BEFORE
THE
SURFACE TRANSPORTATION BOARD

STB Ex Parte No. 646 (Sub No. 1)

SIMPLIFIED STANDARDS
FOR RAIL RATE CASES

Verified Statement
of
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President

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Due Date: October 24, 2006

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I. **INTRODUCTION**

My name is Thomas D. Crowley. I am an economist and the President of L. E. Peabody &

Associates, Inc., an economic consulting firm that specializes in solving economic, transportation,

marketing, and fuel supply problems. I have spent most of my consulting career of over thirty-five

(35) years evaluating fuel supply issues and railroad operations, including railroad costs, prices,

financing, capacity and equipment planning issues. My assignments in these matters were

commissioned by railroads, producers, and shippers of different commodities. A copy of my

credentials is included as Exhibit No. 1 to this verified statement.

I have been requested by Counsel for various Interested Parties to address certain issues arising

from the Surface Transportation Board's ("STB") decision in Ex Parte No. 646 (Sub-No. 1),

Simplified Standards For Rail Rate Cases, served July 26, 2006 ("Ex Parte 646"). Specifically,

Counsel for the Interested Parties have requested that I address the following issues: (1) the

Maximum Value of the Case ("MVC") determinates proposed by the STB and the determinants'

impact on the available rate reduction procedures; (2) the theoretical bases and the application of the

STB's proposed Three Benchmark Methodology ("Three Benchmark"); and (3) the theoretical bases

and the application of the STB's proposed Simplified Stand-Alone Cost Procedures ("SSAC").

My testimony is discussed further below under the following topical headings:

II. Determination and Application of the MVC

III. Application of the Three Benchmark Methodology

IV. Application of the Proposed SSAC Methodology

II. DETERMINATION AND
APPLICATION OF THE MVC

The STB instituted these Ex Parte 646 proceedings in an attempt to remedy the shortcomings of the procedures originally adopted pursuant to the STB's decision in Ex Parte No. 347 (Sub-No. 2), *Rate Guidelines - Non-Coal Proceedings,* Served December 31, 1996 ("Ex Parte 347"). To examine why the shipper community failed to utilize the Ex Parte 347 procedures, the STB held public hearings in 2003 and 2004 to gather input regarding the limitations of the Ex Parte 347 procedures. The STB found that shippers perceived the Ex Parte 347 procedures as too vague to use as an effective tool in the regulatory and negotiating processes. In addition, shippers felt that the proposed Ex Parte 347 procedures would open them to prolonged litigation over whether the shippers would even qualify to use the proposed simplified guidelines.[1]

To address the shippers' concerns around the vagueness of its Ex Parte 347 procedures, the STB now proposes to utilize three procedures to address rate complaints under the stand-alone cost ("SAC") constraint. First, the STB proposes to retain its current stand-alone cost ("Full SAC") procedures for use in certain "large" rate cases that reflect great value to the shipper. Second, the STB proposes to create a scaled-down SSAC procedure to use in what the STB terms "medium size" rate disputes, for which a Full SAC analysis may be too costly. And third, the STB proposes to retain the Three Benchmark methodology, with certain modifications, for use in small rate disputes when even a SSAC approach would be prohibitive to the shipper.

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[1]   See Ex Parte 646 at 3.

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In addition to initial concerns surrounding the vagueness of the Ex Parte 347 procedures, shipper groups urged that the STB to adopt a "bright-line test" for shipper eligibility to use the simplified guidelines.[2] This bright-line test would address shippers' concerns around extended litigation of a shipper's eligibility to bring a case under the small shipper procedures. In response to the shippers' proposal, the Association of American Railroads ("AAR") did not oppose a bright-line test for eligibility in small rate cases, but sought to include only "truly small cases" as measured by a shipper's size.[3] The evidence provided by the various parties persuaded the STB that it needed to provide further guidance as to who may use its simplified guidelines.

Based on input from the shippers and the railroads, the STB has now developed proposed eligibility tests. While the STB's proposed eligibility standards are a start, I believe the STB's proposed eligibility standards contain many flaws, both of conception and application, that make the standards unworkable in the real world and would preclude shippers from using the STB's proposed new rate reasonableness methodologies. These problems are outlined below under the following topical headings:

A. STB Proposed Eligibility Standards

B. Flows in the STB's proposed Eligibility Standards

A. STB PROPOSED ELIGIBILITY STANDARDS

The STB has proposed to meet the shippers' "bright-line test" by developing specific eligibility standards as to when a shipper may pursue a case using the STB's proposed Ex Parte 646

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[2]   See Ex Parte 646 at 9.
[3]   See Ex Parte 646 at 35.

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procedures, and what procedures it may use in pursuing a maximum reasonable rate case. The STB

proposes to base eligibility on what it terms the maximum value of the case ("MVC"). According

to the STB, the MVC equals the maximum relief that a shipper may obtain over five (5) years,

assuming a rate reduction to the 180 percent jurisdictional threshold ("JT") rate level. The STB

proposes to calculate the MVC by multiplying the difference between the issue rate and the JT rate

level by prospective five-year traffic volumes, and discounting the annual cash flows by the most

recent railroad industry cost of capital.[4] Mathematically, one may present the STB's proposed MVC

calculation as follows:[5]

$$MVC = \sum_{n=0}^{4} \{[(Rate - 1.8 \times VC) \times Vol] \div (1+i)^n\}$$

Where:

"Rate" = The issue rate
"VC" = The issue movement's variable cost
"Vol" = Historic or forecasted traffic volumes
"i" = The most current railroad industry cost of capital
"n" = The number of years

The STB proposes to base eligibility for its various maximum reasonable rate methodologies

upon the calculation of the MVC. If the aggregate MVC is less than $200,000, then the shipper may

presumptively use the STB's proposed Three Benchmark methodology for determining a maximum

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[4] See Ex Parte 646 at 33.
[5] The STB's Ex Parte 646 decision does not provide a detailed mathematical equation for the MVC calculation. However, in a subsequent decision in the Ex Parte 646 proceedings served September 25, 2006, the STB provided the equation it claimed it used to develop the asserted MVC of unregulated shipments included in the STB's 2004 Waybill Sample, and included in the STB's July 26, 2006 decision at Table 2. The STB denied a request seeking its workpapers underlying the MVC calculations so I am unable to confirm the STB's calculations. However, I assume that the equation used by the STB to calculate the MVC in its Table 2 reflects the STB's proposed procedure for calculating the MVC in other cases.

reasonable rate.[6] If the aggregate MVC is greater than $200,000, but less than $3.5 million, then the shipper may presumptively use the SSAC approach. Finally, if the MVC is greater than $3.5 million, then the shipper will presumptively utilize a Full SAC analysis.

To guard against what it terms "manipulation of its eligibility standards," the STB proposes to impose several restrictions and rebuttal presumptions on the MVC calculations.[7] These limitations would include limiting rate relief to five (5) years, curtailing the scope of the rate relief to the volume of traffic included in the MVC calculation, and limiting all claims brought within a two (2) year period that involve the same defendant railroad and same captive origin or destination.[8] The STB proposes to allow shippers to rebut these eligibility presumptions based on the likely actual value of the case ("AVC") instead of the MVC.

The STB bases its proposed eligibility thresholds purportedly on evidence filed by shippers in Full SAC cases and the original rulemaking in Ex Parte No. 347. The STB assertedly based its $3.5 million eligibility presumption on shipper claims that the cost to bring a Full SAC analysis exceeds $3.5 million and continues to rise.[9] The STB also asserts that prior testimony in Ex Parte 347 has indicated that consulting costs to bring a SSAC case would range between $25,000 to $85,000 excluding attorney fees. The STB believes that when attorney fees are added to these proposed

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[6]   The threshold MVC levels serve as rebuttable presumptive thresholds for use of a particular rate reasonableness approach, and do not preclude a shipper from bringing a maximum reasonable rate case using a more sophisticated approach. In other words, a shipper that is eligible to use the STB's proposed Three Benchmark approach may use the STB's proposed SSAC approach or a Full Stand-Alone Cost approach. See Ex Parte 646 at 33.

[7]   See Ex Parte 646 at 36.

[8]   See Ex Parte 646 at 34.

[9]   The STB also states that it will hold the $3.5 million threshold level even in the face of raising costs because it believes that its proposed modifications to Full SAC procedures addressed in Ex Parte No. 657(Sub-No.1), *Major Issues in Rail Rate Cases*, Served February 27, 2006 will reduce the expense of bringing any type of maximum reasonable rate proceeding.

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consulting fees, the total cost of a SSAC approach would equal $200,000. As support for its eligibility requirements, the STB examined its 2004 Waybill sample to estimate the number of movements that would be presumed eligible to use the SSAC and Three Benchmark Approaches.[10/] The STB asserts that 17% of regulated shipments would be able to use the Three Benchmark Approach, while 50% of regulated shipments would be able to use the SSAC approach.

B. FLAWS IN THE STB'S
PROPOSED ELIGIBILITY STANDARDS

The STB believes that its proposed eligibility standards for determining which rate reduction methodology that a shipper may presumptively use addresses the concerns brought by the shippers about the existing Ex Parte 347 approaches. I believe, though, that the STB's proposed MVC calculations and eligibility thresholds contain numerous flaws and biases that will preclude their use by the shipping community. Specifically, I have found that the threshold MVC levels are unrealistically low based on the complexity and stipulations mandated by the STB in its proposed SSAC and Three Benchmark approaches. Also, the MVC calculation as proposed by the STB is open to manipulation by the railroads, and effectively removes the decision of which rate reduction methodology should be employed from the hands of the shippers. Third, the MVC has no bearing on the AVC of the case, and it is the AVC which dictates whether or not a shipper will initiate a case. And finally, the MVC calculation unfairly biases the calculation against shippers by artificially raising the value of a case. I explain each of these flaws below under the following topical headings:

1. Threshold MVC Levels Are Unrealistically Low

2. The STB's Proposed Aggregation Rules Are Unrealistic

[10/]   See Ex Parte 646 at 37, Table 2.

3. The MVC Is Subject To Manipulation By The Railroad

4. The MVC Has No Relation To The AVC

1. The Threshold MVC
   Levels Are Unrealistically Low

The STB claims that its threshold MVC levels of $200,000 for the presumptive right to use the Three Benchmark approach and $3.5 million for the presumptive right to use the SSAC approach fairly reflect the upper bound of the costs to bring a maximum reasonable rate case under the respective methods.[11] I believe based on my past experiences in presenting evidence in every Full SAC case filed since the adoption of the modern SAC procedures in Ex Parte 347 (Sub-No. 1), *Coal Rate Guidelines, Nationwide*, Served August 8, 1985 ("Coal Rate Guidelines"), and based on the railroad's response to that evidence, that the STB has dramatically underestimated the costs to produce evidence under the Three Benchmark and SSAC approaches. I explain the reasons for my beliefs below.

a. The Costs To Bring A Case For A Single Movement Under
   The Three Benchmark Approach May Exceed $200,000

The STB believes that the simplifying approaches it proposes in its Three Benchmark methodology will allow small shippers to pursue rate relief where the MVC of the case does not exceed $200,000.[12] These simplifications include: 1) limiting the breadth and depth of discovery;[13] 2) limiting evidence on the comparability of comparison group movements to publicly available information and to non-rate data provided in the STB's Waybill Sample;[14] 3) requiring simultaneous

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[11] See Ex Parte 646 at 36.
[12] See Ex Parte 646 at 36.
[13] See Ex Parte 646 at 31.
[14] See Ex Parte 646 at 20.

tendering of evidence on an appropriate comparison group;[15] and 4) eliminating movement specific adjustments in the calculation of a movement's variable cost.[16]

While the STB may think that its procedures will result in extremely low litigation costs under the Three Benchmark approach, I believe that this is not correct, and the cost of litigation will make the approach cost prohibitive for many small shippers, given the extremely low $200,000 MVC limit the STB proposes for its Three Benchmark approach.

i. The Cost To Justify Inclusion of Movements In The Comparison Group Will Be Much Higher Than The STB Assumes

I believe the STB has dramatically underestimated the true costs to justify inclusion of movements in the comparison group. The STB proposes that after each party submits its final offer comparison group to the STB and justifies its selections, the STB will then select the comparison group that it concludes is most similar in aggregate to the issue movement.[17] The STB indicates that it will determine comparability by reviewing a variety of factors presented by the parties, including such factors as length of movement, commodity type, terrain involved, and "other factors which could affect demand characteristics and operating costs."[18]

While a shipper may easily identify length of haul and commodity type from data contained in the STB's Waybill Sample, identifying the other comparative factors can make the comparison group identification process very time consuming and costly. Take for example a comparison of the terrain involved in the issue and comparison movements. While the STB may envision that the parties to a

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[15] See Ex Parte 646 at 20.
[16] See Ex Parte 646 at 28.
[17] See Ex Parte 646 at 20.
[18] See Ex Parte 646 at 20.

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Three Benchmark case will attempt to justify including a movement in their comparison group based upon broad generalizations about the terrain along the route, e.g., the issue and the comparison movement both move from North Dakota to Minnesota, the reality will most likely be far different. Based on my experiences in Full SAC analyses, I fully expect that the railroads will present in-depth, detailed evidence challenging the shipper's comparison group, while using equally detailed evidence justifying its own comparison group. Such detailed evidence could include detailed topographical data about the route.

I also believe that terrain is not the only comparative category where the expense to present evidence could dramatically rise. The same can occur in developing train characteristics and other factors impacting operating costs. For example, the issue movement may originate at a location that requires an extensive amount of switching or extra locomotive power. The defendant railroad may present evidence based on direct observation that the shipper's comparison group movements do not have the extensive switching or locomotive requirements as the issue movement, and should therefore be excluded from the comparison group calculation. The shipper would then either have to perform its own study of the comparison group movements to determine if the operating characteristics are similar, or run the risk of having the STB select the defendant railroad's comparison group because it was better supported.

The STB will attempt to hold down such extensive use of evidence by limiting the amount of discovery in Three Benchmark cases. In fact, limiting the amount of data available through discovery will potentially increase the cost of justification by forcing shippers to find alternative sources of data. For example, information that a shipper may easily discern from track charts or train lists may be unavailable due to the discovery limitation proposed by the STB. Such a limitation will force the

shipper either to obtain the required data from another source, such as through direct observation on a field trip, or risk not justifying to the STB's satisfaction, the shipper's choices in its comparison group. In contrast, the rail carrier will have access to this information, and there are no limitations on the rail carrier's use of its own data. Thus the STB's proposal imposes a severe disadvantage on shippers while conferring a clear advantage on the defendant railroad.

Some may reject as hyperbole these concerns about ever-increasing complexity in comparison group selection, but one need only look at the evidentiary "arms race" that has occurred in Full SAC cases to see where this can lead. A perfect example of this phenomenon can be seen by comparing the STB's decision in Docket No. 41191, *West Texas Utilities Company v. Burlington Northern Railroad Company*, Served May 3, 1996 ("WTU") to the publicly available evidence in Docket No. 41191 (Sub-No. 1), *AEP Texas North Company v. BNSF Railway Company* ("AEP Texas"). Both cases involve challenging unreasonable rail rates from the Powder River Basin ("PRB") to the Oklaunion Generating Station through the use of the STB's Full SAC constraint, but the level of detail presented in AEP Texas dwarfs that presented by the parties in WTU. The parties in WTU based their evidence primarily on operating and investment data provided in discovery and on system average railroad statistics. In AEP Texas, both parties based their evidence on a multitude of sources presented by dozens of experts. With regard to the stand-alone railroad's operating plan, the railroad based its operating plan in WTU on its historical average cycle time data and shipper specific average train sizes. In AEP Texas, the parties relied upon computer simulation models that incorporated a multitude of operating factors never explicitly raised in WTU.[19]

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[19] The STB's recommended railroad simulation model, the Rail Traffic Controller, incorporates such factors as track geometry, terrain, locomotive characteristics, signaling and communication and segment specific track outages and slow orders.

The differences between <u>WTU</u> and <u>AEP Texas</u> did not come about from modifications to the Full SAC constraint, but from incremental changes to the complexity of evidence filed by the parties in each succeeding Full SAC case. At every turn, the parties to maximum reasonable rate cases subsequent to <u>WTU</u> produced greater levels of information to justify their own evidence, and/or to refute that of the other party. I believe the same rush to complexity will also occur in the justification of the comparison groups in the STB's proposed Three Benchmark approach. I expect initial cases brought under the proposed Three Benchmark methodology will be more complicated than the STB envisions.

ii. The Railroads Will Actively Contest <u>Every Piece Of Shipper Evidence</u>

The railroads have not only raised the cost of filing a Full SAC analysis by making the evidence more complex, they have also raised the expense to shippers by contesting every evidentiary submission made by shippers. I fully expect the railroads to utilize the same tactic in the STB's proposed simplified procedures to discourage filings of maximum rate cases.

It has become the common practice for railroads to contest every round of evidence in Full SAC cases by filing motions to dismiss and/or strike evidence after every shipper evidentiary filing. For example, in Docket N0. 42057, *Public Service Company of Colorado D/B/A Xcel Energy v. Burlington Northern and Sante Fe Railway Company,* ("<u>Xcel</u>"), the defendant railroad, Burlington Northern and Santa Fe Railway Company ("BNSF"), filed motions to strike the shipper's evidence, to supplement its own evidentiary record and to "clarify" the record after Xcel's opening evidence, after Xcel's rebuttal evidence, after the STB's decision in another rate case and after Xcel's post oral hearing brief. In each case, Xcel was forced to respond to each of the railroad's filings and incur even

greater expense than anticipated. The railroads employed similar tactics of filing additional motions and requests in every subsequent Full SAC case since Xcel.[20]

I have every expectation that a railroad faced with contesting a maximum reasonable rate case under the Three Benchmark approach will employ the same tactics. In fact, I believe that post-evidentiary filings would become even more common under the Three Benchmark approach due to the small threshold value of the case. A railroad has every incentive to increase the costs to the shipper of filing a rate case. If the railroad can force the shipper to incur even greater costs by filing numerous extraneous motions, it puts itself in a position to drive the costs above the MVC of the case to the shipper, and discourage similar filings in the future.

iii.   The Estimated Costs to Present A Three Benchmark Case

The STB presumes that costs under the Three Benchmark approach will remain low for several reasons. First, the STB believes that a great deal of the preliminary work before a case is filed would be performed by the shipper and not performed by external consultants and attorneys.[21] Second, the STB anticipates that its use of unmodified URCS variable costs and limitations on discovery will hold expenses in check.[22] Third, the STB expects its comparison group final offer selection process will lead to prompt, expedited resolution to the comparison group selection.[23] I do not agree with the STB's rationale. Shippers will ask consultants and attorneys knowledgeable about these procedures to provide an opinion prior to filing a case. The discovery process is an incremental process and the

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[20]   See the public filings in STB Docket No. 42071, *Otter Tail Power Company v. The Burlington Northern and Santa Fe Railway Company* ('Otter Tail"), in AEP Texas, and STB Docket No. 42088, *Western Fuels Association, Inc., and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company* ("WFA/Basin").

[21]   See Ex Parte 646 at 35.

[22]   See Ex Parte 646 at 29.

[23]   See Ex Parte 646 at 20-21.

bulk of the costs will be associated with the comparison group. Whether or not the STB promptly decides the comparison group selection is totally within their purview and will not impact the cost of presenting a case.

The STB draws its $200,000 presumptive threshold ceiling for a Three Benchmark analysis from testimony presented in its Ex Parte 347 rulemaking.[24] By implementing this ceiling, the STB assumes preparing and presenting a Three Benchmark case will cost shippers less than the $200,000 threshold level. I believe the STB has dramatically underestimated the average costs to prepare and present a case under the STB's proposed Three Benchmark procedures. In actuality, based on my past experience in preparing evidence for maximum reasonable rate cases and other proceedings before the ICC/STB that rely upon Uniform Rail Costing System ("URCS") and Waybill Sample data, I estimate the minimum costs to bring a case using the proposed Three Benchmark approach would equal $100,000 and could range as high as $400,000, including consulting and legal fees.

b. The STB Underestimates The Cost To Present A SSAC Case

The STB has set its eligibility threshold for the cost of a SSAC analysis based on its expectations of the future costs to present a Full SAC case. Specifically, the STB believes that shippers may litigate future Full SAC cases for approximately $3.5 million.[25] Therefore, it has set the bounds for use of its proposed SSAC procedures at the expected cost to file a case using the proposed SSAC approach ($200,000) and the expected cost to litigate a Full SAC case ($3.5 million).

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[24] See Ex Parte 646 at 36.
[25] See Ex Parte 646 at 36.

I believe that, like its estimates of the cost to present a maximum reasonable rate under the Three Benchmark approach, the STB has very seriously underestimated the cost to a shipper of litigating a case using its proposed SSAC methodology. I hold this view for two reasons. First, the steps involved in the STB's proposed SSAC approach are not nearly as straight-forward as the STB suspects. Second, there are large areas of uncertainty that the STB has not accounted for, which will drive up the cost of cases. And, as is currently happening with Full SAC cases, the railroads will take every opportunity to increase the cost of the case though the filing of repeated motions and petitions.

The STB asserts that its SSAC procedures will differ from a Full SAC analysis by eliminating or restricting the evidence parties may submit on certain issues.[26] Specifically, the STB proposes to modify the process as follows:

- *Route* - The shipper will have the right to identify its preferred route. If the shipper chooses a route not currently used by the issue movement, the shipper will need to demonstrate that the selected route has the capacity to handle the additional traffic.

- *Configuration* - The SARR's facilities will replicate the defendant railroad's existing facilities. The shipper will have the opportunity to prove that facilities along the route have fallen into disuse, and thus exclude them from the analysis.

- *Test Year* - The parties will investigate the rates based on a one-year analysis.

- *Traffic Group* - The traffic group will consist of all traffic moving over the selected route. A shipper will not be allowed to reroute non-issue traffic.

- *Cross-Over Traffic* - Cross-over traffic revenues will be allocated using the same method as in a Full SAC analysis.

- *Road Property Investment* - Road property investment ("RPI") will be based on a combination of averages form prior Full SAC cases and actual data.
- *Operating Expenses* - The parties will base operating expenses on modified URCS variable costs for the involved railroad(s).

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[26] See Ex Parte 646 at 12.

- *Discounted Cash Flow* - Because the SSAC approach will only use a one-year test period, the netting process from the existing discounted cash flow ("DCF") model can be eliminated.

- *Maximum Reasonable Rate* - The parties will utilize the same rate reduction approach as used in Full SAC analyses as determined by the STB in its Ex Parte 657 proceedings.

In addition to "simplifying" the rate reasonableness tests, the STB also proposes to stream-line the process by altering the discovery process to place a greater initial burden on the defendant railroad. Instead of the railroad providing raw traffic and operating information to the shipper for the shipper to identify and construct traffic groups, traffic revenues and operating costs, the railroad (as part of the railroad's second disclosure in the SSAC process): 1) will identify all the traffic that moved over the routes replicated by the SARR; 2) will develop total operating and equipment costs for each of the movements included in the traffic group; 3) and create the revenue allocations for the on-SARR portion of each cross-over movement.

While the STB contends that its proposed methodology will stream-line existing Full SAC procedures, and thus eliminate a large portion of the expense associated with a Full SAC analysis, I believe that the STB has not fully considered the ramifications and intricacies of its proposal, and that the amount of work required for various elements in a SSAC case could approach, or even exceed, the cost and complexity of presenting the elements of a Full SAC case.

First, the STB's proposal to shift the burden of identifying the SARR's traffic group and developing SARR revenues to the railroad will not reduce the shipper's cost because the shipper will still need to independently verify the railroad's data. As it currently occurs in a Full SAC analysis, a shipper receives traffic data from the railroad, identifies a subset of the available traffic for its traffic group, and determines the SARR revenue for the traffic group and develops operating expenses for

the traffic group. Subsequently, after receiving the shipper's opening evidence, the defendant railroad independently verifies the data presented by the shipper by going back to the base supporting data and reproducing the shipper's traffic data and operating expense data looking for any errors of omission or calculation. Under the STB's proposed SSAC approach, the methodology will be reversed with the railroad producing the initial data and the shipper verifying the information. The shipper will still use the same steps as if it was producing the data only in reverse order, meaning that it will face no net decline in expense for this portion of the process. If the shipper does not verify the railroad's traffic and operating expense data, it runs the extreme risk of using an incomplete traffic group, incorrectly calculated revenues or incorrectly calculated operating costs. It will be therefore imperative for the shipper to go through the time and expense to reproduce the railroad's data.

Second, the amount of effort to calculate cross-over revenues will be considerably higher under the SSAC approach compared to a Full SAC analysis. Full SAC procedures allow a shipper to identify a traffic group that maximizes SARR revenues while minimizing operating expenses and RPI.[27] This usually entails including in the SARR's traffic group a subset of the actual traffic moving over the replicated route. The SSAC approach will require the inclusion of all traffic moving over the route, which could be several multiples above the amount of effort required in a Full SAC case. For example, on a movement like one the one hypothesized by the STB on page 14 of its Ex Parte 646 decision, which envisions moving grain from the Upper Midwest to the West Coast for export, the number of individual movements included on the route could reach into the thousands. Such a task becomes especially burdensome if the STB adopts its Average Total Cost ("ATC") revenue methodology as proposed in the STB's Ex Parte 657 proceeding, which requires the development

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[27] See Coal Rate Guidelines at 543.

of the variable cost of movement for both the on-SARR and off-SARR portions of <u>each</u> cross-over move.

Third, several RPI categories, including grading and tunnel investment, still require a shipper presenting a SSAC case to produce independent evidence of actual costs. For example, the STB proposes to have parties use Interstate Commerce Commission ("ICC") engineering reports as the basis for determining the underlying quantities of earth work materials where the ICC developed the information. Where the ICC did not produce this information, the parties will need to present evidence of grading quantities from other sources. As the STB well knows, one of the greatest points of contention in recent Full SAC cases has been grading quantities developed where the ICC did not produce engineering reports. Similar squabbles have also occurred over the costs of building and/or day lighting tunnels. The STB should not expect the parties to see a decline in litigation costs associated with these RPI categories.

Fourth, the STB's decision to retain internal cross-subsidy analyses will force shippers on low-density rail lines to spend considerable sums of money justifying the rerouting of their traffic. The STB proposes to retain the internal cross-subsidy tests set forth in STB Docket No. 42054, *PPL Montana, LLC v. The Burlington Northern and Santa Fe Railway Company*, served August 20, 2002 ("<u>PPL</u>") and <u>Otter Tail</u> as an affirmative defense for the defendant railroad. These tests, which act as a threshold hurdle to presenting a Full SAC case (in the case of the <u>PPL</u> cross-subsidy analysis), and as a limitation on rate reductions (in the case of the <u>Otter Tail</u> cross-subsidy analysis), are especially detrimental to shippers with facilities on low-density, under-utilized rail lines.

Shippers in past Full SAC cases have attempted to overcome this cross-subsidy burden by rerouting the issue traffic, rerouting non-issue traffic or a combination of both.[28] As I indicated above, the STB's proposed SSAC procedures would not allow the rerouting of non-issue traffic.[29] This will force shippers on light-density rail lines who bring a maximum reasonable rate case under the proposed SSAC approach to attempt to reroute the issue traffic to higher-density segments. However, to reroute the issue traffic under the proposed SSAC approach, a shipper will need to demonstrate that the route selected has sufficient existing capacity to handle the additional traffic.[30] The currently accepted norm for demonstrating rail line capacity in maximum reasonable rate cases is the use of a rail simulation model such as the Rail Traffic Controller ("RTC") model.[31] Therefore, a shipper that attempts to reroute its issue traffic will almost assuredly be required to perform a simulation to demonstrate that the new route possesses the available capacity. It is this sort of demonstration that the STB acknowledges drives up the cost of Full SAC presentations.[32] The STB's proposed SSAC approach will also drive this expense in medium size cases as well. Shippers who do not undertake these costly efforts will lose any chance of relief no matter how captive, and many isolated shippers may have no way of satisfying the segment cross-subsidy test under any cirucmstatnces.

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[28] See, for example, Otter Tail where the shipper rerouted the issue traffic, Xcel where the shipper rerouted non-issue traffic and STB Docket No. 42056, *Texas Municipal Power Agency v. The Burlington Northern and Santa Fe Railway Company*, served March 24, 2003 ("TMPA") where the shipper rerouted both the issue and non-issue traffic.

[29] As I will discuss below, the STB has effectively gutted Constrained Market Pricing ("CMP") through its proposed simplifications, including eliminating the bedrock SAC principle of maximizing traffic densities on a SARR. See Coal Rate Guidelines at 543.

[30] See Ex Parte 646 at 12.

[31] See Xcel at 27 and Otter Tail at 18.

[32] See Ex Parte 646 at 11.

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Fifth, a shipper can expect to spend considerable funds proving facilities along the route of movement have fallen into disuse. The shipper using the proposed SSAC approach must construct a hypothetical SARR that consists of the existing facilities (including all track, sidings, and yards) along the selected route.[33/] The STB has indicated though that a shipper may exclude facilities along the route that have fallen into disuse by the railroad if the shipper provides "compelling evidence."[34/] It is unclear from the Ex Parte 646 decision what evidence the STB would consider "compelling," but based on prior STB decisions, I believe the STB would accept nothing less than documentation produced by the railroad that the railroad no longer uses a particular facility, or demonstrations of physical evidence such as photographs and field report summaries proving the subject facilities have fallen into disuse. It is highly unlikely, based on my experiences in Fall SAC proceedings, that a defendant railroad will willingly provide the necessary evidence through the discovery process to prove that it no longer uses a facility.[35/] Therefore, the shipper attempting to prove a facility had fallen into disuse will most likely rely upon physical inspection and observation to prove that a railroad no longer uses a particular facility. This will entail the shipper retaining outside consultants and engineers to perform the physical inspections and observations, thus once again increasing the cost and the complexity of the SSAC approach.

Sixth, under the STB's proposed SSAC procedures, even if a shipper does prevail and the STB determines the rate unreasonable, the shipper will still have to prepare and present evidence each year for an additional four (4) years. The STB proposes to only test a rate for reasonableness during a

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33/ See Ex Parte 646 at 12.
34/ See Ex Parte 646 at 12.
35/ The STB and the ICC have long noted the railroads' propensity for withholding critical data from discovery. See, for example, ICC Docket No. 37038, *Bituminous Coal - Hiawatha, Utah to Moapa, Nevada*, 10 ICC 2d 259 (263) ("Nevada Power II") and STB Docket No. 42022, *FMC Wyoming Corporation and FMC Corporation v. Union Pacific Railroad Company*, Served May 10, 2000 ("FMC") at 31.

one-year test period analysis.[36] If the STB finds the rate unreasonable for the test year, it will prescribe rates only for that year. Each subsequent year, the shipper and the railroad will have to then "update" their traffic and operating cost analyses to reflect any changes.[37] This updating will require each party to completely redevelop the traffic group volumes and revenues and recalculate operating expenses.[38] As I indicated above, developing SARR traffic revenues can be expected to be one of the most complex and costly portions of the proposed SSAC procedures, especially if the STB adopts is proposed ATC revenue methodology. Under the STB's proposal, not only would a shipper have to absorb this expense during the initial round of evidence, but absorb this expense every year for an additional four years after a decision is rendered.

i. The Railroads Will Take Every Opportunity To Raise The Expense Of A SSAC Presentation

As I indicated above, the railroads have taken every step possible in recent cases to increase the cost of filing a maximum reasonable rate case, and I have every expectation that a railroad faced with contesting a maximum reasonable rate case under the STB's proposed SSAC approach will employ the same tactics. In fact, for the same reasons I cited above for the proposed Three Benchmark approach, I believe that post evidentiary filings would become even more common under the SSAC approach due to the smaller threshold value of the case relative to that of a Full SAC analysis. A railroad has every incentive to increase the costs to the shipper of filing a rate case. If the railroad can force the shipper to incur even greater costs by filing numerous extraneous motions, it puts itself

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[36] See Ex Parte 646 at 14.
[37] Under the STB's proposal, RPI cost will remain unchanged. See Ex Parte 646 at 56.
[38] As I indicated earlier, it is completely unrealistic to simply adopt the railroad's traffic, revenues and operating costs calculations without thoroughly examining and vetting the analyses. A shipper will ultimately be forced to reproduce the railroad's results to confirm their accuracy.

in a position to drive the costs above the MVC of the case to the shipper, and discourage similar filings in the future.

ii. The Estimated Costs To Present A SSAC Case

As I indicated above, the STB states in its Ex Parte 646 decision that it expects the minimum cost to bring a small shipper rate case using the SSAC approach would range between $25,000 to $85,000, excluding attorney fees, based on testimony received during the Ex Parte 347 proceedings.[39/] These cost levels, which were presented by two railroad witnesses, reflect the costs to bring a maximum reasonable rate case using the AAR's proprietary simplified SAC procedure presented in the Ex Parte 347 hearings. The STB believes it will require approximately the same level of effort to develop a rate case under the STB's proposed SSAC as under the AAR's Ex Parte 347 proprietary procedures because both methods used system-wide figures to estimate operating costs, and investment expenses from prior Full SAC cases.

I disagree with the STB's contention that the cost to present a case using the AAR's Ex Parte 347 simplified SAC procedure should be similar to the costs to prepare and present a case using the STB's proposed SSAC. While the AAR's Ex Parte 347 approach and the STB's proposed SSAC method both arguably use railroad average operating and investment costs, the SSAC procedures as proposed by the STB have so many options and so many unresolved questions that the cost will most assuredly be far higher than $200,00 and in some cases exceed the $3.5 million threshold for a Full SAC case.

[39/] See Ex Parte 646 at 36.

As a threshold matter, I believe the STB has understated the costs to accurately and effectively present a Full SAC analysis as well as a SSAC analysis. The cost to present a Full SAC analysis is relevant to the application of the SSAC method because the STB defines the eligibility to use the SSAC approach, in part, by the expected costs to present a Full SAC analysis. Therefore, to address the SSAC issue, I must first address the issue of the cost to present a Full SAC analysis. The STB holds that a shipper can expect to reasonably spend approximately $3.5 million to present a Full SAC analysis, including consulting and legal fees, taking into consideration the STB's proposed Ex Parte 657 procedures on the cost of evidence preparation and presentation.[40] Based on my experiences in developing evidence in prior Full SAC cases and in analyzing the STB's proposed Ex Parte 657 procedures, I conclude the STB has underestimated the costs for a Full SAC case. I estimate the minimum consulting fees to present a Full SAC analysis would equal $2.25 million, and could run upwards of $4.0 million depending upon the complexity of the case and the number of rounds of evidence required.[41] I base these figures on the costs incurred in prior SAC proceedings and on the level of effort involved in the STB's Ex Parte 657 procedures.[42] If we assume legal fees are 75 percent of the total consulting fees, then the costs to present a Full SAC analysis will run between approximately $4 and $7 million.[43]

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[40] See Ex Parte 646 at 36.

[41] While three rounds of evidence are required by the STB's regulations, the nine most recently decided maximum rate cases had between 3 and 7 rounds of evidence.

[42] The STB presumably believes the costs to present a Full SAC case under its proposed Ex Parte 657 procedures will decline due to the elimination of movement specific adjustments in the calculation of variable costs. However, the effort to calculate movement specific variable costs is minor compared to the effort to develop the SAC for a case. I believe any cost reductions from using unadjusted URCS Phase III costs instead of movement specific costs will be more than offset by the increase in the costs to develop SAC under the proposed Ex Parte 657 procedures.

[43] I must also note that these are only external consultant and legal fees, and do not include the internal company costs to the shipper to bring a maximum reasonable rate case.

Given that the STB plans to utilize many of the same Ex Parte 657 procedures in its SSAC analysis as it plans on using in a Full SAC analysis, I believe the cost to prepare a SSAC analysis will be much, much higher than the $200,000 figure estimated by the STB. I estimate, based on the expected analyses required, that the minimum consulting fees to present a SSAC analysis will be approximately $1 million and could run as high as $2 million. The full extent of the fees is really out of the hands of the shipper and in the hands of the railroad and the STB. Shippers cannot control the level of a railroad's attack in a case and the number of supplemental rounds of evidence the STB will require. It is the level of the railroad's attack and the number of rounds of evidence required by the STB that drive up many of the costs.[44] Since consulting fees for a SSAC analysis will range from $1 to $2 million and assuming legal fees will equal approximately 75 percent of consulting fees, I estimate the total external costs of a SSAC analysis will run between $1.75 to $3.5 million.[45]

2. The STB's Proposed Aggregation Rules Are Unrealistic

As I indicated above, the STB proposes to impose several restrictions and rebuttable presumptions on the MVC calculations to guard against what it terms "manipulation of its eligibility standards."[46] These restrictions would include limiting rate relief to five (5) years, curtailing the scope of the rate relief to the volume of traffic included in the MVC calculation, and limiting all claims brought within a two (2) year period that involve the same defendant railroad and the same captive origin or destination. If the shipper brought one or more rate cases within two (2) years for

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[44] The railroads, or their surrogates, will argue that shippers could lower their costs in presenting a maximum reasonable rate by producing and presenting "better" evidence. This is a hallow argument. In recent Full SAC cases where shippers have presented operating and traffic evidence that the railroads have accepted the majority of, the railroads have developed new arguments and attacks that drive up the cost even further.

[45] As before, these only reflect external costs to the shipper and do not take into consideration internal company costs to bring a maximum reasonable rate case.

[46] See Ex Parte 646 at 36.

movements from the same captive origin or the same captive destination against the same defendant railroad, the STB would aggregate the MVC from these movements in determining the eligibility of use of a rail rate standard.

The aggregation rule proposed by the STB would effectively force even the smallest of shippers to use the more complex SSAC analysis, or spend the time and money justifying its reasons to use the less complex Three Benchmark approach. This is because the STB's flawed eligibility criteria do not take into consideration the route of the effective shipments, only the origins and destinations. Without explicitly taking into consideration the routing of the movements, the eligibility criteria proposed by the STB will produce absurd results.

I have developed the following hypothetical example to demonstrate the faults with the STB's proposed aggregation requirement. Assume a small manufacturing company located in Denver, CO and served exclusively by the BNSF ships a total of three (3) railcars per week or 156 cars per year. The manufacturer's customers are located in Seattle, WA, Los Angeles, CA, Chicago, IL and Houston, TX, and each customer receives 39 cars per year (156 cars ÷ 4 destinations), or approximately one (1) car every 10 days (156 cars ÷ 39 cars). Now also assume, for simplicity sake, that the proposed rates and variable costs for each origin destination pair equal $1,920 and $600 per car, respectively.[47] As Table 1 below shows, the MVC for each individual origin/destination pair is well below the $200,000 threshold eligibility level for the use of the STB's proposed Three

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[47] This assumption that the shipments would face similar rates and costs is realistic because the mileages between the origin and the various destinations are fairly close. However, I have set the average rate per car purposely low to demonstrate the impact on the eligibility level. If the rate in the hypothetical example were set at $2,500 per car, rates which are common amongst chemical and agricultural shipments, the number of annual carloads shipped to surpass the base eligibility level would dramatically fall.

Benchmark approach.[48/] However, when I aggregate the movements as required by the STB's

proposed eligibility standards, the MVC raises to almost two and one-half times the eligibility

threshold.

[48/]   Since the individual movements have the same rates and variable costs, the MVC is the same for each movement.

Table 1

Hypothetical Example of Impact Of

The STB's Proposed Aggregation Requirements

Item (1)	Individual Movements (2)	Aggregate Movements (3)
1. Aggregate Five Year Revenues At The Issue Rate [1]	$374,400	$1,497,600
2. Aggregate Five Year Revenues At The JT Rate [2]	$210,600	$842,400
3. Aggregate Difference in Issue and JT Revenues [3]	$163,800	$655,200
4. Five Year Discount Factor at 12.2 Percent [4]	1.242	1.242
5. Maximum Value of the Case ("MVC") [5]	$131,884	$527,536

[1] Column(2): $1,920 per car x 39 cars per year x 5 years. Column (3): $1,920 per car x 156 cars per year x 5 years.

[2] Column (2): $600 per car x 180% x 39 cars per year x 5 years. Column (3): $600 per car x 180% x 156 cars per year x 5 years.

[3] Line 1 - Line 2.

[4] Discount factor assuming a 12.2% annual cost of capital and cash flows occur at the beginning of each year.

[5] Line 3 ÷ Line 4.

As Table 1 above demonstrates, the STB's proposed aggregation rules would require this small shipper to either use the more complex and costly SSAC methodology, or present evidence as to why the STB should allow it to use the Three Benchmark methodology.

Moreover, the use of a SSAC analysis for the hypothetical example would be completely unrealistic. Because the shipper ships railcars to four distinct corners of the BNSF's system (Los Angles, Seattle, Chicago and Houston), the STB's proposed SSAC approach would require the shipper to reproduce the infrastructure along a majority of the BNSF's major routes. This would require the determination of cross-over revenues for a gigantic amount of BNSF's traffic base and could easily entail sending teams of consultants and engineers over nearly two-thirds of the

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continental U.S. reviewing the infrastructure along the rights-of-way for each aggregated movement. The costs to inspect the track alone would be enormous. When the costs to verify the traffic for this mega-SARR is included, the costs would certainly be prohibitive, considering the shipper only moves three cars per week.

3. The MVC Is Subject To Manipulation By The Railroad

The STB goes to great lengths to guard against a shipper "manipulating" the STB's proposed eligibility requirements. The STB's proposed eligibility requirements, however, take little or no action to guard against the railroads manipulating MVC calculations by setting extremely high issue rates and forcing shippers into a more complex rate analysis.

The STB's proposed MVC calculation requires four (4) inputs: 1) the movement's rate; 2) the movement's variable cost; 3) the movement's historic or prospective volumes; and 4) the railroad industry cost of capital. Of the four inputs, two are completely outside of the shipper's control (the movement's rate and the railroad industry cost of capital), one is slightly impacted by the shipper (the variable costs) and one is completely under the shipper's control (annual shipment volumes).[49] The STB's proposed eligibility standards limit how much a shipper may adjust traffic volumes in the MVC calculation through the standard's aggregation requirements. However, the STB places no limits on the one factor, the issue rate level, that is completely under the control of the railroad. A railroad can easily push the MVC well above the threshold eligibility level by setting the rate high enough. I demonstrate this fact in Table 2 below.

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[49] I believe the variable cost of a movement is slightly impacted by the shipper's ability to use either railroad provided railcars or provide its own railcars. The vast majority of the other variable cost factors are out of the shipper's control.

Item (1)	MVC at $1500 Per Railcar (2)	MVC at $3,000 Per Railcar (3)

Table 2
Hypothetical Example Of The Impact
Of Different Rate Levels On The MVC

	Item (1)	MVC at $1500 Per Railcar (2)	MVC at $3,000 Per Railcar (3)
1.	Aggregate Five Year Revenues At The Issue Rate [1]	$390,000	$780,000
2.	Aggregate Five Year Revenues At The JT Rate [2]	$280,800	$280,800
3.	Aggregate Difference in Issue and JT Revenues [3]	$109,200	$499,200
4.	Five Year Discount Factor at 12.2 Percent [4]	1.242	1.242
5.	Maximum Value of the Case ("MVC") [5]	$87,922	$401,932

[1]   Column(2): $1,500 per car x 52 cars per year x 5 years. Column (3): $3,000 per car x 52 cars per year x 5 years.

[2]   Columns (2) and (3): $600 per car x 180% x 52 cars per year x 5 years (same cost level as Table 1 example).

[3]   Line 1 - Line 2.

[4]   Discount factor assuming a 12.2% annual cost of capital and cash flows occur at the beginning of each year.

[5]   Line 3 ÷ Line 4.

As Table 2 above shows, setting the rate level for a hypothetical move at $1,500 per car and assuming a variable cost of $600 per car and 52 cars shipped per year produces a MVC of $87,992, which is well below the eligibility threshold for the use of the Three Benchmark approach. If, however, the railroad sets the issue rate at $3,000 per car instead of $1,500 per car, the MVC increases to over twice the Three Benchmark eligibility level of $200,000.[50]

Some will argue that the STB's proposed eligibility standards protect shippers from such manipulation by the railroads by providing the shipper the opportunity to rebut the eligibility

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[50]   The reason the MVC increases by a over a factor of four (4) while the issue rate only increases by a factor of two (2) is due to the variable cost for the movement being held constant. Stated differently, the $1,500 per car differences between the two rates accrues directly to the bottom line of the MVC calculation.

presumption. I believe this is an invalid argument because it ignores the costs associated with developing and presenting evidence to overcome the presumptive eligibility. The STB states it has proposed these simplified guidelines to meet the statutory goal of providing shippers meaningful access to regulatory remedies for unreasonable rail rates.[51] Leaving the threshold key to such relief in the hands of a defendant railroad and foisting upon the shipper the costs associated with rebutting the railroad actions does nothing to meet the statutory goal, and in fact places another obstacle in the way of meeting this goal.

4. The MVC Has No Relation To The AVC

The STB proposes to base threshold eligibility levels for its different rate reasonableness standards upon the MVC.[52] As a fundamental issue, the STB's proposed approach for estimating the MVC presumes the rate reasonableness standards proposed by the STB will produce rates at the JT rate level. However, I contend that there is almost no possibility of a rate prescription at the JT level under any of the proposed maximum rate approaches as currently proposed or employed by the STB. This fact leads to a complete disconnect between the value the STB's expects a shipper to receive and the value the shipper will actually receive. This difference in values will effectively preclude shippers from using the STB's proposed standards. Indeed, the actual value of a case ("AVC") in all likelihood will be far lower than the MVC.

a. Neither The Three Benchmark Nor The SSAC Approaches Can Be Expected To Produce Rates At The JT Rate Level

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[51] See Ex Parte 646 at 3.
[52] See Ex Parte 646 at 33.

The STB's proposed MVC estimates rest upon the fundamental assumption that the STB will set the challenged rate at the JT rate level.[53] I believe that there is virtually no possibility that the STB will set a rate at the JT level under its proposed SSAC and Three Benchmark approaches, or under the existing Full SAC procedures as current applied by the STB. I base my contentions upon the results of recent STB decisions in Full SAC cases and upon the limitations and restrictions the STB proposes to place on SSAC and Three Benchmark calculations.

i.   **JT Rate Levels In SAC
And SSAC Proceedings**

Prior to its decision in TMPA, the STB, and its predecessor the ICC, exhibited no clear trend in prescribing rates under the SAC constraint. For example, the STB/ICC found the issue rates in Nevada Power II and STB Docket No. 37809, *McCarty Farms, Inc., Et Al v. Burlington Northern Inc.*, served August 20, 1997 ("McCarty") to be reasonable under the SAC constraint. However, in WTU and STB Docket No. 42051, *Wisconsin Power and Light v. Union Pacific Railroad Company*, served September 3, 2001 ("WPL") not only did the STB determine the issue rates to be unreasonable, but determined that the SAC rates were below the movement's JT rate levels. Finally, in FMC and STB Docket No. 41185, *Arizona Public Service Company and Pacificorp v. The Atchinson, Topeka and Santa Fe Railway Company*, served July 9, 1997 ("APS"), the STB found the issue rates to be unreasonable, but that the SAC rates exceeded the JT rate level.

Since its decision in WPL, the STB has entered what it euphemistically calls its "sophisticated" era of SAC analysis, whereby the STB has determined no SAC rate to be below the JT rate level.[54]

[53] In reality, the rate reasonableness test only establishes the rate. A secondary test determines whether the rate produced is at or below the JT rate level.
[54] See Ex Parte 646 at 40.

During this time span, the STB has found only the rates in Xcel and TMPA to be unreasonable, and in both of those cases, the SAC rates were well above the JT rate levels. .

The fact that it is very unlikely that a Full SAC analysis will produce a rate below the JT rate level given current conditions, indicates to me that there is virtually no possibility that a rate adjudicated under the STB's proposed SSAC approach will produce a rate at the JT rate level. I base this contention on the STB's own admission that the SSAC process will produce less precise results than a Full SAC analysis, and will exclude the assumed efficiencies of the Full SAC procedures.[55] These limitations of the SSAC approach will necessarily dictate that a rate analysis undertaken using the SSAC process will, at best, produce results equal to a Full SAC analysis, and, in the vast majority of cases, produce rates above that of a Full SAC analysis. Exhibit No. 2 to this verified statement details the reasons for this conclusion. Overall, I believe it unlikely under current STB conditions and rulings that a Full SAC analysis will show a contested rate is below the JT rate level. It therefore goes without saying that a rate adjudicated under the proposed SSAC approach will not lead to a rate prescribed at the JT rate level.

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[55] See Ex Parte 646 at 11.

ii.   JT Rate Levels In Three
Benchmark Proceedings

It is mathematically impossible for the STB's proposed Three Benchmark methodology of rate

reasonableness to produce a prescribed rate at or below the JT rate level when the movement is

wholly on a railroad that is revenue inadequate as defined by the STB.   Moreover, it is highly

improbable that a rate on a revenue adequate railroad will be at or below the JT rate level.

The STB's proposed Three Benchmark methodology bases its rate reasonableness standard and

its rate prescription process primarily on the determination of an average Revenue to Variable Cost

ratio ("R/VC") for a comparison group of movements.   Specifically, the STB will calculate the

average R/VC ratio for a comparison group of traffic, and adjust this average R/VC by factors to

account for a railroad's level of revenue adequacy and to account for statistical variation within the

sample set.

As the STB describes in its Ex Parte 646 decision, the members of the comparison group will

include, at a minimum, shipments that have the same 2-digit STCC code as the issue movement and

have an R/VC above 180 percent.[56]   The STB will also adjust the average R/VC ratio for the

comparison group by the ratio of the defendant railroad's RSAM to R/VC $_{total}$.   The STB included this

adjustment to address the railroads' alleged revenue inadequate status.   If the defendant railroad is

revenue inadequate, then the RSAM to R/VC $_{total}$ ratio will always be greater than one (1).[57]

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[56]   See Ex Parte 646 at 33. This is not to infer that these are the only criteria for selection of a comparison group. Other factors can include mileage, car ownership, origin and destination regions or a multitude of other factors.

[57]   The STB defines R/VC $_{total}$ as total railroad revenue divided by total railroad variable costs (REV $_{total}$ ÷ VC $_{total}$), and defines RSAM as total railroad revenue plus total railroad revenue shortfall or overage divided by total railroad variable cost [(REV $_{total}$ + REV $_{short/overage}$) ÷ VC $_{total}$]. The railroad revenue shortfall or overage factor is determined as part of the annual railroad adequacy determination, and is a positive figure if there is a shortfall, or a negative figure of there is an overage. If the railroad is revenue inadequate, the numerator of the ratio (RSAM) will be greater than the denominator (R/VC $_{total}$) leading to an adjustment factor greater than one (1).

These two constraints to the Three Benchmark methodology preclude a prescribed rate, for any railroad deemed revenue inadequate, above the 180 percent JT rate level. This is because the movements in the comparison group must by definition have R/VC greater than 180 percent and the revenue adequacy adjustment factor must be greater than one (1) for a revenue inadequate railroad. Page 1 of Exhibit No. 3 to this verified statement demonstrates the impact of the two constraints. As Page 1 of Exhibit No. 3 shows, even if the average R/VC is at the 180 percent threshold and the railroad is revenue inadequate under current STB revenue adequacy regulations, the resulting prescribed rate by definition must be above the 180 percent JT rate level. The STB's Three Benchmark constraints provide no other alternative.

For the Three Benchmark method to produce a prescribed rate below the JT rate level i.e., less than 180 percent, several unique conditions must occur. First, the railroad must be revenue adequate under STB guidelines. A revenue adequate railroad will have a RSAM less than R/VC_{total} and produce an adjustment factor of less than one (1). Application of this lower reduction factor has the potential to reduce the comparison group's average R/VC below the 180 percent JT threshold level. I demonstrate this occurrence on Page 2 of Exhibit No. 3.

Second, the R/VC of the comparison group must be relatively close to the 180 percent JT threshold rate level, or else the reduction applied by the RSAM to R/VC_{total} will not counteract the increase in the movement's R/VC ratio. In general, assuming all members of the comparison group have the same R/VC, for every 0.01 decline in the railroad's RSAM to R/VC_{total} ratio, the R/VC of the comparison group can increase by 1.8% and retain the same average R/VC ratio. For example,

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If the railroad has unitary revenue adequacy, i.e., the revenue shortfall or overage is zero (0), then the RSAM and R/VC_{total} will equal and the adjustment factor will equal one (1).

as shown in Page 2 of Exhibit No. 3, while the R/VC for the shipments in the comparison group have increased by 1.8% above the JT threshold level, the prescribed rate would produce a R/VC at the JT level due to the mitigating influence of the RSAM to R/VC $_{total}$ ratio.

Third, there must be very little variance in the R/VC for the shipments in the comparison group. If not, the confidence interval adjustment factor will increase the R/VC for the prescribed rate above the JT threshold level. Page 3 of Exhibit No. 3 shows the impact of increasing the R/VC on half the shipments by only 3%. Even this small variance pushes the R/VC for the prescribed rate above the 180 percent JT threshold level.

In sum, if the STB determines a railroad is revenue inadequate, there is no mathematical possibility that a rate prescribed under the Three Benchmark approach will be below the JT rate level. In addition, many factors must be perfectly aligned before STB's proposed Three Benchmark method will produce a prescribed rate at or below the JT rate level for a revenue adequate railroad. It is for this reason that I believe that there is very little chance a rate developed using the STB's Three Benchmark approach will produce a rate at the JT rate level.

b. The Disconnect Between The MVC And The AVC Will Preclude The Use Of The Proposed Procedures

The fact that the MVC of a case has no relationship to the AVC will preclude many shippers from utilizing the STB's proposed procedures. One can most accurately see the disconnected relationship between the these two factors by reviewing the MVC and AVC from prior Full SAC cases. Table 3 below displays the MVC and AVC from the STB's seven (7) most recently decided SAC cases.

Table 3
The MVC And AVC Of Historic Full SAC Cases

	SAC Case (1)	MVC (2)	AVC (3)	% Difference [1] (4)
1.	Otter Tail [2]	$15,892,081	$7,484,387	52.9%
2.	Xcel	$27,956,470	$11,139,532	60.2%
3.	Duke/NS [3]	$284,823,356	$0	[6]
4.	Duke/CSX [4]	$33,478,269	$0	[6]
5.	CP&L [5]	$188,917,973	$0	[6]
6.	PPL	$6,578,284	$0	[6]
7.	TMPA	$17,366,771	$3,187,143	81.6%

[1]   [Column (3) ÷ Column (2)] - 1.

[2]   Based on the SAC rate before application of the STB's cross-subsidy analyses tests.

[3]   STB Docket No. 42069, *Duke Energy Corporation v. Norfolk Southern Railway Company*, served November 6, 2003 9 ("Duke/NS").

[4]   STB Docket No. 42070, *Duke Energy Corporation v. CSX Transportation, Inc.*, served February 4, 2004 ("Duke/CSX").

[5]   STB Docket No. 42072, *Carolina Power & Light Company v. Norfolk Southern Railway Company*, served October 20, 2004 ("CPL").

[6]   STB found the challenged rate to be reasonable and therefore there is no AVC.

As Table 3 above demonstrates, even in Full SAC analyses where history indicates that a shipper may receive a rate prescription at the JT rate level, the AVC of more recent Full SAC cases have been dramatically below the MVC.

Extrapolating this precedent to the current situation, I believe that it is plausible that the difference between AVC and MVC for cases brought under the SSAC and Three Benchmark approaches will be greater than the differences identified in Table 3 for Full SAC cases. I base my conclusion on the limitations of the proposed procedures discussed above and information provided by the United States Government Accountability Office ("GAO").

First, by definition a SSAC result will produce a less precise and more adverse answer from a shipper's perspective than a Full SAC analysis. Moreover, based on Table 3 above, the simple average AVC in a Full SAC case when SARR revenues exceeds SAC is approximately 64.9 percent of the MVC.[58/] From this I would expect SSAC would produce a greater difference between AVC and MVC than produced in Table 3 on Full SAC cases.

I would expect similar results from the Three Benchmark approach based on evidence from a recent GAO study. In a recently published study "Freight Railroads: Industry Health Has Improved, but Concerns about Competition and Capacity Should be Addressed," the GAO found that, based on the STB's unmasked Waybill Sample, 25 percent of tons move at rates with R/VC between 180 and 300 percent, while 6 percent of railroad tonnage moves at rates with R/VC greater than 300 percent.[59/] Assuming a uniform distribution of rates in the 180 to 300 percent band of shipments indicates the average R/VC is approximately 240 percent.[60/] Moreover, a shipper will only bring a rate case under the Three Benchmark Analysis if initial results indicate that the issue rate is above the expected average R/VC. This would indicate that a rate, on average, must be above 240 percent for a shipper to bring a rate case. Since I have assumed a uniform distribution, I would estimate that an average issue rate would have an R/VC midway between the average and the 300 percent maximum, or an average R/VC of 270 percent.

[58/] (59.9% + 60.2% + 81.6%) ÷ 3 = 64.9%
[59/] See GAO Report GAO-07-94 at 33. Because the proposed Three Benchmark approach only considers rates above the 180 percent JT threshold level, I am only concerned with the 31 percent of the STB's Waybill Sample with R/VC greater than 180 percent.
[60/] This result is consistent with my analysis of BNSF's shipments in the 2004 and 2005 Waybill Samples with R/VC of greater than 180 percent, which found the average BNSF R/VC to equal 242 percent and 247 percent in 2004 and 2005, respectively.

Assuming these factors, the AVC of the case would be based on the difference between the issue R/VC of 270 percent and the average R/VC of 240 percent, or 30 percent of the variable cost. In contrast, the MVC would be based on an the difference between the issue R/VC of 270 percent and the JT R/VC of 180 percent or 90 percent of the variable cost. Dividing the AVC of 30 percent of variable cost by the MVC of 90 percent of the variable cost produces a difference of 66.6 percent, slightly higher than the average difference from prior Full SAC cases.

5. The STB's MVC Formula Overstates The Discounted Cash Flows

As I indicated above, the STB did not provide a detailed mathematical formula for its MVC calculation in its July 26, 2006 Ex Parte 646 decision, but did provide an MVC equation in its September 25, 2006 decision in the proceeding denying a workpaper requests seeking the support behind the STB's July 26, 2006 Table 2 calculations. I presume that the MVC equation included in the STB's September 25, 2006 decision reflects the STB's proposed procedures for calculating the MVC in other cases. If my presumption is correct and the STB will utilize its September 25, 2006 equation in determining the MVC, then the STB's proposed method of calculating will unfairly overstate the MVC and push shippers into higher eligibility classes.

The MVC equation proposed by the STB would discount the difference between the annual revenues based on the issue rate and the annual revenues based on the 180 percent JT rate level over a 5 year period. The STB's proposed MVC formula begins the discounting in Year 0, and continues the discounting through Year 4. Discounting cashflows in such a manner implicitly assumes that the shipper receives its cashflows on the first day of each analysis year. Stated differently, the STB's proposed MVC calculation assumes that all of the shipper's movements will occur on the first day

of each year of the 5 year period. This is clearly a nonsensical position, since most non-agricultural shippers will ship products evenly through out the year.[61]

The impact of assuming a beginning of the year discount convention is to artificially raise the calculated MVC due to the time value of money. Simply stated, a dollar received today has more value than a dollar received one year from now. Similarly, assuming a shipper receives all of its cash at the beginning of the year will create a higher MVC than if the cash was received at the end of the year. Since shippers would not receive their cash on the first day of the year, but would theoretically receive their cash through out the year as they make their shipments, the MVC should not assume to the contrary.[62] A more accurate and fair MVC calculation would assume a mid-year convention, which implicitly assumes that the shipper receives half of the cash in the first half of the year and the remainder in the second half. Mathematically, the STB can achieve this result by beginning its discount period at Year 0.5 instead of Year 0, and continuing in annual increments to Year 4.5.

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[61] Even agricultural shippers, who ship based on the growing seasons, do not ordinarily ship all of their product on a single day of the year and will spread their shipments over several weeks or months.

[62] I term the cash received as "theoretical" since the shipper will not receive a check from the railroad for the difference between the revenues based on the issue rate and the revenues based on the JT rate each time it makes a shipment. However, from a discounted cash flow standpoint, this is what is presumed to occur.

III. APPLICATION OF THE PROPOSED
THREE BENCHMARK APPROACH

Under the STB's proposed Three Benchmark methodology, the STB will determine the

reasonableness of the rate by comparing the challenged rate's R/VC ratio to the adjusted average

R/VC ratios for a comparison group of traffic. Specifically, the STB proposes to use the following

methodology:

1. Upon determination of eligibility to use the Three Benchmark approach and the enactment of the necessary confidentiality agreements, the STB will release to the shipper and the railroad all movements in the STB's most recent masked Waybill Sample that have the same 2-digit STCC code as the issue movement and have an R/VC above 180%.

2. Using data from the masked Waybill Sample, the shipper and the railroad will identify their initial evidence of an appropriate comparison group.

3. After receipt of the initial evidence, the STB will convene a technical conference in an attempt to resolve any disputes between the parties as to the appropriateness of movements in the comparison groups.

4. Each party will then tender its "final offer" group of movements it believes should comprise the comparison group. Only movements previously submitted by one of the parties will be allowed to be included in a party's final offer group, and any movement set forth in both parties' initial tender will be required to be included in each side's final tender, unless both parties agree to exclude the movement.

5. After submission of the final offer comparison groups, each party will have an opportunity to challenge the other party's comparison group and support its own comparison group in simultaneous rebuttal filings. The STB will then select the comparison group that it concludes possess the most similarities, in aggregate, to the issue movements.

6. The STB will then adjust the R/VC for each movement in the comparison group by the ratio of the RSAM to R/VC $_{total}$, and calculate the mean and standard deviation of the R/VC ratios, weighted in accordance with the proper sampling factors.

7. Using the mean and standard deviation of the adjusted R/VC ratios for the comparison group, the STB will calculate a 90 percent confidence interval around the adjusted mean R/VC ratio.

8.   If the STB determines the R/VC for the issue movement exceeds the upper bound of the 90 percent confidence interval of the adjusted mean R/VC of the comparison group, the STB will deem the rate unreasonable, and set the prescribed rate at the average adjusted R/VC for the comparison group.

9.   Only at the end of the proceedings, would the STB unmask the revenues for the movements included in the comparison group. The parties could then examine the underlying data used to determine the reasonableness of the issue rate.

The STB contends that the above approach will provide captive shippers with small disputes a practical means for challenging the reasonableness of a rail rate.[63/]

While the STB may contend that its proposed Three Benchmark approach will provide access to rate relief for small shippers, I believe that several flaws and biases endemic to the approach will preclude its use by shippers in its current form. Specifically, the selection of the comparison group from the STB's Confidential Waybill Sample is inherently biased in favor of the railroads. Second, the use of any Waybill Sample data, whether masked or unmasked, is biased because the Waybill Sample does not account for all allowances and rebates given by railroads. Third, the development of the confidence interval only serves to increase the maximum reasonable rate, and, in addition, is unreliable because the movements in the comparison group are not randomly generated. Fourth, there is too much uncertainty surrounding outcomes from the Three Benchmark approach to allow shippers to gauge their prospective results. I address each of these issues below under the following topical headings:

A.   The Selection Of The Comparison Group Is Biased In Favor of the Railroads

B.   The Waybill Sample's Revenues Are Biased

[63/]   See Ex Parte 646 at 28.

C.   The Procedures For Developing Confidence Intervals Are Unnecessary And Unreliable

D.   The Three Benchmark Approach Is Too Uncertain As Proposed

A.   THE SELECTION OF THE COMPARISON
GROUP IS BIASED IN FAVOR OF THE RAILROADS

The STB proposes that the parties to a Three Benchmark rate case select comparison

movements from data contained in the STB's confidential Waybill Sample.[64] The Waybill Sample

consists of a sample of carload waybills for terminating shipments by all rail carriers that terminate

at least 4,500 carloads, or 5 percent of the carloads in any one state. The Waybill Sample identifies

the originating and terminating freight stations, the names of the railroads included in the movement,

the interchange points, the number of cars, the car types, the weight in tons, the commodity type, and

the freight revenue. To protect confidential contract revenue information, the STB allows the carriers

when submitting waybill revenue data to mask the revenue information to safeguard confidentiality,

but requires the railroads to provide it with information to "unmask" the confidential revenue data.

The fact that the railroads are the originators of the data included in the Waybill Sample, and

therefore have access to the unmasked revenue data for any potential comparison group on their

individual railroads, creates an information bias that favors the railroad and places the shipper at a

clear disadvantage in a case. A railroad entering into a Three Benchmark adjudication may use the

unmasked revenue data to identify movements to include in its comparison group that will drive a

higher average R/VC ratio when the STB ultimately reveals the actual revenue data at the end of the

process. Knowing the most beneficial movements to include in a comparison group beforehand will

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[64]   See Ex Parte 646 at 20.

allow a defendant railroad to spend the time and effort to justify the inclusion of these movements in the final comparison group.

Moreover, the fact that the railroads can select and develop revenue masking factors themselves can lead to a gross manipulation of the Three Benchmark process, if the STB allows. Federal regulations currently permit railroads to use proprietary masking procedures when submitting Waybill Sample revenue data to the STB, with the prior approval of the STB.[65] A railroad could, if it so chooses and the STB permitted it, set the masking factor at such low levels that Waybill Sample revenues would be so low as to drop the R/VC for many shipments below the 180 percent JT threshold level, and remove these movements from the comparison group selection process. The shipper attempting to use the STB's proposed Three Benchmark would be faced with a situation whereby there could be little or not identifiable comparable movements in the STB supplied masked Waybill Sample data from which to chose due to the number of movements below the 180 percent JT threshold level. Similarly, a railroad could set its masking factor at such a high level as to artificially raise R/VC levels as to make it appear that the average R/VC for any comparison group would offer little relief from the proposed Three Benchmark procedures.

Shippers on the other hand will not have access to the unmasked revenue information, which will place them in a disadvantageous position. Simply stated, a shipper may end-up fighting for the inclusion of a movement in the final comparison group that could be to its detriment when the STB ultimately unmasks revenue and provides the true revenue information.

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[65]   See 49 CFR 1244.3 (b)(2)-(3)

The impact of having *a priori* knowledge of revenue data may be inferred by comparing Table 2 in the STB's Ex Parte 646 decision, which the STB produced using unmasked revenues, to a comparable table prepared using the STB's procedures and masked revenue data from the STB's Waybill Sample. I prepared Exhibit No. 4 using the same procedures as the STB used in developing its Ex Parte 646 Table 2, but utilized masked revenue data contained in the STB's 2004 and 2005 Waybill Sample.[66/] Table 4 below demonstrates that the use of masked revenue data can lead to dramatically different inferences and conclusions using the unmasked revenue data.

[66/] Exhibit No. 4 also contains the procedures I used to mimic the development of the STB's Table 2.

Table 4

Eligibility Estimates Using 2004 Masked Waybill Sample Data

(Revenues in Thousands) [1]

	Description (1)	Unmasked STB Table 2		Masked 2004 Waybill Sample		Masked 2005 Waybill Sample	
		Large Disputes (2)	Small Disputes (3)	Large Disputes (4)	Small Disputes (5)	Large Disputes (6)	Small Dispute (7)
1.	Farm Products	15%	85%	15%	85%	15%	85%
2.	Metallic Ore	66%	34%	77%	23%	0%	100%
3.	Coal	61%	39%	75%	25%	69%	31%
4.	Crude Petroleum	0%	100%	0%	100%	74%	26%
5.	Non-Met. Minerals	14%	86%	32%	68%	0%	100%
6.	Ordnance	39%	61%	34%	66%	29%	71%
7.	Food Products	8%	92%	20%	80%	11%	89%
8.	Chemicals	11%	89%	23%	77%	24%	76%
9.	Petroleum Products	21%	79%	26%	74%	23%	77%
10.	Transp. Equipment	40%	60%	30%	70%	23%	77%
11.	Waste or Scrap	14%	86%	0%	100%	27%	73%
12.	Miscellaneous Freight	36%	64%	0%	100%	55%	45%
13.	Miscellaneous Mixed Shipments	56%	44%	49%	51%	57%	43%
14.	Small Package Freight	0%	100%	0%	100%	96%	4%
15.	Hazardous Wastes	0%	100%	16%	84%	12%	87%
16.	Total	34%	66%	43%	57%	44%	56%

Source: Exhibit No. 4

As Table 4 above demonstrates, the use of masked revenue data will produce a dramatically different conclusion than using unmasked revenue data. For example, in the STB's Table 2, 11% of chemical shipments (line 8) would be considered eligible for large dispute rate resolutions. Using masked waybill data, the amount of shipments would increase to 23 percent in 2004 and 24 percent in 2005 based on masked revenue data. This increase infers that the revenues in the 2004 and 2005 waybill samples are considerably higher than the unmasked data using waybill data with this much disparity lead to faulty conclusions.

To compare and verify the results from my analysis of the 2004 masked STB Waybill Sample,

I replicated the STB's Table 2 again using data from the 2005 masked STB Waybill Sample. I display

the results in Table 5 below.

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Table 5

Eligibility Estimates Using 2005 Masked Waybill Sample Data

(Revenues in Thousands) [1]

		Unmasked STB Table 2		Masked 2004 Waybill Sample		Masked 2005 Waybill Sample	
	Description (1)	Large Disputes (2)	Small Disputes (3)	Large Disputes (4)	Small Disputes (5)	Large Disputes (6)	Small Dispute (7)
1.	Farm Products	15%	85%	15%	85%	15%	85%
2.	Metallic Ore	66%	34%	77%	23%	0%	100%
3.	Coal	61%	39%	75%	25%	69%	31%
4.	Crude Petroleum	0%	100%	0%	100%	74%	26%
5.	Non-Met. Minerals	14%	86%	32%	68%	0%	100%
6.	Ordnance	39%	61%	34%	66%	29%	71%
7.	Food Products	8%	92%	20%	80%	11%	89%
8.	Chemicals	11%	89%	23%	77%	24%	76%
9.	Petroleum Products	21%	79%	26%	74%	23%	77%
10.	Transp. Equipment	40%	60%	30%	70%	23%	77%
11.	Waste or Scrap	14%	86%	0%	100%	27%	73%
12.	Miscellaneous Freight	36%	64%	0%	100%	55%	45%
13.	Miscellaneous Mixed Shipments	56%	44%	49%	51%	57%	43%
14.	Small Package Freight	0%	100%	0%	100%	96%	4%
15.	Hazardous Wastes	0%	100%	16%	84%	12%	87%
16.	Total	34%	66%	43%	57%	44%	56%

Source: Exhibit No. 4

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In sum, allowing one party to the proceeding to have additional access to critical data, in this

case unmasked revenue information, creates an information asymmetry that creates a natural bias in

the end results. The STB cannot allow such a bias to exist in a regulatory proceeding.

B. THE WAYBILL SAMPLE'S
REVENUES ARE BIASED

The key calculation of the Three Benchmark approach is the determination of the comparison group's average R/VC ratio. Not only is the comparison group's average R/VC ratio instrumental in the determination of the upper bound of the 90 percent confidence interval which determines the reasonableness of a rate, but the STB prescribes a rate equal to the adjusted average R/VC for the comparison group if it finds the issue rate unreasonable. Anything that would bias the calculation of the comparison group's average R/VC will in the final analysis bias the prescribed rate.

According to STB publications describing the Waybill Sample and the GAO's October 2006 Freight Railroad Report, the railroads do not always include final revenue settlements in the Waybill Sample data they supply to the STB.[67] This indicates that the revenue data contained in the Waybill Sample would not necessarily be reflective of the actual rate due to the exclusion of any allowances or rebates provided to the shipper that are settled at a latter date. The fact that the railroads do not include all allowances and rebates in the Waybill Sample data provided to the STB indicates that the unmasked revenue data included in Waybill Sample are most likely overstated. This overstatement will translate to higher comparison group R/VC ratios, and subsequently higher prescribed rates. If the STB wishes to use Waybill Sample data to produce regulatory rates, it must insist that the Waybill Sample data provided by the railroads consist of settled revenues reflecting all allowances and refunds.

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[67] See "The Carload Waybill Statistics: A Content Analysis" in the User Guide For The 1992 ICC Waybill Sample, AAR, July 30, 1993 and GAO Report GAO-07-94 at 17.

C. THE PROCEDURES FOR DEVELOPING CONFIDENCE INTERVALS ARE UNNECESSARY AND UNRELIABLE

The STB proposes to develop a 90 percent one-sided confidence interval around the comparison group's adjusted average R/VC ratio, and to use the upper-bound of the calculated confidence interval as the measure of rate reasonableness.[68/] The STB would develop its confidence interval using the average and standard deviation of the adjusted comparison group and a parameter drawn from the Student's t-distribution based on the number of movements in the comparison group.

I believe it is unnecessary to develop a confidence interval around the comparison group's average R/VC since, statistically, it would have no true meaning. The construction of the confidence interval implies that the sample was drawn randomly from the respective population.[69/] The STB's proposed Three Benchmark approach is far from being a random process, and is in fact the antitheses of randomness due to the direct selection of the comparison group movements by the parties to the case and the final offer selection by the STB. The creation of a confidence interval serves no purpose other than to artificially raise the reasonableness standard of a rate.

If the STB does intend to use a confidence interval, notwithstanding the lack of statistical reasoning for its use, the STB should not construct the confidence interval using a Student's t-distribution as proposed. The use of the Student's t-distribution requires the population from which the sample is drawn to be normally distributed.[70/] The distribution of the adjusted R/VC ratios cannot be assumed, *a priori*, to be normally distributed. If the population is not normal, then the proposed use of the Student's t- distribution will not produce a 90% confidence interval.

[68/]   See Ex Parte 646 at 26.
[69/]   See James H. Stock and Mark W. Watson, Introduction to Econometrics (Pearson Education, 2003) at 71.
[70/]   See William H. Green, Econometric Analysis (Prentice Hall, 5th ed. 2003) at 852. This source is an updated version of the econometric test cited by the STB in Ex Parte 646 at 26.

Instead of relying upon a the Student's t-distribution to construct the confidence interval, I recommend that the STB use a larger sample size in its comparison group (greater than 30), which would allow for an assumption of normality due to the Central Limit Theorem ("CLT").[71] The use of the CLT does not require any assumption about the normality of the underlying population, except that no variable costs equal zero (0).[72] In addition to avoiding the requirement of normality of the R/VC ratios, larger sample sizes will reduce the random variability (variance) of the estimate of the mean of adjusted R/VC ratios. When these estimates are used to "fairly reflect the maximum lawful rates the carrier could charge those potentially captive movements" the reduced variability will provide more consistent results in the disposition of small rail rate disputes.[73]

D. THE THREE BENCHMARK APPROACH IS TOO UNCERTAIN AS PROPOSED

Shippers indicated that they did not use STB's existing simplified guidelines in part due to a lack of predictability of outcomes. In responding to the STB's initial 2003 call for input into eligibility requirements and simplified procedures for small rate cases, shippers stated that one key aspect of any revised methodology would be predictability of the case outcome.[74] Shippers reiterated their calls for predictability of outcomes in follow-up hearings in 2004. The STB acknowledges that its existing simplified procedures do not provide the predictability and other aspects of rate relief sought by shippers, and instituted this proceeding in an attempt to correct this issue.

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[71] The CLT holds whatever the underlying distribution (provided that standard deviation is finite), as the number of samples becomes large, the distribution tends to the standard normal. The CLT has a substantial impact on the practice of statistics. Many practical problems involve sums or averages or random variables, and in these situations, by virtue of the CLT, the normal distribution provides a satisfactory approximation to the true distribution.

[72] See William H. Green, Econometric Analysis (Prentice Hall, 5th ed. 2003) at 909-911.

[73] See Ex Parte 646 at 27.

[74] See Ex Parte 646 at 9.

The STB now states that its Three Benchmark approach (along with its SSAC approach) addresses many of the concerns raised about the existing simplified guidelines, including providing shippers meaningful access to regulatory relief and protecting even small shippers from unreasonable rates.[75/] However, the STB still has not addressed the predictability issue in the Three Benchmark method. I believe this continued lack of predictability could doom the STB's proposed revised procedures.

Litigation, by its very nature, is unpredictable. But the lack of even rudimentary predictability in a regulatory setting provides a complete disservice to the parties to the regulatory case. Without some predictability in outcomes before the STB, shippers will not use the regulatory tools available and leave the shippers in an untenable negotiating position with the railroads. The ICC clearly understood this when it implemented its Coal Rate Guidelines decision. Specifically, the ICC stated: [76/]

> "Thus a benefit of these guidelines is to enable both the shipper and the railroad to estimate the maximum rate we would prescribe if the matter were brought to us for adjudication. We believe that will encourage contract solutions which (as shown below) may often be more efficient and more beneficial to both parties than a prescribed rate."

The Three Benchmark approach, as proposed by the STB, is just too unpredictable for shippers to use to make informed decisions. This unpredictability stems primarily from ambiguity around the composition of the comparison group and from the masked revenues contained in the Waybill

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[75/]   See Ex Parte 646 at 37.
[76/]   See Coal Rate Guidelines at 524.

Sample. The fact that a shipper cannot estimate the composition of the final comparison group precludes the shipper from predicting with any sort of confidence what the STB would consider a reasonable rate. Similarly, shippers cannot predict the outcome of the case because they do not have access to unmasked Waybill Sample revenue data. As I demonstrated above in Tables 4 and 5, there is a significant difference between the masked and unmasked Waybill Sample revenue data. The fact that an entire case presentation will be made with unknown and unverifiable data sets will prevent a shipper from using the Three Benchmark approach, unless it has at least some sense beforehand of the likely outcome.

IV. APPLICATION OF THE
PROPOSED SSAC METHODOLOGY

According to the STB, a Full SAC analysis has two primary objectives. First, to restrain a railroad from exploiting market power over a captive shipper by charging more than needed to obtain a reasonable return on the infrastructure needed to serve the shipper. Second, the SAC test detects and eliminates the costs associated with a railroad's inefficiencies.[77] The STB asserts that this second objective of a Full SAC inquiry, the detection and elimination of inefficiencies, drives the intricacy and expense of a SAC analysis.[78] To simplify, i.e., reduce the expense, of a Full SAC analysis, the STB proposes to use an alternative SSAC that only addresses the first objective, whether the shipper is being forced to cross-subsidize other part's of the railroad's network, while ignoring the second objective, the elimination of a railroad's inefficiencies.

As I described in detail above, the SSAC approach as proposed by the STB is not as "simplified" as the STB presumes, with several aspects of the approach being as complicated, if not more so, than a Full SAC analysis. In addition, I believe the STB's proposed SSAC approach possesses several theoretical and practical flaws that bias the approach in favor of the railroads. First, the SSAC approach proposed by the STB conflicts with CMP by eliminating the efficiencies intrinsic to CMP. Second, the SSAC's use of investment unit costs from prior Full SAC cases is unsupported and unreflective of true costs. I discuss both flaws in greater detail below under the following topical headings:

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[77] See Ex Parte 646 at 10.
[78] See Ex Parte 646 at 11.

A.   The Proposed SSAC Conflicts With CMP

B.   The STB's Proposed SSAC RPI Costs Are Unsupported And Unverifiable

A. THE PROPOSED SSAC
CONFLICTS WITH CMP

The STB states that eliminating the inefficiency objective of the SAC constraint from the SSAC analysis will do away with a majority of the expense incurred in a Full SAC analysis. The STB acknowledges that its approach would produce a "less precise" application of CMP because it would not identify inefficiencies in current rail operations, but the STB claims that its proposed adjustments will allow it to determine whether an illegal cross-subsidy exists.[79] However, as the ICC explained in its Coal Rate Guidelines decision, the SAC constraint of CMP is based on the two overlapping and interacting objectives. In other words, the STB's attempt to only pursue one objective of the SAC constraint, elimination of cross-subsidies, while ignoring the efficiency object of the constraint effectively voids the regulatory basis of CMP.

The STB explained in Coal Rate Guidelines that CMP rests upon two economic theories - differential pricing and the contestability of markets.[80] These theories provide the analytical basis for determining the costs for which a shipper may properly be charged and the extent to which the shipper should bear the appropriate costs of service. To gauge whether a railroad has forced a shipper to bear costs for which the shipper receives no benefits, the ICC implemented the use of the SAC test. The ICC described the SAC test as a method that "approximate[s] the full economic costs, including a normal profit, that need to be met for an efficient producer to provide service to the

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[79]   See Ex Parte 646 at 11.
[80]   See Coal Rate Guidelines at 525.

shipper(s) identified. This cost calculation produces a simulated competitive price standard against which actual rates can be compared."[81] An intrinsic component of the CMP, as manifested by the SAC test, is the hypothetical SARR's efficiency. It is not possible to produce an economically efficient and reasonable rail rate under CMP principles if the SAC process does not directly account for potential efficiencies.

The STB's proposed SSAC removes any SARR efficiencies by mandating the use of existing infrastructure along the route of movement, by including all traffic in the SARR traffic group, and by using the incumbent railroad's system average operating costs in lieu of the more efficient stand-alone operating costs. The fundamental purpose of the SAC constraint of CMP is to determine the least cost at which an efficient competitor could provide the service.[82] To accommodate this purpose, the type and size of the stand-alone facility can vary substantially to provide the least cost service as mandated by CMP principles. Requiring the SARR to reproduce the defendant railroad's existing facilities frustrates this fundamental purpose, and makes the rate reasonableness analysis moot.

The same can be said of the proposed approach of including all traffic along the route of movement in the SARR's traffic group. The ICC called the ability to group traffic in a SAC analysis "essential to the theory of contestability."[83] By including all traffic over a defined segment of track in a SSAC analysis eliminates the ability of the shipper to define the most efficient traffic group. In addition, requiring the use of the incumbent's system average operating costs redefines the analysis from CMP to simple replacement pricing, which is neither economically rational nor sustainable in

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[81] See Coal Rate Guidelines at 529, emphasis added.
[82] See Coal Rate Guidelines at 543.
[83] See Coal Rate Guidelines at 544.

a contestable market. Simply stated, if the STB wishes to continue to use CMP as its economic foundation for rail rate regulation, it must consider both the efficiency and the cross-subsidy objectives of SAC. Elimination of one objective turns the test into an exercise with no true economic justification.

The STB attempts to justify its elimination of efficiencies from its proposed SSAC procedures on the premise that the railroads have allegedly eliminated excess capacity, and have therefore presumably become as efficient as possible.[84/] The STB has incorrectly transposed the causality function between railroad efficiency and capacity. Productive efficiency can be defined as using the least amount of resources to produce a given good or service or as output is being produced at the lowest possible unit cost. This will occur when the average cost of production is at the lowest point on the average cost curve, and indicates that production is achieved at the lowest cost possible where the organization is maximizing its output given its level of inputs. Relative to a railroad's operation, a rail line's capacity is a function of how efficiently the railroad operates over the line. Simply stated, capacity is a function of efficiency.

The STB would flip this causal relationship and assert that efficiency is a function of capacity. This is nonsensical. A rail line's efficiency simply is not defined by its capacity. For example, assume a line segment on a railroad can handle 25 trains a day with up to 100 cars per train. If the railroad ran 25 trains a day but only included 50 cars on each train, the line segment could be said to be at "capacity" because it could not handle any additional trains, but the system is not efficient because

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[84/] See Ex Parte 646 at 11, "But times have changed. Railroads no longer are burdened by substantial excess capacity; rather, the rail industry now faces the opposite situation. Rail capacity is strained, demand for transportation service is forecast to increase, and railroads must make capital investments to meet that demand."

it is only transporting 50% of the potential carloads. The STB clearly recognized this distinction

between capacity and efficiency in its original Ex Parte 347 proceedings.[85/] To now claim that

railroads can ignore efficiency because certain line segments are allegedly at their capacity ignores

the relationship between the two factors.

The other problem with the STB's efficiency and capacity juxtaposition is that capacity in the

current rail network is as much a function of the sunk costs as efficiency. Much of the existing U.S.

rail network's capacity is based on investment decisions made long ago, and are sunk in nature. If

a railroad were to enter the market today, it is highly probable that it would not replicate the existing

infrastructure, but would construct a more efficient facility based on current market conditions. This

is a basic principle of CMP, which is to determine the cost of an optimally efficient system.[86/] This

is the opportunity invested in a Full SAC analysis, and disallowed under the proposed SSAC

procedures.

B. THE STB'S PROPOSED SSAC RPI COSTS ARE UNSUPPORTED AND UNVERIFIABLE

Instead of developing RPI costs specific to the SARR under consideration in a SSAC analysis,

the STB proposes to utilize average RPI unit costs based on evidence submitted in prior Full SAC

analyses.[87/] Specifically, the STB proposes to use rolling average costs from past cases to develop

average RPI unit costs for major RPI categories. The STB proposes to use costs developed in the

six most recent SAC cases - Otter Tail, Duke/NS, Duke/CSX, CPL, Xcel and TMPA - in which the

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[85/] See Ex Parte 347 at 10, note 33.
[86/] See Ex Parte 347 at 10.
[87/] See Ex Parte 646 at 13.

STB ruled on each party's RPI evidence.[88/] As the STB issues decisions in new Full SAC cases, it indicates it will update its rolling average RPI costs for use in SSAC analysis. The STB asserts that its proposed approach will simplify the preparation of a SSAC case, and thus reduce the overall expense.

While the STB's proposed approach is definitely simpler, I believe it contains several flaws that make it too unreliable for use for rate regulation. First, in developing average RPI unit costs, the STB failed to account for the differences in constructing railroads in the eastern U.S. versus the western U.S. Second, there appears to be too much variation in some investment categories on which to effectively determine representative "average" investment unit costs. Third, the STB has apparently failed to support or verify several investment statistics making their use dubious at best. I explain each one of the flaws below.

1.   The STB Fails To Differentiate Regional Costs

The STB proposes to develop its rolling average RPI costs using the six most recent Full SAC decisions. Three of those decisions, Otter Tail, Xcel and TMPA, involved SARRs built from the PRB of Wyoming and Montana to generating stations in South Dakota, Colorado and Texas. The other three decisions, Duke/NS, Duke/CSX and CPL, involved SARRs extending from Central Appalachia to generating stations in North Carolina and South Carolina. The STB acknowledged in its Duke/NS decision that constructing railroads east of the Mississippi River is more costly than building railroads in the western portion of the U.S.[89/] The STB even recognizes the impact of location on RPI costs

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[88/]   See Ex Parte 646 at 40. The STB states that it excluded RPI evidence from PPL since it did not thoroughly weigh the railroad's RPI evidence in the case.

[89/]   See Duke/NS at 8, "The relative expense to build transportation projects in the mountainous areas of the Eastern United States compared to projects located primarily in less mountainous areas of the West may have been a factor in this case."

in its <u>Ex Parte 646</u> decision.[90] Nevertheless, the STB still proposes to use average RPI expenses from across all regions to develop RPI expenses in SSAC analyses.

I believe that average RPI investment unit costs may be a useful surrogate for actual unit costs if the STB's investment information could be separated into additional or different categorical groupings. For example, earth work unit costs in the coastal plains east of the Appalachian Mountains may exhibit similarities to earth work unit costs to the plains east of the PRB. However, I was unable to thoroughly investigate additional potential RPI groupings due to the STB's refusal to make its work papers underlying its RPI unit costs available for inspection. It goes without saying though that since the STB has previously recognized the regional nature of railroad investment, its proposal to use interregional RPI unit costs is highly questionable.

2. Some Investment Categories Exhibit Too Much Variation

The STB's proposal to rely upon average RPI unit costs rests upon the implicit assumption that the averages calculated by the STB are the best indicator of the true investment expense for the hypothetical SARR. However, in most cases, the STB ignores the dispersion of its RPI unit costs estimates which provides an indication how close the true mean lies to the sample.[91] Exploring a measure of central tendency, in this case the average RPI unit costs, without exploring a measure of dispersion for the sample group can lead to erroneous and biased conclusions.

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[90] See <u>Ex Parte 646</u> at 39.
[91] The STB does recognize the level of dispersion in its estimation of grade separation unit costs when it seeks comments on the potential exclusion of the <u>Duke/NS</u> unit costs due to it being a potential outlier. See <u>Ex Parte 646</u> at 48.

Theoretically, the STB's proposed approach is based upon probability statistics, in which the rolling average is the same as an expected value. The expected value of a given unit cost represents the probability-weighted average of its possible values. The rolling average, or the "mean" also represents a "central tendency" in that one typically will predict that an actual value of a unit cost will be closer to rather than farther away from the average.

However, the ability of an average or, equivalently, the expected value to predict the actual value of a unit cost is influenced by the dispersion of the associated data. One way to measure the dispersion of data is to measure the average absolute deviation ("AAD"). The AAD measures the extent to which the values in a given data set differ from the average of the set. For example, if one averaged the numbers 4 and 8, the average would be 6, while the mean absolute deviation would be 2. This is equivalent to $|8 - 6| = 2$ and $|4 - 6| = 2$. In terms of probability, the average absolute deviation measures the extent to which the expected value predicts actual values. In other words, it predicts the errors, how far the typical value will "miss" the predicted value. If the average absolute deviation is, say 5% of the average, any given value will miss the expected value by only 5%.[92/]

I have calculated the AAD to test whether rolling average RPI unit costs from the past six SAC cases are good predictors of RPI unit costs in a Simplified-SAC case. I show the results of this analysis in Exhibit No. 5. As Exhibit No. 5 shows, the rolling averages appear to reasonably predict some unit costs. For example, the cost per track mile of track construction is consistent, such that the typical value from the past six cases differs only 4% from the average value. Unfortunately, the

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[92/] For a complete discussion of statistical dispersion, see the National Institute of Standards and Technology's Engineering Statistics Handbook at NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/, October, 2006.

same cannot be said for many of the other rolling averages proposed by the STB. The typical land cost per acre from the past six SAC cases differs from the average by 49% for commercial properties to 58% for residential properties. The cost per foot of Type 1 bridges for the last six SAC cases differs from the average by 45%. The costs of public improvements without grade separation differ from the average by 57%, while the grade separations differ by 50%. These results suggest that there is little validity in using these unit costs as proxies for unit costs in SSAC cases, since they have little predictive value in determining the unit costs of any given case. The unique attributes of each SARR cause the unit costs to differ dramatically.

The existence of such large deviations in several of the investment categories should give the STB pause about its calculated average RPI unit costs. These large deviations may be caused by outliers within each case's RPI unit costs. This is a standard concern when developing the average of averages as the STB proposes in this case. This can be resolved by a detailed examination of the underlying unit costs for each Full SAC case. But once again, this is not possible due to the STB's refusal to make its workpapers available for examination. Without a close examination of the underlying data, the STB is asking shippers to rely upon blind faith in the preparation of a SSAC analysis.

3. The STB Is Relying Upon Unverified Data

The STB would have the parties using a SSAC analysis rely upon average unit costs from prior Full SAC cases. The implicit assumption to the STB's proposal is that the STB has already vetted the investment costs from the Full SAC cases, and the resulting costs are truly reflective of the actual

costs incurred. However, the STB has already indicated that this assumption is not true in all cases, and should cause one to reflect on the accuracy of the STB's figures.

The STB proposes for parties performing a SSAC analysis to use historic culvert construction costs from prior Full SAC cases to develop culvert costs in the SSAC analysis.[93/] Unlike other RPI categories where the STB has estimated RPI unit costs in each case, the STB would have the parties calculate culvert expense using a series of linear equations that the STB claims were developed in prior Full SAC analyses. Just as one can run statistical tests to draw inferences around an average (as the STB proposes in its Three Benchmark Approach around the adjusted average R/VC of the comparison group), one may also run statistical tests around the results of linear regressions to test the robustness of the results. Most practitioners report the results of these statistical tests when reporting the results of their regression equation.[94/]

Counsel for the Interested Parties requested via a workpaper requests to the STB that the STB provide the basis for the its culvert expense regression equations, including the statistics for the regression results. In its September 25, 2006 decision in this proceeding, the STB indicated that it was unable to provide the output statistics since, according to the STB, the data was not provided to it by the parties to the underlying cases. The STB's response to the workpaper requests raises two large concerns. First, if the parties to the original Full SAC cases did not provide the output statistics to their regression analysis, then how did the STB fully evaluate the evidence in those cases? Second, and of larger concern to this proceeding, the STB now proposes to use investment data for future

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[93/] See Ex Parte 646 at 44.
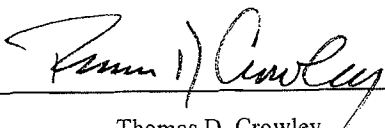
[94/] The most common statistics included when reporting regression results include the coefficient of determination which explains the proportion of variability of the dependent variable explained by the linear relationship with the independent variable, the standard error of the coefficient of determination, the standard error of the regression coefficients and the p-values of the regression coefficients.

SSAC analysis for which it has no supporting documentation and no basis to determine the robustness of the data. One must question the ability of the STB to establish a reasonable rate based on unsupported and unverifiable information.

VERIFICATION

COMMONWEALTH OF VIRGINIA   )
)
CITY OF ALEXANDRIA   )

I, THOMAS D. CROWLEY, verify under penalty of perjury that I have read the foregoing

Verified Statement of Thomas D. Crowley, that I know the contents thereof, and that the same

are true and correct. Further, I certify that I am qualified and authorized to file this statement.

_____

Thomas D. Crowley

Sworn to and subscribed
before me this day of October 24, 2006

_____
Anthony V. Evanshaw III
Notary Public for the State of Virginia

My Commission expires: September 30, 2007

STATEMENT OF QUALIFICATIONS

My name is Thomas D. Crowley. I am an economist and President of the economic consulting firm of L. E. Peabody & Associates, Inc. The firm's offices are located at 1501 Duke Street, Suite 200, Alexandria, Virginia 22314 and 5901 N. Cicero Avenue, Suite 504, Chicago, Illinois 60646.

I am a graduate of the University of Maine from which I obtained a Bachelor of Science degree in Economics. I have also taken graduate courses in transportation at George Washington University in Washington, D.C. I spent three years in the United States Army and since February 1971 have been employed by L. E. Peabody & Associates, Inc.

I am a member of the American Economic Association, the Transportation Research Forum, and the American Railway Engineering and Maintenance-of-Way Association.

The firm of L. E. Peabody & Associates, Inc. specializes in solving economic, marketing and transportation problems. As an economic consultant, I have organized and directed economic studies and prepared reports for railroads, freight forwarders and other carriers, for shippers, for associations and for state governments and other public bodies dealing with transportation and related economic problems. Examples of studies I have participated in include organizing and directing traffic, operational and cost analyses in connection with multiple car movements, unit train operations for coal and other commodities, freight forwarder facilities, TOFC/COFC rail facilities, divisions of through rail rates, operating commuter passenger service, and other studies dealing with markets and the transportation by different modes of various commodities from both eastern and western origins to various destinations in the United States. The nature of these studies enabled me to become

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familiar with the operating practices and accounting procedures utilized by railroads in the normal course of business.

Additionally, I have inspected and studied both railroad terminal and line-haul facilities used in handling various commodities, and in particular unit train coal movements from the Powder River Basin to various utility destinations in the midwestern and western portions of the United States and from the Eastern Coal Fields to various destinations in the Mid-Atlantic, northeastern and southeastern portions of the United States. These operational reviews and studies were used as a basis for the determination of the traffic and operating characteristics for specific movements of coal and numerous other commodities handled by rail.

I have frequently been called upon to develop and coordinate economic and operational studies relative to the acquisition of coal and the rail transportation of coal on behalf of electric utility companies. My responsibilities in these undertakings included the analyses of rail routes, rail operations and an assessment of the relative efficiency and costs of railroad operations over those routes. I have also analyzed and made recommendations regarding the acquisition of railcars according to the specific needs of various coal shippers. The results of these analyses have been employed in order to assist shippers in the development and negotiation of rail transportation contracts which optimize operational efficiency and cost effectiveness.

Moreover, I have developed numerous variable cost calculations utilizing the various formulas employed by the Interstate Commerce Commission ("ICC") and the Surface Transportation Board ("STB") for the development of variable costs for common carriers, with particular emphasis on the

STATEMENT OF QUALIFICATIONS

basis and use of Rail Form A and its replacement costing formula the Uniform Railroad Costing System ("URCS"). I have utilized Rail Form A/URCS costing principles since the beginning of my career with L. E. Peabody & Associates Inc. in 1971.

I have frequently presented both oral and written testimony before the ICC, STB, Federal Energy Regulatory Commission, Railroad Accounting Principles Board, Postal Rate Commission and numerous state regulatory commissions, federal courts and state courts. This testimony was generally related to the development of variable cost of service calculations, rail traffic and operating patterns, fuel supply economics, contract interpretations, economic principles concerning the maximum level of rates, implementation of maximum rate principles, and calculation of reparations or damages, including interest. I presented testimony before the Congress of the United States, Committee on Transportation and Infrastructure on the status of rail competition in the western United States. I have also presented testimony in a number of court and arbitration proceedings concerning the level of rates, rate adjustment procedures, rail operating procedures and other economic components of specific contracts.

Since the implementation of the *Staggers Rail Act of 1980*, which clarified that rail carriers could enter into transportation contracts with shippers, I have been actively involved in negotiating transportation contracts on behalf of coal shippers. Specifically, I have advised utilities concerning coal transportation rates based on market conditions and carrier competition, movement specific service commitments, specific cost-based rate adjustment provisions, contract reopeners that recognize changes in productivity and cost-based ancillary charges.

STATEMENT OF QUALIFICATIONS

I have been actively engaged in negotiating coal supply contracts for various users throughout the United States. In addition, I have analyzed the economic impact of buying out, brokering, and modifying existing coal supply agreements. My coal supply assignments have encompassed analyzing alternative coals to determine the impact on the delivered price of operating and maintenance costs, unloading costs, shrinkage factor and by-product savings.

I have developed different economic analyses for over sixty (60) electric utility companies located in all parts of the United States, and for major associations, including American Paper Institute, American Petroleum Institute, Chemical Manufacturers Association, Coal Exporters Association, Edison Electric Institute, Mail Order Association of America, National Coal Association, National Industrial Transportation League, North America Freight Car Association, the Fertilizer Institute and Western Coal Traffic League. In addition, I have assisted numerous government agencies, major industries and major railroad companies in solving various economic problems.

In the two Western rail mergers that resulted in the creation of BNSF Railway Company and Union Pacific Railroad Company and in the acquisition of Conrail by Norfolk Southern Railroad Company and CSXT, I reviewed the railroads' applications including their supporting traffic, cost and operating data and provided detailed evidence supporting requests for conditions designed to maintain the competitive rail environment that existed before the proposed mergers and acquisition. In these proceedings, I represented shipper interests, including plastic, chemical, coal, paper and steel shippers.

STATEMENT OF QUALIFICATIONS

I have participated in various proceedings involved with the division of through rail rates. For example, I participated in ICC Docket No. 35585, *Akron, Canton & Youngstown Railroad Company, et al. v. Aberdeen and Rockfish Railroad Company, et al.* which was a complaint filed by the northern and midwestern rail lines to change the primary north-south divisions. I was personally involved in all traffic, operating and cost aspects of this proceeding on behalf of the northern and midwestern rail lines. I was the lead witness on behalf of the Long Island Rail Road in ICC Docket No. 36874, *Notice of Intent to File Division Complaint by the Long Island Rail Road Company.*

As a result of my extensive economic consulting practice since 1971 and my participating in maximum-rate, rail merger, and rule-making proceedings before various government and private governing bodies, I have become thoroughly familiar with the operations, practices and costs of the rail carriers that move coal over the major coal routes in the United States.

Comparison of Full SAC and Simplified SAC Analyses

Coal Rate Guidelines define a stand-alone railroad ("SARR") as a system in which the plant size and traffic base are designed to maximize efficiencies and production economies.[1] The fact that a SARR is designed to maximize efficiencies and production economies infers that the designer of a SARR will set out to create an optimal system that balances two factors, revenues and costs. From an optimization perspective, an optimal SARR can be created in two ways. First, the designer may maximize the revenue from a system given a fixed and variable set of costs. Or, second, the designer can minimize fixed costs and variable operating costs given a static revenue base.[2] Mathematically, these expression can be represented as follows:

1)   MAX (Revenue) $\Rightarrow$ Investment + Fixed Oper. Cost + Variable Oper. Cost

2)   MIN (Investment + Fixed Oper. Cost + Variable Oper. Cost) $\Rightarrow$ Revenue

Lets assume that the designer of a SARR in a Full SAC wishes to maximize revenue over a certain section of a railroad's network that is operating at less than full capacity. Assuming the designer reproduces the current infrastructure, the network could be maximized his network by shifting traffic from other parts of the railroad to this portion of the network. Therefore, the new revenue for this section of the network would be greater than the existing revenue, while the variable operating costs will also be greater than the existing operating costs (ignoring for the moment efficiency gains in variable operating costs). Assuming these conditions, then:

3) $\text{Revenue}_{New} > \text{Revenue}_{Current}$

4) $\text{Variable Operating Cost}_{New} > \text{Variable Operating Cost}_{Current}$

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[1]   See Coal Rate Guidelines at 544.

[2]   The ICC made this point in Coal Rate Guidelines. "The plant should be designed to minimize construction (or acquisition) and operating costs and/or maximize the carriage of profitable traffic." Coal Rate Guidelines at 543.

Comparison of Full SAC and Simplified SAC Analyses

5) $\qquad$ Revenue $_{New}$ > Variable Operating Cost $_{New}$

Then the system is optimizing its structure because the new traffic is making a greater contribution to the fixed investment and operating costs while maximizing physical plant utilization.

In a simplified stand-alone cost analysis ("SSAC"), the designer is precluded from optimizing the network due to a limitation on rerouting non-issue traffic, and requirements to continue to utilize the same operating plant. [3] Therefore in a SSAC analysis under the same considerations:

6) $\qquad$ Investment $_{Full\ SAC}$ = Investment $_{SSAC}$

7) $\qquad$ Fixed Operating Costs $_{Full\ SAC}$ = Fixed Operating Cost $_{SSAC}$

8) $\qquad$ Revenue $_{Full\ SAC}$ ≥ Revenue $_{SSAC}$

9) $\qquad$ Variable Operating Cost $_{Full\ SAC}$ ≥ Variable Operating Cost $_{SSAC}$

Given that the traffic will be making less of a contribution to the same fixed investment and operating costs, the results of the SSAC analysis will fall below that of a Full SAC analysis. In other words, a Full SAC analysis will by definition produce an answer no worse than a SSAC analysis and in almost all cases better.[4]

The same analysis can be performed if the designer sets out to minimize expenses instead of maximizing revenues. If the designer of a Full SAC analysis holds revenues for his network constant relative to the incumbent railroad, he will attempt to minimize all costs such that:

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[3]   See Ex Parte 646 at 13.

[4]   A Full SAC analysis will produce the same results as a SSAC analysis if there are no inefficiencies in current railroad's system and its network is operating at capacity.

Comparison of Full SAC and Simplified SAC Analyses

10) $\text{Investment}_{\text{Full SAC}} < \text{Investment}_{\text{Current}}$

11) $\text{Fixed Operating Costs}_{\text{Full SAC}} < \text{Fixed Operating Costs}_{\text{Current}}$

12) $\text{Variable Operating Costs}_{\text{Full SAC}} < \text{Variable Operating Costs}_{\text{Current}}$

In a SSAC analysis, because costs are not adjusted for efficiencies, costs are greater than in a Full

SAC analysis. Therefore:

13) $\text{Investment}_{\text{SSAC}} \geq \text{Investment Full}_{\text{SAC}}$

14) $\text{Fixed Operating Costs}_{\text{SSAC}} \geq \text{Fixed Operating Costs}_{\text{Full SAC}}$

15) $\text{Variable Operating Costs}_{\text{SSAC}} \geq \text{Variable Operating Costs}_{\text{Full SAC}}$

Because the SSAC will have a cost structure that, at best, is no better than a Full SAC analysis,

and is much more likely to have a higher cost structure due to the inability to shed inefficiencies in

the incumbent's current operations, the best a SSAC analysis can do is equal a Full SAC analysis

and will most assuredly produce a worse result.

As indicated above, a SSAC analysis will produce the same results as a Full SAC analysis

only if the incumbent railroad is fully utilizing its plant and is fully maximizing efficiencies. Since

this is clearly not happening with current railroad operations, it is safe to assume that a SSAC

analysis will always produce a worse result than a Full SAC analysis.

Application of the STB's Proposed Three
Benchmark Method On a Revenue Inadequate Railroad

	Movement (1)	Revenue to Variable Cost Ratio 1/ (2)	RSAM to R/VC $_{Total}$ Ratio 2/ (3)	Adjusted Revenue to Variable Cost Ratio 3/ (3)
1.	A	180.001%	1.001	180.2%
2.	B	180.001%	1.001	180.2%
3.	C	180.001%	1.001	180.2%
4.	D	180.001%	1.001	180.2%
5.	E	180.001%	1.001	180.2%
6.	F	180.001%	1.001	180.2%
7.	G	180.001%	1.001	180.2%
8.	G	180.001%	1.001	180.2%
9.	I	180.001%	1.001	180.2%
10.	J	180.001%	1.001	180.2%
11.	K	180.001%	1.001	180.2%
12.	L	180.001%	1.001	180.2%
13.	M	180.001%	1.001	180.2%
14.	N	180.001%	1.001	180.2%
15.	O	180.001%	1.001	180.2%
16.	P	180.001%	1.001	180.2%
17.	Q	180.001%	1.001	180.2%
18.	R	180.001%	1.001	180.2%
19.	S	180.001%	1.001	180.2%
20.	T	180.001%	1.001	180.2%

21	Mean of the Adjusted R/VC Ratio 4/	180.2%
22.	Standard Deviation of the Adjusted R/VC Ratio 5/	0%
23.	Upper Bound of a 90% Confidence Interval 6/	180.2%

1/ Only moves with R/VC of greater than 180% can be included in the comparison group.

2/ A RSAM to R/VC $_{total}$ ratio of greater than one (1) indicates the railroad is not revenue adequate under current STB revenue adequacy definitions.

3/ Column (2) x Column (3)

4/ Average of Column (4), Lines 1 to 20

5/ The standard deviation of Column (4), Lines 1 to 20. Because all unadjusted R/VC are the same in this example, the standard deviation of the sample is zero (0).

6/ Because the standard deviation of the sample equals (0), the upper bound of the 90 percent confidence interval equals the adjusted R/VC of the sample group.

Application of the STB's Proposed Three
Benchmark Method On a Revenue Adequate Railroad

	Movement (1)	Revenue to Variable Cost Ratio 1/ (2)	RSAM to R/VC Total Ratio 2/ (3)	Adjusted Revenue to Variable Cost Ratio 3/ (3)
1.	A	181.8%	0.99	180.0%
2.	B	181.8%	0.99	180.0%
3.	C	181.8%	0.99	180.0%
4.	D	181.8%	0.99	180.0%
5.	E	181.8%	0.99	180.0%
6.	F	181.8%	0.99	180.0%
7.	G	181.8%	0.99	180.0%
8.	G	181.8%	0.99	180.0%
9.	I	181.8%	0.99	180.0%
10.	J	181.8%	0.99	180.0%
11.	K	181.8%	0.99	180.0%
12.	L	181.8%	0.99	180.0%
13.	M	181.8%	0.99	180.0%
14.	N	181.8%	0.99	180.0%
15.	O	181.8%	0.99	180.0%
16.	P	181.8%	0.99	180.0%
17.	Q	181.8%	0.99	180.0%
18.	R	181.8%	0.99	180.0%
19.	S	181.8%	0.99	180.0%
20.	T	181.8%	0.99	180.0%

21	**Mean of the Adjusted R/VC Ratio 4/**	**180.0%**
22.	**Standard Deviation of the Adjusted R/VC Ratio 5/**	**0%**
23.	**Upper Bound of a 90% Confidence Interval 6/**	**180.0%**

1/ Only moves with R/VC of greater than 180% can be included in the comparison group.
2/ A RSAM to R/VC total ratio of less than one (1) indicates the railroad is
  revenue adequate under current STB revenue adequacy definitions.
3/ Column (2) x Column (3)
4/ Average of Column (4), Lines 1 to 20
5/ The standard deviation of Column (4), Lines 1 to 20. Because all unadjusted R/VC
  are the same in this example, the standard deviation of the sample is zero (0).
6/ Because the standard deviation of the sample equals (0), the upper bound of the 90
  percent confidence interval equals the adjusted R/VC of the sample group.

Application of the STB's Proposed Three
Benchmark Method On a Revenue Adequate Railroad

	Movement (1)	Revenue to Variable Cost Ratio 1/ (2)	RSAM to R/VC $_{Total}$ Ratio 2/ (3)	Adjusted Revenue to Variable Cost Ratio 3/ (3)
1.	A	183.000%	0.99	181.2%
2.	B	183.000%	0.99	181.2%
3.	C	183.000%	0.99	181.2%
4.	D	183.000%	0.99	181.2%
5.	E	183.000%	0.99	181.2%
6.	F	183.000%	0.99	181.2%
7.	G	183.000%	0.99	181.2%
8.	G	183.000%	0.99	181.2%
9.	I	183.000%	0.99	181.2%
10.	J	183.000%	0.99	181.2%
11.	K	180.001%	0.99	178.2%
12.	L	180.001%	0.99	178.2%
13.	M	180.001%	0.99	178.2%
14.	N	180.001%	0.99	178.2%
15.	O	180.001%	0.99	178.2%
16.	P	180.001%	0.99	178.2%
17.	Q	180.001%	0.99	178.2%
18.	R	180.001%	0.99	178.2%
19.	S	180.001%	0.99	178.2%
20.	T	180.001%	0.99	178.2%

21	Mean of the Adjusted R/VC Ratio 4/	179.7%
22.	Standard Deviation of the Adjusted R/VC Ratio 5/	2%
23.	Upper Bound of a 90% Confidence Interval 6/	180.1%

1/ Only moves with R/VC of greater than 180% can be included in the comparison group.

2/ A RSAM to R/VC $_{total}$ ratio of less than one (1) indicates the railroad is revenue adequate under current STB revenue adequacy definitions.

3/ Column (2) x Column (3)

4/ Average of Column (4), Lines 1 to 20

5/ The standard deviation of Column (4), Lines 1 to 20.

6/ Line 21 + {1.328 x [Line 22 ÷ (20-1)$^{\frac{1}{2}}$]}, where 1.328 equals the student's-t parameter for a 10% confidence interval with 20-1 degrees of freedom.

STB Eligibility Estimates

	Commodity (1)	Total Regulated (2)	Large Disputes		Medium Disputes		Small Disputes	
			Revenues (3)	% of Total (4)	Revenues (5)	% of Total (6)	Revenues (7)	% of Total (8)
1.	Farm Products	$942,701,000	$140,960,000	15%	$589,934,000	63%	$211,807,000	22%
2.	Metallic Ore	199,375,000	131,922,000	66%	59,997,000	30%	7,456,000	4%
3.	Coal	3,168,171,000	1,937,001,000	61%	1,058,386,000	33%	172,784,000	5%
4.	Crude Petroleum	2,403,000	0	0%	993,000	41%	1,410,000	59%
5.	Non-Met. Minerals	111,508,000	16,135,000	14%	65,984,000	59%	29,389,000	26%
6.	Ordinance	7,267,000	2,858,000	39%	3,979,000	55%	430,000	6%
7.	Food Products	280,429,000	23,591,000	8%	156,673,000	56%	100,165,000	36%
8.	Chemicals	2,534,099,000	267,842,000	11%	1,627,608,000	64%	638,649,000	25%
9.	Petroleum Products	516,563,000	107,579,000	21%	260,906,000	51%	148,078,000	29%
10.	Transportation Equipment	23,158,000	9,327,000	40%	8,817,000	38%	5,014,000	22%
11.	Waste or Scrap	40,906,000	5,884,000	14%	30,732,000	75%	4,290,000	10%
12.	Miscellaneous Freight	103,195,000	37,262,000	36%	62,894,000	61%	3,039,000	3%
13.	Miscellaneous Mixed Shipments	7,667,000	4,309,000	56%	2,948,000	38%	410,000	5%
14.	Small Package Freight	2,375,000	0	0%	2,375,000	100%	0	0%
15.	Hazardous Waste	20,895,000	0	0%	13,064,000	63%	7,831,000	37%
16.	Totals	$7,960,712,000	$2,684,670,000	34%	$3,945,290,000	50%	$1,330,752,000	17%

Source: Ex Parte 646 Table 2

Eligibility Estimates Based On 2004 Masked Waybill Sample Data

	Commodity	Total Regulated	Large Disputes		Medium Disputes		Small Disputes	
			Revenues	% of Total	Revenues	% of Total	Revenues	% of Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Farm Products	$1,476,472,260	$220,941,524	15%	$1,016,809,518	69%	$238,721,218	16%
2.	Metallic Ore	311,568,384	239,667,970	77%	61,491,447	20%	10,408,967	3%
3.	Coal	4,902,114,656	3,659,507,696	75%	1,152,061,806	24%	90,545,154	2%
4.	Crude Petroleum	12,069,872	0	0%	9,495,712	79%	2,574,160	21%
5.	Non-Met. Minerals	274,027,984	88,204,006	32%	151,428,346	55%	34,395,632	13%
6.	Ordinance	8,340,516	2,858,280	34%	5,052,072	61%	430,164	5%
7.	Food Products	884,606,480	174,953,220	20%	516,944,638	58%	192,708,622	22%
8.	Chemicals	4,177,154,234	946,675,185	23%	2,613,530,357	63%	616,948,692	15%
9.	Petroleum Products	874,327,187	224,689,937	26%	492,561,937	56%	157,075,313	18%
10.	Transportation Equipment	31,337,997	9,555,688	30%	12,823,738	41%	8,958,571	29%
11.	Waste or Scrap	196,960	0	0%	196,960	100%	0	0%
12.	Miscellaneous Freight	1,583,588	0	0%	874,780	55%	708,808	45%
13.	Miscellaneous Mixed Shipments	7,494,636	3,705,396	49%	3,379,560	45%	409,680	5%
14.	Small Package Freight	2,375,120	0	0%	2,375,120	100%	0	0%
15.	Hazardous Waste	38,533,128	6,324,800	16%	26,702,488	69%	5,505,840	14%
16.	Totals	$13,002,203,002	$5,577,083,702	43%	$6,065,728,479	47%	$1,359,390,821	10%

Source: 2004 STB Waybill Saample and L. E. Peabody & Associates, Inc. analysis.

Eligibility Estimates Based On 2005 Masked Waybill Sample Data

Commodity	Total Regulated	Large Disputes		Medium Disputes		Small Disputes	
		Revenues	% of Total	Revenues	% of Total	Revenues	% of Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Farm Products	$1,628,767,693	$250,325,947	15%	$1,099,305,876	67%	$279,135,870	17%
2. Metallic Ore	1,061,160	0	0%	896,040	84%	165,120	16%
3. Coal	411,765,661	283,211,959	69%	117,773,377	29%	10,780,325	3%
4. Crude Petroleum	5,574,011,253	4,148,032,766	74%	1,338,723,965	24%	87,254,522	2%
5. Non-Met. Minerals	8,175,880	0	0%	6,071,080	74%	2,104,800	26%
6. Ordinance	290,096,114	84,130,260	29%	169,557,405	58%	36,408,449	13%
7. Food Products	9,829,900	1,082,284	11%	8,159,376	83%	588,240	6%
8. Chemicals	907,197,885	220,523,556	24%	513,251,054	57%	173,423,275	19%
9. Petroleum Products	4,299,862,489	976,476,478	23%	2,716,398,761	63%	606,987,250	14%
10. Transportation Equipment	928,381,705	211,602,046	23%	554,288,829	60%	162,490,830	18%
11. Waste or Scrap	43,390,872	11,612,312	27%	20,326,980	47%	11,451,580	26%
12. Miscellaneous Freight	128,595,824	71,060,072	55%	50,910,180	40%	6,625,572	5%
13. Miscellaneous Mixed Shipments	73,200,491	41,972,401	57%	29,281,718	40%	1,946,372	3%
14. Small Package Freight	43,919,720	42,175,240	96%	1,494,560	3%	249,920	1%
15. Hazardous Waste	50,793,100	6,731,480	13%	40,015,220	79%	4,046,400	8%
16. Totals	$14,399,049,747	$6,348,936,801	44%	$6,666,454,421	46%	$1,383,658,525	10%

Source: 2005 STB Waybill Saample and L. E. Peabody & Associates, Inc. analysis.

Methodology Used To Aggregate 2004 And 2005 Waybill Sample Revenues

1. Identify shipment moves in the STB's Waybill Sample based on same movement characteristics:
   a. Same 7 digit STCC [1]
   b. Same origin and destination FSAC
   c. Same railroad
   d. Same routing

2. Delete all exempt traffic as identified by use of the exempt flag field in the Waybill Sample file and by car type, i.e, box cars, TOFC and COFC. [2]

3. Aggregate URCS costs and masked revenues for each identified movement.

4. Calculate R/VC for the aggregated movements.

5. For each movement with a R/VC ratio of greater than 180 percent, determine the MVC over a five year period using the STB's 2004 railroad industry average cost of capital. [3]

6. Stratify movements by the MVC into three categories: MVC less than $200,000, MVC between $200,000 and $3.5 million and MVC of greater than $3.5 million.

7. Aggregate revenues by 2 digit STCC based on stratification.

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[1] Movements with the hazardous materials flags were aggregated at the base 7 digit STCC level due to the STB's Table 2 Methodologies' silence on the handling of hazardous materials and due to the fact that hazardous materials are not in themselves an exempt commodity.

[2] The STB's Table 2 Methodologies delete exempt traffic after aggregating revenues and costs and determination of MVC. However, aggregating the data before deleting exempted traffic would lead to including some exempted car types in aggregated data. Therefore, in preparing this exhibit, I deleted exempt traffic and car types prior to aggregating revenue and cost information.

[3] I used the 2004 railroad industry cost of capital for consistency with the STB's Table 2, even though the STB has recently issued its 2005 railroad industry cost of capital decision.

Analysis of Land, Earthwork, Bridge Unit Costs from Full Stand-Alone Cost Cases

Item (1)	Land Cost per Acre 1/				Earthwork Cost per Cubic Yard 2/				Bridge Cost per Foot 3/		
	Agricultural (2)	Residential (3)	Industrial (4)	Commercial (5)	Common (6)	Loose (7)	Solid (8)	Borrow (9)	Type 1 (10)	Type 2 (11)	Type 3 (12)
1. Otter Tail	$533	$13,006	$14,844	$32,423	$3.90	$6.57	$9.22	$12.35	$2,315	$2,552	$4,300
2. Duke/NS	4,088	3,853	76,611	204,849	3.32	8.75	9.09	9.84	6,044	3,405	3,813
3. Duke/CSXT	4,141	6,982	39,842	94,656	3.29	8.67	9.09	9.81	4,892	3,924	3,993
4. CP&L	3,932	4,913	83,253	130,900	3.34	8.81	9.20	9.89	5,790	3,967	3,701
5. Xcel	446	22,157	13,797	42,549	3.43	8.00	9.57	12.26	1,793	2,690	4,427
6. TMPA	4,932	24,709	47,234	74,344	3.19	4.51	7.15	10.46	2,225	3,862	4,409
7. Mean (Expected Value) 4/	$3,012	$12,603	$45,930	$96,620	$3.41	$7.55	$8.89	$10.77	$3,843	$3,400	$4,107
8. Maximum Value 5/	$4,932	$24,709	$83,253	$204,849	$3.90	$8.81	$9.57	$12.35	$6,044	$3,967	$4,427
9. Minimum Value 6/	$446	$3,853	$13,797	$32,423	$3	$5	$7	$10	$1,793	$2,552	$3,701
10. Percent Difference - Max to Min 7/	1006%	541%	503%	532%	22%	95%	34%	26%	237%	55%	20%
11. Average Absolute Deviation 8/	$1,682	$7,354	$23,103	$47,503	$0.17	$1.34	$0.58	$1.02	$1,732	$519	$272
12. Ratio Avg. Abs. Dev./Mean 9/	56%	58%	50%	49%	5%	18%	7%	10%	45%	15%	7%

1/ Ex Parte 646 Table A-2
2/ Ex Parte 646 Table A-3
3/ Ex Parte 646 Table A-6
4/ Average, Lines 1 - 6
5/ Maximum Value, Lines 1 - 6
6/ Minimum Value, Lines 1 - 6
7/ (Line 8 - Line 9) ÷ Line 9
8/ (Σ|Line 7 - i|) ÷ 6 where i = Line 1 through Line 6
9/ Line 11 ÷ Line 7

Analysis of Other Road Property Investment Unit Costs from Full Stand-Alone Cost Cases

Item (1)	Cost per Track Mile Track Construction 1/ (2)	Cost Per Route Mile			Cost per Grade Separation 5/ (6)
		Other Earthwork 2/ (3)	Signaling & Communication 3/ (4)	Public Improvement (w/o Grade Separation) 4/ (5)	
1. Otter Tail	$550,664	$36,260	$168,669	$24,391	$561,877
2. Duke/NS	563,401	82,643	139,689	15,575	2,117,957
3. Duke/CSXT	549,626	78,399	156,914	3,549	469,857
4. CP&L	531,706	96,555	169,578	9,313	554,317
5. Xcel	588,465	59,027	209,142	33,597	539,225
6. TMPA	602,974	33,303	81,883	46,521	832,437
7. Mean (Expected Value) 6/	$564,473	$64,365	$154,313	$22,158	$845,945
8. Maximum Value 7/	$602,974	$96,555	$209,142	$46,521	$2,117,957
9. Minimum Value 8/	$531,706	$33,303	$81,883	$3,549	$469,857
10. Percent Difference - Max to Min 9/	13%	190%	155%	1211%	351%
11. Average Absolute Deviation 10/	$20,831	$21,501	$29,018	$12,679	$424,004
12. Ratio Avg. Abs. Dev./Mean 11/	4%	33%	19%	57%	50%

1/ Ex Parte 646 Table A-4
2/ Ex Parte 646 Table A-5
3/ Ex Parte 646 Table A-8
4/ Ex Parte 646 Table A-10
5/ Ex Parte 646 Table A-11
6/ Average, Lines 1 - 6
7/ Maximum Value, Lines 1 - 6
8/ Minimum Value, Lines 1 - 6
9/ (Line 8 - Line 9) ÷ Line 9
10/ (Σ|Line 7 - i|) ÷ 6 where i = Line 1 through Line 6
11/ Line 11 ÷ Line 7