantial; the FY 2010 Financial Plan provides for spending $28.8 billion in year-of-expenditure dollars between 2011 and 2057. Since the useful life of most of the improvements should extend well beyond the operator’s term under the lease, this capital spending effectively benefits PennDOT as owner of the road.

The question, therefore, is whether the cost of these improvements should be viewed as “additional rent” in performing our analysis. Conceptually, instead of having the concessionaire fund capital outlays, PennDOT could have charged the PTC additional cash rent in the amount of the value of the scheduled capital investments, and undertaken the improvements to I-80 itself.

However, under the statutory provisions of the ISRRPP, capital improvements to I-80 are explicitly authorized as eligible uses of toll receipts. The eligibility issue posed by the FHWA appears to deal exclusively with whether the Rent portion of operating costs that is payable to PennDOT (not reinvested directly in I-80) is reasonable under market standards. In addition, the Discounted Cash Flow valuation method deals with enterprise free cash flows after capital expenditures. Accordingly, we have not

5 Congress authorized up to $15 billion of nationwide volume cap for tax-exempt private activity bonds for highway and intermodal facilities under the SAFETEA-LU reauthorization bill. However, the tax code generally limits the extent to which such financing can be used to acquire existing facilities, such as I-80. Further, access to such financing would be contingent upon an allocation being granted by USDOT. Accordingly, it is unlikely a private buyer would be able to assume the availability of tax-exempt bonds as a primary source for acquisition financing.
included the value of the improvements in our calculation of the Implied Value of Rent.

D. Appropriate Analytical Time Frame.

The PTC’s financial strategy for meeting its payment obligations to PennDOT through 2057 pursuant to Act 44 is a dynamic model. The PTC is required to provide the Commonwealth’s Secretary of the Budget with an update of its financial plan each June 1 for the ensuing fiscal year.

We have performed this analysis based on the financial model contained in the FY 2010 Financial Plan. We have not gone back and performed the valuation analysis based on the earlier versions of the financial model from mid-2007 when Act 44 was being enacted by the General Assembly, because the financial model has changed considerably since first proposed. The Applicants have modified the original plan to incorporate a much more robust capital program for I-80 than originally contemplated. Traffic forecasts have been revised to reflect the effects of the ongoing recession. Bond market conditions have changed dramatically as a result of the 2008 credit crisis. Leverage ratios, lending rates and target equity returns are much different than they were in 2007. As a result, the proposed Rent stream today is different than initially contemplated.

The latest model is based on current market conditions. It forecasts certain levels of Rent (amounts to be paid from I-80 toll receipts) and certain levels of Transfers (amounts to be paid from Mainline Turnpike toll receipts). This represents the PTC’s reasonable expectations at this time based on the most current information. In answering the question as to whether the Rent is within market standards, we believe it would be inappropriate to perform the valuation based on earlier projections from 2007 that have been superseded.

IV. Comparing I-80 to Other Toll Facilities

Two of the valuation techniques--Enterprise Value and Acquisition Price--involve market comparables: comparing Rent to the upfront lease or sale price for other toll facilities. The third technique—Discounted Cash Flow—involves comparing the implied value of I-80 to itself, with and without the payment of proposed Rent. All three methodologies draw upon financial metrics of other toll facilities regarding various modeling assumptions (bond ratings, required equity returns, debt service coverage ratios, etc.) Therefore, we have identified a “peer group” of similar toll facilities that have changed ownership or control in recent years to which I-80 can be compared.
A. Peergroup Facilities.

We limited the peer group to other North American toll facilities, since travel patterns, fuel costs, concession terms, financing practices and tax policy differ dramatically in Europe and other regions from those in the United States and Canada. The universe of potential projects for comparison consists of the following projects, not all of which have complete financial information available:

Table IV-1
Transfer of Control in Major North American Toll Facilities: 1999-Present

<table>
<thead>
<tr>
<th>Project</th>
<th>Location</th>
<th>Seller/Lessor</th>
<th>Buyer/Lessee</th>
<th>Type of Transaction*</th>
<th>Year of Transaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>407 ETR</td>
<td>Ontario, CAN</td>
<td>Public</td>
<td>Private</td>
<td>Brownfield w/ Expansion</td>
<td>1999</td>
</tr>
<tr>
<td>91 Express Lanes</td>
<td>California</td>
<td>Private</td>
<td>Public</td>
<td>Brownfield</td>
<td>2003</td>
</tr>
<tr>
<td>SR 125</td>
<td>California</td>
<td>Private</td>
<td>Private</td>
<td>Greenfield</td>
<td>2003</td>
</tr>
<tr>
<td>Chicago Skyway</td>
<td>Illinois</td>
<td>Public</td>
<td>Private</td>
<td>Brownfield</td>
<td>2005</td>
</tr>
<tr>
<td>Dulles Greenway</td>
<td>Virginia</td>
<td>Private</td>
<td>Private</td>
<td>Brownfield</td>
<td>2005</td>
</tr>
<tr>
<td>Indiana Toll Road</td>
<td>Indiana</td>
<td>Public</td>
<td>Private</td>
<td>Brownfield</td>
<td>2006</td>
</tr>
<tr>
<td>Pocahontas Parkway</td>
<td>Virginia</td>
<td>Nonprofit</td>
<td>Private</td>
<td>Brownfield w/ Extension</td>
<td>2006</td>
</tr>
<tr>
<td>Northwest Parkway</td>
<td>Colorado</td>
<td>Public</td>
<td>Private</td>
<td>Brownfield</td>
<td>2007</td>
</tr>
<tr>
<td>North Texas Tollway Authority/SH 121-T</td>
<td>Texas</td>
<td>Public</td>
<td>Public</td>
<td>Brownfield w/Expansion</td>
<td>2007</td>
</tr>
</tbody>
</table>

* "Greenfield" projects involve construction of a new facility with no established traffic patterns. "Brownfield" projects are transfers of ownership in existing tolled facilities, which may involve improvement or extension. I-80 has features of a brownfield project, in that it is an existing facility with established traffic patterns, but shares with greenfields the uncertainty of traffic patterns once tolling is initiated.

Most of the transactions listed above involve long-term operating concessions (leases) ranging from 50-99 years. In a financial (present value) context, there is relatively little difference between buying outright ownership of an asset and acquiring a long-term (~99 year) leasehold interest.
B. Using EBITDA for Inter-Company Comparisons.

While all of the peer group highways are toll facilities, they vary considerably in terms of capital cost, traffic levels, operating profile, and other key features. In the private sector, making inter-company value comparisons is facilitated by expressing their enterprise value or acquisition price using a uniform financial metric. The most common yardstick is a measure of net cash flow known as EBITDA (earnings before interest, taxes, depreciation and amortization). EBITDA measures net cash flow from operations on a pre-tax basis, before taking into account how the owner financed the enterprise. The value or price of the enterprise is typically expressed as a multiple of historic EBITDA (such as 10 times EBITDA).

For I-80, the realizable value received by PennDOT is the Implied Value of Rent—the net present value of projected Rent discounted to the first full year of operations (2012). As described under “Discounted Cash Flow” below, the Implied Value of Rent is calculated to be $4,970 million. We divided this amount by the projected EBITDA for that year, in order to arrive at an I-80 Rent-to-EBITDA multiple. Based on the PTC’s latest financial plan for implementing Act 44, I-80’s projected financial performance in FY2012 (the first full year of operations) is as shown below:

<table>
<thead>
<tr>
<th>Table IV-2 I-80 Forecast EBITDA for FY 2012 ($ in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toll and other Revenues</td>
</tr>
<tr>
<td>Less: Operating Expenses (before Depreciation)</td>
</tr>
<tr>
<td>Net Cash Flow (EBITDA)</td>
</tr>
</tbody>
</table>

Therefore, I-80’s Rent-to-EBITDA multiple would be ($4,970/$361) or 13.8x. This can serve as a benchmark for comparison to the EBITDA multiples for the identified toll road Enterprise Values and Acquisition Prices to see where I-80 fits into the market range of ratios.

Longer lease terms give investors greater value because of the additional cash flow returns in the out-years. As of 2012 (the assumed first year of I-80 operations as a

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6 The EBITDA projections from the FY2010 Financial Plan have been slightly modified from the Financial Plan by $19.8 million (4.4%) in FY 2012, to reflect additional interest income resulting from the provision of net working capital for the investor under the Discounted Cash Flow analysis. (See Appendix C-1).
toll road). The remaining term of the I-80 lease is 46 years. The other toll roads shown in Table IV-1 have terms ranging as long as 94 years. In order to normalize comparisons, we have calculated adjusted EBITDA multiples for I-80 for terms matching those of the peer group toll roads, summarized below. (See Appendix A for a more detailed discussion.)

### Table IV-3
**I-80 Adjusted EBITDA Multiple Based on Lease Term of Peer Group**

<table>
<thead>
<tr>
<th>Remaining Term of Lease:</th>
<th>46 Years (to match term of Dulles Greenway)</th>
<th>71 Years (to match term of Indiana Toll Road)</th>
<th>88 Years (to match term of Toronto 407ETR)</th>
<th>94 Years (to match term of Chicago Skyway)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-80 2012 EBITDA Multiple</td>
<td>13.8x</td>
<td>16.1x</td>
<td>17.1x</td>
<td>17.4x</td>
</tr>
</tbody>
</table>

The higher the EBITDA multiple, the greater the acquisition payment (i.e., rental) received by the owner/lessor, relative to net cash flow from operations. Likewise, the lower the multiple, the lower is the acquisition payment (i.e., rental). A multiple *near or below* market levels would indicate that the Rent is not excessive, relative to the acquisition price or rents supported by net toll revenues on other toll roads. This would indicate the Rent is a necessary and valid cost of operating the facility. Conversely, a multiple *well above* the market range would indicate that toll receipts from I-80 users appear to be supporting higher rent than that being paid for other facilities, relative to the road’s financial performance.
V. Valuation Results

A. Discounted Cash Flow

The Discounted Cash Flow valuation method uses projected financial performance of the enterprise to estimate current value from the perspective of a hypothetical private buyer. For I-80, we have used the financial projections contained in the FY 2010 Financial Plan. Appendix C-1 and C-2 show the I-80 operating assumptions and the resulting free cash flow to the firm (FCFF)\(^7\), without the lease in place (Before Rent analysis). To estimate the upfront amount a private concessionaire would pay to lease I-80, we calculated the FCFF and then discounted it at the weighted average cost of capital (WACC). We further refined our estimate of what a private concessionaire would pay for I-80 by modeling the capital structure over the remaining life of the lease. This allows for the capital structure to vary year to year based upon debt service coverage and rating considerations over time, rather than using a single cost of capital estimate for the entire project life.

Assumptions regarding future earnings growth, tax rates, investment income on debt service reserves and cash balances, the ability of the owner to use current tax losses to offset other current gains, depreciation rates and allocation of the purchase price between franchise value and book value of assets all are embedded in the FCFF and a necessary part of any financial analysis. (Appendix A contains a more thorough description of the analytical framework for the Discounted Cash Flow method.)

1. Weighted Average Cost of Capital.

The WACC represents an estimate of the owner’s risk-adjusted debt and equity costs of capital for financing an investment under current market conditions. In computing WACC, we started with the amount of debt that the project could carry over the term of the lease. The estimate was based upon a target debt rating on I-80 for Moody’s from a low of Baa1 to a high of A1, with a midpoint A3. (For Standard & Poor’s these equivalent ratings are a low of BBB+ to a high of A+, with a midpoint of A-.). Moody’s has published a detailed description of the financial and other factors it evaluates in assigning a toll road rating.\(^8\) We modeled the capital structure of the investor so as to meet the parameters likely to result in the targeted A3 rating level, using metrics such as Concession Life Coverage Ratio, Net Debt-to-EBITDA, etc. (Appendix A contains a

\(^7\) Free Cash Flow to the Firm (FCFF) is defined as earnings before interest and taxes, multiplied by 1 minus the owner’s assumed tax rate, and making adjustments to add back in depreciation and amortization, deduct capital outlays, and reflect changes in required working capital.

\(^8\) Rating Methodology - Operational Toll Roads: Moody’s Investors Service-December 2006
detailed description of the various financial metrics Moody’s uses in assigning toll road ratings.)

We assumed current taxable debt rates commensurate with this rating category of 6.38%, obtained from Bloomberg.\textsuperscript{9} Because interest expense is deductible for tax purposes, and because Discounted Cash Flow uses after-tax cash flows, it is necessary to compute the after-tax cost of borrowing. At an assumed 35% standard federal corporate tax rate, a corporation’s after-tax cost of debt capital would be 4.15%.\textsuperscript{10}

For the calculation of the cost of equity, we reviewed the equity discount rates used by the Macquarie Infrastructure Group in its August 20, 2009 report to investors for the fiscal year ending 6/30/2009.\textsuperscript{11} Macquarie is the leading private investor in North American toll roads.

\begin{center}
\begin{tabular}{ll}
\textbf{Asset} & \textbf{Equity Discount Rate} \\
407 ETR (Toronto) & 9.50\% \\
Chicago Skyway & 12.50\% \\
Dulles Greenway & 12.50\% \\
Indiana Toll Road & 14.50\% \\
\end{tabular}
\end{center}

Table V-1

Indicative Target Equity Returns for Macquarie Infrastructure Group Toll Roads

\textit{Fiscal Year Ended 6/30/2009}

In order to achieve mid A range target bond ratings for I-80, we have determined that the I-80 project would initially be optimally structured with an approximately 63% debt-to-total capital ratio, and have average debt service coverage of 1.5 times for the first 10 years of operations. These parameters are closest to current debt service coverage ratios and debt-to-enterprise value ratios for the Chicago Skyway (1.8x; 76%) and the Dulles Greenway (1.3x; 60%) presented by Macquarie in its report. Both projects use target equity returns of 12.50%. Highway 407 ETR has a more favorable coverage ratio (2.0x) and a lower leverage ratio (29%), and consequently employs a lower discount rate for equity (9.5%). In contrast, Indiana Toll Road has a much lower

\textsuperscript{9} Based on Bloomberg Fair Value Corporate Bond Curves as of October 13, 2009.
\textsuperscript{10} A corporate investor would also be subject to Pennsylvania corporate income tax (9.99%), which, when added to the federal 35% tax liability, would slightly reduce the effective after-tax cost of borrowing. However, it is difficult to determine the precise combined tax rate since it depends on the investor’s organizational structure. In any event, including state tax effects would have a commensurate effect on the analysis of discounted cash flows under both the Before Rent and After Rent scenarios, and would not materially change the net result.
\textsuperscript{11} Macquarie Infrastructure Group: Full Year Results--30 June, 2009, Macquarie Infrastructure Investment Management Ltd., 20 August 2009
debt service coverage ratio (1.0x) and a much higher leverage ratio (92%), and therefore uses a higher adjusted discount rate for equity (14.5%). Based on these factors, we determined that the appropriate I-80 target equity cost would be 12.5%.

With these market inputs of debt capital (6.38% pre-tax yield) and equity capital (12.50% yield), along with the optimized capital structure (approximately 63% debt and 37% equity), it is possible to calculate the initial WACC for a hypothetical I-80 concessionaire, as shown below:

### Table V-2
**Calculation of Weighted Initial Cost of Capital for I-80***
*(based on prevailing market yields)*

<table>
<thead>
<tr>
<th>Capital Component</th>
<th>1. Nominal Yield</th>
<th>2. Percent of Capital Structure</th>
<th>3. = 1 x 2 Weighted Cost of Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Debt Capital (After-Tax)</td>
<td>6.38% x (1-.35) = 4.15%</td>
<td>62.55%</td>
<td>2.60%</td>
</tr>
<tr>
<td>b. Equity Capital</td>
<td>12.50%</td>
<td>+ 37.45%</td>
<td>+ 4.68%</td>
</tr>
<tr>
<td>c. = a + b Weighted Initial Cost of Capital</td>
<td>100.00%</td>
<td></td>
<td>7.28%</td>
</tr>
</tbody>
</table>

* Further information on the WACC calculation is presented in Appendix C-1.

The WACC of 7.28% represents the weighted initial cost of capital at the time the private investor acquires the I-80 leasehold interest. This initial WACC must be adjusted for variations in the capital structure of the buyer over the life of the lease to meet ongoing bond rating requirements. Under the pro-forma analysis, the debt-to-capital ratio peaks in the third decade of the lease at 82%. The higher leverage factor has the effect of reducing the cost of capital, resulting in a Lifetime WACC of **7.01%**. This reflects the average returns investors would require on debt and equity capital based on I-80’s risk profile.
2. **DCF Before and After Rent**

Initially, we calculated the discounted present value of I-80’s cash flow to a private concessionaire before taking into account the Rent due to PennDOT as of 2012 (the first year of projected operations). This valuation represents the long term lease value that a private concessionaire would pay for I-80 cash flows reflected in the FY 2010 Financial Plan. This valuation is **$5,110 million**.

We then calculated what a private concessionaire would pay upfront for I-80 with the Rent obligations in place. For this second analysis, we made appropriate cost of capital adjustments to the WACC to reflect the additional cost of making ongoing lease payments to PennDOT and how those lease payments fit into the capital structure. Specifically, we assumed that the Rent payable to PennDOT would continue to be subordinate to debt service, capital improvements and other operating costs, as it is under the provisions of Act 44.

A corporate valuation that *exceeds* zero (i.e., is greater than the discounted present value of net cash flows after deducting the annual cost of Rent) would indicate that a private concessionaire would be willing to pay a greater price than the Rent under Act 44. Conversely, a negative result would indicate that the Rent exceeds the price a concessionaire would be willing to pay. This valuation net of the Rent payments is positive **$140 million**. Therefore, the **Discounted Cash Flow method indicates that a private investor would be willing to pay a slightly greater amount than the Rent, indicating that the Rent is within market ranges and therefore is reasonable.**

The numerical difference between I-80’s discounted cash flows before and after deducting Rent—($5,110 million minus $140 million, or **$4,970 million**)—represents the Implied Value of Rent on a present value basis. Stated differently, under the Discounted Cash Flow approach, the present value of the rental payments ($4.97 billion) is valued at 97 percent of the fair market value of I-80’s free cash flows ($5.11 billion). This figure was used to calculate the I-80 Rent-to-EBITDA multiple for purposes of comparing it with EBITDA multiples for other toll roads under both the Enterprise Value and Acquisition Price valuation methodologies.

3. **Sensitivity Analysis**

The Discounted Cash Flow analysis utilizes a reasoned estimate as to what the WACC for a private investor would be under current market conditions for I-80, both without the lease in place (i.e., excluding Rent) and with the lease in place (including Rent). However, it is useful to look at the results under different rate-of-return assumptions. The table below shows how a change of 1% in the WACC would affect the results of the analysis.
Table V-3
Value of I-80 Net Cash Flows Varying WACC by 1%
($ in millions)

<table>
<thead>
<tr>
<th>Interest Rate Environment</th>
<th>a. Market Value Before Deducting Rent Payments</th>
<th>b. Market Value After Deducting Rent Payments</th>
<th>c. Resulting Rent PV</th>
<th>Rent as % of Estimated Market Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>If WACC is 1% Lower</td>
<td>$6,341</td>
<td>$692</td>
<td>$5,649</td>
<td>89%</td>
</tr>
<tr>
<td>Current Rate Environment</td>
<td>$5,110</td>
<td>$140</td>
<td>$4,970</td>
<td>97%</td>
</tr>
<tr>
<td>If WACC is 1% Higher</td>
<td>$4,186</td>
<td>($223)</td>
<td>$4,409</td>
<td>105%</td>
</tr>
</tbody>
</table>

B. Enterprise Value:

A second valuation method is a Market Comparables approach comparing the Enterprise Value of different companies relative to their financial performance (EBITDA). A fundamental element of Enterprise Value is the market capitalization of the organization’s publicly-traded common stock, computed by multiplying current share price times the number of shares outstanding.

None of the peer group toll roads has common stock independently listed on a stock exchange. However, several of the facilities (407ETR, Chicago Skyway, SR 125, Dulles Greenway and Indiana Toll Road) are held by Macquarie Infrastructure Group (MIG), which is a publicly traded infrastructure investment fund listed on the Australian Stock exchange. Morgan Stanley issued a research report on MIG on July 1, 2009 containing enterprise valuations of these toll roads.12 The valuations were based on market equity estimates provided by Macquarie, and Morgan Stanley’s projected financial performance for 2009 and 2010. Macquarie’s estimate is based on its internal assessment of the value of the toll roads’ equity investment on a “marked-to-market” basis. In the absence of listed common stock prices, this provides a useful perspective on prevailing toll road values.

12  *Macquarie Infrastructure*, Morgan Stanley Research, July 1, 2009
The Morgan Stanley report contained Enterprise Value (EV) estimates for four North American toll roads:

Table V-4
Enterprise Value-to-EBITDA Multiples for Selected Toll Roads

(Estimated Results for FY 2009 and FY 2010)

<table>
<thead>
<tr>
<th>Asset</th>
<th>Remaining Lease Term</th>
<th>FY 2009 EV/EBITDA</th>
<th>FY 2010 EV/EBITDA</th>
<th>I-80 Term Adjusted**</th>
</tr>
</thead>
<tbody>
<tr>
<td>407 ETR</td>
<td>88</td>
<td>35.7x</td>
<td>32.1x</td>
<td>17.1x</td>
</tr>
<tr>
<td>Chicago Skyway</td>
<td>94</td>
<td>28.4x</td>
<td>29.0x</td>
<td>17.4X</td>
</tr>
<tr>
<td>Dulles Greenway</td>
<td>46</td>
<td>33.5x</td>
<td>34.4x</td>
<td>13.8x</td>
</tr>
<tr>
<td>Indiana Toll Road</td>
<td>71</td>
<td>44.1x</td>
<td>39.7x</td>
<td>16.1x</td>
</tr>
<tr>
<td>I-80</td>
<td>46</td>
<td>---</td>
<td>13.8 x *</td>
<td>13.8x</td>
</tr>
</tbody>
</table>

* Data for I-80 is the Rent-to-EBITDA multiple estimate for 2012.
** The I-80 multiples have been adjusted to conform to the remaining term of each of the other toll road leases.

Source: Morgan Stanley Research

We compared these EV/EBITDA multiples to I-80’s Rent-to-EBITDA multiple, based upon the effective date of January 2012 and using the 12 month forward-looking EBITDA. Therefore in Table V-4 we used the other toll roads’ FY 2010 EBITDA (forecast period ending June 30, 2010) to more closely match forwarding looking EBITDA for I-80. In securities valuation, forward-looking multiples are considered more useful than backward looking multiples since market valuations are based upon investors’ future expectations.

The analysis shows that I-80’s adjusted Rent-to-EBITDA multiple (13.8x to 17.4x) is less than the Enterprise Value multiples of four peer group toll roads (29.0x to 39.7x).
C. Acquisition Price:

A final method of estimating market levels for toll facilities is to examine actual change-of-ownership transactions completed in recent years. Most transfers are structured as long-term leases of 50-99 years, with the tenant (concessionaire) having made an upfront payment (franchise or concession fee) that represents prepaid rent.

The Acquisition Price method is similar to the current Enterprise Value method in using an EBITDA multiple as a valuation benchmark, except that it uses the price originally paid for the long-term lease rather than an estimate of its current market value. In addition to the four toll roads for which Enterprise Value data was available (407ETR, Chicago Skyway, Dulles Greenway, and Indiana Toll Road), we were able to calculate historical Acquisition Price-to-EBITDA ratios for four other toll roads (91 Express Lanes, Pocahontas Parkway, Northwest Parkway, and North Texas Tollway Authority SH 121-T). The Acquisition Price relative to each road’s EBITDA is then compared to the term-adjusted I-80 Rent-to-EBITDA multiple.

<table>
<thead>
<tr>
<th>Asset</th>
<th>Original Lease Term</th>
<th>Transaction Amount</th>
<th>Price/EBITDA Multiple</th>
<th>I-80 Term-Adjusted Price/EBITDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>407ETR *</td>
<td>99</td>
<td>$3,100</td>
<td>24.7x</td>
<td>17.6x</td>
</tr>
<tr>
<td>Chicago Skyway*</td>
<td>99</td>
<td>$1,830</td>
<td>64.4x</td>
<td>17.6x</td>
</tr>
<tr>
<td>Dulles Greenway*</td>
<td>51</td>
<td>$617</td>
<td>19.0x</td>
<td>14.2x</td>
</tr>
<tr>
<td>Indiana Toll Road*</td>
<td>75</td>
<td>$3,850</td>
<td>63.5x</td>
<td>16.5x</td>
</tr>
<tr>
<td>91 Express Lanes</td>
<td>27</td>
<td>$208</td>
<td>12.5x</td>
<td>12.0x</td>
</tr>
<tr>
<td>Pocahontas Parkway</td>
<td>99</td>
<td>$611</td>
<td>95.5x</td>
<td>17.6x</td>
</tr>
<tr>
<td>Northwest Parkway</td>
<td>99</td>
<td>$503</td>
<td>89.8x</td>
<td>17.6x</td>
</tr>
<tr>
<td>NTTA SH 121-T</td>
<td>41</td>
<td>$3,200</td>
<td>38.5x</td>
<td>13.3x</td>
</tr>
<tr>
<td>I-80</td>
<td>46</td>
<td>$4,970</td>
<td>13.8x</td>
<td>13.8x</td>
</tr>
</tbody>
</table>

* Data is available for the Enterprise Value as well as Acquisition Price of this toll road.
The term-adjusted I-80 Rent multiples (from 12.0x to 17.6x) can be compared to the range of 12.5x to 95.5x Acquisition multiples for the eight roads. Note that the Enterprise Value multiples for the four toll roads in Table V-4 generally are lower than the corresponding Acquisition Price multiples for those same toll roads shown in Table V-5. For Chicago and Indiana they have declined substantially, from approximately 64x to the 30x to 40x range. It is likely that the declines in EBITDA multiples since initial financing of the acquisitions are attributable to the global recession and investors’ heightened concerns about excessive leverage.

D. Relative Merits of the 3 Valuation Approaches

The pros and cons of these three valuation techniques are summarized below. Their relative contribution to the overall analysis of the market value of Rent is then considered in the final section of this report.

1. **Discounted Cash Flows for a Private Concessionaire.** Computing the discounted present value of I-80 cash flows from the perspective of a for-profit concessionaire before and then after paying Rent has the benefit of comparing the same set of project cash flows to itself. It calculates the *financeable upfront value* of the enterprise. This analysis assumes similar tax treatment of a for-profit entity “acquiring” I-80 as to the other referenced transactions. Typically, the prepaid lease buyers of these roads are treated as tax owners who can use the benefits of tax losses effectively to increase those early periods’ free cash flows.

More weight generally is accorded to the Discounted Cash Flow approach than other valuation methods, especially if the sample size of other comparables is limited. However, a pro-forma calculation like Discounted Cash Flow has certain shortcomings: It is sensitive to the modeling assumptions such as changes in projected earnings growth and capital structure. It also lacks the market validation of actual invested capital (“skin in the game”) that is reflected in stock trading prices (Enterprise Value) or change-of-ownership transactions (Acquisition Price). Still, we believe that the Discounted Cash Flow method is the most relevant methodology for determining whether the Rent payable from I-80 tolls bears a reasonable relationship to what a private investor would pay.

2. **Market Comparables based on Enterprise Value.** Enterprise Value provides a valuation of an enterprise as reflected in the current market value of the equity and the debt-capital invested. Where recent data is available on the trading level of equity securities of a company, Enterprise Values can provide a “real-time” snapshot of investor sentiment for a particular company or sector, including future earnings potential. However, where the common stock is not actively traded, or is based on estimates of a single owner (as is the case for the toll roads held by Macquarie...
Infrastructure Group), the Enterprise Value is inherently subjective. Comparing the four toll roads’ Enterprise Value-to-EBITDA multiple to I-80’s Implied Value-to-EBITDA multiple provides secondary market indication of whether the Rent is within market ranges for toll roads.

3. Market Comparables on Acquisition Price. Similar to Enterprise Value, Acquisition Price can be viewed as the value of prepaid rent, as revealed through a transfer of ownership transaction. If the firms being compared have similar characteristics, this approach can serve as an accurate valuation. However, if one compared two firms in the same business with widely divergent cash flow characteristics relating to future capital expenditure requirements and lease termination periods, one would expect different valuations. Also, comparing sale prices is most meaningful for transactions occurring recently, or under similar credit market and economic conditions. Each of the change-of-ownership transactions for toll roads occurred prior to the credit meltdown of the last year, suggesting the Acquisition Price multiples may not be reflective of current market conditions. Nevertheless, by showing actual “done deals”, the Acquisition Price method offers valuable supplementary data on market trends.

In summary, these three corporate valuation approaches offer the following advantages and disadvantages:

<table>
<thead>
<tr>
<th>Valuation Technique</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discounted Cash Flow</td>
<td>• Compares the project “to itself” in determining a financeable upfront amount.</td>
<td>• Results are sensitive to assumptions made regarding model inputs such as earnings growth, capital structure, debt and equity rates &amp; tax effects. • A financial calculation, not actual investment activity.</td>
</tr>
<tr>
<td>Enterprise Value Comparison</td>
<td>• Provides current data on market sentiment regarding common stock value of firm.</td>
<td>• Common stock of individual toll roads not publicly traded, so calculation is reliant on market value estimates of fund sponsors. • Limited number of comparables.</td>
</tr>
<tr>
<td>Acquisition Price Comparison</td>
<td>• Reflects “done deals” (whether lease or sale).</td>
<td>• Older transactions may not reflect current market terms. • Limited number of comparables.</td>
</tr>
</tbody>
</table>
VI. Findings and Conclusion

The Discounted Cash Flow analysis indicates that the value of I-80 to a private owner without the Rent obligation as set forth in the financial model is $5,110 million. Its value with the Rent obligation is $140 million. The difference between the two is $4,970 million (97% of full value), which we believe is a reasonable estimate of the financeable present value of the lease payments to PennDOT. This gives a Rent-to-EBITDA multiple of 13.8x over 46 years. Our finding that I-80 would have value of only $140 million to a private owner after deducting the cost of the Rent indicates that the Implied Value of Rent is slightly lower than full market value. The reason that the present value of the Rent is so close to the Discounted Cash Flow valuation is that the financial plan for meeting Act 44 sets toll rates at the lowest level sufficient to meet operating, capital and Rent obligations. A sensitivity analysis performed by assuming a WACC 1% higher than current market levels still keeps the valuation of Rent within 5 percent of the estimated market value, which can be considered within the margin of error for a Discounted Cash Flow analysis.

The value of a leasehold interest in a toll facility in large measure is a function of the toll rates and terms of the lease, which are unique to each transaction. The fact that the cash flow projections for I-80 are based on a tolling regime that is identical to that currently being charged on the Pennsylvania Turnpike system further validates the conclusion that the tolls are reasonable and the Rent being supported is within market levels.

The results of the Discounted Cash Flow methodology can be corroborated by looking at the market comparables under the Enterprise Value and Acquisition Price methods. The average Enterprise Value multiple for four of the peer group toll roads of 33.8 times can be compared to the adjusted Rent-to-EBITDA multiple of 13.8 to 17.4 times. As previously discussed, the higher the multiple, the greater the present value of Rent being payable from tolls.

Finally, one can look at the Acquisition Price multiples for those toll roads that have changed hands. The average original purchase multiple of 52.5 times can be compared to the I-80 adjusted multiple range of 12.0 to 17.6 times. Of these two methods, recent Enterprise Value multiples should be weighted more heavily than Acquisition Price multiples, due to the dramatic changes in recent market conditions subsequent to the transactions.

Several factors could account for the Rent-to-EBITDA multiple for I-80 appearing to be significantly lower than either the Enterprise Value or Acquisition Price multiples for other toll facilities. One possible explanation is the high level of future capital

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13 Current passenger toll rates on the Mainline Turnpike are approximately 8 cents per mile.
expenditures on I-80 relative to its revenue stream. The PTC has stated in its application to FHWA that it intends to completely rebuild the entire length of I-80 over the term of the lease. Capital spending will increase nearly four-fold from historic levels of $60 million to an average of $250 million per year in the first decade alone. Although data was not readily available on the long-term capital spending plans for the other toll roads, I-80 reinvestment may be much higher in relative terms than for the other facilities. The Discounted Cash Flow model deducts capital outlays to determine free cash flow for valuation purposes; this may explain why I-80 would have a lower EBITDA multiple than other roads with less robust capital programs.

Another factor that particularly affects the comparison to Acquisition Price multiples is the much more constrained credit market environment today, resulting in less highly-leveraged capital structures than even 18 months ago. Because debt capital is much less costly than equity capital, today’s reduced leverage ratios (greater proportion of equity) will produce a higher WACC, resulting in lower valuations.

Taking into account the strengths and weaknesses of each of the methods, and based on our professional judgment and experience, we believe the Discounted Cash Flow method should be relied on most heavily of the three methods. The Enterprise Value multiples offer a useful cross-check based upon market data of publicly traded securities. Because of the lack of recent (post-credit crunch) transactions, the Acquisition Price multiples should be weighted least heavily.

Based upon the findings from applying the three valuation techniques, and using our professional judgment in interpreting the results, we have concluded that the Rent projected to be paid to PennDOT is reasonable by market standards.
Appendix A:  
Discussion of Factors Affecting 
Discounted Cash Flow Valuation Results

Under the Discounted Cash Flow methodology, the two key factors driving financial valuations are:

- The calculation of free cash flow available to all sources of capital (debt and equity); that is, net cash flow from toll revenues after paying operating expenses and taxes and making required capital outlays. This is referred to in financial terminology as the “free cash flow to the firm” or “FCFF”.

- The calculation of the weighted average cost of capital; that is, the required return needed to pay investors in order to generate upfront proceeds to fund the initial rental payment. This is referred to as the “WACC”.

The buyer discounts the FCFF by the WACC to determine the net present value (financeable bid price). This same methodology was applied to look at I-80’s specific projections to see what “rents” a private investor might be willing to pay. In order to do that, it was necessary to define the analytical parameters for performing the valuation.

A. Free Cash Flow to the Firm.

FCFF is calculated by taking book accounting earnings before interest and taxes (EBIT) and multiplying it by 1 minus the owner’s assumed tax rate. Various adjustments must be made to convert book income to net available cash flow: Non-cash expenses such as depreciation and amortization should be added back; cash outlays that are not recognized as accrual basis expenses such as capital expenditures (CAPX) should be subtracted; and increases (or decreases) in required cash working capital (WC) should be deducted (or added). Mathematically, this may be expressed as:

\[ FCFF = EBIT \times (1-Tax) + \text{Depreciation} - \text{CAPX} - \text{change in WC} \]

There has been considerable debate in privatization policy discussions as to whether a private operator could manage a toll road “better” than a governmental operator,
thereby improving its EBITDA results. Various arguments can be made for and against this hypothesis.

On the revenue side, we note that the toll regime for I-80 is assumed to be “at market”: The tolls would be set at the same per-mile rate as presently charged to users of the existing Mainline, and the traffic levels should be similar under either governmental or private management. Therefore, the revenue stream can be assumed to be approximately the same under either case.

In terms of expenses, it is significant that toll roads as an infrastructure class are highly capital-intensive, and operating costs typically are a relatively small portion of the annual enterprise budget. Indeed, for the pro-forma projections for I-80 under governmental operation by the PTC, operating costs constitute only 14% of total revenues over the life of the lease. In addition, a privately-managed toll road that is an asset of an infrastructure fund such as Macquarie Infrastructure Group likely would have ongoing management fees and overhead charges in the range of 1% to 2% of net asset value, offsetting some portion of any efficiency gains.

For these reasons, rather than making arbitrary assumptions about potential operating cost savings under a private concession, we believe it is reasonable to use the same pro-forma PTC operating projections to estimate FCFF under corporate control.

B. The Effect of Taxes on Free Cash Flow.

Calculating how and when taxes are owed, carried forward, or used to offset other income are important components of the equity investor’s return. Prepaid long-term lease transactions typically vest tax ownership in the lessee/operator. They usually generate upfront tax losses and taxable gains later in life. If early losses can offset other taxes, then the investors in toll roads are able to pay a higher purchase price for the assets, since part of the cash return is sheltered from federal taxation. Our calculations are based on a 35% federal corporate tax bracket. Because the state tax liability may vary depending upon the specific organizational structure of the concessionaire, we have not attempted to calculate the impact of Pennsylvania corporate income taxes. However, it likely would have a similar effect on our valuation comparison of I-80 cash flows pre-Rent vs. after-Rent.
C. Cost of Capital.

In calculating the WACC, the owner looks at the after-tax cost of debt, the cost of equity and any other source of capital used.

1. Debt Capital.

In general, the cost of debt will be driven by expected debt ratings and current debt market conditions. Our model uses a capital structure designed to attain a mid-A range rating from Moody’s Investors Service. Moody’s toll road rating methodology is based on 10 different calculations with weightings from 8% to 20% to get to its rating\textsuperscript{14}. Listed below are the factors Moody’s evaluates:

<table>
<thead>
<tr>
<th>Moody’s Toll Road Rating Factors</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Type</td>
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</tr>
<tr>
<td>Service Area</td>
<td>10%</td>
</tr>
<tr>
<td>Traffic Profile</td>
<td>10%</td>
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<tr>
<td>Regulatory Factors</td>
<td>10%</td>
</tr>
<tr>
<td>Business Model</td>
<td>10%</td>
</tr>
<tr>
<td>Cash Interest Coverage</td>
<td>8%</td>
</tr>
<tr>
<td>Funds From Operations/Debt</td>
<td>8%</td>
</tr>
<tr>
<td>Debt Service Coverage Ratio</td>
<td>8%</td>
</tr>
<tr>
<td>RCF/Capital Expenditures</td>
<td>8%</td>
</tr>
<tr>
<td>C Lifetime Coverage Ratio</td>
<td>8%</td>
</tr>
</tbody>
</table>

\textsuperscript{14} Rating Methodology for Operational Tollroads, Moody’s Investors Service, December 2006.
To meet the Moody’s criteria associated with a single A rating, we determined that the capital structure of the investor acquiring I-80 for a 46-year period should be approximately 63% debt and 37% equity. The debt portion was structured initially as 73% current interest bonds and 27% capital appreciation bonds, with no subordinated debt in the capital structure. Using a recent A-rated taxable yield curve and adding a yield premium of 23 basis points to that for the compound interest bond portion of the debt resulted in a pretax initial cost of debt of 6.38%.

2. Equity Capital.

The cost of equity is driven by a risk-free rate (usually the yield on 10-year U.S. Treasury obligations), the market risk premium (expected total return in the equity markets above the risk-free Treasury return), and the “beta” of the equity. Beta is a measure reflecting the volatility of returns on a particular asset relative to the market in general, and is a function of the underlying asset and the degree of leverage in the capital structure.

In estimating the cost of equity we also reviewed periodic reports to shareholders by Macquarie Infrastructure Group (“MIG”). In MIG’s calculation of the underlying value of each of its toll facilities holdings, it selects a discount rate for the target return on equity. This is a good analogy for I-80 since the underlying transactions MIG reports on are privately held. MIG selects its equity discount rate based upon normal equity cost calculations:

<table>
<thead>
<tr>
<th>Facility</th>
<th>Discount Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>407 ETR</td>
<td>9.5%</td>
</tr>
<tr>
<td>Chicago Skyway</td>
<td>12.5%</td>
</tr>
<tr>
<td>Dulles Greenway</td>
<td>12.5%</td>
</tr>
<tr>
<td>Indiana Toll Road</td>
<td>14.5%</td>
</tr>
</tbody>
</table>

For our I-80 discounted cash flow model, we assumed a 12.5% cost of equity, which is the mid-point range. It is relevant to note that the projected debt service coverage ratios of I-80 were nearest to the recent coverage ratios of Chicago Skyway and Dulles Greenway, which also used a 12.5% equity yield.

D. Cost of Capital Variance over Time.

Due to the very long life of the lease terms (46 years in I-80’s case between 2012 and 2057, and up to 99 years for other facilities), the cost of capital can vary somewhat over time. In modeling the discounted cash flows, we not only calculated the present value of free cash flow at the estimated initial WACC, but also determined the
estimated value to an owner over the entire term, using a Lifetime WACC reflecting minor adjustments in the mix of debt and equity. Most of the changes in capital structure over time are attributable to the pattern in which debt gets repaid and dividends get distributed. These subtle variations in the debt-equity composition can produce a slightly different valuation of the lifetime WACC, compared to simply discounting free cash flows at the original WACC over the lease term.

E. Discounted Cash Flow with Rent

In order to estimate the amount a private concessionaire would prepay for I-80 if the Rent remained in place, it is necessary to evaluate the priority of the Rent payments in such a capital structure. Under Act 44, annual Rent payments funded from I-80 tolls are subordinate to both required debt service and all capital expenditures, but are senior to equity distributions. The priority of flow of funds is an important consideration in determining the optimal capital structure for an investor. The subordinate status of the Rent effectively allows it to serve as “coverage” for that portion of the investor’s bid that is debt financed. In addition, the net amount of upfront capital to be raised ($140 million in our analysis, after adding back in the requirement to pay Rent) is much smaller than the prepaid amount under the no Rent scenario ($5.11 billion). As a result, a concessionaire could finance its $140 million bid using a much more highly leveraged structure than is financeable under the much larger “no Rent” option. The summary contained in Appendix C presents the pro-forma financing approach under both scenarios.

F. Adjusting EBITDA Multiples to Reflect Different Lease Terms.

An adjustment should be made to I-80’s Rent-to-EBITDA multiple to facilitate comparisons with the other toll roads with longer lease terms. The remaining terms of the leases for the peer group toll roads from 46 years to 94 years. Because longer lease terms give investors additional financial returns in the out-years, they have greater intrinsic value. We have performed the discounted cash flow analysis by projecting out the FY 2010 Financial Plan to match the term of other toll roads, and calculated “adjusted” Rent-to-EBITDA multiples as shown below. These projections served as a basis for interpolating values for lease periods of varying terms.
Table A-2
Effect of Extended Lease Term on I-80’s Implied Value of Rent
($ in millions)

<table>
<thead>
<tr>
<th></th>
<th>46-Year Term</th>
<th>75-Year Term</th>
<th>99-Year Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present Value of I-80 Cash Flows without Rent</td>
<td>$5,110</td>
<td>$6,120</td>
<td>$6,527</td>
</tr>
<tr>
<td>Present Value of I-80 Cash Flows including Rent</td>
<td>- $140</td>
<td>- $167</td>
<td>- $178</td>
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<tr>
<td>Implied Value of Rent</td>
<td>$4,970</td>
<td>$5,953</td>
<td>$6,349</td>
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<tr>
<td>2012 EBITDA Multiple</td>
<td>13.8x</td>
<td>16.5x</td>
<td>17.6x</td>
</tr>
</tbody>
</table>

Table A-2 indicates that, for I-80, there is an approximately 28 percent greater present value for a lease term of 99 years ($6,349 million) than for 46 years ($4,970 million). Extending the lease term beyond 99 years adds very little in present value terms.
Appendix B:

Qualifications of Provident Capital Advisors

Provident Capital Advisors LLC / Provident Resources Group Inc.

Provident Capital Advisors is a wholly-owned subsidiary of Provident Resources Group, Inc. (Provident). Provident was founded in 1999 as a Georgia nonprofit corporation. Provident is exempt from federal income taxes under Section 501(a) of the Internal Revenue Code of 1986, as amended ("Code") as an organization described in Section 501(c)(3) of the Code. Provident pursues a broad range of charitable activities and programs that serve to: (1) promote, advance and support education; (2) relieve the poor and distressed through the provision of safe, comfortable and affordable housing; (3) lessen the burdens of state and local governments; (4) advance healthcare for all individuals; and (5) provide for and serve the special needs of the elderly through the provision of safe, compassionate and comfortable senior living facilities. Provident strives to assist state and local governments in lessening the burdens they face in providing many needed services to their citizens through direct and individual collaborations and through public/private ventures involving government, education and other public institutions, as well as certain associated private sector enterprises.

Since its inception, Provident has acquired, financed and developed more than 35 properties in furtherance of its charitable purposes, including the acquisition, financing and development of approximately 4,000 units of affordable housing and nearly 1,700 beds, of student housing for public universities in Louisiana, Missouri and Maryland with another 1,000 units currently in development. To date, Provident has raised more than $560 million in tax-exempt financing in support of its charitable activities. As of December 31, 2008, Provident had total assets in excess of $475 million.
Patrick Mooney, CFA

Patrick R. Mooney, CFA serves as Managing Director of Capital Markets for Provident Resources Group Inc., and serves on the board of Provident Capital Advisors. Mr. Mooney has career experience in public finance, corporate finance, energy trading and risk management, financial analysis, investment banking and investor relations. He has worked as an investment banker in both Public Finance and Corporate Finance and in industry for the largest independent oil and gas company in America.

a. Prior to joining Provident in 2009, Mr. Mooney worked for CapitalOne Southcoast, Inc., a subsidiary of CapitalOne Financial. During his tenure at CapitalOne Southcoast, he was promoted from Senior Vice President of Energy Investment Banking to Managing Director and head of Investment Banking. He also served on the board of directors of CapitalOne Southcoast for a portion of his tenure with the firm. His primary responsibilities as head of investment banking were to raise capital for energy clients, recommend optimal capital structures for clients needing capital based upon current market conditions, and developing new business.

b. Prior to joining Capital One in 2005, Mr. Mooney owned and managed a licensed broker dealer headquartered in Texas. Among the transactions he closed was serving as financial advisor to a client in a $180 million merger with a public firm. He prepared analysis projecting how the transaction could improve the market price of the acquiring firm’s public stock, basing the deal benefits on research and analysis of its trading multiples. He then advised his client to obtain a stock put agreement based upon the trailing EBITDA. Mr. Mooney successfully negotiated the exchange ratio and put agreement in a favorable market.

c. Prior to 2002, Mr. Mooney held the role of Vice President of Investor Relations for a Boston-based public technology company and prior to that he held the same position at the largest independent oil and gas company in America - Union Pacific Resources. At Union Pacific Resources, he also served as Managing Director of the energy trading and risk management group for 7 years.

Both Investor Relations positions required communication with existing current and prospective. Additionally these positions required communicating and recruiting new institutional shareholders, which involves positively
communicating the management team’s expertise and future financial prospects for the firm.

- Prior to joining Union Pacific Resources in the early 1990s, Mr. Mooney spent 12 years as a public finance investment banker with a Louisiana-based investment bank. He began as a junior investment banker and ultimately headed the Company’s most profitable division. Mr. Mooney managed a $15 million budget and staff of 15 for this investment banking and financial services company. He directed new business development, deal structuring, and the department’s strategic direction. He developed his division into one of the most profitable regional investment banks in the country.

- After receiving his MBA in 1975, Mr. Mooney started his career with a national tax exempt bond firm. He spent his time on a trading desk in Chicago and New York bidding on newly issued tax exempt offerings from state and local governments around the country. During this period he developed expertise in pricing municipal bonds issued by state and local entities of varying credit-worthiness from around the country.

- **Education**

  Mr. Mooney became a Chartered Financial Analyst in 2002. He received his Masters in Business Administration from Tulane University and his Bachelor of Science in Mechanical Engineering from Louisiana State University. He also did graduate work in Petroleum Engineering at LSU.

  Mr. Mooney is a member of the Society of Petroleum Engineers, the Louisiana CFA Society and the CFA Institute.
## Appendix C-1

### I-80 Valuation (Before Deducting Rent)

#### Operating Assumptions

<table>
<thead>
<tr>
<th>Period</th>
<th>Revenue</th>
<th>Expense</th>
<th>Depr &amp; Amort</th>
<th>Other Income</th>
<th>EBIT</th>
<th>EBITDA</th>
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<tbody>
<tr>
<td>2012</td>
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<td>$105,601</td>
<td>$298,083</td>
<td>$20,121</td>
<td>$62,632</td>
<td>$360,716</td>
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<tr>
<td>2013</td>
<td>$476,000</td>
<td>$109,000</td>
<td>$413,058</td>
<td>$26,070</td>
<td>$19,989</td>
<td>$393,070</td>
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<tr>
<td>2014</td>
<td>$509,000</td>
<td>$113,000</td>
<td>$399,944</td>
<td>$33,867</td>
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<td>$429,657</td>
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<td>2015</td>
<td>$544,000</td>
<td>$118,000</td>
<td>$399,948</td>
<td>$41,742</td>
<td>$67,794</td>
<td>$467,742</td>
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<td>$581,000</td>
<td>$123,000</td>
<td>$400,865</td>
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<td>$97,395</td>
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<td>2017</td>
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<td>$128,500</td>
<td>$402,563</td>
<td>$43,431</td>
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<td>2018</td>
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<td>$133,500</td>
<td>$412,797</td>
<td>$43,924</td>
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<td>$534,576</td>
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<td>2019</td>
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<td>$138,500</td>
<td>$430,625</td>
<td>$44,035</td>
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<td>$562,510</td>
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<td>2020</td>
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<td>$144,093</td>
<td>$448,614</td>
<td>$44,521</td>
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<td>2021</td>
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<td>$149,856</td>
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<td>2022</td>
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<td>$155,850</td>
<td>$486,025</td>
<td>$47,746</td>
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<td>$505,584</td>
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<td>$526,482</td>
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<td>$547,685</td>
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<td>$46,535</td>
<td>$1,086,880</td>
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### Appendix C-2

#### I-80 Valuation (Before Deducting Rent)

<table>
<thead>
<tr>
<th>Period</th>
<th>EBIT</th>
<th>Tax</th>
<th>Amort</th>
<th>CAPX</th>
<th>Working Cap</th>
<th>Flow to Firm</th>
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</thead>
<tbody>
<tr>
<td>2012</td>
<td>$62,632</td>
<td>-$21,921</td>
<td>$298,083</td>
<td>-$223,170</td>
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<td>-$233,576</td>
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<td>2014</td>
<td>$29,712</td>
<td>-$10,399</td>
<td>$399,948</td>
<td>-$254,390</td>
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<td>2015</td>
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<td>-$23,728</td>
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<td>2016</td>
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<td>$412,797</td>
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<td>2019</td>
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### Appendix C-3

**Weighted Average Cost of Capital Analysis**

#### I-80 Valuation (Before Deducting Rent)

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<tr>
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<th>Calculation of Initial WACC</th>
<th>Calculation of Lifetime WACC</th>
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<td>Weight</td>
<td>Yield</td>
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<tr>
<td>Cost of equity times % equity</td>
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<td>Pretax Cost of Debt times (1-tax) times % Debt</td>
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<td>WACC</td>
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#### Yield Curves - October 13, 2009

<table>
<thead>
<tr>
<th>Maturity-(Year)</th>
<th>A- Taxable Current Interest Bond</th>
<th>A- Taxable Capital Appr. Bonds</th>
<th>BBB+ Taxable Current Interest Bond</th>
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<tbody>
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<td>5</td>
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<td>5.29%</td>
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<td>10</td>
<td>5.63%</td>
<td>5.87%</td>
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<tr>
<td>15</td>
<td>6.01%</td>
<td>6.25%</td>
<td>6.59%</td>
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<td>6.27%</td>
<td>6.51%</td>
<td>6.75%</td>
</tr>
<tr>
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<td>6.33%</td>
<td>6.57%</td>
<td>6.82%</td>
</tr>
<tr>
<td>30</td>
<td>6.39%</td>
<td>6.63%</td>
<td>6.87%</td>
</tr>
</tbody>
</table>

**Capital Structure (Before Rent)**

- Average Current Interest Bond maturity: 20
- Average Capital Appreciation Bond maturity: 24
- Weighted Pre Tax Cost of Debt: 6.38%
### Appendix C-4

#### I-80 Valuation After Deducting Rent

<table>
<thead>
<tr>
<th>Period</th>
<th>EBIT</th>
<th>Tax</th>
<th>Depr. &amp; Amort.</th>
<th>CAPX</th>
<th>Change in Working Cap</th>
<th>Free Cash Flow to Firm</th>
<th>Period</th>
<th>EBIT</th>
<th>Tax</th>
<th>Depr. &amp; Amort.</th>
<th>CAPX</th>
<th>Change in Working Cap</th>
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## Appendix C-5

### Weighted Average Cost of Capital Analysis

#### I-80 Valuation (After Deducting Rent)

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<th>Calculation of Initial WACC</th>
<th>Calculation of Lifetime WACC</th>
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</thead>
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<td>25.00%</td>
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<td>9.30%</td>
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<td>Pretax Cost of Debt times (1-tax) times % Debt</td>
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</tr>
<tr>
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<td>4.06%</td>
<td>4.06%</td>
</tr>
<tr>
<td></td>
<td>95.00%</td>
<td>90.70%</td>
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<tr>
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<td>100.00%</td>
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#### Yield Curves - October 13, 2009

<table>
<thead>
<tr>
<th>Maturity-(Year)</th>
<th>A- Taxable Current Pay</th>
<th>A- Taxable CAB</th>
<th>BBB+ Taxable Current Pay</th>
</tr>
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<tbody>
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<td>5</td>
<td>5.23%</td>
<td>5.47%</td>
<td>5.29%</td>
</tr>
<tr>
<td>10</td>
<td>5.63%</td>
<td>5.87%</td>
<td>6.15%</td>
</tr>
<tr>
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<td>6.01%</td>
<td>6.25%</td>
<td>6.59%</td>
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<td>6.27%</td>
<td>6.51%</td>
<td>6.75%</td>
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<tr>
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<td>6.33%</td>
<td>6.57%</td>
<td>6.82%</td>
</tr>
<tr>
<td>30</td>
<td>6.39%</td>
<td>6.63%</td>
<td>6.87%</td>
</tr>
</tbody>
</table>

### Capital Structure (After Rent)

- Average Current Interest Bond maturity: 16
- Average Capital Appreciation Bond maturity: 19

### Weighted Pre Tax Cost of Debt

- 6.25%