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**PUBLIC VERSION**  
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**BEFORE THE  
SURFACE TRANSPORTATION BOARD**



WESTERN FUELS ASSOCIATION, INC.  
and BASIN ELECTRIC POWER  
COOPERATIVE, INC.

Complainants,

v.

BNSF RAILWAY COMPANY

Defendant.

Docket No. 42088

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**REBUTTAL EVIDENCE OF COMPLAINANTS  
WESTERN FUELS ASSOCIATION, INC. AND  
BASIN ELECTRIC POWER COOPERATIVE, INC.**

**NARRATIVE**

VOLUME 2 OF 2

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And BASIN ELECTRIC POWER  
COOPERATIVE, INC.

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## ACRONYMS

The following acronyms are used:

|                      |                                                                                  |
|----------------------|----------------------------------------------------------------------------------|
| AAR                  | Association of American Railroads                                                |
| AEI                  | automatic equipment identification scanner                                       |
| AEO 2005             | Annual Energy Outlook, 2005 edition, published by the EIA                        |
| AREMA                | American Railway Engineering and Maintenance-of-Way Association                  |
| ATF                  | across-the-fence                                                                 |
| Basin/Basin Electric | Basin Electric Power Cooperative, Inc.                                           |
| BN                   | Burlington Northern Railroad Company                                             |
| BNSF                 | BNSF Railway Company, f/k/a The Burlington Northern and Santa Fe Railway Company |
| CA                   | constructive allowance                                                           |
| CMP                  | Constrained Market Pricing                                                       |
| cmp                  | corrugated metal pipe                                                            |
| CNW                  | Chicago and North Western Railway Company                                        |
| CSX                  | CSX Transportation, Inc.                                                         |
| CTC                  | centralized traffic control system                                               |
| CWR                  | continuous welded rail                                                           |
| CY                   | cubic yards                                                                      |
| DCF                  | discounted cash flow                                                             |
| DED                  | dragging equipment detector                                                      |
| DP                   | distributed power (type of locomotive configuration on a train)                  |
| DRGW                 | Denver & Rio Grande Western Railway Company                                      |
| EIA                  | Energy Information Administration, U.S. Department of Energy                     |
| EOTD                 | end-of-train device                                                              |
| FADB                 | BNSF's Fixed Asset Data Base                                                     |
| FEC                  | Florida East Coast Railway Company                                               |
| FED                  | failed equipment detector                                                        |
| FRA                  | Federal Railway Administration                                                   |
| G&A                  | general and administrative                                                       |
| GAAP                 | General Accepted Accounting Principle                                            |
| GTM                  | gross ton-miles                                                                  |
| GWR                  | gross weight on rail                                                             |
| IC                   | Illinois Central Railroad Company                                                |
| ICC                  | Interstate Commerce Commission                                                   |
| IDC                  | interest during construction                                                     |
| IT                   | information technology                                                           |
| JT                   | jurisdictional threshold                                                         |
| KCS                  | The Kansas City Southern Railway Company                                         |

|           |                                                                     |
|-----------|---------------------------------------------------------------------|
| L&D       | loss and damage                                                     |
| LF        | linear feet                                                         |
| LRR       | Laramie River Railroad                                              |
| LRS       | Laramie River Generating Station                                    |
| LUM       | locomotive unit-mile                                                |
| Means     | R.S. Means (engineering unit-cost reference guide)                  |
| MGA       | Monongahela Railway                                                 |
| MGT       | million gross tons                                                  |
| MOW       | maintenance-of-way                                                  |
| MP        | milepost                                                            |
| MRL       | Montana Rail Link                                                   |
| MSP       | Modified Straight-Mileage Prorate                                   |
| NS        | Norfolk Southern Railway Company                                    |
| O/D       | origin/destination                                                  |
| PRB       | Powder River Basin of Wyoming                                       |
| PRM       | The Board's percentage reduction method                             |
| QRS       | Quality Rail Services, LLC                                          |
| R-1       | Annual Report Form R-1                                              |
| RAM       | WFA/Basin's Revenue Allocation Methodology                          |
| RCAF-A    | rail cost adjustment factor, adjusted for changes in productivity   |
| RCAF-U    | rail cost adjustment factor, unadjusted for changes in productivity |
| RCB       | reinforced concrete box culvert                                     |
| ROI       | return on investment                                                |
| ROW       | right-of-way                                                        |
| R/VC      | revenue-to-variable cost                                            |
| RTC Model | Rail Traffic Controller simulation model                            |
| SAC       | stand-alone cost                                                    |
| SARR      | stand-alone railroad                                                |
| SEM       | switch engine minutes                                               |
| SP        | Southern Pacific Transportation Company                             |
| STB       | Surface Transportation Board                                        |
| T&E       | train and engine crew                                               |
| T&O       | traffic and operating                                               |
| UP        | Union Pacific Railroad Company                                      |
| URCS      | Uniform Railroad Costing System                                     |
| USGS      | United States Geological Survey                                     |
| VC        | variable cost                                                       |
| WC        | Wisconsin Central Railroad Company                                  |
| WCS       | Wisconsin Central System                                            |
| WFA       | Western Fuels Association, Inc.                                     |
| WRPI      | Western Railroad Properties, Incorporated                           |
| 4WD       | Four-wheel drive                                                    |

## CASE GLOSSARY

The following short form case citations are used:

|                                           |                                                                                                                                                                             |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>AEP Texas</u>                          | <u>AEP Texas North Co. v. Burlington Northern and Santa Fe Ry.</u> , STB Docket No. 41191 (Sub No. 1) (filed Aug. 11, 2003)                                                 |
| <u>AEPCO</u>                              | <u>Arizona Electric Power Coop., Inc. v. Burlington Northern and Santa Fe Ry.</u> , STB Docket No. 42058 (STB served March 15, 2005)                                        |
| <u>APS I</u>                              | <u>Arizona Public Service Co. v. Atchison, Topeka and Santa Fe Ry.</u> , 2 S.T.B. 367 (1997)                                                                                |
| <u>APS II</u>                             | <u>Arizona Public Service Co. v. Atchison, Topeka and Santa Fe Ry.</u> , 3 S.T.B. 70 (1998)                                                                                 |
| <u>APL</u>                                | <u>Arkansas Power &amp; Light Co. v. Burlington Northern R.R.</u> , 3 I.C.C.2d 757 (1987)                                                                                   |
| <u>CPL</u>                                | <u>Carolina Power &amp; Light Co. v. Norfolk Southern Ry.</u> , STB Docket No. 42072 (STB served Dec. 23, 2003)                                                             |
| <u>Coal Rate Guidelines or Guidelines</u> | <u>Coal Rate Guidelines, Nationwide</u> , 1 I.C.C.2d 520 (1985), <u>aff'd sub nom. Consolidated Rail Corp. v. United States</u> , 812 F.2d 1444 (3 <sup>rd</sup> Cir. 1987) |
| <u>Coal Trading</u>                       | <u>Coal Trading Corp. v. The Baltimore &amp; Ohio R.R.</u> , 6 I.C.C.2d 361 (1990)                                                                                          |
| <u>Duke/CSX</u>                           | <u>Duke Energy Corp. v. CSX Transportation, Inc.</u> , STB Docket No. 42070 (STB served Feb. 4, 2004)                                                                       |
| <u>Duke/NS I</u>                          | <u>Duke Energy Corp. v. Norfolk Southern Ry.</u> , STB Docket No. 42069 (STB served Nov. 6, 2003)                                                                           |
| <u>Duke/NS II</u>                         | <u>Duke Energy Corp. v. Norfolk Southern Ry.</u> , STB Docket Nos. 42069, 42070 & 42072 (STB served Oct. 20, 2004)                                                          |
| <u>FMC</u>                                | <u>FMC Wyoming Corp. v. Union Pacific R.R.</u> , STB Docket No. 42022 (STB served May 12, 2000)                                                                             |

|                        |                                                                                                                                                                           |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>McCarty Farms</u>   | <u>McCarty Farms, Inc. v. Burlington Northern, Inc.</u> , 2 S.T.B. 460 (1997)                                                                                             |
| <u>Nevada Power I</u>  | <u>Bituminous Coal -- Hiawatha, Utah to Moapa, Nevada</u> , 6 I.C.C.2d 1 (1989)                                                                                           |
| <u>Nevada Power II</u> | <u>Bituminous Coal -- Hiawatha, Utah to Moapa, Nevada</u> , 10 I.C.C.2d 259 (1994)                                                                                        |
| <u>OPPD</u>            | <u>Omaha Public Power District v. Burlington Northern R.R.</u> , 3 I.C.C.2d 123 (1986) <u>aff'd on appeal</u> 3 I.C.C. 2d 853 (1987)                                      |
| <u>Otter Tail</u>      | <u>Otter Tail Power Co. v. Burlington Northern and Santa Fe Ry.</u> , STB Docket No. 42071 (filed Jan. 2, 2002)                                                           |
| <u>PPL</u>             | <u>PPL Montana, LLC v. Burlington Northern and Santa Fe Ry.</u> , STB Docket No. 42054 (STB served Aug. 20, 2002)                                                         |
| <u>San Antonio</u>     | <u>San Antonio, Texas v. Burlington Northern R.R.</u> , 1 I.C.C.2d 561 (1986)                                                                                             |
| <u>TMPA I</u>          | <u>Texas Municipal Power Agency v. Burlington Northern and Santa Fe Ry.</u> , STB Docket No. 42056 (STB served March 24, 2003)                                            |
| <u>TMPA II</u>         | <u>Texas Municipal Power Agency v. Burlington Northern and Santa Fe Ry.</u> , STB Docket No. 42056 (STB served Sept. 27, 2004)                                            |
| <u>WTU</u>             | <u>West Texas Utilities Co. v. Burlington Northern R.R.</u> , 1 S.T.B. 638 (1996), <u>aff'd sub nom. Burlington Northern R.R. v. S.T.B.</u> 114 F.3d 206 (D.C. Cir. 1997) |
| <u>WPL I</u>           | <u>Wisconsin Power &amp; Light Co. v. Union Pacific R.R.</u> , STB Docket No. 42051 (STB served Sept. 13, 2001)                                                           |
| <u>Xcel I</u>          | <u>Public Service Company of Colorado d/b/a Xcel Energy v. Burlington Northern and Santa Fe Ry.</u> , STB Docket No. 42057 (STB served June 8, 2004)                      |
| <u>Xcel II</u>         | <u>Public Service Company of Colorado d/b/a Xcel Energy v. Burlington Northern and Santa Fe Ry.</u> , STB Docket No. 42057 (STB served Jan. 19, 2005)                     |

**III-E Non Road  
Property Investment**



**III. E. NON-ROAD PROPERTY INVESTMENT**

Neither WFA/Basin nor BNSF put in specific evidence on non-road property investment since they agree that all of the LRR's locomotives, railcars and other equipment (except computers) would be leased. The parties also agree that the LRR would purchase computers and related hardware, and address these costs in their discussion of the LRR's IT requirements in Part III-D-3-d of their opening and reply evidence. See BNSF Reply Narr. at III.E-1.

**III-F Road  
Property Investment**



### III. F. ROAD PROPERTY INVESTMENT

On Opening, WFA/Basin presented a feasible and well supported road property investment figure for the LRR. Consistent with its approach in recent cases, BNSF often used completely different standards to construct the LRR even when it was plainly unnecessary. Moreover, BNSF's Reply is often muddled and conflicting (*i.e.*, it argues for one standard and then applies different standards). For all of the reasons set forth in this Part, the Board should reject BNSF's road property investment costs and accept those presented by WFA/Basin on Rebuttal, as shown in Rebuttal Table III-F-1 below and Rebuttal Exhibit III-F-1.

**REBUTTAL TABLE III-F-1  
LRR Road Property Investment Costs**

| Item                                     | WFA/Basin Opening | BNSF Reply | WFA/Basin<br>Rebuttal |
|------------------------------------------|-------------------|------------|-----------------------|
| 1. Land                                  | \$ 3.37           | \$ 7.3     | \$ 3.37               |
| 2. Roadbed Preparation                   | 131.4             | 436.8      | 145.0                 |
| 3. Culverts                              | 11.8              | 19.0       | 14.4                  |
| 4. Track                                 | 302.4             | 409.1      | 306.2                 |
| 5. Tunnels                               | 27.7              | 28.7       | 28.7                  |
| 6. Bridges                               | 58.1              | 80.4       | 58.0                  |
| 7. Signal & Communications               | 58.5              | 68.8       | 58.1                  |
| 8. Buildings & Facilities                | 43.3              | 51.7       | 42.0                  |
| 9. Public Improvements                   | 7.5               | 8.59       | 9.8                   |
| 10. Subtotal                             | \$ 644.1          | \$ 1,110.3 | 665.6                 |
| 11. Mobilization                         | 19.1              | 34.0       | 19.9                  |
| 12. Engineering                          | 64.1              | 110.3      | 66.2                  |
| 13. Contingency                          | 64.1              | 124.7      | 66.2                  |
| 14. Total Road Property Investment Costs | \$ 791.5          | \$ 1,379.3 | \$ 817.9              |

Part III-F of this Rebuttal Narrative is divided into two subparts. The first subpart addresses BNSF's generalized evidence at pages III.F-2 to 24 of its Reply Narrative. Subpart two addresses the road property investment categories included in the Board's stand-alone cost case presentation outline.

**SUBPART I**  
**RESPONSE TO BNSF REPLY ON SAC**  
**COSTS VERSUS REAL-WORLD COSTS AND STANDARDS**

BNSF's road property investment reply is prefaced by a 22-page, generalized plea for greater SARR road property investment costs. See BNSF Reply Narr. at III.F-2 to 24. BNSF presents three principal themes: (1) the infrastructure proposed by WFA/Basin ought to be based on BNSF's most current construction standards; (2) WFA/Basin's Opening road property investment figures do not reflect real-world costs; and (3) so called "cherry picking" of costs is inappropriate.

**1. Infrastructure Requirements**

BNSF admits that WFA/Basin are permitted to design and build the least cost, but feasible, stand-alone railroad. Id. at III.F-2. But BNSF complains that under the Board's decisions, complainants have been allowed to build least cost SARRs that are not truly feasible or efficient by modern day standards – noting in particular that the LRR's construction standards might be acceptable for some rail lines but not for heavy axle coal traffic where such standards are "obsolete." Id. at III.F-2 to 3. BNSF's overarching

theme is that the LRR must be built using BNSF's most current construction standards for heavy-haul coal lines and nothing else.

Before dissecting BNSF's particular points, it is important to consider the key differences between the LRR and BNSF. Those differences have a significant impact on the infrastructure requirements of the LRR.

**a. Density**

**i. BNSF versus LRR Density**

BNSF's major coal line in the PRB supports not only most of the traffic that the LRR will carry, but also the whole of UP's PRB traffic. Consider that in 2003, the segment of the PRB Joint Line (Orin Subdivision) between Converse Jct. and Shawnee Jct. carried {     } MGT. See WFA/Basin Rebuttal electronic workpaper "2003 System Traffic Density Map.pdf" (this map was produced by BNSF in discovery). This is the LRR's densest line segment as well. By comparison, in its peak year the LRR will handle only 154 MGT on this segment, or nearly {     } percent less than what moves over that segment today.

**ii. BNSF and UP Future Traffic Growth**

Future PRB coal traffic growth projected by BNSF and UP quickly widens the density gap. As the Board is well aware, BNSF and UP have hopes of moving over 500 million net tons of PRB coal in the future. Rebuttal Table III-F-2 below demonstrates that the potential long-term density disparity between the LRR (even using

its peak-year MGTs for the entire 20-year DCF period) and the Joint Line is even more significant when such growth is considered:

**REBUTTAL TABLE III-F-2**  
**Long-Term Density Disparity Between The LRR and BNSF/UP**  
**Over the Converse Jct. to Shawnee Jct. Segment**  
**Based on BNSF and UP Traffic Goal of 500 Million Net Tons of Coal**  
**(MGT)**

| Year      | BNSF/UP <sup>1/</sup> | LRR <sup>2/</sup> | Yearly Difference | Cumulative Difference |
|-----------|-----------------------|-------------------|-------------------|-----------------------|
| 2004      | { }                   | 154               | { }               | { }                   |
| 2005      | { }                   | 154               | { }               | { }                   |
| 2006      | { }                   | 154               | { }               | { }                   |
| 2007      | { }                   | 154               | { }               | { }                   |
| 2008      | { }                   | 154               | { }               | { }                   |
| 2009      | { }                   | 154               | { }               | { }                   |
| 2010      | { }                   | 154               | { }               | { }                   |
| 2011      | { }                   | 154               | { }               | { }                   |
| 2012      | { }                   | 154               | { }               | { }                   |
| 2013      | { }                   | 154               | { }               | { }                   |
| 2014      | { }                   | 154               | { }               | { }                   |
| 2015      | { }                   | 154               | { }               | { }                   |
| 2016      | { }                   | 154               | { }               | { }                   |
| 2017      | { }                   | 154               | { }               | { }                   |
| 2018      | { }                   | 154               | { }               | { }                   |
| 2019      | { }                   | 154               | { }               | { }                   |
| 2020      | { }                   | 154               | { }               | { }                   |
| 2021      | { }                   | 154               | { }               | { }                   |
| 2022      | { }                   | 154               | { }               | { }                   |
| 2023      | { }                   | 154               | { }               | { }                   |
| 2024      | 746                   | 154               | 592               | { }                   |
| Total MGT | { }                   | 3,234             |                   |                       |

1/ BNSF/UP MGT estimate is based on 500 million net tons over the segment in 2024. The 500 million net tons is multiplied by 1.49 to reach 746 MGT in 2024. The 1.49 figure is based on WFA/Basin's calculation of the percentage increase between net tons and gross tons reflected in its Opening electronic workpaper "Annual Statistics.xls," tab "2024 Density\_Segment" (percentage increase in Column F over Column E). The 2004 MGT figure is derived by adding the 2003 density of { } MGT to 1/21 of the difference between the 2003 density and the projected 2024 density ({ } + ((746 - { })/21)). The growth between 2005 and 2023 is based on the previous year's MGT + ((746 - { })/21).

2/ The LRR number is based on its peak-year MGT as determined in its Opening electronic workpaper "Annual Statistics.xls," tab "2024 Density\_Segment." The peak-year figure was used each year to show the disparity even at the highest LRR tonnage level.

While the numbers in the above table are illustrative and actual density may vary,<sup>1</sup> it is virtually certain that the growth in traffic will further widen the long-term density gap between the real-world Joint Line and the LRR. Even if BNSF and UP experience no growth, the 20-year disparity in MGTs would still be close to 4.3 billion gross tons.

**iii. Impact of Density Disparity**

BNSF's current design specifications must necessarily be viewed through the density prism. Additional investment costs for concrete ties, heavier rail and wider roadbed are more understandable when judged against the growing amount of traffic that BNSF and UP haul over the Joint Line. However, BNSF's arguments ignore the obvious differences between the BNSF/UP requirements and the LRR's requirements. Indeed, BNSF repeatedly urges that a SARR being built to serve traffic in the future should be constructed at the highest standards possible today. Here, the future is known. There is no doubt as to the LRR's traffic density in its peak year. As demonstrated above, the LRR's peak year density pales in comparison even to BNSF/UP's 2003 density on a line that represents half of the LRR system. Thus, the infrastructure requirements for the LRR are unequivocally different than those of the real world BNSF.

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<sup>1</sup> WFA/Basin note that BNSF and UP recently announced plant to target a PRB Joint Line capacity goal of 550-600 million tons in five years. See WFA/Basin Rebuttal electronic workpaper "Joint Line Capacity.pdf," which reproduces a September 22, 2005 article from Argus Coal Transportation.

**b. LRR's Opening Construction Plans Are Feasible**

Given the maximum density on the LRR, WFA/Basin's experts have engineered a feasible and well supported SARR. To demonstrate this point, WFA/Basin's engineering witnesses have considered and examined a number of relevant comparisons. In particular, BNSF is fond of suggesting that the LRR's infrastructure is not adequate for heavy axle coal traffic. Id. at III.F-3, 8, 10, 12, and 23. However, real-world railroads, such as NS and BNSF itself, have successfully used the LRR's specifications on lines that carry high volumes of heavy-axle-load traffic.

**i. Norfolk Southern**

Norfolk Southern ("NS") operates one of the most heavily used coal corridors in the East. In particular, the line between Bluefield and Roanoke, VA carried over 100 MGT in 1996. See WFA/Basin Rebuttal electronic workpaper "NS Density.pdf." Traffic is undoubtedly heavier today. In addition to the significant amount of traffic, the rail lines in this corridor are also heavily curved, and many stretches have only a single main track. Thus, NS has a vested interest in developing construction and maintenance standards that will ensure high availability of the track. Yet, NS continues to use wood ties in this corridor. It uses two spikes per plate in tangents. It uses 136-pound rail. It uses similar amounts of ballast and subballast as the LRR (although BNSF did not quarrel with the WFA/Basin's quantities). See WFA/Basin Rebuttal electronic workpaper "NS Paper.pdf." The LRR's basic track structure requirements, based on



MGTs, are very similar to NS's except that it has far less curvature. Thus, the LRR's basic construction specifications are demonstrably feasible.

ii. **BNSF**

BNSF shrugs off any examples of infrastructure that exists today on its PRB lines that are inconsistent with its current construction specifications, arguing that it is committed to upgrading these lines, and, therefore, any reliance on such examples is misplaced. See BNSF Reply Narr. at III.F-3 to 5. BNSF's argument is faulty in three respects. First, simply because BNSF has changed some of its specifications does not mean that its current infrastructure, if replicated, is inadequate for the LRR. Second, BNSF's argument is inconsistent with its past positions in other stand-alone rate cases involving PRB coal traffic. Third, BNSF's argument is inconsistent with its restatement of the LRR's construction cost.

The current BNSF infrastructure, including older segments such as the Canyon Subdivision between Bridger Jct. and Guernsey, has generally served BNSF well since it started moving coal from the PRB in the 1970s. While BNSF may be planning to upgrade such lines in the future, it has continued to rely on this infrastructure for many years. This infrastructure has shown its "feasibility" for longer than the LRR's 20-year life under the DCF model. The basic underpinnings of this infrastructure include exactly the types of materials, and construction specifications, that WFA/Basin propose and that NS uses today.

Moreover, BNSF's current infrastructure suggests that its upgrading plans are not that urgent. For example, on the Orin Subdivision, 141-pound rail represents less than 10 percent of the total rail installed – amazingly, the long-forgotten 132-pound rail (the original rail section used to construct the Orin Subdivision) accounts for over 20 percent of the rail on the Subdivision.

Second, BNSF has repeatedly accepted many of the basic design parameters of the LRR in other stand-alone rate cases. For example, in AEP Texas, BNSF stated that “BNSF Engineering Consultants accept the use of the 7"x 9"x 8'- 6" [wood] crossties at the AEP Texas spacing of 20.5 inches for all TNR mainline locations.” See BNSF's AEP Texas Reply Narr. (Public Version) filed May 24, 2004, at III.F-104. The AEP Texas SARR replicated some of the same lines being used here, and it carried a similar amount of traffic. Has so much changed in the past year that long-used and plainly feasible infrastructure must now be discarded? Clearly, the answer is no.

Third, BNSF's arguments ignore its own evidence in Part III.F. In particular, BNSF's initial arguments might lead one to believe that the BNSF has costed the LRR using all concrete ties, 141-pound rail, dragging-equipment detectors (“DEDs”) every five miles, etc. In fact, BNSF did nothing of the sort. BNSF only specified its new construction standards where it has such infrastructure today. This Jekyll & Hyde approach to costing the LRR is unwarranted and nonsensical because BNSF, through its own actions, has accepted WFA/Basin's LRR construction parameters in numerous areas.

Moreover, BNSF has not suggested that any one place is in more dire need of different track structure than any other place. Thus, BNSF has not provided any rationale for its inconsistent design of the LRR.

## **2. Real World Construction Costs**

In light of the above, a direct comparison to BNSF's cost per mile to construct new track is really an apples to oranges comparison. Nevertheless, a critique of BNSF's arguments is in order.

The central element of BNSF's real-world cost argument is that it presently costs \$2.5 million per track mile for new construction in the PRB, and that WFA/Basin's opening estimate of \$1.77 million per track mile must, therefore, be wrong.<sup>2</sup> As demonstrated below, a \$1.77 million cost per mile for the LRR is not unreasonably low and BNSF's recent PRB projects are not truly comparable to the LRR.

BNSF places particular reliance on the Walker-to-Shawnee triple-tracking project on the Joint Line as the benchmark for its \$2.5 million per track mile figure. *Id.* at III.F-4. But there is a fundamental flaw in BNSF's cost per track mile from that project – it involved more than just laying one additional main track. In fact, the Walker-to-Shawnee project not only added a third track, but it included the realignment of its Main 1 track for over 10.4 miles. Moreover, the track laying and signal installation portions of the project, by far the most expensive, were undertaken in parts. The first 8.3 miles of

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<sup>2</sup> WFA/Basin's Rebuttal investment per track mile is \$1.83 million.

third main track were completed in October 2004. The remaining 5.8 miles of were not completed until June 2005. A third phase, that finished a 3,000-foot realignment of track, was also completed in June 2005 – but was not done at the same time as the third-track installation. And, according to BNSF, there are still two more phases of this project to complete. Obviously, such intermittent construction – which occurred under traffic – increases costs and ruins the potential economies of scale available for large-scale, continuous construction that occurs before any traffic begins to move.

BNSF also downplays the impact of existing traffic on the construction planning and costs, stating simply that “capacity improvements may incur some increased grading and track laying costs caused by delays associated with construction under traffic or additional signal costs to tie signals for the new tracks into the existing system.” Id. at III.F-7. However, BNSF’s own documents and construction requirements indicate that existing traffic was a greater impediment than it suggests. For example, BNSF’s internal employee newsletter notes that the project was “challenging given . . . the high traffic on the line.” BNSF Today, June 25, 2005 (included as WFA/Basin Rebuttal electronic workpaper (“BNSF Today.pdf”). When the recent track realignment was performed, BNSF took extraordinary steps to reduce the downtime on the existing lines, as BNSF states:

With the “go” signal on Wednesday morning, the plan – probably one of Engineering’s most involved given the choreography – was put into play, beginning with welders cutting out 18, 80-foot track panels, of the track to be moved.

In the meantime, signals were relocated, and after all panels were removed, scrapers and graders cleared the old track ballast. Four new, pre-built turnouts were then placed – a significant accomplishment in itself as they had to be lifted over another mainline. Then new insulated joint panels were set where the track was shifted. Welders then began the 40 welds needed to connect the panels. As they finished, surfacing began, followed by new ballast.

Id. The newsletter also notes that BNSF only allowed a 36-hour window for this realignment. This unusual and extraordinary effort cannot come without added costs.

In addition, BNSF's proposed blanket cost per track mile is inconsistent with its costs for other projects. For example, BNSF added 84.7 track miles to the Orin Subdivision between 1994 and 1999 at a cost of \$160 million, or \$1.88 million per track mile (indexed from 1999 to 4Q04 the cost per track mile is \$2.26 million per track mile). See BNSF Reply Narr. at III.F-3. Again, such work was done under traffic and was not continuous, and it is far less track miles than the LRR is building. Yet, now BNSF argues that anything less than \$2.5 million a track mile is unacceptable. Id. at III.F-4 to 5.

As for other projects, the Guernsey to Grattan (Valley Subdivision) project cost \${ } million per track mile in { }. See BNSF Reply electronic workpaper "III F Intro Charts.xls." While indexing this cost forward to January 2005 does yield \$2.48 million per track mile, as BNSF states, a 6.22-mile project is not comparable to the LRR in size or scope, and that project was also performed under traffic. Moreover, not all projects of that length are so expensive. For example, a preliminary engineering estimate (which BNSF routinely bettered through bidding) for the addition of double track on the

Angora Subdivision near Alliance, NE, was \${ } million for { } track miles, or just \${ } million per track mile (the cost also included \${ } million to upgrade an existing siding). See WFA/Basin Rebuttal electronic workpaper "Latan.pdf." The Alliance and Shawnee Junction areas are similar in terms of topography and soil type.

Thus, while BNSF's costs are certainly higher than the LRR's, BNSF has not supported its bald assertion that anything less than \$2.5 million per track mile is deficient based on "real world" costs. BNSF's assertions are especially dubious given the very busy corridors where the tracks were added. Finally, BNSF makes no mention of the additional labor costs it incurs by utilizing its own unionized labor force to place ballast, track and signals.

BNSF's "real world" claims are also inconsistent with its restatement of the LRR's construction costs. In particular, BNSF's costs assume \$2.98 million per track mile for the LRR. And despite its claims that it is not "gilding the lily," BNSF included \$295 million (including additives) for additional right-of-way "retaining walls" on all of the Orin, Campbell and Reno Subdivisions. These additions are completely without merit as explained in Part III-F-2-f below. When the unnecessary retaining walls are removed, BNSF's cost per track mile is \$2.34 million. BNSF's additional costs largely wither under scrutiny, or stem from differences in approach, such as concrete versus wood ties. Essentially, BNSF's preliminary statements carry little weight when compared with its actual reply evidence.

WFA/Basin also note that BNSF's proposed track-mile investment costs greatly exceed not only those proposed by WFA/Basin, but also those accepted by the Board in other SAC proceedings in which BNSF was a party. Rebuttal Table III-F-3 illustrates the point:

| <b>REBUTTAL TABLE III-F-3</b><br><b>SARR Base-Year Road Property Investment Per Track Mile</b><br>(\$ Millions) |                    |                      |                 |                                |
|-----------------------------------------------------------------------------------------------------------------|--------------------|----------------------|-----------------|--------------------------------|
| <b>Item</b>                                                                                                     | <b><u>TMPA</u></b> | <b><u>Xcel I</u></b> | <b>LRR-BNSF</b> | <b>LRR-WFA/<br/>Basin Reb.</b> |
| Track Miles                                                                                                     | 2,243.70           | 679.07               | 462.53          | 446.36                         |
| Road Property Investment                                                                                        | \$4,097.1          | \$1259.8             | \$1,379.3       | \$ 817.9                       |
| Investment Per Track<br>Mile                                                                                    | \$1.83             | \$1.86               | \$2.98          | \$1.83                         |

### 3. So-Called Cherry-Picking

Perhaps the single greatest red herring in BNSF's presentation is the suggestion that WFA/Basin have "cherry picked" BNSF unit costs and that the alleged cherry picking has caused a significant understatement of the LRR's costs. See BNSF Reply Narr. at III.F-11 to 21. Not only is BNSF's argument incorrect and misleading, but the total cost differences that BNSF's posits are minimal.

First, BNSF suggests that WFA/Basin purposefully cherry-picked rail prices from BNSF's own price list, and that other AFEs demonstrated that such prices were not available in 2004. Id. at III.F-12 to 13. However, the LRR's rail is being purchased in 2003 to meet the construction timeline, with completion in 3Q04. Hence, reliance on the

early 2004 figure is justified. Moreover, if BNSF considered the price outdated it could have so indicated. The price data in issue were produced in discovery, and the Board has held that a complainant is entitled to rely upon data provided by a defendant in discovery. See Xcel I at 103.

Next, BNSF argues that WFA/Basin cherry-picked earthwork categories. See BNSF Reply Narr. at III.F-14. In other words, the unit cost selections were appropriate, but WFA/Basin should have included additional items. BNSF's focuses on three particular items – overexcavation, undercutting and topsoil removal – arguing that these costs should be included separately. BNSF's argument misses the mark.

To determine Orin Subdivision grading quantities, both parties used the Orin Line construction data from Jerry R. Masters' testimony on behalf of BN in the Iowa Public Service v. BN ("IPS") case (Docket No. 37021). This material does not include separate categories for overexcavation and undercutting. As BNSF's construction witness recognizes in the instant proceeding, the costs for both of these activities "would have been accounted for in the excavation and embankment unit costs for that project." BNSF Reply Narr. at III.F-15. In addition, although BNSF does not acknowledge it directly, any quantities for these activities were included in the quantities that both parties used for common earthwork.

BNSF suggests that by using the unit costs for common excavation from the Walker-to-Shawnee Project, WFA/Basin's calculation may be too low or cherry-picked.



Id. at III.F-15 to 16. A careful examination of the Walker-to-Shawnee project and BNSF's restatement of the LRR's earthwork costs suggests why the original Orin Line project did not price these activities separately. First, the Walker-to-Shawnee unit cost for overexcavation (embankment and excavation combined) was \$ { } per CY versus \$ { } per CY for common excavation. Moreover, as explained below, the "overexcavation" was only performed on a small portion of the Walker-to-Shawnee project that was directly under the existing main track scheduled for realignment – a problem the LRR does not face. In addition, BNSF adds only a little over \$7 million for this activity. And even BNSF's calculations are dubious because BNSF assumes that such quantities should be added to WFA/Basin's earthwork quantities rather than removed from the total earthwork quantities and priced separately. If BNSF had followed that procedure, the impact on costs would have been minimal.

As with overexcavation, BNSF fails to explain the circumstances which caused it to add separate undercutting quantities at \$ { } per CY and \$1.65 million in investment. Indeed, the minimal quantity of undercutting, representing only 1.4 percent of the total excavation quantities on the Walker-to-Shawnee project, suggests any undercutting quantities were most likely included in the Orin Line excavation quantities. In any event, BNSF again assumed that the quantities were in addition to, rather than a part of, the quantities determined from the original Orin Line construction documents.

Finally, BNSF complains that costs for topsoil removal (i.e., stripping) have been overlooked by WFA/Basin. Id. at III.F-14. Yet, in BNSF's actual construction-cost evidence for the LRR, it adds no quantities or costs for this activity, recognizing that it is already covered in the common excavation quantities included by WFA/Basin and paid for by the application of the common earthwork unit cost from the Walker-to-Shawnee project.

BNSF's also analyzes a series of bridge-related bids in an attempt to demonstrate that cherry-picking the lowest cost for each item from all bids would reduce costs over 10 percent. Id. at III.F-17 to 18. While this is an interesting analysis, BNSF never suggests that WFA/Basin did anything of the sort – and, in fact, they did not.

In light of the above, BNSF's complaints about cherry-picking are without merit. Further, BNSF improperly suggests that WFA/Basin have purposely understated the LRR's costs, which is not accurate.

## **SUBPART II ITEMIZED RESPONSES TO BNSF REPLY**

While the parties differ on a large number of construction items, the total difference in road property investment costs of \$592 million is largely attributable to a small number of items, as shown in Rebuttal Table III-F-4 below.

**REBUTTAL TABLE III-F-4**  
**Major Construction Cost Differences**  
(\$ millions)

| <u>Cost Item</u>                              | <u>WFA/Basin Opening</u> | <u>BNSF Reply</u> | <u>Difference</u> | <u>WFA/Basin Rebuttal</u> |
|-----------------------------------------------|--------------------------|-------------------|-------------------|---------------------------|
| Retaining Walls                               | \$0                      | \$295             | \$295             | \$0                       |
| Ballast and Subballast                        | \$70                     | \$123             | \$53              | \$75                      |
| Track Labor                                   | \$110                    | \$159             | \$49              | \$106                     |
| Common Earthwork                              | \$80.0                   | \$107.2           | \$27.2            | \$89.3                    |
| Locomotive Shop                               | \$10.6                   | \$33.5            | \$22.9            | \$11.0                    |
| Contingencies on Engineering and Mobilization | \$0                      | \$14.4            | \$14.4            | \$0                       |

The items in Rebuttal Table III-F-4 are discussed in more detail below, but

WFA/Basin briefly note some of the major problems with BNSF's Reply materials.

#### **Retaining Walls**

BNSF's flawed assumption that the LRR's right-of-way would never be wider than 100 feet resulted in BNSF's absurd proposal for an enormous complex of retaining walls at a cost of over \$295 million. Not only are BNSF's assumptions incorrect, its "fix" for this problem is preposterous when additional property to extend side slopes could be acquired for less than \$600,000 even using BNSF's assemblage factor and land costs.

#### **Ballast and Subballast**

BNSF's resourcing of subballast, its increased compaction factor and its use of concrete ties are the principal drivers of the disparity in these costs. BNSF's revised compaction factor of 1.94 for subballast upped the quantities about 44 percent. However, BNSF's quantities included an undetermined amount of subballast waste. Therefore, WFA/Basin's engineering experts consulted a Wyoming quarry that recommend a 1.77 compaction factor, which WFA/Basin used on Rebuttal. On the other hand, WFA/Basin's ballast requirements were reduced considerably by correcting their spreadsheet so that the volume of the ties was accounted for properly, as BNSF suggested.

**Track Labor**

WFA/Basin's Opening track labor unit costs were based on a quote for installation that took into account WFA/Basin's basic track structure for the LRR. BNSF accepted some of these costs, such as subballast installation, but ignored them when it suited it. As WFA/Basin explain below, they have continued to use their Opening unit costs because they continue to use the same infrastructure specified on Opening.

**Common Earthwork**

On Opening, WFA/Basin based common earthwork quantities on the roadbed width, track centers, and other details that define the parameters used to make the quantity calculations. As explained below, in several instances, WFA/Basin inadvertently used parameters different than those they specified (i.e., 15-foot track centers versus 25-foot track centers). WFA/Basin have corrected these disparities on Rebuttal. However, WFA/Basin rejects BNSF's additional quantities for gold-plated extras, such as 13-foot wide access roads versus 7-foot wide access roads. Thus, the parties disagree on the total quantities of common earthwork by over 5 million cubic yards. The parties do, however, agree on the unit cost for common excavation.

**Locomotive Shop**

On Opening, WFA/Basin included a well-sized and complete locomotive shop. The basic structure costs were based on a quote from a major construction company, and other costs were developed from quotes or the Means Handbook. On Reply, BNSF misconstrued a number of the details of WFA/Basin's shop, and then opted to cost its own shop based entirely on the Means Handbook (other than tooling costs) and without regard to any of the costs that WFA/Basin included on Opening. WFA/Basin thoroughly refute BNSF's criticisms of their shop, and they point out many shortcomings and unnecessary extras in BNSF's shop. Thus, WFA/Basin continue to use their Opening shop costs, with a few minor adjustments for indexing.

**Contingencies on  
Mobilization and  
Engineering**

Consistent with Board precedent, on Opening WFA/Basin applied a 10 percent contingency factor to the construction subtotal excluding land. No contingencies were added to mobilization and engineering. On Reply, BNSF added contingencies to mobilization and engineering. As explained below, adding contingencies to these additives is unwarranted, and inconsistent with Board precedent. In particular, WFA/Basin's engineering witnesses point out that contingencies are generally used to cover unexpected occurrences, such as discovering that additional earthwork might be needed in a particular location. The engineer's fees and the mobilization costs for equipment do not automatically increase because some unexpected issue is encountered. Thus, WFA/Basin continue to apply contingencies in the same manner as on Opening.

**1. Land**

Before turning to the particulars of the LRR's land acquisition cost, WFA/Basin note BNSF's almost comical attack on their land valuation witness, Robert Brockman. In a throw-away paragraph, BNSF suggests that Mr. Brockman is somehow unqualified because he does not normally prepare valuations of railroad rights-of-way. Id. at III-F.26. BNSF's argument is completely without merit.

Mr. Brockman has over 25 years of experience in the real estate industry in Wyoming. Mr. Brockman's real estate firm, Keyhole Land Company, is based in Wheatland, WY, which is very close to the LRR's route. Mr. Brockman serves as President, Appraiser and Broker for Keyhole Land Company. His clients include federal, state and local government agencies, such as the Natural Resource Conservation Service (part of the USDA), the Bureau of Land Management, the National Forest Services, the

State of Wyoming Land Board, and the Federal Aviation Administration. In addition, Mr. Brockman has performed right-of-way appraisals for electric utilities – an activity very similar to appraising a railroad right-of-way.

More importantly, Mr. Brockman knows Wyoming real estate. He has been valuing properties in the LRR's territory for his entire professional career. In addition to his extensive experience in this territory, Mr. Brockman went through all the steps necessary to perform a proper valuation, including inspection on the ground and in the air, as well as research and consultation with other real estate professionals familiar with this market.

In contrast, BNSF's real estate witness, Arnold Tesh, did not inspect any of the property, perform any research, or even consult with someone in Wyoming during his "valuation" process.<sup>3</sup> Indeed, Mr. Tesh's work is not really a valuation at all. Instead, Mr. Tesh did only two things. First, he changed Mr. Brockman's valuation of the Guernsey Yard facilities on the basis that several years ago he looked at this property and determined it should be valued at \$17,000 per acre. See BNSF Reply Narr. at III.F-28. However, Mr. Tesh's \$17,000 valuation figure, which was developed for purposes of the TMPA rate case, was subsequently rejected by the Board in Xcel I (at 88-89). Second, Mr. Tesh changed the assemblage factor for recently acquired property. Id. at III.F-29 to

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<sup>3</sup> Wyoming is a non-disclosure state, so one cannot sit in an office in Washington, DC and use a computer to develop comparable sales. Site visits and discussions with local real estate professionals are essential to proper land valuation in Wyoming.

30. In all other respects, Mr. Tesh accepted Mr. Brockman's valuation. In other words, despite BNSF's blustering about Mr. Tesh's experience in valuing railroad properties, Mr. Brockman presented the only real expert valuation testimony here because he did the leg work. Mr. Tesh's valuation is better classified as an attempt to increase the LRR's land costs by the stroke of a pen.

a. **Right-of-Way Acreage**

BNSF accepted WFA/Basin's Opening right-of-way acreage quantities.

See BNSF Reply Narr. at III.F-27 to 28.

i. **Right-of-Way Width**

On Opening, WFA/Basin assumed that the LRR would need an average right-of-way width of 100 feet, and that where BNSF bought much larger parcels the LRR would not follow suit. Indeed, BNSF has many areas where it has 200 feet or more of right-of-way, which the LRR does not need. In prior stand-alone cases, the Board has recognized that an average 100-foot right-of-way is adequate – obviously some places might require more than 100 feet and many places would require much less.

On Reply, BNSF mistakenly assumed that the LRR would never purchase more than exactly 100 feet. Id. at III.F-27 to 28. This is not what WFA/Basin did; their 100-foot average right-of-way width allows for areas where the right-of-way is wider. As discussed in Part III-F-2-f below with respect to right-of-way retaining walls, BNSF has taken its mistaken assumption to absurd lengths, which the Board should reject.

**b. Yards**

BNSF accepted the acreage for the Donkey Creek and South Logan Yards. Id. at III.F-29. For the Guernsey Yard, it increased the total acreage to accommodate a road around the entire yard plus some additional ditches and an additional 0.68 miles of track fronting the locomotive shop. Id. at III.F-30 to 31. As explained in Parts III-F-2-b-iii-(a)-(i) and III-F-7-c below, these additional items are not necessary. Thus, WFA/Basin continue to use their Opening yard acreage calculations.

**c. Microwave Towers**

The parties agree on the acreage and costs for microwave tower pad sites, except for the proper assemblage factor that should apply.

**d. Valuation**

The land valuation differs in two respects: the cost per acre for Guernsey Yard property and the assemblage factor that should be applied to purchases of land north of Bridger Junction.

**i. Guernsey Yard**

As noted above, BNSF's Witness Tesh argues that price per acre for property for the Guernsey Yard should be \$17,000. Id. at III.F-31. This position is presented without the benefit of any actual sale documents or other supporting materials. Consequently, Mr. Brockman has not had an opportunity to critique whatever materials



Mr. Tesh relied upon in TMPA and Xcel. On this basis alone, Mr. Tesh's revised figure should be rejected for lack of proof.

BNSF also suggests that Mr. Brockman's estimate of \$1,250 per acre is based only on his discussion with a real estate broker in Guernsey, and that the cost per square foot of \$0.029 is too low versus the \$0.39 per square foot proposed by Mr. Tesh. Id. at III.F-30 to 31. BNSF's assertions are incorrect. Mr. Brockman has reviewed actual sales data for the Guernsey Yard area that support his per acre price. See WFA/Basin Rebuttal electronic workpaper "Yard Comps.pdf." In particular, the following transactions support his valuation estimate:

1. State of Wyoming to Town of Guernsey. Sale of 53.33 acres. Sold on September 25, 2003 at a sale price of \$50,000, or \$934 per acre or \$.021 per square foot. This is a tract of land that is adjacent to the western boundary of the Town of Guernsey (the North Platte River), the southern boundary is Highway 26, and the northern boundary is the BNSF Railway ROW. The sale price was based on an appraisal completed by the State of Wyoming. The town intends to use the land for expansion of corporate limits and use of highway businesses and single family development.
2. Lawrence to WYDOT. Sale of 33.27 acres of Industrial zoned property in September 2000 for \$33,000 or \$991.89 per acre or \$.023 per square foot. This sale is bounded on the north by Highway 26 (next to east end of railroad overpass), and on the west and south by the BNSF Railway yards. The sale price was based on an appraisal completed by the Buyer and acceptable to the Seller.
3. Fletcher to Newton. Sale of 40 acres in October 1999 for \$37,000 or \$925 per acre or \$.021 per square foot. The property is located just west of Guernsey on the Guernsey Lake Road (#317), and to the southwest of the BNSF Railroad ROW (about ½ mile).

4. ANT, LLC (which acquired the property from BNSF on a quit claim deed two months before this transaction) to Rush. Sale of 284 acres in December 1998 for \$25,000 or \$88 per acre or \$.002 per square foot. The property is about 1 mile east of Guernsey on the north side of Highway 26 and less than 1/2 mile north of the BNSF ROW.
5. Lawrence to Harvey. Sale of 24 acres in June 1982 for \$833 per acre or \$.019 per square foot. The property is located on the northeastern edge of Guernsey, less than 1/8 mile north of the BNSF Yard.
6. Martin to Lehmeyer. Sale of 39 acres in July 1996 for \$45,000 or \$1,154 per acre or \$.026 per square foot. The property is located about 2 miles north of the Guernsey Cemetery on the Hartville Highway. The property was improved with a well, barn and corrals.
7. McCormick to Goecke. Sale of 6,500 square feet in May 2001 for \$6,500 or \$1.00 per square foot. The property is a vacant lot located on Main Street in the Town of Guernsey. It is zoned for commercial use.
8. Intermodel Leasing to JO Enterprises. Sale of 96,000 square feet in February 1988 for \$45,000 or \$0.047 per square foot. The property is located on the west end of Guernsey on the south side of Highway 26, including frontage on Highway 26. It is presently a convenience store location with water and sewer taps.
9. Rush to Then. Sale of 24,750 square feet in September, 2001 for \$10,000 or \$0.404 per square foot. The property is located in a residential section of the southwestern portion of the Town of Guernsey. It is zoned for single family use, and the property included two garages, a sewer tap and a water tap when it was sold.

Rebuttal Table III-F-5 below summarizes the transactions described above.

| <b>REBUTTAL TABLE III-F-5</b><br><b><u>Guernsey Area Land Transactions</u></b> |                            |                    |                                                             |
|--------------------------------------------------------------------------------|----------------------------|--------------------|-------------------------------------------------------------|
| <b><u>Sale No.</u></b>                                                         | <b><u>Price per SF</u></b> | <b><u>Area</u></b> | <b><u>Comments</u></b>                                      |
| 1                                                                              | \$0.021                    | 53.53 ac.          | Adjacent to town and RR                                     |
| 2                                                                              | \$0.023                    | 33.27 ac.          | Adjacent to town and RR                                     |
| 3                                                                              | \$0.021                    | 40 ac.             | Single family, <1 mile from town                            |
| 4                                                                              | \$0.002                    | 284 ac.            | Rural res., 1 mile east of town (seller is BNSF subsidiary) |
| 5                                                                              | \$0.019                    | 24 ac.             | Just north of BNSF Yard                                     |
| 6                                                                              | \$0.026                    | 39 ac.             | 2 miles north of town                                       |
| 7                                                                              | \$1.00                     | 6,500 sf           | Developed lot in town                                       |
| 8                                                                              | \$0.47                     | 96,000 sf          | Developed lot in town                                       |
| 9                                                                              | \$0.404                    | 24,750 sf          | Developed lot in town                                       |

As Rebuttal Table III-F-5 demonstrates, the majority of the sales are within the \$0.02 per square foot range. Sales outside of this range are developed lots within the Corporate limits of the Town of Guernsey. Mr. Brockman's estimated cost to acquire the land for the Guernsey Yard is supported by a considerable quantity of market data. Therefore, his cost of \$1,250 per acre or \$0.029 per square foot, coupled with Mr. Tesh's lack of any supporting documentation, negates BNSF's higher valuation claim.

**ii. Assemblage Factor**

BNSF argues in favor of the 6.65 assemblage factor for the Orin Subdivision property accepted by the Board in WTU (and later in Xcel I) rather than the 4.3 factor used by Mr. Brockman. Id. at III.F-29. Here again, BNSF has not provided the necessary support for this figure, such that Mr. Brockman could actually evaluate what BNSF paid for the property and whether the assemblage factor was properly calculated.

Moreover, WFA/Basin specifically noted on Opening that it requested the transaction materials supporting the WTU study, but BNSF refused to provide them. See WFA/Basin Op. Narr. at III-F-9. Nevertheless, BNSF relies on the study's conclusion without producing the supporting materials – a tactic the Board has rebuked BNSF for in the past. See Xcel I at 93 (BNSF cannot rely on grading quantity data it should have produced in discovery). Thus, on Rebuttal, Mr. Brockman still has no critique to offer because he does not have access to the transactional data underlying BNSF's study.

As for the assemblage factor proposed by Mr. Brockman, BNSF argues that the WTU study should apply over Mr. Brockman's figure, which is an average culled from his experience and the literature he included on Opening. Id. at III.F-29. The assemblage factor used by Mr. Brockman is based on real world assemblage factors, not on an unsupported assemblage factor culled from prior litigation. Moreover, BNSF ignores the fact that railroad corridors are included in Mr. Brockman's assemblage factor. For example, in Op. Exhibit III-F-2, p. 374, the paper's author notes that the assemblage factor for the new WRPI connector line in nearby Niobrara County, WY was 3.06, which is substantially lower than BNSF's assemblage factor and also lower than Mr. Brockman's factor. Thus, Mr. Brockman's application of an average assemblage factor of 4.3 is well- supported. Although BNSF's factor may have been accepted in the past, it should still be open to review given its inconsistency with Mr. Brockman's analysis.

BNSF's flat refusal to provide supporting data to permit such a review casts doubts on its use here.

Rebuttal Table III-F-6 below provides a comparison of the land value determinations made by the parties.

| <b>TABLE III-F-6</b>                                               |                                 |                          |                                  |
|--------------------------------------------------------------------|---------------------------------|--------------------------|----------------------------------|
| <b><u>Comparison of WFA/Basin's and BNSF's Land Valuations</u></b> |                                 |                          |                                  |
| <b><u>Property Area</u></b>                                        | <b><u>WFA/Basin Opening</u></b> | <b><u>BNSF Reply</u></b> | <b><u>WFA/Basin Rebuttal</u></b> |
| South of Bridger Jct. ROW                                          | \$653,554                       | \$653,554                | \$653,554                        |
| North of Bridger Jct. ROW                                          | \$2,333,016                     | \$3,608,036              | \$2,333,016                      |
| Guernsey Yard                                                      | \$151,400                       | \$2,727,480              | \$151,400                        |
| Donkey Creek Yard                                                  | \$108,360                       | \$167,580                | \$108,360                        |
| South Logan Yard                                                   | \$1,557                         | \$2,407                  | \$1,557                          |
| Microwave Tower Sites                                              | \$123,840                       | \$177,420                | \$123,840                        |
| <b>Total</b>                                                       | <b>\$3,371,726</b>              | <b>\$7,336,477</b>       | <b>\$3,371,726</b>               |

## **2. Roadbed Preparation**

Roadbed preparation costs for the LRR include costs for clearing and grubbing, earthwork, water for compaction, retaining walls, rip rap and many other smaller cost items. Roadbed preparation costs were discussed by WFA/Basin at pages III-F-10 to 57 of their Opening Narrative and by BNSF at pages III.F-33 to 87 of its Reply Narrative.

On Opening, WFA/Basin included \$157.96 million for roadbed preparation, including \$11.82 million for culverts and \$14.70 million for yard drainage, paving, lighting and fencing. WFA/Basin Op. at III-F-14 and WFA/Basin's Errata electronic

workpaper "Building Site Development Costs.xls" (filed May 3, 2005). BNSF included \$455.74 million, including \$19.00 million for culverts and \$15.82 million for yard drainage, paving, lighting, an amount nearly three times that of WFA/Basin. See BNSF Reply Narr. at III.F-87.<sup>4</sup> As discussed below, BNSF has significantly overstated roadbed preparation costs by: (1) adding over \$237 million<sup>5</sup> in unnecessary right-of-way retaining walls; (2) overstating the required earthwork quantities; (3) overstating the unit costs for loose rock and solid rock excavation through the selection of costlier equipment and the addition of unnecessary tasks associated with earthmoving; and (4) including costs for unnecessary items such as undercutting and foundation conditioning.

Rebuttal Table III-F-7 below compares WFA/Basin's Opening, BNSF's Reply and WFA/Basin's Rebuttal investment costs for roadbed preparation for the LRR.

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<sup>4</sup> BNSF's Table II.F.2-11 is incomplete because it does not include BNSF's \$19.00 million for culverts and WFA/Basin's \$11.82 million culverts nor does it include WFA/Basin's \$14.70 million for yard lighting, drainage, fences and paving.

<sup>5</sup> The \$295 million right-of-way retaining wall figure referenced in Subpart I includes additives for mobilization, engineering and contingencies.

**REBUTTAL TABLE III-F-7**  
**Comparison of TNR Estimated Roadbed Preparation Investment -**  
**WFA/Basin Opening, BNSF Reply and WFA/Basin Rebuttal - 4Q04**  
(\$ in millions)

| <u>Item</u><br>(1)                                | <u>WFA/Basin<br/>Opening</u><br>(2) | <u>BNSF<br/>Reply</u><br>(3) | <u>WFA/Basin<br/>Rebuttal 1/</u><br>(4) | <u>BNSF<br/>Overstatement 2/</u><br>(5) |
|---------------------------------------------------|-------------------------------------|------------------------------|-----------------------------------------|-----------------------------------------|
| 1. Clearing                                       | \$ 0.10                             | \$ 0.34                      | \$ 0.10                                 | \$ 0.24                                 |
| 2. Grubbing                                       | 0.04                                | 0.04                         | 0.04                                    | 0.00                                    |
| 3. Foundation Conditioning                        | 0.00                                | 7.34                         | 0.00                                    | 7.34                                    |
| 4. Undercutting                                   | 0.00                                | 1.65                         | 0.00                                    | 1.65                                    |
| 5. Earthwork - Line Segments                      |                                     |                              |                                         |                                         |
| a. Common                                         | 64.80                               | 83.26                        | 72.30                                   | 10.96                                   |
| b. Loose Rock                                     | 3.52                                | 4.36                         | 3.52                                    | 0.84                                    |
| c. Solid Rock                                     | 6.08                                | 11.71                        | 6.08                                    | 5.63                                    |
| d. Borrow                                         | 18.16                               | 18.28                        | 18.16                                   | 0.12                                    |
| e. Tunnel Daylighting                             | 12.58                               | 14.20                        | 14.80                                   | (0.60)                                  |
| f. Land for Waste Excavation                      | 0.17                                | 0.21                         | 0.18                                    | 0.03                                    |
| 6. Earthwork - Yards                              | 16.37                               | 29.15                        | 17.59                                   | 11.56                                   |
| 7. Lateral Drainage                               | 0.06                                | 0.06                         | 0.06                                    | 0.00                                    |
| 8. Yard Drainage, Paving,<br>Lighting and Fencing | 14.70                               | 15.82                        | 14.90 <u>3/</u>                         | 0.92                                    |
| 9. Culverts                                       | 11.82                               | 18.99                        | 14.36 <u>4/</u>                         | 4.63                                    |
| 10. Retaining Walls                               | 0.05                                | 0.05                         | 0.05                                    | 0.00                                    |
| 11. Rip Rap                                       | 0.61                                | 0.61                         | 0.61                                    | 0.00                                    |
| 12. Relocation of Utilities                       | 0.93                                | 1.91                         | 1.85                                    | 0.06                                    |
| 13. Topsoil Placement / Seeding                   | 3.05                                | 3.08                         | 3.05                                    | 0.03                                    |
| 14. Water for Compaction                          | 3.18                                | 4.41                         | 3.87                                    | 0.54                                    |
| 15. Road Surfacing (for detours)                  | 0.48                                | 0.48                         | 0.48                                    | 0.00                                    |
| 16. Environmental Compliance                      | 1.26                                | 2.25                         | 2.23                                    | 0.02                                    |
| 17. Right-of-Way Retaining Wall                   | <u>0.00</u>                         | <u>237.53</u>                | <u>0.00</u>                             | <u>237.53</u>                           |
| 18. Total                                         | \$157.96                            | \$455.74                     | \$174.23                                | \$281.51                                |

1/ See WFA/Basin Rebuttal electronic workpaper "LRR Grading Rebuttal.xls" except where noted.

2/ Column (3) - Column (4)

3/ See WFA/Basin Rebuttal electronic workpaper "Building Site Development Costs.xls."

4/ See WFA/Basin Rebuttal electronic workpaper "Culvert Quantities and Costs.xls."

**a. Clearing, Grubbing, Stripping, Foundation  
Conditioning, and Undercutting**

**i. Clearing and Grubbing**

**(a) Clearing**

On Opening, WFA/Basin included \$0.10 million for clearing the LRR right-of-way. WFA/Basin applied two different unit costs for clearing: one unit cost for acres cleared that required grubbing and one unit cost for acres that only required clearing with no grubbing. These unit costs were obtained from the Means Handbook and adjusted to reflect (1) the location factor applicable to the LRR and (2) the indexing of costs from January 2005 to October 2004. The acres of clearing and grubbing were developed from the ICC Engineering Reports, publicly available documents for the Orin Line, and material provided by BNSF in discovery for the Campbell to Eagle Butte line. See WFA/Basin Op. Narr. at III-F-15 to 18 and Op. Exhibit III-F-5.

On Reply, BNSF included \$0.34 million for clearing. BNSF accepted WFA/Basin's quantity calculation methodology for the rail lines replicated by the LRR that are covered by the ICC Engineering Reports, and accepted the unit costs applied to those quantities. See BNSF Reply Narr. at III.F-36. The disparity in investment of \$0.24 million is caused by differences in: (1) route miles; (2) siding/main track miles; (3) yard track miles; and (4) BNSF's inclusion of clearing (and grubbing) costs for the LRR's Campbell, Orin and Reno Subdivisions. Each of these differences is discussed below.



As discussed in Parts III-B-1 and III-B-2 above, BNSF has (1) overstated the LRR's route miles by 1.58 miles; (2) overstated the LRR's additional track (second main, passing sidings and set out tracks) by 13.61 miles; and (3) overstated the LRR's yard track requirements by 0.63 miles. BNSF's overstated track miles result in overstated clearing costs.<sup>6</sup>

The primary difference in clearing costs is caused by BNSF's inclusion of quantities and costs (for both clearing and grubbing) for the LRR's Orin, Campbell and Reno Subdivisions. On Opening, WFA/Basin reviewed the public documents for the Orin Subdivision (also applied to the Reno Subdivision which was constructed at the same time) and the BNSF-provided documents for the Campbell Subdivision and determined that these documents did not specify any quantities for clearing or grubbing. Therefore, WFA/ Basin did not include any costs for clearing or grubbing for these lines.

In previous SAC proceedings where the stand-alone railroad encompassed all or a portion of these same lines, BNSF has acknowledged that these documents do not specify any quantities for clearing or grubbing, and BNSF did not include any costs for clearing or grubbing for these lines in those proceedings.<sup>7</sup> On Reply in this proceeding, BNSF again concedes that these documents do not specify any quantities for clearing or

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<sup>6</sup> The difference in route and track miles impacts every roadbed preparation cost with the exception of road surfacing (for detours) and tunnel daylighting.

<sup>7</sup> See BNSF's October 8, 2003 Reply Narrative (Public Version) at III.F-60 in Otter Tail, STB Docket No. 42071, and BNSF's May 24, 2004 Reply Narrative (Public Version) at III.F-10 in AEP Texas, STB Docket No. 41191 (Sub-No. 1).

grubbing. See BNSF Reply Narr. at III.F-34 to 35. However, BNSF claims that WFA/Basin's use of the common excavation unit cost from the Walker-to-Shawnee project requires that WFA/Basin also apply the clearing and grubbing price from the Walker-to-Shawnee project. Id. at III.F-34. BNSF attempts to support its position by stating that the Walker-to-Shawnee common excavation unit cost does not include clearing and grubbing, as the Orin Line excavation unit costs did. Therefore, WFA/Basin should include separate costs for clearing and grubbing for the LRR's Orin, Campbell and Reno Subdivisions Id. BNSF then uses the Walker-to-Shawnee project to develop the quantities of clearing and grubbing for these lines, and it applies the Walker-to-Shawnee unit cost for clearing and grubbing. Id. at III.F-35.

BNSF's approach is flawed. According to the public filings in Otter Tail and AEP Texas, both BNSF and Complainants relied on excavation costs developed from the Means Handbook. The parties recognized that clearing and grubbing costs were not included in those excavation unit costs and, therefore, included separate costs for clearing and grubbing. The parties also recognized that the construction documents for these lines did not identify any quantities for clearing and grubbing, and neither party included clearing and grubbing costs for these lines. WFA/Basin's use of the common excavation unit cost from the Walker-to-Shawnee project is no different from the use of the Means Handbook excavation unit costs in that none of these unit costs include clearing and grubbing costs. The use of the Walker-to-Shawnee project common excavation unit cost

does not require the inclusion of additional clearing and grubbing costs as stated by BNSF.

Furthermore, no clearing and grubbing quantities can be properly included for the Orin, Campbell and Reno Subdivisions unless the construction documents specify clearing and grubbing quantities. BNSF admits that the documents do not include any such quantities. Id. at III.F-33. Therefore, the inclusion of such costs is unsupported and improper.

BNSF's clearing and grubbing quantity calculations also are improper. BNSF uses the Walker-to-Shawnee project (181 acres for 14.2 miles) and calculates an average width of 105 feet. Id. at III.F-34. BNSF then translates this 105 feet into 62 feet for the subgrade surface of the project, with the residual 43 feet representing the additional feet out to the right-of-way boundary. Id. at III.F-35. BNSF then adds this 43 feet on both sides to the WFA/Basin specified roadbed width of 24 feet to arrive at a right-of-way width for clearing purposes of 110 feet. Id. Using this as a basis, BNSF then states that it conservatively used a 100-foot width in determining the quantities for the Orin, Campbell and Reno subdivisions. Id.

BNSF's quantities are nothing more than unsubstantiated, nonsensical mathematical calculations. BNSF has provided no description of what the 181 acres represents or why they needed to be cleared and grubbed. The 43 feet is nothing more

than a residual calculation, and there is no evidence that the LRR requires 43 feet of clearing and grubbing on either side of its track.

The inclusion of a separate charge for clearing and grubbing for a track modification project located on a small section of the Orin Line does not in any way prove that clearing and grubbing quantities were present on the Orin, Campbell and Reno Subdivisions, especially since both parties are in agreement that the construction documents for the Orin, Campbell and Reno Subdivisions do not identify any clearing or grubbing quantities. BNSF's far-reaching and unsupported position, and resulting costs, should be rejected.

On Rebuttal, WFA/Basin continue to rely on their Opening methodology and unit costs resulting in costs of \$0.10 million for clearing. See WFA/Basin Rebuttal Exhibit III-F-2.

**(b) Grubbing**

On Opening, WFA/Basin included \$42,948 for grubbing. WFA/Basin's costs for grubbing were based on quantities developed using the same methodology and the same source documents as those used for clearing and a unit cost from the 2005 Means Handbook. See WFA/Basin Op. Narr. at III-F-15 to 18 and Op. Exhibit III-F-5.

On Reply, BNSF included \$44,423 for grubbing. BNSF agreed with WFA/Basin's quantity calculation methodology and WFA/Basin's unit cost.<sup>8</sup> See BNSF Reply electronic workpaper "III F 2 LRR Grading.xls," tab "IIIF\_5 Othr EW." The difference between WFA/Basin and BNSF is due to BNSF's overstated track miles for the LRR as discussed above under clearing.

On Rebuttal, WFA/Basin have included \$42,964 for grubbing using their Opening unit cost and the same procedures they used on Opening to develop quantities.<sup>9</sup> See WFA/Basin Rebuttal Exhibit III-F-2.

**ii. Stripping**

On Opening, WFA/Basin did not include any costs for stripping. See WFA/Basin Op. Narr. at III-F-19. On Reply, BNSF correctly recognizes that the Orin Line quantities already include this activity, and it agrees with WFA/Basin that no costs for stripping are necessary. See BNSF Reply Narr. at III.F-36 to 37.

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<sup>8</sup> BNSF's inclusion of \${ } per acre for the Campbell, Orin and Reno Subdivisions of the LRR that was discussed in the previous section reflected costs for both clearing and grubbing.

<sup>9</sup> The minor increase over Opening reflects the total 0.08 track miles added by WFA/Basin on Rebuttal. See Part III-B-2. (WFA/Basin's Opening grading track miles already included the 0.18-mile track mile reduction on the Campbell Subdivision made elsewhere in WFA/Basin's Rebuttal road property investment calculations and discussed in Part III-B-1-c.)

### iii. Foundation Conditioning

On Opening, WFA/Basin did not include a separate cost for foundation conditioning. On Reply, BNSF included \$7.34 million for this item. BNSF's argument in favor of separate foundation conditioning costs hinges on its assumption that because such costs were included separately on the Walker-to-Shawnee project they must be included everywhere on the lines being replicated. BNSF even applied its flawed logic beyond the recently-constructed lines being replicated (the Orin, Reno and Campbell subdivisions) to the older lines south of Bridger Junction that were constructed over 100 years ago. See BNSF Reply Narr. at III.F-38 to 39 and Reply electronic workpaper "III F 2 LRR Grading.xls." As explained below, BNSF's position is flawed and unsupported.

First, WFA/Basin note that BNSF's definition of foundation conditioning requires clarification. In particular, BNSF implies that foundation conditioning is the equivalent of the overexcavation line item in the Walker-to-Shawnee bids. From there, BNSF draws on its construction payment terms sheet, and apparently its construction specifications, to suggest that overexcavation is required on all cut sections and the portions of embankments that are less than the conditioning depth of 18 inches used for the Walker-to-Shawnee project.

BNSF's conclusions are not supported by the documents it cites. Indeed, the Walker-to-Shawnee payment terms only state that the top 18 inches of the subgrade need to be compacted in accordance with BNSF's embankment standards. See

WFA/Basin Rebuttal electronic workpaper "foundation preparation.pdf." {





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Furthermore, BNSF has presented no evidence, which only it would have, that foundation conditioning was performed on any of the lines replicated by the LRR (except for the Walker-to-Shawnee project discussed above). In fact, the only evidence of record supports WFA/Basin's position that there is no need to include additional amounts for foundation conditioning – specifically, the ICC Engineering Reports and BNSF's Orin Line and Campbell Subdivision construction documents. None of these documents shows any quantities for foundation conditioning. Therefore, it is logical to assume that such quantities, if indeed there were any, are already reflected in the excavation quantities contained in the ICC Engineering Reports and BNSF's construction documents. These are the same quantities to which both parties have applied excavation and compaction unit costs. Applying foundation conditioning costs to these same quantities, as BNSF has done, results in a double count of costs.

For the above reasons, WFA/Basin maintain their Opening position that separate foundation conditioning costs are unnecessary.

**iv. Undercutting**

On Opening, WFA/Basin did not include a separate cost for undercutting. On Reply, BNSF included \$1.65 million for undercutting. As with foundation conditioning, the entire crux of BNSF's position that separate undercutting costs need to

be included is that they were included separately for the Walker-to-Shawnee project. See BNSF Reply Narr. at III.F-39 to 41. Again, BNSF applied this logic to both the newly-constructed lines being replicated (the Orin, Reno and Campbell Subdivisions) and the older lines south of Bridger Junction. Id. and Reply electronic workpaper "III F 2 LRR Grading.xls." BNSF's position is flawed and unsupported.

First, the inclusion of separate undercutting costs on the Walker-to-Shawnee project does not in any way demonstrate that undercutting was necessary elsewhere on the Orin, Reno or Campbell Subdivisions, and it certainly does not demonstrate that undercutting was performed on the lines south of Bridger Junction that were constructed over 100 years ago.

Second, no undercutting quantities are shown on any of the ICC Engineering Reports or the BNSF construction documents for the Orin Line and Campbell Subdivision. Therefore, it is logical to assume, absent supporting documentation stating otherwise (which BNSF has not provided save for the Walker-to-Shawnee project, which neither party relied on for earthwork quantities), that all excavation quantities, including any undercutting, were captured in the earthwork quantities contained in the ICC Engineering Reports and BNSF construction documents used by both parties to develop the LRR's earthwork quantities. In addition, any unsuitable material uncovered during the excavation process would be disposed of as part of the 30 percent waste material that both parties assumed in the development of their

respective earthwork unit costs. BNSF's application of undercutting unit costs to earthwork quantities that are included in the calculation of excavation costs results in a double count as these quantities are, in effect, being excavated twice.

Finally, the inclusion of separate costs for undercutting has been repeatedly rejected by the Board. See Duke/NS I at 95; CPL at 82; Duke/CSX at 80. Moreover, BNSF did not raise undercutting as an issue in the Xcel case, even though the SARR in that case and the LRR both traverse the Campbell, Orin, Reno and Canyon Subdivisions. Xcel I at 15, 89.

In light of the above, WFA/Basin continue to exclude separate undercutting costs on Rebuttal.

**b. Earthwork**

**i. Earthwork Quantities for LRR Line  
Segments for Which Engineering Reports Exist**

On Opening, WFA/Basin utilized the earthwork quantities from the ICC Engineering Reports to develop the earthwork quantities for the LRR rail lines between Campbell and Donkey Creek and south of Bridger Jct. WFA/Basin adjusted the ICC Engineering Report earthwork quantities to reflect the modern roadbed width of 24 feet and 25-foot track spacing for the main tracks and passing sidings. See WFA/Basin Op. Narr. at III-F-20 to 24.

On Reply, BNSF accepted WFA/Basin's methodology including the 24-foot roadbed width for these rail lines and the 25-foot track spacing. See BNSF Reply Narr. at

III.F-41. The only modification BNSF made to the quantities for these lines (other than previously-discussed differences in track miles) was the addition of earthwork quantities to reflect access roads. See BNSF Reply electronic workpaper “III F 2 LRR Grading.xls.” As discussed below, BNSF’s additional earthwork for access roads is unfounded.

**ii. Earthwork Quantities for Segments Not Covered by The ICC Engineering Reports**

The LRR has three segments that are not covered by the ICC Engineering Reports: the main line from Donkey Creek to Bridger Jct. and the Campbell and Reno Branches. On Opening, WFA/Basin used publicly available documents for a portion of the Orin Line to develop the earthwork quantities for the Donkey Creek to Bridger Jct. main line and the Reno Branch. WFA/Basin used BNSF construction documents provided in discovery to develop the earthwork quantities for the Campbell Branch. See WFA/Basin Op. Narr. at III-F-24 to 26 and Op. electronic workpaper “LRR GRADING.xls.”

On Reply, BNSF accepted WFA/Basin’s methodology but made three modifications (other than the previously-discussed difference in track miles): (1) BNSF increased the roadbed width for these segments from 24 feet to 28 feet; (2) it increased the earthwork quantities to reflect 13-foot access roads; and (3) it increased the earthwork quantities to reflect 25-foot track centers on mainline double-track (or greater) segments.

See BNSF Reply Narr. at III.F-42 to 46 and Reply electronic workpaper “III F 2 LRR Grading.xls.” Each of BNSF’s modifications is discussed below.

**(a)     Roadbed Width**

WFA/Basin used a 24-foot roadbed width on Opening after observing that track on the heavily-traveled Canyon Subdivision has a similar roadbed width. See WFA/Basin Op. Narr. at III-F-23. As noted above, the Canyon Subdivision has been carrying coal traffic since BNSF completed construction of the Orin Subdivision over 25 years ago. Given that this line has endured high volumes of heavy-axle coal traffic for many years, the LRR’s 24-foot roadbed is demonstrably feasible.

Despite its many years in service, on Reply, BNSF argues that the 24-foot roadbed on the Canyon Subdivision has proven inadequate, and it points out that newer projects on the subdivision use 28-foot roadbed widths. See BNSF Reply Narr. at III.F-42 to 44. In BNSF’s terms, WFA/Basin’s approach is an example of least cost – but inefficient – construction. Id. However, BNSF never explains why a 24-foot roadbed width is inadequate or “inefficient.” To be sure, BNSF uses 28-foot roadbeds in new construction, and has used it for some time. But if 24-foot roadbeds were truly inadequate, BNSF would have rebuilt the Canyon Subdivision in its entirety long ago, and BNSF would have proposed a 28-foot roadbed width for all of the LRR’s lines.

The impression left from reading BNSF’s Reply Narrative is that BNSF used a 28-foot roadbed width for the entire LRR. However, this is far from the case.

BNSF used the 28-foot roadbed width on only the Orin, Campbell and Reno Subdivisions. On the remaining lines of the LRR, including the Canyon Subdivision, BNSF actually accepted the 24-foot roadbed width that it claims is inadequate and inefficient.

There is no rationale for BNSF's Jekyll & Hyde approach. On the one hand, BNSF claims that the Canyon Subdivision is a prime example why a 24-foot roadbed is inadequate, albeit without any support. Yet, BNSF develops the earthwork quantities for this LRR line based on the existing 24-foot roadbed width. If BNSF does not even believe the Canyon Subdivision needs to have a 28-foot roadbed width, how can it use that as the reason to increase the roadbed width from 24 feet to 28 feet on other LRR line segments?

There is no rationale for BNSF's approach on the basis of density, either. The three densest segments of the LRR are Converse Jct. to Orin Jct. (154 million gross tons per mile ("MGT/M") in 2024), East Donkey Creek to Donkey Creek (150 MGT/M) and Bridger Jct. to Wendover (149 MGT/M). For the Converse Jct. to Orin Jct. line segment, BNSF argues for a 28-foot roadbed width. However, for the other two segments, which are only slightly lower in density, BNSF accepts WFA/Basin's 24-foot roadbed width. Furthermore, the other line segments that BNSF claims need a 28-foot roadbed width range from a low of 10 MGT/M (E. Fortin to W. Campbell) to a high of 149 MGT/M (Orin Jct. to Bridger Jct.). See WFA/Basin Op. electronic workpaper "LRR

Annual Statistics.xls,” tab “2024 Density\_Segment.” All of these segments have density that is equal to or lower than the density for segments where BNSF accepted WFA/Basin’s 24-foot roadbed width.<sup>10</sup>

Clearly, BNSF has not shown that WFA/Basin’s 24-foot roadbed width is inadequate nor demonstrated that its 28-foot roadbed width is necessary. Therefore, on Rebuttal, WFA/Basin continue to use a 24-foot roadbed width for all of the LRR’s lines.

**(b) Access Roads**

On Opening, WFA/Basin did not include a specific discussion regarding access roads for the LRR. On Reply, BNSF states “WFA/Basin did not construct any access roads adjacent to the tracks of the LRR.” See BNSF Reply Narr. at III.F-44. In the same discussion of access roads, BNSF states “the earthwork quantities that WFA/Basin used from the Masters’ testimony already include some quantities associated with the construction of adjacent access roads.” Id. at III.F-45. Apparently, BNSF is confused on the subject of access roads.

BNSF’s first statement is incorrect and its second statement is correct. To the extent that access roads were built when the lines being replicated were constructed, the quantities associated with these roads were already included, not only in the Orin Line earthwork quantities taken from the Masters’ documents referenced by BNSF but also in

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<sup>10</sup> BNSF had similar roadbed width inconsistencies in the Xcel case. The Board sided with the complainant regarding the use of a 24-foot roadbed width. See Xcel I at 90-91.

the earthwork quantities shown on the ICC Engineering Reports and on BNSF's Campbell Subdivision construction documents. In other words, the source data used by both WFA/Basin and BNSF to develop earthwork quantities for the LRR reflects the earthwork quantities associated with the access roads included in the original construction of the lines being replicated.

After admitting that the Orin Line earthwork quantities include quantities associated with access roads, BNSF then claims that the access roads originally constructed (and included by WFA/Basin) are inadequate and their width must be nearly doubled, from 7 feet to 13 feet. Id. at III.F-46. BNSF has provided no explanation as to why the original roads were inadequate. BNSF's only support for its 13-foot width is that a 13-foot width is BNSF's current standard. Yet, as recently the Xcel proceeding, BNSF advocated 10-foot wide access roads. See Xcel I at 92. In the end, all BNSF could muster was a few reasons why access roads are necessary in general (see BNSF Reply Narr. at III.F-9 to 10), but it never explains why these activities cannot take place on the 7-foot wide access roads provided by WFA/Basin.

In addition to the Orin and Reno Subdivisions, BNSF also includes 13-foot wide access roads on other segments of the LRR, specifically the Campbell Branch and between Bridger Junction and Wendover. As noted above, to the extent that access roads are located on these segments, the earthwork quantities are already reflected in the actual earthwork quantities contained in the BNSF construction documents and the ICC



Engineering Reports used by both parties to calculate the earthwork quantities for these segments. Including additional earthwork quantities for access roads is unsupported and improper.

Furthermore, WFA/Basin note that access to the LRR's right-of-way can be gained not only from the access roads that WFA/Basin have included but also from roads that cross the LRR. In addition, both WFA/Basin and BNSF have provided the LRR's maintenance and operating personnel with 4-wheel drive vehicles that can travel along the LRR's cleared right-of-way. Therefore, the need for a wide, graded road alongside the right-of-way is reduced.

Finally, the inclusion of additional costs for access roads has been rejected by the Board in several recent decisions. See TMPA I at 117; Duke/NS I at 90-91; CPL at 78; Duke/CSX at 76; and Xcel I at 92.

On Rebuttal, WFA/Basin have maintained their Opening position that the earthwork for access roads has been included in the earthwork quantities used by both parties and that BNSF's additional earthwork quantities for unnecessary and oversized access roads are improper.

**(c) 25-Foot Track Centers**

On Opening, WFA/Basin specified 25-foot track centers for double track segments and passing sidings. However, as noted by BNSF, in calculating the earthwork quantities for such track based on the Orin Line and Campbell Subdivision construction

documents, WFA/Basin inadvertently used 15-foot track centers instead of 25-foot track centers. BNSF Reply Narr. at III.F-44. WFA/Basin have corrected this on Rebuttal. See WFA/Basin Rebuttal Exhibit III-F-3.

**iii. Yard and Interchange Tracks**

On Opening, WFA/Basin included yards at Donkey Creek, South Logan and Guernsey (East and West). WFA/Basin also included interchange tracks at Campbell, Orin Jct. and Moba Jct. Earthwork quantities for interchange tracks were based on the additional track quantities for the sections where they were located as the interchange tracks were treated simply as additional side tracks. Yard quantities for the Donkey Creek Yard and Guernsey Yard West were based on the application of the one-foot fill rule used in conjunction with the earthwork quantities from the ICC Engineering Reports. For the South Logan Yard, WFA/Basin applied the per-mile earthwork quantities for additional track from the Orin Line. For Guernsey Yard East, WFA/Basin's engineers utilized a computer program in concert with USGS topographical maps to determine the required earthwork quantities. See WFA/Basin Op. Narr. at III-F-27 to 31.

On Reply, BNSF accepted WFA/Basin's earthwork quantities for the LRR's interchange tracks at Campbell, Orin Jct. and Moba Jct. BNSF also accepted WFA/Basin's earthwork quantities for the Donkey Creek and Guernsey West yards. However, BNSF took exception to WFA/Basin's quantities for the Guernsey East and

South Logan Yards. See BNSF Reply Narr. at III.F-46 to 51. BNSF's criticisms are addressed below.

**(a) Guernsey Yard East**

Guernsey Yard has two sections, an east section and a west section, located east and west of the U.S. Highway 26 overpass. See WFA/Basin Op. Exhibit III-B-3 and Rebuttal Exhibit III-B-1, pp. 9-11. On Opening, WFA/Basin developed grading quantities (totaling 2.46 million CY) for the eastern portion of the Guernsey Yard rather than relying on the ICC Engineering Reports and using the one-foot fill approach applied on the west end of the yard. WFA/Basin took this step because (i) this portion of the yard was constructed after the ICC Engineering Reports were prepared and its quantities were not included in the ICC Engineering Reports due to its recent vintage; (2) the Guernsey Yard East as proposed by LRR is larger than BNSF's current Guernsey Yard East; and (3) the topography surrounding Guernsey Yard East is not flat. These factors made it unrealistic to apply the one-foot fill rule customarily used to develop yard earthwork quantities in the unique circumstances presented.

On Reply, BNSF increased the total grading quantities for the Guernsey Yard East by almost 400,000 CY, to 2.85 million CY. The increase is attributable to adjustments that BNSF made to several items, as discussed below. See BNSF Reply Narr. at III.F-47 to 50.

**(i)     Drainage Ditches**

BNSF argues that a two-foot flat bottom ditch is necessary in cut sections throughout the yard, otherwise the flow of water will not reach the storm sewer collector that WFA/Basin installed on Opening. BNSF has misconstrued the drainage system that WFA/Basin costed. Consequently, it has added ditches where the drainage system already covers the area.

In particular, BNSF assumed that storm sewers would only be placed between tracks based on WFA/Basin's drawing of a typical installation. However, that is only a typical drawing, and in any event the drawing clearly contemplates drainage on the outside tracks – presumably on the downslope. But the drawings are not truly relevant because WFA/Basin actually costed the storm drainage system on the basis of the total square feet in the entire yard since it is impossible to know ahead of time the exact locations where drains are necessary. Thus, additional ditches would not provide any added benefit. Therefore, WFA/Basin have not adjusted their Opening Guernsey Yard East earthwork quantities for additional ditches.

**(ii)    Ten-Foot Shoulder**

BNSF argues that WFA/Basin only included a ten-foot shoulder on the outside yard tracks even though their typical yard track cross-section assumes a 12-foot shoulder. WFA/Basin agree that their Opening calculation was in error, and it has been corrected on Rebuttal.

**(iii) Adjustments to Contours**

BNSF agrees that WFA/Basin's general approach for developing contours for Guernsey Yard East by using USGS quadrangle maps is acceptable. However, BNSF argues that WFA/Basin made two errors in the contours used on Opening. First, BNSF argues that WFA/Basin's elevation is linked to the top of the tie rather than the top of the subgrade. Second, BNSF states that WFA/Basin mistakenly raised the profile by nine inches when the data was processed through the Eagle Point Engineering software. Third, BNSF notes certain problems with the profile of the wye track proposed by WFA/Basin.

WFA/Basin agree that the profile for the wye track is incorrect, and they have adjusted the quantities accordingly. WFA/Basin also agree that the quantities were calculated from the top of the tie rather than top of the subgrade, and WFA/Basin corrected this problem. Finally, WFA/Basin fixed the nine-inch profile error in using the Eagle Point Engineering software.

On Rebuttal, WFA/Basin have calculated 2.64 million CY of excavation for Guernsey East Yard.

**(b) South Logan Yard**

On Opening, WFA/Basin developed the earthwork quantities for the LRR's South Logan Yard by applying the per-mile quantities for additional track that they used for the Orin Subdivision (based on a 24-foot roadbed width) to the track-mile

requirements of the yard, resulting in earthwork quantities of 121,918 cubic yards. See WFA/Basin Op. Narr. at III-F-29 to 30 and Op. Exhibit III-F-11.

On Reply, BNSF accepted WFA/Basin's methodology but pointed out that WFA/Basin's per-mile quantities were based on 15-foot track center spacing. BNSF revised the South Logan Yard earthwork quantities to 203,197 cubic yards to reflect 25-foot track center spacing and BNSF's use of a 28-foot roadbed width on this segment of the LRR. See BNSF Reply Narr. at III.F-51.

As discussed above, BNSF's 28-foot roadbed width is unnecessary. With regard to track spacing, BNSF is only partially correct. As discussed above, WFA/Basin inadvertently neglected to adjust the Orin Line additional track quantities to reflect 25-foot track center spacing. However, the 25-foot track center spacing only applies to the first yard track (i.e., the yard track next to the main line). All other yard tracks are spaced on 15-foot track centers. On Rebuttal, WFA/Basin have developed the earthwork quantities for South Logan Yard using this spacing configuration. This results in a total of 161,676 cubic yards of earthwork for the South Logan Yard. See WFA/Basin Rebuttal Exhibit III-F-4.

**(c) Open Cut of Former Tunnel No. 2**

On Opening, WFA/Basin elected to construct a large open cut where Guernsey Tunnel No. 2 was originally located. As BNSF daylighted this tunnel in 1998, WFA/Basin utilized BNSF's actual costs for this project from a contractor's invoice

provided in discovery. WFA/Basin then indexed this cost to 4Q04 using the Engineering News Record index. WFA/Basin included \$12.58 million in investment for this item. See WFA/Basin Op. Narr. at III-F-31 to 32 and Op. electronic workpapers “tunnel daylighting cost.pdf” and “ENR index.pdf.”

On Reply, BNSF made three modifications to WFA/Basin’s costs. First, BNSF added \${ } for bridge steel used for the highway bridge that was not included in the contractor’s invoice. Second, BNSF added \${ } that BNSF had to pay to the State of Wyoming for a permit to proceed with the project. Third, BNSF changed the index used to inflate the costs from 1998 to 4Q04, claiming WFA/Basin’s index was incorrect, and applied this index to the sum of all three cost components. BNSF included a total of \$14.20 million in investment costs for this item. See BNSF Reply Narr. at III.F-51 to 52 and Reply electronic workpaper “III F 2 LRR Grading.xls,” tab “IIIF Summary.” In addition, BNSF included \$600,000 per year in maintenance costs for repairs to the walls of the cut. See BNSF Reply Narr. at III.D-192.

WFA/Basin accept BNSF’s inclusion of \${ } for bridge steel and \${ } for permitting. However, WFA/Basin disagree with BNSF’s indexing of these costs for three reasons. First, the index used by BNSF is improper. It mixes Means Handbook annual indexes with Engineering News Record monthly indexes and incorrectly uses July 1998 as the base for the contractor’s invoice. Conversely, WFA/Basin used only the Engineering News Record indexes and properly reflected the

December 1998 date of the contractor's invoice as the starting point for the index.

WFA/Basin's indexing method is more accurate as it does not mix indexes and reflects the correct starting point.

Second, BNSF has improperly applied a construction-cost index which reflects all costs, including both labor and materials, to a strictly material item (i.e., the bridge steel). On Rebuttal, WFA/Basin have indexed this cost item using the AAR Materials and Supplies index from 4Q98 to 4Q04, resulting in the addition of \${ } million for bridge steel.

Third, BNSF has improperly applied a construction cost index to a permitting cost. BNSF has provided no evidence that the permitting cost would be any more for the LRR than it was for the BNSF. On Rebuttal, WFA/Basin have included the \${ } million incurred by BNSF for permitting of the tunnel-daylighting project.

As discussed in Section III-D-4-e-x above, BNSF's inclusion of \${ } per year for annual maintenance of the cut at the location of the former Guernsey Tunnel No. 2 is improper. Contrary to BNSF's claims, BNSF has not had to perform cut wall repairs regularly. As support for this annual charge, BNSF included one 2002 AFE showing total expenditures of \${ } million dollars. Guernsey Tunnel No. 2 was daylighted in 1998. BNSF has not provided any evidence of expenditures prior to, nor subsequent to, this lone AFE. This one AFE does not support BNSF's annual maintenance cost of \${ }. However, as WFA/Basin utilized BNSF's actual costs



to daylight Guernsey Tunnel No. 2, WFA/Basin have conservatively included an additional \$ { } million in their investment cost to reflect additional steps to solidify the cut walls so as to avoid the need for constant repairs. When indexed to 4Q04, this additional investment equals \$ { } million.

The additional \$ { } million for bridge steel, \$ { } million for permitting and \$ { } million for cut wall repairs increases WFA/Basin's Rebuttal investment for the cut at the location of daylighted Tunnel No. 2 to \$14.80 million. See WFA/Basin Rebuttal electronic workpaper "Tunnel Daylighting Cost Rebuttal.pdf."

#### iv. Total Earthwork Quantities

The parties' total earthwork quantity differences are attributable to the items discussed above and minor differences in track miles. The total quantity differences are shown in Rebuttal Table III-F-8 below:

| <b>Rebuttal Table III-F-8</b><br><b>Comparison of Cubic Yards of Earthwork -</b><br><b><u>BNSF Reply v. WFA/Basin Rebuttal</u></b> |            |                    |                                            |
|------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|--------------------------------------------|
| Type                                                                                                                               | BNSF Reply | WFA/Basin Rebuttal | BNSF Reply Over/(Under) WFA/Basin Rebuttal |
| (1)                                                                                                                                | (2)        | (3)                | (4)                                        |
| 1. Common                                                                                                                          | 40,005,550 | 34,808,142         | 5,197,408                                  |
| 2. Loose Rock                                                                                                                      | 760,341    | 710,604            | 49,737                                     |
| 3. Solid Rock                                                                                                                      | 1,668,596  | 1,564,216          | 104,380                                    |
| 4. Borrow                                                                                                                          | 1,384,441  | 1,375,661          | 8,780                                      |
| 5. Total                                                                                                                           | 43,818,928 | 38,458,623         | 5,360,305                                  |

**v. Unit Costs**

**(a) Common Earthwork**

On Opening, WFA/Basin utilized the common earthwork unit costs from BNSF's Walker-to-Shawnee construction project. Specifically, WFA/Basin combined the unit costs for excavation and embankment, and applied the total to all of the LRR's common earthwork quantities. On Reply, BNSF accepted WFA/Basin's unit cost and the method by which WFA/Basin applied it. See BNSF Reply Narr. at III.F-52 to 53. As such, WFA/Basin have continued to use their Opening unit cost on Rebuttal.

**(b) Loose Rock Excavation**

On Opening, WFA/Basin used the Means Handbook to develop the loose rock excavation unit cost. As WFA/Basin's engineering experts noted, this approach was conservative because: (1) loose rock under the ICC Engineering Reports definition is easily moved by virtually any modern equipment that is used for common earthwork; and (2) BNSF's definition of common earthwork, which is priced much lower than the loose rock unit cost used by WFA/Basin, includes any material covered under the ICC Engineering Report definition of loose rock. Thus, WFA/Basin's use of a loose rock unit cost higher than the common excavation unit cost is extremely conservative. See WFA/Basin Op. Narr. at III-F-37 to 39.

Using the Means Handbook, WFA/Basin's engineers chose a combination of two 300 HP dozers for ripping the loose rock, a dozer for pushing it into piles, a 3CY

power shovel for placing the ripped and dozed rock into trucks (including the Means 15% additive), a 42 CY off highway truck to haul the material to the fill or disposal site, and a dozer to spread the material after it is dumped. The average cost for loose rock excavation was \$8.86 per cubic yard. See WFA/Basin Op. electronic workpaper "LRR Grading.xls," tab "IIIF Unit Costs" and "Means Unit Costs.pdf."

On Reply, BNSF agreed in principle with WFA/Basin's Opening costs, with the one exception that it substituted a 3 CY hydraulic excavator for the 3 CY shovel specified by WFA/Basin. This single change increases the loose rock unit cost to \$10.33 per cubic yard. BNSF Reply Narr. at III.F-54 to 55. BNSF's arguments in favor of the excavator are undoubtedly familiar to the Board as BNSF has often repeated them – as recently as its reply evidence in the AEP Texas case.

In general, excavating loose rock requires a process similar to excavating common earth because the ripping process is designed to make it easier for the excavating equipment to dig out the material – or pick it up if the rock is loose on the ground. In the unit costs specified by both parties, a 410 HP dozer is largely responsible for piling the ripped rock. From there, a shovel or excavator is responsible for loading the material into trucks. Although the use of a shovel or excavator allows for possible excavation needs that might arise, its primary task is still loading. The 3 CY shovel is better suited to that task. In particular, with its upward-facing bucket, it can excavate and load in one action when handling materials above grade.

BNSF never suggests that the shovel format is not feasible for its primary task. Rather it argues that the hydraulic excavator is a more versatile excavator, which may be true but it is not relevant here. See BNSF Reply Narr. at III.F-55. The reality is that a hydraulic excavator is not as useful for the loading task as the shovel. As noted above, the shovel is set up much like a front end loader (although much more powerful). The shovel can scoop and lift without adjusting the bucket, can swivel on its base, and then tip the bucket or release its bottom to dump into the truck. The hydraulic excavator is not optimally efficient for the loading tasks posited by BNSF because the bucket-down orientation requires a greater range of motion to load and dump than does the shovel configuration. This is confirmed by the higher Means cost for using a hydraulic excavator. Moreover, the Army's earthwork training materials note that:

Loading trucks with a backhoe is sloppy and somewhat inefficient. The sloppiness is due to material falling off the teeth as the bucket is lifted toward the dumping position. The inefficiency results from the maneuvering necessary to complete a dump within the length of a truck body. It also has a slow digging cycle. The slow cycle is caused by the necessity of pulling the bucket toward the boom before hoisting, to retain the load during the hoist.

See WFA/Basin Rebuttal electronic workpaper "Backhoe Loading.pdf." In other words, BNSF's argument for greater flexibility is not warranted given the extra costs and the limited usefulness of the excavator. Moreover, as BNSF's approach does not contemplate that the excavator will be doing anything other than loading the loose rock from a pile, it

is inappropriate not to select the least cost, feasible loading equipment, which in this case is the shovel selected by WFA/Basin.

On Rebuttal, WFA/Basin continue to use their Opening loose rock unit cost.

**(c) Solid Rock Excavation**

On Opening, WFA/Basin developed solid rock excavation costs using the typical approach applied in previous cases and accepted by the Board. See, e.g., WPL I at 81-82. First, WFA/Basin used an average of the costs from the Means Handbook for (1) Drilling and Blasting Rock over 1500 CY and (2) Bulk Drilling and Blasting.

WFA/Basin then added the costs of excavating, loading, hauling, spreading, and compacting blasted rock. All of these activities combined were costed at \$12.59 per CY.

See WFA/Basin Op. Narr. at III.F-40 to 41 and Op. electronic workpaper "LRR Grading.xls," tab "IIIF Unit Costs."

On Reply, BNSF disagreed with several components of WFA/Basin's solid rock excavation unit cost. Specifically, BNSF disputed the blasting costs, added costs for a bulldozer to move blasted material, added costs to blast boulders a second time, and added costs to transport boulders. All of these modifications resulted in a unit cost of \$29.15 per cubic yard for solid rock excavation. See BNSF Reply Narr. at III.F-57 to 65 and Reply electronic workpaper "III F 2 LRR Grading.xls," tab "IIIF Unit Costs."

BNSF's modifications, most of which were proposed and rejected by the Board in prior SAC cases are addressed below.

(i) **Comparable Rock Excavation Costs**

Before delving into the specific criticisms of BNSF's development of solid rock excavation costs, WFA/Basin once again note that their costs developed from the Means Handbook are extremely conservative in comparison to the costs incurred on real-world BNSF projects. In particular, on Opening, WFA/Basin pointed out that the Guernsey Tunnel No. 2 daylighting project and the Walker-to-Shawnee costs per CY for rock excavation were only \${ } (in 1998 dollars) and \${ } (in 2004 dollars), respectively.

On Reply, BNSF argues that the Walker-to-Shawnee project did not actually encounter any rock excavation, and that the \${ } per cubic yard unit cost was only a placeholder in the event rock was encountered. BNSF Reply Narr. at III.F-64. Even though no rock was encountered, it hardly follows that the unit cost is irrelevant. After all, if rock excavation is as costly and complicated as BNSF suggests in its Reply, it follows that any "placeholder" unit cost should reflect such higher costs.

Similarly, BNSF argues that the Guernsey Tunnel No. 2 daylighting project did not actually excavate any solid rock – citing a WFA/Basin Opening workpaper. Id. at III.F-64 to 65. Therefore, BNSF reasons that the unit costs were not reflective of solid rock excavation. BNSF also argues that even if the project costs were accurate, that project was limited in geographic scope and WFA/Basin could not realize such economies blasting rock over the whole of the Canyon Subdivision.

As discussed in the next section below, nearly 1,000,000 CY of the LRR's Rebuttal figure of 1.56 million CY of solid rock are located in Guernsey Yard East – a geographically limited area just like the Tunnel No. 2 daylighting project. Thus, BNSF's second point is unfounded. As for the type of excavation, WFA/Basin agree that no blasting was required, but most of the project was paid for under rock excavation, which, under BNSF's construction specifications, contemplates that the contractor might need to blast. Nevertheless, as with BNSF's unit cost for Walker-to-Shawnee, if solid rock was encountered, \$ { } per CY is far below the unit costs proposed by either WFA/Basin or BNSF.

In addition, the two BNSF projects suggest that the solid rock conditions where blasting would be required might actually be very limited in this territory. Thus, the necessity for BNSF's excessive unit cost is further reduced.

**(ii) Drilling and Blasting**

BNSF argues that WFA/Basin's drilling and blasting costs should be based solely on the Means Handbook cost for Drilling and Blasting Rock Over 1,500 CY. BNSF's position is predicated on the argument that the economies for larger-scale blasting will not be available to the LRR because only 21,770 cubic yards per mile require blasting. See BNSF Reply Narr. at III.F-58 to 59. BNSF's argument is off the mark.

BNSF's average of 21,770 CY per mile is merely a simple average of the total solid rock quantity for the LRR (1.49 million CY on Opening) divided by the 68.7

route miles of the LRR that include solid rock quantities, the majority of which (62.7 miles) is south of Bridger Jct. BNSF then reduced the 27,770 CY per mile by 50 percent to 10,885 CY per mile to reflect WFA/Basin's assumption (accepted by BNSF) that only half of the solid rock will require blasting.

BNSF's contention that the solid rock is distributed on an even basis along the LRR's route is unfounded. For example, over 925,000 of the total CY is for rock excavation in Guernsey Yard East, which is only two miles in length. Furthermore, of the 527,000+ CY of solid rock in the territory between Bridger Jct. and Guernsey, over 300,000 is located just between Wendover and Guernsey – a distance of only 12 miles (including the yard length). Thus, BNSF's use of an average of 10,885 CY per mile does not reflect the real distribution of the quantities. Based on the actual distributions, WFA/Basin's use of drilling and blasting costs applicable to high volumes is appropriate. Moreover, the Board has agreed with WFA/Basin's methodology in its four most recent decisions. See Xcel I at 97 (recognizing that concentrations of blasting make the use of average figures for blasting large quantities appropriate); Duke/NS I at 95; CPL at 81; and Duke/CSX at 79. Consequently, on Rebuttal, WFA/Basin continue to use their Opening blasting costs.

### (iii) Other Blasted Rock Handling Costs

On Opening, WFA/Basin used the Means Handbook cost to "Excavate and Load Blasted Rock, 3 CY power shovel." BNSF argues that the blasted rock cannot be



handled at the specific costs provided by Means and selected by WFA/Basin. Rather, BNSF suggests two additional costs that it argues the LRR must incur to handle the blasted materials, which are summarized as follows:

1. BNSF includes costs to reblast 30 percent of the rock used in embankment and five percent of the waste rock or "boulders," as BNSF describes it, that are left over from any initial blasting; and
2. BNSF includes the costs of loading ½ CY boulders onto a truck.

See BNSF Reply Narr. at III.F-60 to 62.

BNSF's additional costs are without merit because they are based on a series of flawed and unsupported assumptions that, when debunked, obviate the need for the additional costs. First, BNSF argues that the initial blasting will leave only 40 percent of the blasted material small enough to be reused in embankment without further processing. BNSF's definition of "small enough" is less than 24 inches, which it takes from the WRPI construction specifications.

The problems with BNSF's assumption are numerous. Initially, WFA/Basin notes that BNSF's 40 percent assumption is based on nothing other than its experts' experience. The other critical flaw in BNSF's assumption is that it assumes that the end result of all blasting is a large quantity of rocks exceeding 24 inches, which BNSF does not define at all (i.e., 24 inches in diameter or 24 cubic inches or 24 inches square?). BNSF offers no support for this claim. Indeed, the references to the WRPI construction specifications undermine BNSF's position. In particular, those specifications state that all

blasted materials should be small enough for earth moving equipment to handle. In other words, the WRPI specifications contemplated that the materials could, and indeed, had to be blasted in a manner that would permit their easy removal.

WFA/Basin also note that blasting is far from the random exercise that BNSF posits. In fact, blasting is planned with a number of end results in mind, including the size of rocks that are desired and the landing zone for the materials. Variations in the desired end result are achieved, inter alia, by placing the charges in different locations, varying the spacing of the charges, and varying the depth of the charges. See WFA/Basin Rebuttal electronic workpaper file "blasting.pdf" (desired fragmentation is obtained by checking the drill pattern, spacing and burden to be blasted).

Finally, WFA/Basin's engineering experts conferred with R.S. Means personnel regarding its assumptions for handling blasted materials. Means personnel confirmed that the Means Handbook cost assumes that blasting would produce materials small enough to be handled by the 3 CY shovel that WFA/Basin used to "excavate and load blasted rock." See WFA/Basin Rebuttal electronic workpaper "Means Solid Rock Inquiry.pdf."

Notwithstanding that the Means Handbook costs for excavating and loading blasted rock clearly apply here, BNSF asserts that all waste rock should be costed using a Means Handbook cost of \$14.98 per CY for handling boulders under ½ cubic yard. Strangely, BNSF suggests that one reason why the 3 CY shovel costs is inappropriate is

because the pieces of rock will not fit in the bucket even though it is mathematically obvious that a ½ cubic yard rock will fit in a 3 CY shovel with ease. Indeed, the equipment supplied under the Means Handbook cost used by BNSF is only a 2.25 CY front end loader. See WFA/Basin Rebuttal electronic workpaper “BNSF Boulder Crew.pdf.” As such, BNSF’s claim lacks foundation.

BNSF also implies that any larger rocks that exist after blasting must be moved using a Means Handbook unit cost to “Excavate and Load Boulders” – although it only costed the loading of boulders (favoring instead to reblast much of the rock, which is also unnecessary). Again, BNSF’s suggestion is improper.

The first problem with BNSF’s approach is that it proposes a cost for excavating boulders that have not been blasted. Obviously, it is considerably more expensive to excavate boulders that are in place rather than rocks that have been blasted. Indeed, this is exactly why the Means Handbook cost for excavating blasted rock is much lower than the cost for excavating non-blasted boulders in place. WFA/Basin’s engineering experts confirmed this point with Means personnel. See WFA/Basin Rebuttal electronic workpaper “Means Solid Rock Inquiry.pdf.” Moreover, Means confirmed that its cost for excavating blasted rock assumes that some of the rocks might be quite large – not larger than the 3 CY bucket on the shovel, but still larger than the boulders that the BNSF claims must be moved.

BNSF's boulder loading cost is also inconsistent with the manner in which BNSF handled waste rock. In particular, BNSF assumed that it would reblast five percent of the waste "boulders" left over from the initial blasting. After that rock is blasted, it is reasonable to assume that, even under BNSF's approach, the materials could be handled using the costs to excavate and load blasted rock with a 3 CY shovel. Yet, BNSF applied the exorbitant boulder moving cost to 100 percent of the wasted rock.

WFA/Basin also note that BNSF's solid rock excavating costs include the cost to bulldoze ripped materials (presumably into superfluous piles). This cost is completely unexplained. Moreover, the 3 CY shovel costs assume the cost of excavating and loading. If pushing into piles is performed, there is no need for the shovel to excavate, and, therefore, the costs would be lower. In any event, the dozer is unnecessary because the blasting process tends to create piles, as shown in a video that WFA/Basin have included in its Rebuttal electronic workpapers. See WFA/Basin Rebuttal electronic workpaper "blast.wmv."

**(iv) Hauling**

BNSF accepted WFA/Basin's use of a 42 CY off-highway hauler to handle waste and dump excavated materials and the applicable unit cost. See BNSF Reply Narr. at III.F-63.

**(v) Other**

BNSF accepted WFA/Basin's compaction and spreading unit costs. Id. In addition, BNSF accepted WFA/Basin's position that 50 percent of the materials classified as solid rock can be ripped. Id. Therefore, BNSF also accepted WFA/Basin's use of the average of the unit costs for loose rock and solid rock excavation for all the solid rock quantities.

On Rebuttal, WFA/Basin continue to use their Opening solid rock unit cost of \$10.73 per CY, which is the average of their Opening unit cost for loose rock of \$8.86 per CY and their Opening unit cost for solid rock of \$12.59 per CY. See WFA/Basin Rebuttal electronic workpaper "LRR GRADING Rebuttal.xls," tab "IIIF Unit Costs."

**(d) Borrow**

On Opening, WFA/Basin used a unit cost of \$13.84 per CY for borrow. On Reply, BNSF accepted this unit cost. See BNSF Reply Narr. at III.F-65.

**(e) Fine Grading**

On Opening, WFA/Basin did not include separate costs for fine grading because the common excavation cost used by WFA/Basin included the required fine grading work. See WFA/Basin Op. Narr. at III-F-43. On Reply, BNSF accepted WFA/Basin's position, although it gratuitously characterized WFA/Basin's position as an "omission of a separate cost for this item." See BNSF Reply Narr. at III.F-65 to 66. WFA/Basin's engineering experts object to BNSF's characterization. They did not

“omit” any costs because fine grading is included in the common excavation unit cost used by both parties.

**(f) Land for Waste Excavation**

On Opening, WFA/Basin assumed that 30 percent of the excavated quantities would be wasted, and they included \$0.17 million for land for waste quantities. WFA/Basin’s calculations were based on an assumed depth of 15 feet (24,200 CY per acre), resulting in the need for 414.1 acres, and a land cost of \$400 per acre. See WFA/Basin Op. electronic workpaper “LRR GRADING.xls,” tab “IIIF\_13Othr Cst.”

On Reply, BNSF included \$0.21 million for land for waste quantities. BNSF accepted WFA/Basin’s methodology and land cost. The difference in investment is caused solely by the difference in earthwork quantities, which has been addressed above.

On Rebuttal, WFA/Basin have included \$0.18 million for land for waste quantities, which reflects the slight increase in earthwork quantities from Opening. See WFA/Basin Rebuttal Exhibit III-F-6.

**(g) Summary**

On Rebuttal, WFA/Basin have included \$117.83 million for earthwork (including land for waste excavation). See WFA/Basin Rebuttal Exhibits III-F-5 (earthwork) and III-F-6 (land for waste excavation).

c. **Drainage**

i. **Lateral Drainage**

BNSF accepted WFA/Basin's quantities, unit costs and total cost for lateral drainage. See BNSF Reply Narr. at III.F-66

ii. **Yard Drainage**

Yard drainage coverage in Guernsey Yard is discussed on pages III-F-50 above. WFA/Basin further note that BNSF otherwise accepted WFA/Basin's yard drainage quantities. However, BNSF has added costs for foundations and inverts for each catch basin. See BNSF Reply Narr. at III.F-83. This additional cost is unnecessary.

Catch basins are precast and the bottom section of the basin is the foundation; therefore, additional foundations are not required or used. See WFA/Basin Rebuttal electronic workpaper "Terre Hill Concrete Products Miscellaneous Inlet Boxes.pdf."

Inverts are used in manholes to assure that laminar flow will take place through the manhole. Inverts are not used in catch basins because the inflow from the drainage in the top of the catch basin creates a turbulent flow through the catch basin. Therefore, WFA/Basin have not included foundations or inverts on Rebuttal.

Yard lighting is discussed at pages III-F-169 to 171 below.

**d. Culverts**

On Opening, WFA/Basin's engineering experts designed the LRR's culverts to replicate existing culvert sizes on the BNSF. However, WFA/Basin's engineers opted to use standardized culvert types. In particular, they used corrugated metal pipe ("cmp") for all openings up to 144 inches in diameter, and elsewhere used reinforced concrete box ("RCB") culverts. BNSF raises a number of objections to WFA/Basin's approach, which are discussed in detail below.

**i. Culvert Inventory**

The parties generally agree on the culvert inventory. However, BNSF has disputed WFA/Basin's use of pipe culverts in certain underpass and cattle pass locations. See BNSF Reply Narr. at III.F-68 to 69. BNSF notes three locations where WFA/Basin replaced a single, large culvert with two smaller pipes. Id. at 68. BNSF correctly points out that these locations are used as underpasses, and, therefore, two smaller pipes cannot be used. Id. WFA/Basin agree, and they have replaced the culverts used on Opening with the same sized openings that BNSF used on Reply.

BNSF also argues that WFA/Basin replaced 15 cattle passes with smaller or different pipes that prevent the openings from being used as cattle passes. Id. at III.F-68 to 69. WFA/Basin accept BNSF's cattle pass revisions.



BNSF also points out that WFA/Basin incorrectly adjusted the area of two culverts when changing from box culverts to pipes. Id. at III.F-69 to 70. WFA/Basin agree the area reduction was in error, and they have corrected this on Rebuttal.

BNSF further notes that WFA/Basin understated the culvert lengths in double track territory by using 15-foot track centers rather than 25-foot track centers. Id. at III.F-71. WFA/Basin have also corrected this error on Rebuttal.

BNSF also argues that WFA/Basin incorrectly converted certain SPP pipe sizes to cmp pipe sizes. Id. at III.F-70. WFA/Basin agree and have corrected the cited errors on Rebuttal.

**ii. Pipe Size and Gage**

BNSF suggests that WFA/Basin erred in using corrugated metal pipe culverts for openings up to 144 inches. Id. at III.F-70 to 73. BNSF's argument suggests that the culvert loading strength that WFA/Basin used does not adequately address how much cover the pipe can withstand in addition to the Cooper E-80 loading requirement. Id. In other words, BNSF suggested that WFA/Basin's pipes might be adequate under five feet of cover but not 40 feet. Thus, BNSF opted to use sizes and gages that were used when the Orin Line was constructed. Id. at III.F-71. BNSF's effort to increase these costs is not warranted.

WFA/Basin's engineering experts did, in fact, take into consideration the amount of cover that might be placed over the pipe in addition to the Cooper E-80 loading

requirements. For example, WFA/Basin's 24-inch, 14 gage pipe can withstand 155 feet of cover. See WFA/Basin Rebuttal electronic workpaper "Height of Cover.pdf."

WFA/Basin's 144-inch, 10 gage pipe (the largest they use) can withstand 39 feet of cover. See WFA/Basin Rebuttal electronic workpaper "Cover Versus Pipe Size.xls."

WFA/Basin's engineering experts reviewed the Orin Line plans and profiles that BNSF's relied on for its culvert gages and found that the maximum cover for any culvert was 44 feet, and that pipe was 102 inches in diameter (WFA/Basin's 102-inch pipe can handle 67 feet of cover). Id. WFA/Basin's engineering experts also doubled-checked to confirm that the cover depths did not exceed the maximum cover for each pipe size. Thus, WFA/Basin have continued to use the same gages and types of pipes on Rebuttal that they did on Opening.

### **iii. CMP Unit Costs**

On Opening, WFA/Basin used prices from Lane Metal Products for its cmp installations. BNSF accepts WFA/Basin's costs for pipes up to 42 inches. See BNSF Reply Narr. at III.F-72. For pipes between 48 and 84 inches, BNSF used costs from Lane's website on the its flawed theory that the gages selected by WFA/Basin were inadequate. Id. at 72 to 73. For pipes greater than 84 inches, BNSF used SPPs based on the same flawed theory. Id. at 73. As WFA/Basin's cmps are adequate on their face, WFA/Basin continues to use it Opening cmp unit costs.

BNSF accepts WFA/Basin's pipe installation costs for pipe up to 90 inches.

Id. For pipes larger than 96 inches, BNSF suggests that WFA/Basin have made an arbitrary adjustment that is not acceptable. Id. BNSF did not suggest any alternatives because it used SPP for pipes greater than 84 inches. WFA/Basin's installation costs for pipes greater than 96 inches are reasonable.

In determining the installation cost for pipes greater than 96 inches, WFA/Basin's engineering experts reviewed the crew production rate and factors that influence that production rate. In particular, the crew, specified by Means, for 90 inch CMP installations includes the same type of equipment needed to install pipes greater than 96 inches. For example, a review of the Means specifications for crews B-13, B-13B and B-13C shows that the only difference between these three crews is the equipment size and the equipment cost. See WFA/Basin Rebuttal electronic workpaper "Pages 415 and 416, 2005 Means.pdf." Thus, the major factor in selecting the crew is ensuring that the equipment can handle the weight of the pipe. A 20-foot length of WFA/Basin's largest pipe, 144 inches, weighs 5640 pounds or 2.8 tons. WFA/Basin used Means Crew B-13B, which includes a 55-ton crane capable of lifting a 144-inch section of pipe in place. WFA/Basin acknowledge that some additional time might be needed for a larger pipe installation (e.g., it might take slightly longer to place a strap around a larger pipe). Therefore, on Opening, WFA/Basin's engineering experts included a 15 percent additive to the labor and equipment cost to install larger pipes. Thus, BNSF claim of an

arbitrary adjustment is unfounded, and WFA/Basin continue to use their Opening installation costs for pipes larger than 96 inches.

Finally, BNSF argues that the cmp cost should include a bituminous coating. Id. at III.F-73 to 74. As the Board is aware from previous SAC cases, bituminous coating is not a requirement for culverts. Indeed, the useful life of galvanized pipe easily exceeds 30 years. See WFA/Basin Rebuttal electronic workpaper "NCSPA.pdf." Consequently, WFA/Basin's engineers opted to exclude bituminous coating.

**iv. SPP Unit Costs**

As noted above, BNSF proposes to build culverts larger than 84 inches with SPP. As WFA/Basin have shown the feasibility of their cmp, they have not included any SPP structures. Thus, BNSF's unit costs for SPP (BNSF Reply Narr. at III.F-74 to 75) are not at issue on Rebuttal.

**v. RCB Unit Costs**

The parties agree on the underlying unit costs for reinforced concrete box culverts. Id. III.F-75 to 76. However, BNSF has adjusted the shipping costs associated with the culverts as well as the cost indexing. Id. On Rebuttal, WFA/Basin agree with the unit cost and shipping changes that BNSF proposed.

vi. **Summary**

With the adjustments noted above, WFA/Basin's Rebuttal culvert costs are \$14.4 million versus their \$11.8 million total on Opening and BNSF's Reply total of \$19.0 million.

e. **Other**

i. **Sideslopes**

On Reply, BNSF accepted WFA/Basin's use of a 1.5:1 sideslope for developing earthwork quantities.

ii. **Drainage Ditches**

On Reply, BNSF accepted WFA/Basin's drainage ditch specifications. See BNSF Reply Narr. at III.F-77.

iii. **Retaining Walls**

On Opening, WFA/Basin included \$53,610 for retaining wall investment for the LRR. WFA/Basin's costs were based on quantity information from the ICC Engineering Reports and unit costs from the Means Handbook. See WFA/Basin Op. Narr. at III-F-51 to 52 and Op. electronic workpaper "LRR GRADING.xls," tab "IIIF\_5 Othr EW."

On Reply, BNSF included \$53,637 for retaining walls. BNSF accepted WFA/Basin's use of the quantity information from the ICC Engineering Reports and the use of gabion baskets. See BNSF Reply Narr. at III.F-77 and BNSF Reply electronic

workpaper "III F 2 LRR Grading.xls," tab "IIIF\_5 Othr EW." The difference between the two amounts is caused by the 0.03 route miles that BNSF added for the Moba spur. As WFA/Basin have included this mileage on Rebuttal, WFA/Basin now agree with BNSF as to the cost of \$53,637 for existing retaining walls along the LRR route. See WFA/Basin Rebuttal Exhibit III-F-2.

However, in its Reply at III.F-83 to 86, BNSF included costs of \$237.53 million for retaining walls that do not currently exist, referred to by BNSF as "ROW Retaining Walls." As noted above and discussed in detail in Part III-F-2-f below, these additional retaining walls are totally unnecessary and BNSF's attempt to include them inflates the LRR's construction cost beyond any semblance of rationality.

**iv. Rip Rap**

On Opening, WFA/Basin included \$605,437 for rip rap investment for the LRR. WFA/Basin's costs were based on quantity information from the ICC Engineering Reports and the Orin Line and Campbell Subdivision construction documents applied to unit costs from the Means Handbook. See WFA/Basin Op. at III-F-52 and Op. electronic workpaper file "LRR GRADING.xls," tab "IIIF\_5 Othr EW."

On Reply, BNSF included \$609,272 for rip rap. BNSF accepted WFA/Basin's quantity methodology and unit cost. See BNSF Reply Narr. at III.F-77 and BNSF electronic workpaper "III F 2 LRR Grading.xls," tab "IIIF\_5 Othr EW." The

difference between the two amounts is caused entirely by BNSF's overstatement of the LRR's route miles for the LRR, which is discussed above.

On Rebuttal, WFA/Basin have included \$605,565 for rip rap investment, a slight increase over Opening to reflect the addition of 0.03 miles for the Moba spur. See WFA/Basin Rebuttal Exhibit III-F-2.

**v. Relocating and Protecting Utilities**

On Opening, WFA/Basin included \$0.93 million for utility relocation investment for the LRR. WFA/Basin's costs were based on the 1994 cost per route mile accepted by the Board in WTU (indexed to 4Q04) applied to the lines being replicated that were constructed subsequent to the existence of utility lines, namely the Orin, Campbell and Reno Subdivisions (totaling 149.25 route miles). See WFA/Basin Op. Narr. at III-F-52 to 53 and Op. electronic workpaper "LRR GRADING.xls," tab "IIIF\_13Othr Cst."

On Reply, BNSF included \$1.91 million for utility relocation. BNSF accepted WFA/Basin's application of this cost to the newly-constructed lines of the LRR. but increased the route miles for these lines by 1.58 miles to 150.83 miles and rejected the cost per route mile used by WFA/Basin. BNSF developed a cost per route mile based on the utility relocation requirements of a portion of the Orin Line, based on the original plans, applied to unit costs developed from the Means Handbook. See BNSF Reply Narr.

at III.F-77 to 79 and BNSF Reply electronic workpapers “III F 2 LRR Grading.xls,” tab “IIIF\_13 OthrCst” and “III F 2 Utilities.xls.”

As discussed in Part III-B-1 above, BNSF’s additional 1.58 route miles are unnecessary. Therefore, on Rebuttal, WFA/Basin have continued to rely on the 148.25 route miles used on Opening for utility relocation. However, WFA/Basin have accepted BNSF’s cost per route mile for utility relocation based on its analysis of the Orin Line construction documents with two corrections to BNSF’s analysis. Specifically, BNSF included costs for two utility relocations where no relocation was performed. See BNSF Reply electronic workpaper file “III F 2 Utilities.xls,” tab “Utilities,” rows 4 and 6, where the “Action” shown is “None.” WFA/Basin have corrected BNSF’s errors, reducing the cost per mile from \${ } to \${ }. See WFA/Basin Rebuttal electronic workpaper “III F 2 Utilities WFA.xls.”

On Rebuttal, WFA/Basin have included \$1.85 million for utility relocation costs for the LRR. See WFA/Basin Rebuttal Exhibit III-F-6.

**vi. Seeding/Topsoil Placement**

On Opening, WFA/Basin included \$3.05 million for topsoil placement and seeding investment for the LRR. For the recently-constructed lines replicated by the LRR (i.e., the Orin, Campbell and Reno Subdivisions), WFA/Basin’s quantities were based on the per-mile quantities obtained from the Orin Line construction documents. For the remaining lines, WFA/Basin relied on the quantities contained in the ICC Engineering



Reports. For the unit costs, WFA/Basin relied on unit costs from the Walker-to-Shawnee project. See WFA/Basin Op. Narr. at III-F-53 to 54 and Op. Exhibit III-F-13.

On Reply, BNSF included \$3.08 million for this item. BNSF accepted WFA/Basin's quantity methodology and unit costs. See BNSF Reply Narr. at III.F-79 and BNSF Reply electronic workpaper "III F 2 LRR Grading.xls," tab "IIIF\_13Othr Cst." The difference between the two amounts is caused entirely by BNSF's overstatement of the route miles for the LRR, discussed above.

On Rebuttal, WFA/Basin have included \$3.05 million for topsoil placement and seeding costs for the LRR. See WFA/Basin Rebuttal Exhibit III-F-6.

**vii. Water for Compaction**

On Opening, WFA/Basin included \$3.18 million for water for compaction. The quantity of water per cubic yard was developed based on the publicly available Orin Line construction documents and the Campbell Subdivision construction documents provided by BNSF in discovery. The cost for the water was obtained from BNSF's Walker-to-Shawnee project. See WFA/Basin Op. Narr. at III-F-54 to 55 and Op. Exhibit III-F-13.

On Reply, BNSF included \$4.41 million for water for compaction. BNSF accepted WFA/Basin's unit cost for water but modified the quantity calculation. See BNSF Reply Narr. at III.F-80 and BNSF Reply electronic workpaper "III F 2 LRR Grading.xls," tab "IIIF\_13Othr Cst." Specifically, there are two differences between

WFA/Basin's and BNSF's quantity calculations: (1) gallons per cubic yard; and (2) earthwork quantities. Each of these differences is discussed below.

BNSF accepted WFA/Basin's use of the cubic yards and gallons of water from the Orin Line and Campbell Subdivision construction documents. However, BNSF added in the cubic yards and gallons of water from the Walker-to-Shawnee project in calculating its Reply weighted average gallons of water per CY. This revises the average gallons per cubic yard from 18.5 to 20.3. See BNSF Reply Narr. at III.F-80. On Rebuttal, WFA/Basin have accepted this modification.

BNSF's earthwork quantities, and related water for compaction quantities, are overstated for several reasons. First, as discussed in Parts III-B-1 and III-B-2 above, BNSF has overstated the LRR's route miles, second main/passing siding miles, set-out track miles and yard track miles. This overstatement in miles results in an overstatement in earthwork quantities. Second, as discussed above, BNSF has overstated the roadbed width of the LRR rail lines through its use of an unnecessary 28-foot roadbed width for selected lines and its unnecessary use of 13-foot access roads. Both of these modifications unnecessarily increase the earthwork requirements of the LRR.

On Rebuttal, WFA/Basin have included \$3.87 million for water costs for the LRR. See WFA/Basin Rebuttal Exhibit III-F-6.

**viii. Surfacing for Detour Roads**

BNSF accepted WFA/Basin's quantities and costs for surfacing detour roads. See BNSF Reply Narr. at III.F-80.

**ix. Construction Site Access Roads**

On Opening, WFA/Basin did not include additional costs for construction site access roads because (1) the LRR is accessible from highways and roads, and (2) the costs for any needed roads are incidental under the BNSF construction specifications associated with the common earthwork unit costs that WFA/Basin used.

On Reply, BNSF accepted WFA/Basin's position that no additional costs for construction site access roads are necessary. See BNSF Reply Narr. at III.F-80 to 81.

**x. Environmental Compliance**

On Opening, WFA/Basin included \$1.26 million for environmental compliance costs. WFA/Basin's costs were based on the 1997 cost per route mile accepted by the Board in FMC (indexed to 4Q04), applied to the rail lines replicated by the LRR that were constructed within the last forty years, namely the Orin, Campbell and Reno Subdivisions (totaling 149.25 route miles). See WFA/Basin Op. Narr. at III-F-57 and Op. electronic workpaper "LRR GRADING.xls," tab "IIIF\_13Othr Cst."

On Reply, BNSF included \$2.25 million for environmental compliance. BNSF accepted WFA/Basin's application of this cost to the recently-constructed lines replicated by the LRR, but increased the route miles for these lines by 1.58 miles to

150.83 miles and rejected the cost per route mile used by WFA/Basin. BNSF developed a cost per route mile based on the environmental compliance costs incurred during the Walker-to- Shawnee project. See BNSF Reply Narr. at III.F-81 to 82 and BNSF Reply electronic workpaper "III F 2 LRR Grading.xls," tab "IIIF\_13Othr Cst."

As discussed in Section III-B-2, BNSF's additional 1.58 route miles are unnecessary. Therefore, on Rebuttal, WFA/Basin have continued to rely on the 148.25 route miles used on Opening for purposes of determining environmental compliance costs. However, WFA/Basin have accepted BNSF's cost per route mile for environmental compliance as it is based on more current information and specific to the area traversed by the LRR.

On Rebuttal, WFA/Basin have included \$2.23 million for environmental compliance costs for the LRR. See WFA/Basin Rebuttal Exhibit III-F-6.

**f. ROW Retaining Walls**

The single most ridiculous item in BNSF's road property investment evidence is its inclusion of \$237.53 million for right-of-way retaining walls. This one item alone (including mobilization, engineering and contingencies) represents more than 20 percent of BNSF's total road property investment costs for the LRR. Yet, it serves no purpose, other than to inflate the LRR's construction costs.

BNSF's entire analysis rests on its patently false assertion that WFA/Basin "emphatically stated they would not acquire any land for the LRR beyond a 100-foot

ROW.” See BNSF Reply Narr. at III.F-83. WFA/Basin’s Opening Narrative clearly states that the LRR right-of-way width “is based upon an average width of 100 feet in most areas.” See WFA/Basin Op. Narr. at III-F-3. WFA/Basin’s engineering experts further noted that to the extent BNSF purchased larger tracts (in some cases BNSF’s right-of-way is 200 or more feet), the LRR would not include such additional purchases. Id. That is all WFA/Basin’s experts said. They did not rigidly assume that the LRR would never need any right-of-way in excess of 100 feet. Hence, their use of an average right-of-way width of 100 feet.

BNSF conveniently interpreted WFA/Basin’s statement about an average right-of-way width to mean that the LRR would have to be built strictly within a 100-foot corridor at all times. In addition, BNSF claims that the average roadbed width over the entire LRR is nearly 104 feet, and that all the lines of the Campbell, Orin and Reno Subdivisions exceed 100 feet in roadbed width. See BNSF Reply electronic workpaper “III F 2 LRR Grading.xls,” tab “IIIF\_10 CY Grad.” Consequently, BNSF’s engineering witnesses purport to have calculated the massive retaining-wall investment that would be needed to keep the roadbed within a 100-foot right-of-way on these segments. See BNSF Reply Narr. at III.F-83 to 86.

BNSF’s arguments are absurd. Even assuming, arguendo, that the LRR’s right-of-way width is inadequate in some places, BNSF’s proposed solution defies logic and SAC principles.

First, BNSF's right-of-way width calculations are overstated as they reflect BNSF's overstated track miles, overstated roadbed width and overstated access roads. As discussed in Part III-B-2 above, BNSF has overstated the LRR track miles by 15.82 track miles, 13.59 miles of which is additional side track which increases the right-of-way width requirements. As discussed above, BNSF has also overstated the roadbed width of the Orin, Reno and Campbell subdivisions by using 28-foot rather than 24-foot roadbeds. Finally, BNSF has overstated the LRR's access road requirements. When all of BNSF's overstatements are corrected, the average right-of-way width requirements for the various LRR line segments range from a low of 66.21 feet on the Wendover to Moba Jct. segment to a high of 105.03 feet on the Donkey Creek to Reno segment, with the overall average on the entire LRR equal to 93.40 feet – or less than the average 100-foot right-of-way width used by WFA/Basin. See WFA/Basin Rebuttal electronic workpaper “LRR GRADING Rebuttal.xls,” tab “IIIF\_3R CY Grad.”

Second, BNSF's claim that it could not change WFA/Basin's specification of a maximum right-of-way width of 100 feet (which WFA/Basin has shown is an erroneous interpretation) is absurd. In its Reply filing, BNSF made, inter alia, the following 21 changes to specifications or requirements put forth by WFA/Basin on Opening:

1. Increased the number of set-out tracks;
2. Increased the length of the set-out tracks;
3. Modified the Guernsey Yard track configuration;
4. Used 141-lb. rail rather than 136-lb. rail;

5. Used concrete ties rather than wood ties;
6. Increased geotextile amounts;
7. Increased ballast depth;
8. Increased the length of concrete bridges;
9. Placed defective equipment detectors every 5 miles where concrete ties were substituted for wood ties;
10. Added a fueling facility for helpers;
11. Added a maintenance fluid storage facility;
12. Modified the locomotive shop building structure;
13. Modified the locomotive wash house;
14. Modified the wastewater treatment facility;
15. Modified the yard lighting specifications;
16. Increased snow fence quantities;
17. Added roadway signs;
18. Specified concrete grade crossings rather than rubber/asphalt;
19. Increased the size of the LRR's locomotive fleet;
20. Increased the size of the LRR's rail car fleet; and
21. Increased the number of personnel employed by the LRR.

Clearly, BNSF could have increased the LRR's right-of-way width if it was necessary.

Third, BNSF's retaining-wall solution violates SAC principles. Even if more right-of-way were actually necessary, building retaining walls for \$237.53 million is a platinum-plated solution. Given that the widest average roadbed width calculated under BNSF's methodology is 118.23 feet between Reno and Bridger Junction, even if the LRR needed an extra 20 feet of right-of-way (120 feet on average) on the Campbell, Orin and Reno Subdivisions, the total additional cost for this property is only \$413,600 using WFA/Basin's land values and assemblage factor and \$575,314 using BNSF's land values and assemblage factor. See WFA/Basin Rebuttal electronic workpaper "Extra Land Costs.xls." Obviously, a \$237.5 million "fix" for a non-existent problem must be rejected

by the Board. Moreover, even if the Board finds that additional right-of-way is needed, it should follow its approach in FMC where it increased the average of right-of-way width to 106 feet rather than the 100 feet proposed by the complainant or the 120 feet proposed by UP. Id. at 794-797.

### 3. Track Construction

On Opening, WFA/Basin's engineering experts designed the LRR's track specifications (and costs) on a straightforward premise: design a particular type of track structure for mainline tangents, mainline curves, yard tracks, etc., and apply those standards across the entire system. Thus, a section of mainline tangent track on the Orin Subdivision would be indistinguishable from a section of the same track on the Canyon Subdivision, and a section of mainline curve less than 3 degrees on the Campbell Subdivision would be indistinguishable from a section of the same track on the Front Range Subdivision.

On Reply, BNSF has so muddled this process that its end result is essentially useless. For example, BNSF has built some of the LRR with concrete ties and other parts with wood ties, and the locations of the interspersed wood ties result in inefficient and nonsensical construction techniques. BNSF follows a similar, inexplicable pattern with rail. For example, BNSF claims that it is placing 141-pound on the LRR where it has this rail in place on curves over 3 degrees on the Orin Subdivision, but it actually put 141-pound in other spots where it does not have 141-pound rail, such as



curves on the Front Range Subdivision (Moba Branch). See BNSF Reply Narr. at III.F-111. In addition, the quantities of rail delivered to each railhead are poorly documented, such that WFA/Basin's experts could not determine how or why the materials were apportioned.

Inefficiencies are rampant in BNSF's proposals for transportation of materials as well. For example, BNSF includes shipping for ties to Bridger Jct. (Orin Jct.) from Denver, Colorado via a route that runs north to Deer Lodge, Montana (via Utah and Idaho) and then back to Orin, WY – a distance of 1603.9 miles. See BNSF Reply Workpapers Vol. I, pp. III.F-390-391. A similar route is used for rail deliveries out of Pueblo, CO, except it is an extra 118 miles further than Denver. Id. In reality, these materials would be delivered to Shawnee Jct., not Orin Jct., because Shawnee Jct. is also geographically near the middle of the LRR system but can be accessed by rail from the east rather than going an extra 1,000 miles out of the way to the west. The distance from Pueblo to Shawnee Jct. via UP's Yoder-Egbert Line is only 443.8 miles, rather than the 1722.1 miles that BNSF used from Pueblo to Orin Jct. going via Deer Lodge, MT. See WFA/Basin Rebuttal electronic workpaper "Shipping Distances.pdf." In addition, subballast and ballast are also being delivered to Shawnee Jct.

WFA/Basin also note that BNSF's route selection is flawed because there are shorter routes to Orin Jct. and other railheads than the ones that BNSF used. For example, if rail was routed from Pueblo to Alliance to Gillette to Billings to Casper to

Orin Jct., the total distance is 1,228.3 miles or almost 500 miles shorter than BNSF's proposed route. See WFA/Basin Rebuttal electronic workpaper "Shipping Distances.pdf." Likewise, BNSF's route for rail from Laurel, MT to Moba Jct, WY is 1,228.6 miles (via Utah and Idaho) (see BNSF Reply Workpapers Vol. I, pp. III.F-386), but an available route going east via Alliance and Sidney, NE and around to Cheyenne, WY and then to Moba Jct. is only 770.9 miles. See WFA/Basin Rebuttal electronic workpaper "Shipping Distances.pdf."

BNSF compounds this kind of error when moving rail from Laurel to Guernsey. It assumes a route of 1,387 miles via Cheyenne, WY (see BNSF Reply Workpapers Vol. I, pp. III.F-387-388), but the route via Alliance and Northport, NE is only 620.6 miles. See WFA/Basin Rebuttal electronic workpaper "Shipping Distances.pdf."<sup>11</sup> When BNSF's routing errors on rail and ties alone are considered, BNSF overstates investment in those categories by over \$6 million.

BNSF also engaged in its own "cherry-picking" by accepting WFA/Basin's track labor quote for certain installation items, but then substituting higher-cost labor on other installation items when it served its purposes. Given BNSF's considerable protestations on the "cherry picking" issue, it is surprising that BNSF would opt to pick and choose from WFA/Basin's track installation bid. In any event, BNSF's more costly

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<sup>11</sup> WFA/Basin note that rail moving from Montana through Gillette to Alliance uses a small LRR segment between Donkey Creek and Campbell, but this segment will be built first and quickly due to its short length.

labor is suspect because the substituted labor costs assume that the cost per track mile is constant whether installing a single main track or triple track on a particular segment. WFA/Basin's track installation costs, on the other hand, specifically take into account the economies of scale that come with laying tracks side-by-side. BNSF's approach would eliminate all such benefits as discussed below.

On an administrative note, BNSF pointed out an indexing problem related to material costs in WFA/Basin's Opening evidence. See BNSF Reply Narr. at III.F-90 to 91. WFA/Basin have corrected this problem on Rebuttal. However, BNSF also indexed some items improperly, such as subballast, as noted below.

**a. Geotextiles**

On Opening, WFA/Basin included geotextile fabric under turnouts and road crossings (the quantities for road crossing geotextile were included in the crossing cost). BNSF accepted WFA/Basin's general approach to geotextile fabric except that BNSF added more material under the turnouts so that it will extend under the transition ties that BNSF has added on Reply. See BNSF Reply Narr. at III.F-92 to 93. Similarly, BNSF changed the crossing type that WFA/Basin used on Opening, which caused the quantities to change for road crossings as well (these costs are also included with BNSF's crossing costs). Id. at III.F-94. BNSF's additional geotextile under turnouts is unnecessary because the transition ties are unwarranted as explained below. Further, as explained in Part III-F-8 below, on Rebuttal WFA/Basin have accepted BNSF's change in crossing

type, and they included any geotextiles that BNSF did for crossings. Consequently, WFA/Basin continue to use the same approach to geotextile quantities, but have added an additional amount of fabric to cover the single crossover they omitted on Opening. See p. III-B-8 above.

**b. Ballast and Subballast**

**i. Ballast**

**(a) Sources and Unit Costs**

On Opening, WFA/Basin's engineers planned to use granite ballast from a quarry at Guernsey. However BNSF notes that WFA/Basin erred in their selection of this quarry because it mines only dolomite ballast and not granite ballast. Id. at III.F-96 to 97. WFA/Basin's engineers agree that granite ballast is a better choice than other rock types, and they have confirmed that granite ballast is not available from the quarry at Guernsey. Consequently, WFA/Basin have resourced their ballast to the Granite Canyon quarry as BNSF's did on Reply. Likewise, WFA/Basin used BNSF's unit costs.<sup>12</sup>

As for delivery points, WFA/Basin's experts used Guernsey, Shawnee Jct. and Donkey Creek. On Reply, BNSF used these same points and it added Moba as a fourth railhead. WFA/Basin agree that Moba is a suitable and appropriate delivery point

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<sup>12</sup> In its Reply Narrative BNSF said the unit cost was \${ } per ton, but it used \${ } per ton in its spreadsheets. Id. at III.F-101 to 102 and BNSF Reply electronic workpaper "III F Construction.xls," tab "Ballast Unit Cost." The number in the Narrative matches BNSF's source, so WFA/Basin have used \${ } on Rebuttal.

and have also used it on Rebuttal. WFA/Basin also agree with the mileages that BNSF used from Granite, WY to the four delivery points.

**(b)    Quantities**

The parties differ as to the total quantities of ballast for two reasons. First, BNSF used concrete ties on a large portion of the LRR. Concrete ties require an additional four inches of ballast, which obviously adds to the quantities. Second, BNSF built more and longer set-out tracks. As WFA/Basin's engineers are continuing to use wood ties and their original set-out track configuration, they have not added any additional quantities for these items on Rebuttal.

WFA/Basin also note several changes in their quantities from Opening to Rebuttal. In particular, BNSF pointed out on Reply that WFA/Basin made several ballast calculation errors. First, WFA/Basin did not remove the tie volume from their calculations. See BNSF Reply Narr. at III.F-99. Second, BNSF noted that WFA/Basin double counted the ballast quantities for interchange, set-out and helper tracks. Id. WFA/Basin have corrected these errors on Rebuttal. Finally, WFA/Basin have added an additional 0.03 route miles near Moba, which slightly raised the required quantities.

**ii.    Subballast**

**(a)    Unit Costs and Sources**

On Opening, WFA/Basin used two sources of subballast, Guernsey and Moorcroft, WY, which is located near Donkey Creek. The unit cost was based on a quote

from Guernsey Stone in Guernsey, WY. Subballast destined for the Guernsey railhead was priced without transportation as the industrial track lead connects directly to the proposed Guernsey Yard site. Subballast was also delivered from Guernsey to Shawnee Jct. Finally, WFA/Basin provided for shipping the subballast from Moorcroft to Donkey Creek.

On Reply, BNSF changed the sources and costs of subballast for the LRR. First, BNSF indicated that it could not find a quarry in Moorcroft, and so it ignored that source or any others closer to Donkey Creek. Id. at III.F-98. It then shifted the source to the Granite Canyon quarry for subballast bound for Donkey Creek and Shawnee Jct. Id. BNSF also used its Shawnee to Walker unit costs from this origin. Id. at III.F-103. As it did with ballast, BNSF also added Moba as a destination. Id. at III.F-104. Finally, BNSF added trucking costs for subballast being marshaled in Guernsey. Id. at III.F-103. WFA/Basin address each BNSF change below.

Moorcroft, WY is located about 17 miles east of Donkey Creek on BNSF's Black Hills Subdivision. On Opening, WFA/Basin determined that a company called First Energy Services Company sold aggregates there, and that it had direct access to BNSF. However, WFA/Basin did not receive a separate quote for subballast at that time.

On Reply, BNSF stated it could not find a quarry in Moorcroft. Id. at III.F-98. As a result, WFA/Basin investigated their source further. A check with First Energy revealed that the subballast is not actually quarried in Moorcroft. See WFA/Basin

Rebuttal electronic workpaper “Subballast from First Energy.pdf.” Instead, it is mined about 20 miles to the northeast in Sundance, WY. First Energy did confirm that it had rail access at Moorcroft. Id. However, WFA/Basin’s reliance on the Guernsey Stone subballast costs on Opening understated the actual costs for aggregates at Moorcroft because First Energy indicated that subballast would cost \$11.00 per ton. This figure includes any required deliveries from Sundance to Moorcroft. Id. Thus, WFA/Basin have revised their delivered costs to Donkey Creek to reflect the updated unit costs plus rail shipping to Donkey Creek from Moorcroft.

As for shipments to Shawnee Jct., BNSF’s delivered cost per ton for subballast from Granite Canyon is lower than the per ton cost that WFA/Basin used on Opening for deliveries to Shawnee Jct. from Guernsey. Accordingly, WFA/Basin have used BNSF’s revised unit cost and supplier from its reply evidence. WFA/Basin also agree that Moba is a useful fourth delivery point, and they have applied BNSF’s delivered price to that point as well.

WFA/Basin disagree with BNSF’s revisions to the subballast transportation cost from Guernsey Stone. In particular, BNSF has added trucking costs to move subballast from MP 94.1, where the Guernsey Stone industrial track connects with the current BNSF and proposed LRR Guernsey Yard, to the LRR’s connection with the residual BNSF at MP 91.40. See BNSF Reply Narr. at III.F-98.

BNSF's trucking additive is unwarranted. The subballast can simply be dumped right at the connection point at MP 94.1. The subballast will not be moved on the residual BNSF under BNSF's or WFA/Basin's Rebuttal subballast plans. Thus, it can be moved around in the Guernsey Yard as need be by the track construction contractor from the dump point, and the subballast can be dispersed further along the proposed LRR lines as track construction north of Guernsey progresses. Consequently, WFA/Basin have not included any trucking costs on Rebuttal.

WFA/Basin also determined that BNSF improperly indexed the Granite Canyon subballast unit cost. In particular, BNSF first indexed the unit cost from 2003 to 4Q04. See BNSF Reply electronic workpaper "III F Construction.xls," tab "Ballast Unit Cost," cells L5, L6 and L8. BNSF then indexed the delivered subballast costs again in cell J8 on tab "Material Unit Cost." Thus, BNSF indexed the subballast twice – and it also indexed the transportation costs, which did not require indexing. WFA/Basin have corrected this error on Rebuttal.

**(b) Quantities**

On Opening, WFA/Basin's engineers developed subballast quantities based on their basic LRR track designs for different track types. On Reply, BNSF agrees with the amount of subballast needed under the various tracks. See BNSF Reply Narr. at III.F-99. However, BNSF suggests that in order to achieve the desired levels of subballast when compacted, it regularly adds a compaction factor of between 40 and 44 percent to



the subballast quantities. Id. at III.F-140. Thus, BNSF opted to use a 1.94 conversion factor versus the 1.5 conversion factor that WFA/Basin used. Id. The conversion factor assumes that 1.5 tons is equal to one cubic yard of subballast, or in BNSF's case 1.94 tons is equal to one cubic yard of compacted subballast.

WFA/Basin's engineers have reviewed BNSF's Reply materials on this point and consulted with a Wyoming quarry operator to determine the necessity of BNSF's increased conversion factor. While WFA/Basin's engineers agree that a compaction factor is appropriate for subballast because the 1.5 conversion factor is for loose material, BNSF's figure is questionable. For example, BNSF opted to use the 1.94 figure based on an email from Jack Moy, BNSF's Manager Engineering in Denver, Colorado. See BNSF Reply Workpapers Vol. II, p. III.F-289. {

} Thus, WFA/Basin's engineers consulted with Pete Lien & Sons quarry in Wyoming on this issue. Its representative indicated that this firm uses a conversion of 3,510 pounds per cubic yard for 95% compacted material (

}) – a conversion factor of 1.755. See WFA/Basin Rebuttal electronic workpapers "Subballast from Lien and Compaction.pdf" and "BNSF Subballast Specs.pdf." As BNSF's figure cannot be sufficiently parsed with respect to { }, WFA/Basin have used the 1.755 compaction factor on Rebuttal.

c. Ties

On Opening, WFA/Basin used Grade 5, 7" x 9" x 8'-6" timber ties on mainline track spaced at 20.5-inch intervals. For yard, setout and helper tracks, WFA/Basin used Grade 3, 6" x 8" x 8'-6" timber ties spaced at 24-inch intervals. BNSF agrees with the specifications that WFA/Basin used for yard, setout and helper tracks. BNSF also agrees with WFA/Basin's mainline tie sizes. From that point, BNSF's position on tie type, spacing and related-anchoring activities departs significantly from WFA/Basin's Opening proposal. The points of disagreement are discussed in turn below.

i. Tie Type

As noted above, WFA/Basin used Grade 5 wood ties on all mainline track. BNSF argues that because it uses mostly concrete ties on its coal lines today, the LRR should also use concrete ties. See BNSF Reply Narr. at III.F-105 to 106. Of course, as noted above, BNSF did not actually use concrete ties everywhere on the LRR. Rather it opted to use them only where it has them today, thereby conceding that wood ties can be used in this application. Id. at III.F-107. In any event, as WFA/Basin noted at the outset of Part III-F, the LRR and current Orin Subdivision operations are not comparable. Over the long term, the disparity between the LRR's tonnage and the anticipated growth of PRB coal tonnage by both UP and BNSF may well justify the greater investment in concrete ties for those railroads. However, it does not make economic or operational sense for the LRR to make a similar investment. Moreover, wood ties remain the most

popular tie on most railroads. See WFA/Basin Op. Narr. at III-F-62. In addition, as also noted above, NS continues to use wood ties on its heavy-haul coal routes in the Virginia and West Virginia coalfields. Thus, the continued use of wood ties by real-world railroads in heavy-haul situations supports WFA/Basin's use of them here.

BNSF also argues that the precedential support for wood ties is limited to the WTU decision. This is not true, as BNSF well aware. The Board has accepted wood ties in four PRB coal rate cases decided after WTU. See WPL at 88; PPL I at 23; TMPA I at 28; Xcel I at 104. Moreover, BNSF concurred with the use of wood ties as recently as its Reply evidence in AEP Texas, which was filed just last year. See WFA/Basin Op. Narr. at III-F-61.

WFA/Basin also note that concrete ties have considerable drawbacks, which were noted on Opening. Id. at III-F-61 to 62. Beside the additional investment costs, concrete ties make the track structure more rigid, which places a much greater strain on the roadbed, subballast and ballast. And while concrete ties are valuable in holding gauge in curves, the LRR does not have a lot of curves. Some additional maintenance-related drawbacks of concrete ties discussed in the public evidence in the AEP Texas case are repeated here for the Board's benefit:

- Rail seat abrasion: Concrete tie abrasion results when the material under the pad is lost to abrasion, hydraulic action and motion transmitted to rail. The loss appears in the form of localized breakdown of cement paste under the rail seat. This abrasion results in fastener fallout, running rail and wide gauge. Each of these conditions can result in sun kinks in the rail and slow orders on the track.

Fastener fallout along with running rail can result in sun kinks due to the rail's not being fastened tightly to the ties. As the fasteners deteriorate, the rail is not clamped as tightly to the tie as it once was. This results in rail creep. Rail creep can result in sun kinks when temperatures rise into the 90's and 100's and the rail is not fastened tightly to the ties. Loose connectors can also result in wide gauge. As the gauge increases, the FRA guidelines require that slow orders be placed on particular track sections.

- Accelerated rail wear: Track lateral resistance tests performed on UP trackage by DOT's Facility for Accelerated Service Testing (FAST) have confirmed that use of concrete ties in heavy curvature can result in increased rail wear and problems with stability. These problems can have a direct impact on maintenance activities and refute any notion that the use of concrete ties would be preferable to the use of wood ties.
- Maintenance: Track managers/maintainers face significant practical problems when maintaining concrete tie track. Defective concrete tie replacement and disposal require resources far in excess of those needed for maintaining wood tie track.
- Replacement: When a concrete tie becomes defective, whether because of rail seat abrasion, tie pad failure, fastener fallout or cracking, requiring replacement, labor and equipment resources needed to remove an 800-pound tie are very significant. This work cannot be done manually, as would be the case with removal of a wood tie (which typically weighs approximately 180 pounds). The logistics of concrete tie supply, replacement and removal involve significant manpower and heavy equipment. On the other hand, two persons using hand tools are able to deliver the new wood tie, and replace and remove the defective tie.

In addition, replacement of concrete ties has a more direct impact on rail operations. In the event that an equipment-caused derailment (*e.g.*, a broken flange) occurs, ties are totally destroyed. Such events typically require taking the railroad out of service while the ties are replaced. Wood ties, on the other hand, can quickly be laced in and trains run, slowly until the repairs are completed. Accordingly, it is extremely risky to have concrete ties on the TNR, particularly on single track portions.

- Disposal: Wood ties are easily picked up and transported to either land fills or closed burning, energy producing facilities. Concrete ties, as noted, are

significantly more difficult to handle because of their substantial weight. Disposal is thus far more difficult, and expensive, as it necessitates the use of additional manpower and/or heavy equipment. Equally problematic is the fact that, unlike wood ties, there is no readily available market for the disposal of concrete ties.

See Complainant's Rebuttal Narrative (Public Version) in AEP Texas, Docket No. 41191 (Sub-No. 1), filed July 27, 2004, at III-D-173 to 175.

In addition, Mr. Reistrup, WFA/Basin's chief operating witness, notes that Amtrak switched from wood ties to concrete ties for track programs when he was its President. However, concrete ties were a disappointment in many respects. For example, when derailments occurred the track was destroyed over a longer distance than with wood ties. More importantly, the life span of the ties, which Amtrak expected to be about 60 years, turned out to be much shorter. Indeed, many ties have already been replaced in less than 30 years.

In light of the above, WFA/Basin continue to use wood ties on Rebuttal.

**ii. Tie Spacing**

On Opening, WFA/Basin's engineers spaced mainline track ties at 20.5-inch intervals. This standard is consistent with that used in AEP Texas where BNSF agreed to this specification. It is also consistent with the WTU decision at 707. BNSF argues that it now uses 19.5-inch spacing for wood ties in heavy axle applications. See BNSF Reply Narr. at III.F-105. Therefore, in the limited circumstances where BNSF used wood ties, it changed the spacing to 19.5-inches.

BNSF's reduced tie spacing is not required. AREMA recommends that the subgrade bearing pressure not exceed 25 pounds per square inch ("PSI"). See WFA/Basin Rebuttal electronic workpaper "Subgrade Pressure Calcs.pdf." WFA/Basin's engineers have determined that the pressure on the LRR's subgrade is less than 20 PSI when a 286,000 pound car is traveling at 60 mph. Id. Thus, closer tie spacing is not necessary.

BNSF agrees with WFA/Basin's 24-inch spacing on setout, helper and interchange tracks. See BNSF Reply Narr. at III.F-107.

**iii. Tie Unit Costs**

The parties agree on the basic unit costs for Grade 5 and Grade 3 ties that WFA/Basin developed on Opening, excluding indexing corrections. However, for Grade 5 ties, BNSF argues that WFA/Basin failed to include a 10 percent profit additive to the bare Means unit cost that WFA/Basin used. Id. at III.F-107 to 108. In particular, BNSF suggests that the profit additive is for the benefit of the supplier rather than the contractor that places the tie, which profit is already covered in the track labor units costs used by both parties. BNSF's assertion is incorrect.

The Means unit cost already includes the supplier's profit margin. The profit margins are for the marked-up costs of materials by the contractor, not the supplier. In particular, Means states that "[s]ome prices are listed as bare costs, others as costs that include overhead and profit of the installing contractor." See BNSF Reply Workpapers

Vol. I, p. III.F-303. This theme is carried through the unit cost example that BNSF reproduced in its electronic workpaper file “ties.pdf.” Indeed, heading No. 9 on page 3 of that workpaper shows the ten percent additive as part of the contractor’s overhead and profit, not the supplier’s. Indeed, suppliers are never mentioned. In any event, WFA/Basin’s engineers contacted Means and its representative confirmed that any profit the supplier may or may not have made is already included in the bare costs. See WFA/Basin Rebuttal electronic workpaper “Means - Profit on Materials.pdf.” Consequently, WFA/Basin have continued to use their Opening unit cost for Grade 5 ties (indexing errors were corrected).

WFA/Basin note again that BNSF’s concrete tie delivery routing is circuitous and illogical – particularly in routing ties from Denver to Bridger Jct. rather than to Shawnee Jct., which would save nearly 1,000 miles. Interestingly, BNSF’s Reply Narrative suggests that BNSF intended to ship the ties to Shawnee Jct. rather than Bridger Jct., but it did not do so in its spreadsheets. See BNSF Reply Narr. at III.F-108.

#### iv. Transition Ties

On Opening, WFA/Basin did not include transition ties before turnouts, bridges or road crossings. BNSF’s argument for transition ties, namely that these ties are needed in order to protect the locations from changes in rigidity of the track structure (id. at III.F-109), is flawed in several key respects. First, BNSF does not distinguish between the need for transition ties on the LRR as BNSF has built it (i.e., with concrete ties)

versus WFA/Basin's proposed track structure. Second, BNSF ignores the fact that it does not have transition ties in all instances on the lines the LRR is replicating. Third, other Class I railroads do not use transition ties.

The LRR is using a wood tie-based track structure on its mainline track. Consequently, there is no transition that needs to be made when approaching a turnout or road crossing that is built on the same basic substructure. Indeed, transition ties are not recommended by AREMA, nor are they used by all railroads as a construction standard. See WFA/Basin Rebuttal electronic workpaper "Transition Ties.pdf." For example, CSXT's turnout and road crossing diagrams show standard 8'6" ties ahead of the switch points and crossing. Id. Transition ties might be needed at bridges if they were open deck bridge (i.e., the transition was from ballasted mainline track to open steel or concrete structures), but all of WFA/Basin's bridges are ballasted deck thereby obviating the need for transition ties at bridge approaches.

**d. Rail**

**i. Specifications**

On Opening, WFA/Basin specified 136-pound premium rail on all mainline track between Donkey Creek and Guernsey. 136-pound premium rail is also specified for curves three degrees or greater on the LRR's branch lines. 136-pound standard rail is specified for tangents on branch lines and for mine spurs and interchange tracks. 115-pound relay is used in yards.



136-pound rail is the primary rail used on the lines being replicated by the LRR. Indeed, 72 percent of the rail on the Orin Line is 136-pound rail, 20 percent is 132-pound rail and 8 percent is 141-pound rail. See WFA/Basin Rebuttal electronic workpaper “rail data.xls.” Thus, 136-pound is demonstrably feasible.

BNSF agrees that 136-pound rail is acceptable for tangents. In fact, it specified 136-pound standard rail where WFA/Basin used premium rail. See BNSF Reply Narr. at III.F-111. However, BNSF did not use 136-pound premium rail in curves three degrees or greater. Instead, BNSF opted for 141-pound premium because that is what it has used for rail replacement in such curves since 2002. Id. at III.F-110.

BNSF’s rail specification swaps are unnecessary and they further complicate the stand-alone cost process with superfluous changes. BNSF never suggests that 136-pound premium in curves is not feasible or appropriate for the LRR. Instead, it simply rests on its running theme that it now uses 141-pound premium in curves and therefore the LRR should, too. NS uses 136-pound rail in the very heavily-curved territory of the eastern coalfields. Accordingly, WFA/Basin’s engineers and operating witnesses see no reason to change this standard. WFA/Basin’s engineers have also continued to use premium rail where it was specified on Opening.

## **ii. Rail Quantities**

For the most part, the parties agree on the total quantities of rail needed by the LRR, except for the differences in track miles that are addressed above in Part III-B-2.

However, BNSF raised two issues regarding crossovers and curves that are addressed below.

(a) Crossovers

BNSF states that No. 20 crossovers placed on 25-foot track centers (rather than 15-foot track centers) require an additional 162 feet of rail to connect the end points of the turnouts. See BNSF Reply Narr. at III.F-112 to 113. WFA/Basin's engineers have reviewed the turnout schematics provided by BNSF, and they agree that 162 additional feet of rail are needed in this application. Therefore, WFA/Basin have included the additional rail quantities on Rebuttal.

(b) Curves

BNSF argues that WFA/Basin's total rail quantities are understated because they removed the spirals from curves. Id. at III.F-114. BNSF is correct that the spirals were removed. However, WFA/Basin's engineers did this on purpose because their rail specifications call for premium rail in curves three degrees or greater. The only way to determine the parts of the curves that are three degrees or greater is to remove the less than three degree spiral information from the curve data and include the removed track lengths in the tangent track quantities. Otherwise, any curved area that eventually exceeded three-degrees would be built as a three degree curve throughout even though it is not in fact three degrees or greater for most of the curve. Thus, WFA/Basin's rail

quantities are not understated because such track was built to tangent track specifications and included in that quantity.

As for the transition from tangent to superelevated track, the construction of the spirals, and therefore the transition from tangent to superelevated track, remains the same whether or not the spreadsheets show the spirals. In other words, neither WFA/Basin nor BNSF have provided an exact transition from tangent to superelevated track because such transitions are accounted for during construction. Rather, BNSF simply opted to assume that the entire curve is superelevated, when in actual practice that would not be necessary. Thus, WFA/Basin have continued to follow their approach developed on Opening.

WFA/Basin also agree that they omitted three curves greater than three degrees (id. at III.F-116), and have added those curves on Rebuttal.

Finally, BNSF correctly notes that on Opening WFA/Basin actually provided premium rail on all curves, even though they intended to use premium rail only on curves three degrees or greater. Id. WFA/Basin have corrected this error on Rebuttal where appropriate, i.e., on the LRR's branch lines. (Because WFA/Basin's engineers have specified premium rail on all portions of the main tracks between Donkey Creek and Guernsey, all curves between these points are built with premium rail.)

**(c) Yard Tracks**

BNSF accepts the use of 115-pound relay rail in yards. Id. at III.F-116.

BNSF proposes an additional 0.68 miles of yard track to accommodate its revisions to the locomotive shop. As explained below in Part III-F-7-c, BNSF's additional trackage is unnecessary, but WFA/Basin's have added 0.05 track miles for a locomotive lay-up track near the west end of the locomotive shop. Otherwise, WFA/Basin continue to use the same quantity of yard track as proposed on Opening.

**(d) Interchange Tracks**

The parties agree on the rail weights and quantities for interchange tracks.

Id. at III.F-117.

**(e) Set-Out Tracks**

On Opening, WFA/Basin's experts specified 860-foot set-out tracks that provide for 600 feet in the clear. On Reply, BNSF argues that the total distance should be increased to 925 feet because additional rail is required when a No. 10 turnout is set on 25-foot track centers. Id. at III-F.117 to 118. However, WFA/Basin's set-out tracks are set on 15-foot track centers – there is no operational need for 25-foot track centers between mainline tracks and setout tracks as there is between the mainline tracks themselves. Consequently, no additional track length is necessary as BNSF suggests. WFA/Basin also addressed the setout track length in detail in Part III-B-2-c above.

On Reply, BNSF added additional set-out track for two reasons. First, it argued that some set-out tracks should be lengthened to accommodate MOW equipment. Id. at III.F-117. Second, it argued that the use of concrete ties requires that additional DEDs be installed, at closer intervals, which also requires additional set-out tracks to be placed near the new DEDs. As explained in Parts III-B-2-c and III-D-4 above, the LRR does not require additional MOW equipment storage space. Similarly, LRR is not using concrete ties for the reasons discussed above. Therefore, WFA/Basin have not added any additional set-out track quantities.

**iii. Unit Costs**

WFA/Basin based their unit costs for 136-pound rail, both premium and standard, on a 2004 price list that BNSF provided in discovery. BNSF complains on Reply that WFA/Basin cherry-picked these unit costs because the price of rail went up in 2004 versus 2003, and that the 2004 price list WFA/Basin used was updated in later in 2004 to reflect the increases. Id. at III.F-119. In support, BNSF cites several AFEs that it used to determine new 2004 prices. Id. at III.F-119 to 120. WFA/Basin's engineering witnesses have reviewed the materials provided by BNSF, and they take issue with BNSF's restatement of the rail unit costs.

First, BNSF's restatement results in illogical unit cost disparities. In particular, under BNSF's pricing, 136-pound standard rail is more expensive than 136-pound premium rail, which is in turn more expensive than 141-pound premium rail. Id. at

III.F-120. Changes in steel prices cannot account for this disparity as the heavier rail should cost more. WFA/Basin's engineers suspect that the disparity has more to do with the volumes involved. For example, BNSF's 136-pound premium rail price is based on two orders for 160 feet of rail, which is obviously not comparable to the LRR's quantities.

Second, if BNSF's price list was not suitable BNSF should have said so when it produced it in discovery. The Board has rejected the "our price list is bad" argument as recently as the Xcel I decision. Id. at 102-103. Finally, under the LRR's construction schedule the rail orders would be placed in 2003. Consequently, WFA/Basin's use of a figure that covers that time period is appropriate.

BNSF also adjusts the unit costs to reflect two additional rail delivery points, Moba and Guernsey. WFA/Basin agree these additional delivery points are useful, and have redistributed the rail deliveries to reflect these two additional points. However, as noted above, BNSF's rail shipments have been poorly routed thereby jacking up transportation costs. WFA/Basin, therefore, provided for more logical routes on Rebuttal. See WFA/Basin Rebuttal electronic workpaper "Shipping Distances.pdf."

**e. Field Welds/Compromise Welds**

The parties agree on the costs and quantities for field weld kits. The parties also agree on the costs for compromise welds. The parties disagree on the compromise weld quantities for two reasons. First, BNSF has added numerous set-out track locations,

thereby necessitating more 136-pound-to-115-pound compromise welds. Second, BNSF added more compromise welds in the yards due to WFA/Basin's inadvertent use of 136-pound turnouts on yard tracks.

WFA/Basin did not intend to use 136-pound turnouts in the yards as evidenced by its installation quotes from Windgate. See WFA/Basin Op. electronic workpaper "Windgate Track Construction.pdf." However, WFA/Basin's engineers inadvertently failed to use a 115-pound turnout cost. As the cost would likely less for a 115-pound turnout, WFA/Basin's engineers have conservatively continued to use their Opening unit cost for such turnouts, but they have not added any additional compromise welds. As for the additional welds for set-out tracks, WFA/Basin have not included the extra set-out tracks proposed by BNSF on Reply, and therefore have not added any additional compromise welds related to these tracks.

**f. Insulated Joints**

The parties agree on the unit cost and installation cost for insulated joints. The differences in quantities are discussed in Part III-F-6-1 below, which addresses the LRR's signal system.

**g. Switches (Turnouts)**

**i. Turnout Specifications**

The parties agree on the turnout specifications, such as size, powered or manual, etc.

ii. Quantities

BNSF raised several turnout quantity arguments on Reply. First, BNSF noted that WFA/Basin made several quantity errors based on their track configuration, thereby undercounting No. 10 turnout by four and No. 20 turnouts by seven. See BNSF Reply Narr. at III.F-124. WFA/Basin's engineering experts disagree. They have reviewed the track diagrams they used on Opening and their automated count of turnouts and determined that all necessary turnouts have been accounted for on Opening and Rebuttal.

Second, BNSF changed the turnout quantities to reflect track configuration differences between the parties. In particular, BNSF added more No. 10 turnouts to reflect its additional set-out tracks and minor changes in the Guernsey Yard. Id. As WFA/Basin are not reconfiguring the trackage in the vicinity of the locomotive shop in Guernsey Yard or adding additional set-outs tracks, it did not add additional No. 10 turnouts (aside from the single additional No. 10 turnout needed for the 0.05-mile lay-up track near the locomotive shop). Likewise, BNSF added a No. 20 turnout at Nacco Jct. to reflect its proposed second southerly mine lead extending toward the North Antelope/Rochelle Mine. Id. However, as explained in Part III-B-1-a above, the additional lead track is not necessary – a result confirmed by both parties' RTC modeling. Thus, WFA/Basin's engineers have not added a second No. 20 turnout at Nacco Jct.



Finally, BNSF added two No. 20 turnouts for the crossover that WFA/Basin included in the LRR track configuration for purposes of the RTC modeling, but which they inadvertently excluded from their track diagrams and turnout quantities. Id.; see also p. III-B-8 above. This error has been corrected on Rebuttal and these two turnouts have been included.

**iii. Unit Costs**

The parties agree on the unit costs for the turnout materials, but they differ on the labor costs to install the turnouts. These differences are discussed in the track labor section below.

**iv. Other Turnout Components**

**(a) Switch Heaters**

The parties agree on the unit cost and installation cost for switch heaters and associated propane tanks. The quantity differences are driven by BNSF's different track configuration.

**(b) Switch Stands**

The parties agree on the costs for switch stands and powered switch machines. However, BNSF added targets and target masts to low-target switch stands. Id. at III.F-127. BNSF's inclusion of costs for these items is a double count because the A&K switch stand cost that WFA/Basin used on Opening (and which BNSF accepted)

includes the target and target mast. See WFA/Basin Rebuttal electronic workpaper “Switch Stands.pdf.”

**(c) Generators**

On Opening, WFA/Basin’s engineers did not add generators because WFA/Basin’s signals expert, Mr. Grappone, determined that the batteries included with the signal system were capable of operating signals and the low voltage switch mechanisms for more than 24 hours without access to commercial power. In particular, Mr. Grappone mated 24 volt, 400 amp hour batteries with 24 Volt DC switch mechanisms thereby negating the need for generators. Indeed, one switch could be activated nearly 7,000 times before the battery capacity is depleted. See WFA/Basin Rebuttal electronic workpaper “Switch Throws.pdf.”

WFA/Basin’s engineers did develop a unit cost for generators, but contrary to BNSF’s suggestion (BNSF Reply Narr. at III.F-127), they did not exclude generators by accident. As discussed above BNSF’s inclusion of such generators on Reply is unnecessary. Id.

**h. Other Track Materials**

**i. Rail Lubricators**

The parties agree on the unit cost and installation cost for rail lubricators. However, BNSF correctly points out that WFA/Basin applied an incorrect unit cost for

the lubricators. See BNSF Reply Narr. at III.F-128. This error has been corrected on Rebuttal. The parties also agree on the quantities of rail lubricators.

**ii. Tie Plates, Clips, Spikes and Anchors**

**(a) Specifications**

On Opening, WFA/Basin's engineers used four spikes per tie (two per plate) based on AREMA standards and the actual locations on the lines being replicating where this spiking pattern was used. See WFA/Basin Op. Narr. at III-F-67. BNSF argues for four spikes per plate because it uses four spikes in this territory as a rule, though obviously some exceptions exist. See BNSF Reply Narr. at III.F-130. WFA/Basin's engineers disagree that four spikes are necessary. Not only does AREMA not require more than two spike per plate, but NS is using this same spiking pattern on heavy-axle lines, and its heavy axle testing indicated that two spikes per tie worked with only small adjustments to the material being used. See WFA/Basin Rebuttal electronic workpaper "NS Paper.pdf." Consequently, WFA/Basin's engineers continue to use two spikes per plate.

On Opening, WFA/Basin's engineers also included box anchors on every tie for 200 feet on either side of a crossing or turnout. BNSF notes that WFA/Basin excluded one of the three tracks outside of the turnout in its calculations. See BNSF Reply Narr. at III.F-131. WFA/Basin have added additional box anchors to correct this error.

The parties agree on the other specifications that WFA/Basin used on Opening. Of course, unlike WFA/Basin, BNSF proposes to build most of the LRR with concrete ties. Consequently, BNSF's quantities include a variety of clips, pads and insulators that are not applicable to WFA/Basin's specifications for the LRR.

**(b) Unit Costs**

The parties agree on the unit costs for plates, spikes and anchors. However, BNSF noted that WFA/Basin's costs were not indexed properly. WFA/Basin have also corrected this error on Rebuttal.

**iii. Derails and Wheel Stops**

After making a correction for indexing, the parties agree on the unit costs for derails and wheel stops. The total quantities differ due to BNSF's inclusion of additional set-out tracks. As WFA/Basin are not including those tracks on Rebuttal, they continue to use their Opening quantities for derails and wheel stops.

**i. Materials Transportation**

The parties have addressed materials transportation under the various individual material cost items. WFA/Basin do agree with BNSF, however, that shipments of rail, ballast and subballast to additional locations is beneficial. Therefore, they have adjusted those costs and delivery points accordingly. On the other hand, BNSF's routing of items such as rail is inconsistent and irrational, as noted above, and WFA/Basin have made any necessary adjustments.

**j. Track Labor and Equipment**

Track labor and equipment represent one of the biggest difference in costs between the parties (\$41 million). As discussed below, BNSF's arguments against WFA/Basin's track installation costs are unfounded. In addition, BNSF, as noted above, "cherry picked" the installation costs it either liked or could not otherwise increase. More importantly, BNSF's version of these costs does not recognize any economies of scale or efficiencies inherent in laying double track versus single track.

First, BNSF argues that WFA/Basin's track installation contractor, Windgate, is a Pennsylvania company that does not operate in Wyoming, and, therefore, it is not familiar with how to construct lines in the PRB. See BNSF Reply Narr. at III.F-133. This argument is preposterous. First, the most local-specific construction issues are those associated with grading and preparing the subgrade. Installing subballast, ballast and track on properly prepared subgrade is essentially the same no matter where the lines are located. As the grading contractor, not Windgate, is responsible for preparing the subgrade, BNSF's arguments on this point are moot.

BNSF also argues that the labor cost estimate is "made for litigation" and based only on the "barest information." Id. The Windgate quote was not "made for litigation," but on the other hand, WFA/Basin's engineers cannot simply waste vendors' time with extended inquiries related to projects that will never actually be built. Thus, WFA/Basin's engineers necessarily limited their details of the project to the configuration

of the LRR (track diagrams) and related track cross sections. Nevertheless, WFA/Basin did ask Windgate to price the project in a variety of ways (e.g., subballast separate from track), and include related work such as installing rail lubricators.

BNSF's arguments also conflict with its actions. BNSF complains about the Windgate quote, but nevertheless relied on it in several key respects, including installing subballast, which is a major piece of the track installation cost. Id. at III.F-136. BNSF cannot have it both ways.

BNSF's other, unstated rationale for ignoring the Windgate quote when it suits it is that it has changed so many specifications (i.e., tie type and spacing, rail weight, and ballast sections in concrete tie areas) that the Windgate quote can no longer apply. As WFA/Basin's engineers have already demonstrated the feasibility of their track material specifications, BNSF's revised track installation costs are superfluous.

The WFA/Basin engineers further submit that BNSF's calculation of track construction costs on concrete ties (based on the Walker-to-Shawnee project) is fatally flawed in that it does not consider the economies of building multiple tracks side-by-side as the Windgate quote does. For example, Windgate's quote is \$150,790 for a single track segment of mainline track, but the cost for a double track segment is \$258,500, which demonstrates the savings associated with building side-by-side track. See WFA/Basin Op. electronic workpaper "Windgate Track Construction.pdf." BNSF's position is especially egregious given that the subballast installation costs that BNSF

accepted from Windgate recognizes the benefits of building side-by-side tracks. In particular, Windgate's cost per mile for subballast installation on a single-track, 24-foot roadbed is \$60,600, but its cost for a double-track segment is \$96,150. Id. As BNSF accepts such efficiencies for subballast installation, it cannot then deny them in its recalculation of mainline track costs.

There are two other problems with BNSF's mainline track installation cost per mile. First, BNSF's costs are based on the use of its unionized work force, which simply cannot compete with non-unionized contract labor forces. Second, BNSF's cost makes no distinction between installing wood ties versus concrete ties. Although BNSF builds some segments of the LRR with wood ties, there are still differences between the construction activities that BNSF's track installation costs do not even attempt to recognize. Yet, BNSF constructs wood tie track segments at the same cost per mile as concrete tie track segments. See BNSF Reply electronic workpaper "III F Construction.xls," tab "Total Cost," row 67. For all of the above reasons, BNSF's mainline track installation costs should be rejected.

In addition to arguing for increased rail installation costs on mainline track, BNSF argues for similarly expensive yard, set-out and interchange track construction. In support of its costs, BNSF cites a yard expansion project in Joliet, IL where BNSF used a contractor rather than its own forces. See BNSF Reply Narr. at III.F-135. However, those construction costs suffer two fatal problems. First, that project was built on

concrete ties, not the wood ties that WFA/Basin used and BNSF accepted for these tracks.

See BNSF Reply electronic workpaper "III F Track Labor.xls," tab "Yard," row 4.

Handling concrete ties is substantially more expensive due to their weight, and the concrete ties require more ballast thereby driving the ballast-laying labor cost up.

Second, the contractor used unionized labor on the job just as BNSF does for its track installations. Indeed, WFA/Basin's experts suspect that BNSF's labor agreements would have prevented the contractor from getting the job if union labor was not used. In any event, the job cost details included in BNSF's Reply electronic workpaper "III F 3 Yard Track Labor.txt" include entries such as "accrued union fringes" under the various labor-related cost categories, such as unloading and distributing concrete ties. Id. at 7. BNSF's track installation costs for yard, set-out and interchange tracks involving concrete ties are neither applicable nor comparable to those that WFA/Basin's engineers used on Opening and Rebuttal.

Similarly, the track installation costs that BNSF developed for turnouts are not comparable to those used by WFA/Basin's engineers because they assume the same concrete ties from the Joliet project and the same unionized labor force. Again, WFA/Basin have used the Windgate quote for installation costs.

In light of the above, WFA/Basin's engineers continue to use the per mile track installation costs they applied on Opening.



#### 4. Tunnels

On Opening, WFA/Basin used BNSF's tunnel inventory to determine the linear feet of tunnels that the LRR would require. WFA/Basin then applied the cost per linear foot for tunnel construction derived from the Coal Trading decision, indexed to 2004. On Reply, BNSF points out that WFA/Basin's indexing was incorrect, resulting in an understatement of the tunnel costs. Id. at III-F.137. WFA/Basin agree that their indexing was incorrect. On Rebuttal, they have revised their per-foot cost of construction to match that used by BNSF.

WFA/Basin did not specify the type of tunnel construction being used on the LRR (e.g., concrete, steel or timber) because the Coal Trading decision does not specify the type. In Part III-D-4 of its Reply, BNSF has included certain timber tunnel-related maintenance costs. BNSF's assumption that the two tunnels on the LRR would be timber-lined is not supported by the unit costs that both parties use. In particular, \$6,001 per linear foot is sufficient to support the use of concrete, steel or both in the tunnels. For example, WFA/Basin Witness Kenyon was directly involved in the building of two 3,100-foot steel arch supported, concrete lined, single track tunnels with interior lighting on the DRGW near Provo, Utah in 1983. The cost per linear foot for the concrete and steel tunnels was \$2,300. As the DRGW cost is slightly lower than the per foot cost from Coal Trading, WFA/Basin's engineering and MOW witnesses have assumed that the LRR tunnels could and would be built with similar materials at the Coal Trading unit cost.

**5. Bridges**

On Opening, WFA/Basin developed most of their bridge designs and costs based on documents received from BNSF in discovery. Likewise, WFA/Basin's bridge inventory is driven by the actual bridges on the lines being replicated. In total, the parties' bridge investment differs by only \$6.2 million. Nevertheless, much of BNSF's restatement of costs is unwarranted and contradicted by its own discovery materials. Consequently, WFA/Basin have made only minor revisions to their bridge costs on Rebuttal. (Both parties address overpasses in Part III-F-8.

**a. Inventory**

The parties agree on the inventory of bridges and the number of tracks that each bridge location must accommodate.

**b. Bridge Design**

On Opening, WFA/Basin's engineers sorted the LRR's bridges into four categories, Type I, II, III and IV bridges, depending on the characteristics of the bridge. In addition, WFA/Basin converted certain very small bridges to culverts, which BNSF accepts. See BNSF Reply Narr. at III.F-141. BNSF also accepts the categories that WFA/Basin's engineers developed and with a few minor exceptions, it accepts the placement of bridges in those categories. Id. at III.F-145.

WFA/Basin's engineers briefly address the bridge-sorting disparities that BNSF raised on Reply. First, BNSF noted that WFA/Basin appeared to make three errors

with span length adjustments, and one of these errors required that a bridge be placed in a different category. Id. at III.F-141 to 142. WFA/Basin's engineers agree that erroneous adjustments were made on these three bridges, and they have corrected this on Rebuttal, including placing Bridge 103.18 in the Type III bridge category rather than Type I.

Second, BNSF lengthened two Type IV bridges, Bridges 133.01 and 95.65, arguing that WFA/Basin's changing of the bridge deck material from steel to concrete reduced the potential water flow under the bridge because the concrete bottom chord of the structure is lower than the steel it is replacing. Id. at III.F-143 to 145. In support of its position, BNSF cites a WFA/Basin-provided paper by a BNSF employee ("Jennison Paper") that suggests that the use of a concrete substructure rather than steel on the replacement Canadian River Bridge, a very long bridge built as part of the Panhandle Subdivision expansion on BNSF's "Transcon" line, required that the bridge be lengthened. BNSF argues that WFA/Basin must do the same with the two bridges that BNSF identified. As discussed below, the two bridges at issue in this case do not require lengthening.

Before turning to the particulars of two bridges, WFA/Basin note that the Canadian River Bridge water flow was impacted solely by the additional new piers, five in all, and not the concrete deck. In support, the WFA/Basin engineers note that Figure 2 of the Jennison Paper shows the cross sections of the old and new bridges side-by-side. See WFA/Basin Op. Workpapers Vol. 10, p. 5591. The existing low chord of the old

bridge is actually lower than the proposed low chord of the new bridge. Thus, BNSF's claim that thru-truss steel bridges have greater clearances than precast concrete girder bridges is not accurate.

In any event, BNSF's proposed extension of the two bridges for purposes of building the LRR is not required. First, Bridge 133.01 near Orin, WY is 19-feet high and 378 feet long with seven spans. See WFA/Basin Op. Workpapers Vol. 9, pp. 5508-5511 for photographs of the bridge. The photograph on page 5508 shows that only two spans of the bridge use a steel thru-truss design. The remaining five spans use precast concrete girders, just as the LRR does. In addition, the picture shows that the bottom chord of the truss is lower than the bottom of the concrete girders in the adjacent span. Since WFA/Basin's proposed bridge will not have a lower clearance than the bridge it is replicating, no adjustment to the bridge's length is required.

BNSF's extension of Bridge 95.65 is likewise unnecessary. Here the bridge is 70 feet tall and 833 feet long. As WFA/Basin's photographs show, the 70-foot height is largely dictated by the need to keep the grades consistent across the gap over the river, rather than to accommodate flood waters. See WFA/Basin Op. Workpapers Vol. 9, pp. 5389-5394. For example, the photograph on page 5393 shows that the bottom chord of the truss on the left of the picture is much lower than the steel girder section to the right. As the entire precast concrete girder bridge will have a section depth similar to the steel girder (rather than just part of the structure as BNSF's current bridge has now), the

clearance below the bridge will be much greater for the proposed bridge than the bridge being replicated. Thus, there is no need to lengthen the bridge as BNSF proposes.

**c. Cost Development**

**i. Type I, II and III Bridges**

On Opening, WFA/Basin's engineers developed the cost per linear foot for Type I, II and III bridges by using cost data from 21 BNSF bridge projects that were built as part of the Panhandle Subdivision expansion. On Reply, BNSF largely accepted WFA/Basin's approach, but it argued that WFA/Basin made several methodology and data entry errors, which it adjusted. BNSF Reply Narr. at III.F-147. These differences are discussed below.

BNSF notes that WFA/Basin's cost for bearing pile installation was entered into their bridge spreadsheet as \${ } when the actual cost from BNSF's data was \${ }. Id. WFA/Basin have corrected this error on Rebuttal.

BNSF also notes that the pre-cast girder that WFA/Basin's engineers selected for the Type III bridges was not the I beam style that they intended, but rather a T girder. WFA/Basin's engineers cannot confirm BNSF's assertions, but the net cost difference is minimal. Therefore, they have adopted BNSF's approach on Rebuttal.<sup>13</sup>

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<sup>13</sup> BNSF's suggestion that Type III precast components could not be less than those used for Type II bridges is incorrect. Id. at III.F-148. As BNSF itself recognizes (id. at III.F-147), the Type III bridges are constructed with both precast and cast-in-place bridge components, whereas Type II bridges have only precast components. As such, Type III  
(continued...)

BNSF also argues that WFA/Basin incorrectly calculated certain “miscellaneous additional material” for the Type I, II and III bridges; although, it agrees with WFA/Basin’s general approach. Id. at III.F-150. First, BNSF notes that WFA/Basin’s cost inputs from Bridge 477.1 incorrectly used the costs from Bridge 477.7. WFA/Basin’s engineers agree with the correction of this error.

Second, BNSF argues that WFA/Basin incorrectly assumed that the miscellaneous bridge material could be a negative number. Id. at III.F-151. In other words, the calculations included certain costs that had been charged incorrectly or inadvertently to another bridge in the complex of bridges all being built at the same time on the Panhandle expansion project. The resulting calculations occasionally produce a negative figure (essentially a credit) for the miscellaneous components for a particular bridge, but these are typically balanced against an unusually high figure on an adjacent bridge. For example, if one were to sort the model bridges by milepost and then observe the miscellaneous costs per foot, it becomes apparent that Bridges 468.7 and 472.7 have unjustifiably high miscellaneous costs of \$621.02 per foot and \$638.47 per foot respectively. See WFA/Basin Rebuttal electronic workpaper “LRR Bridge Costs.xls,” tab “Model Cost,” column AE. Indeed, the miscellaneous costs for each of these two bridges are more than double that of any other bridge.

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<sup>13</sup>(...continued)  
bridges actually have more concrete than Type II bridges, but the precast components are smaller. Thus, the precast components are less expensive than in Type II bridges.

Seven of the next nine bridges in the column, when sorted by milepost, have very low miscellaneous costs; two had more mid-range costs of \$240.47 and \$217.35 per foot (which is about what WFA/Basin's engineering experts expected); and six of the next seven bridges are the bridges with negative miscellaneous costs. WFA/Basin's engineering experts observed the trend and concluded that many expenses charged to Bridges 468.7 and 472.7 should have been credited to other adjacent bridges, but were not, thereby causing the disparity and the negative entries. Nevertheless, BNSF chose to characterize the negative entries as "outliers" and irrational negative numbers rather than net these figures against the other miscellaneous bridge materials used in the model bridge costs. See BNSF Reply Narr. at III.F-151.

However, BNSF has presented no evidence to suggest that these credits are wrong. Instead, it argues that it has found additional invoices that show that BNSF actually paid more than the AFE data suggest, and, therefore, the credits must be discarded. Id. But BNSF's additional invoices (BNSF Reply electronic workpaper "bridges.pdf") do not provide any cost details that support its position. In fact, the invoices are not invoices at all. Instead, they are merely details of items that have been ordered and shipped. There is no pricing on any of these documents, nor is there any indication that the items ordered were separate from the items that BNSF or its contractor would have had to order under the AFE authority. Thus, BNSF's suggestion that its late-

discovered documents (which should have been produced during discovery) offset any credits that WFA/Basin's engineers used is unfounded.

**ii. Type IV Bridges**

On Opening, WFA/Basin's engineers used the same basic methodology for determining the cost per linear foot for these particularly large bridges that they used for smaller bridges. The major difference is that WFA/Basin's engineers based their costs on a single bridge, Bridge 412.1. BNSF accepts the use of this bridge as the basis for Type IV bridges. See BNSF Reply Narr. at III.F-152. However, BNSF argues that the cost developed by WFA/Basin does not include the costs for I beam girders, which BNSF submits it supplied to the contractor and paid for separately. Id. at 152 to 153. BNSF's only direct support for its position is the recollection of its engineering witness, Mr. Boileau. Id. at 153. With all due respect to Mr. Boileau, his involvement in this bridge project is considerably more distant than WFA/Basin's source for this information, Mr. John Hronek of HNTB. HNTB was the engineering firm on this project, and Mr. Hronek was the co-presenter of the "Jennison" paper on this bridge project, along with Mr. Jennison from BNSF. See WFA/Basin Op. Workpapers Vol. 10, pp. 5940-5955. When asked by phone about the precast I beams, he indicated that the bid tab that WFA/Basin's engineers used on Opening included the precast pieces. This conversation was later confirmed by email. See WFA/Basin Rebuttal electronic workpaper "Hronek.pdf."



BNSF further attempts to bolster its I beam argument by noting that the cost per linear foot from the Jennison paper was \$3,500, its revised cost per linear foot is \$3,483, and WFA/Basin's cost is only \$3,000 per linear foot. See BNSF Reply Narr. at III.F-153. Therefore, BNSF reasons that WFA/Basin's cost per linear foot must not include the I beams. BNSF's argument misses the mark. The Jennison Paper bid tab includes a variety of cost items that WFA/Basin already cover in other sections, including subballast installation and mobilization, which represent over 15 percent of the project costs. See WFA/Basin Op. Workpapers Vol. 10, p. 5958. In addition, it includes other costs that the LRR would not incur at all, such as removal of the existing bridge and substructure. Id. Thus, WFA/Basin's lower cost per linear foot is easily explained. In light of the above, WFA/Basin's engineers continued to use their Opening per linear foot costs on Rebuttal for all bridge types.

**iii. Indexing**

BNSF again points out certain indexing errors in WFA/Basin's unit costs. See BNSF Reply Narr. at III.F-153 to 154. WFA/Basin have corrected these errors on Rebuttal.

**iv. Transportation**

On Opening, WFA/Basin's engineers used BNSF-supplied data on the costs to truck bridge materials to the bridge sites. BNSF generally accepts WFA/Basin's costs and methodology. Id. at III.F-154 to 156. However, BNSF notes that two items, piling

and braces, are regularly transported by rail rather than truck. Id. at 156. BNSF, therefore, added rail transportation costs from its supplier in Blythville, Arkansas to WFA/Basin's railheads. Id. While WFA/Basin's engineers have concerns that BNSF's sourcing is considerably further away from the LRR territory than other places where the material could be found, to be conservative they have included the rail shipping cost proposed by BNSF.

WFA/Basin's Rebuttal bridge costs of \$48.6 million are detailed in Rebuttal electronic workpaper "LRR Bridge Costs.xls."

**6. Signals and Communications**

**a. Signals**

**i. CTC**

On Opening, WFA/Basin's signals and communications expert, Mr. Grappone, designed the signals system to complement and fully utilize the infrastructure developed by WFA/Basin's operating and engineering witnesses. A key piece of Mr. Grappone's plan was his straight-line diagram of the signal system. See WFA/Basin Op. electronic workpaper "Grappone Straight Line.doc." In general, BNSF accepts WFA/Basin's quantities and costs, but several area of dispute remain.

First, BNSF notes that Mr. Grappone omitted a crossover in his straight line diagram. See BNSF Reply Narr. at III.F-158. This is the same crossover at MP 14.2 on the Orin Subdivision that is discussed above. Mr. Grappone agrees that the signal costs

for this crossover should be included, and he has done so on Rebuttal. BNSF also notes that Mr. Grappone overstated, by one, the number of signals at "CP F 223 " on the straight line diagram. Id. Mr. Grappone agrees, and the signal quantity at this location has been reduced accordingly.

BNSF argues that at "CP C 65," the total number of signal huts is insufficient because the hut specified covers four signals when there are actually five signals at that location. Id. at III.F-159. However, BNSF's assertion misses a critical element of how these systems are typically costed. In particular, Mr. Grappone notes that the location in question has five signals and three switches or a total of eight devices that the hut must control. The hut costs that he included covers four signals and two crossovers (four switches, two at each end of the crossover) or a total of eight devices that the hut can control. In other words, the hut can handle eight devices regardless of whether it is five signals and three switches or four signals and four switches. Consequently, there is no need for additional signal huts.

BNSF's other changes, referenced in the first paragraph on p. III.F-159, are unexplained. However, Mr. Grappone's review of BNSF's spreadsheet, "III.F.6 CTC.xls," suggests that BNSF's other signal hut changes are driven by incorrect assumptions similar to those noted above. In addition, in at least one instance, BNSF actually provided for less capabilities than Mr. Grappone did. At location "CP B 588," Mr. Grappone's two signal huts could accommodate a total combination of 14 signals or

switches. In contrast, BNSF's selections could only accommodate 8 devices. In any event, Mr. Grappone has reviewed all of the signal requirements and determined that no other changes were necessary.

BNSF then argues that WFA/Basin understated their costs by not including insulated joints at intermediary signals and signalized grade crossings. Id. BNSF's assertion is incorrect. The automatic signal controls selected by Mr. Grappone utilize jointless technology. In particular, Mr Grappone used intelligent track circuits for automatic signal control and grade crossing predictors. Intelligent track circuit equipment, such as "Electrocode" manufactured by GE Transportation Global Signaling, is designed to provide signal control without the need for insulated joints. Grade crossing predictor equipment such as the HXP-3 by GETS is designed to provide consistent warning times as well as gate and flasher control for highway crossings without the need for insulated joints. Technologies such as these are in widespread use on freight railroads and have a proven track record of safety and reliability. Thus, Mr. Grappone did not add insulated joints for intermediary signals or crossing predictors.

BNSF also argues that WFA/Basin should have included costs for Independently Controlled Switches ("ICS") within crossovers. Id. The stated purpose of ICS is that it permits a train to operate through one turnout in a crossover, even if the other turnout is shut down – normally the operational turnout would show a red signal when the other turnout is inoperative. WFA/Basin agree with BNSF that the RTC model

controls the crossovers independently, and, therefore the LRR signals should have this capability. However, BNSF has not explained its cost of \$110,000 per crossover for this technology. Id. at III.F-160. Indeed, BNSF does not even offer a description of it (i.e., is it a special detector, switch controller, etc.). Moreover, Mr. Grappone determined that independent control of the turnouts on a crossover is easily achieved through the signal-installation process by wiring the crossovers to separate controllers in the signal hut. A diagram of the necessary wiring configuration is shown in WFA/Basin Rebuttal electronic workpaper "ICS wiring.doc." Mr. Grappone's signal hut costs already include the necessary control equipment, which includes inputs for switch indication. In addition, on Opening, Mr. Grappone provided sufficient 12-conductor AWG 14 cable for switch indication and sufficient 5-conductor AWG 6 for switch control. Thus, Mr. Grappone disagrees with the inclusion of any additional costs for ICS in crossovers.<sup>14</sup>

BNSF has also increased the LRR's signal costs by its inclusion of additional DEDs in areas where it placed concrete ties. See BNSF Reply Narr. at III.F-160. As WFA/Basin are using all wood ties for the LRR, and BNSF otherwise accepted WFA/Basin's placement of detectors, Mr. Grappone has continued to use the FED count and costs he used on Opening.

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<sup>14</sup> Due to BNSF's lack of explanation of the ICS technology, Mr. Grappone reasoned that BNSF may be including some unspecified ICS add-on technology to existing crossovers that were not originally designed to be independently controlled. BNSF may also be adding this capability to interlockings where a new crossover must be wired into an existing crossover location.

Finally, the parties agree on all of the signal-related unit costs, with two minor exceptions. First, BNSF indexed all of the costs that Mr. Grappone used. Id. WFA/Basin disagree with BNSF's indexing. The quotes that Mr. Grappone used are from early in 2005, and there is no reason to assume that the signal components were any more expensive in 4Q04. As signal costs do not depend on the variables that directly affect other unit costs, such as grading, Mr. Grappone has continued to use his unindexed costs on Rebuttal.

Second, BNSF argues for a higher unit cost for power drops. WFA/Basin used \$3,500 per drop on Opening. Id. This unit cost was based on a figure from AEP Texas, but Mr. Grappone's own experience also informed the decision to use that unit cost. Indeed, his conclusion is that the number of drops required and their close proximity on the right-of-way makes \$3,500 a reasonable figure. BNSF points out, however, that for microwave towers, Mr. Grappone used BNSF's higher unit cost of \$ {            }, and that his use of BNSF's cost in one place necessitates its use elsewhere. Id. Mr. Grappone disagrees. Microwave towers usually are not located directly on the right-of-way, and so they would not benefit from the economies of scale that the wayside signals enjoy. Thus, it is not inconsistent for Mr. Grappone to use two different power drop prices.

**ii. AAR Signal Unit Counts**

On Opening, WFA/Basin included AAR Signal Unit counts based on those used in previous SAC cases. See WFA/Basin Op. electronic workpaper "Laramie River C&S Spreadsheet.xls." Such counts are typically developed on a per-device basis (i.e., a double track highway crossing predictor has a count of 40 devices) and then totaled up based on the number of each type of device type in the stand-alone railroad's system. This total count is then provided to the MOW experts who use it to determine the total number of signal maintainers needed on the SARR.

On Reply, BNSF adopted many of the per-device AAR Signal Unit counts that WFA/Basin used on Opening, but it also changed a number of them without explanation. Mr. Grappone undertook an investigation to determine whether BNSF's changes were justified. He discovered that both WFA/Basin (on Opening) and BNSF (on Reply), in a many cases, overstated the per-device AAR Signal Unit counts. For example, BNSF used 140 AAR Signal Units for a two-crossover, four signal hut and 23 units for each signal controlled by that hut. See BNSF Reply electronic workpaper "III F 6 CTC.xls," tab "AAR Units." BNSF double-counted the AAR Signal Units for signals by including them in the signals line item as well as the hut line item. Moreover, the 23 units for signals is overstated in that a two-head signal with three aspects per head should carry 14 units. See WFA/Basin Rebuttal electronic workpaper "AREMA Signal Manual.pdf." BNSF's per-unit numbers for many similar items were found to be overstated, as detailed

in Rebuttal electronic workpaper "Rebuttal Laramie River C&S Spreadsheet.xls." Thus, Mr. Grappone has adjusted the per-device AAR Signal Unit counts, as well as the overall count, which is now 16,113 versus WFA/Basin's Opening count of 22,208 and BNSF's Reply count of 28,885.

**b. Detectors**

As noted above, BNSF agrees with WFA/Basin's placement of FEDs. Id. at III.F-161. However, BNSF has added DEDs approximately every five miles where it uses concrete ties. Id. As WFA/Basin's engineers continue to use wood ties, they have not added any additional DEDs on Rebuttal.

**i. Crossing Signals**

The parties agree on the locations and unit costs for crossing signals. Id. at III.F-162. However, BNSF added additional costs for insulated joints at these locations. Id. As explained above, the crossing signals do not require insulated joints because they use a joint-less technology.

**c. Communications**

On Opening, Mr. Grappone designed the LRR's communications system to meet the needs of the operating plan and provide seamless communications to signal locations, locomotive personnel and MOW crews. BNSF generally accepts the communications plan presented by Mr. Grappone. See BNSF Reply Narr. at III.F-163.



However, WFA/Basin's Opening presentation did lack proper references in certain cost categories, although all of the costs were actually located in the supporting materials that they provided on Opening and in a response to a follow-up workpaper request from BNSF. Thus, BNSF's general criticism regarding certain cost sources is well taken, but WFA/Basin have corrected the sourcing issues on Rebuttal or otherwise accepted BNSF costs. The individual items are addressed below.

Before turning to those items, WFA/Basin also note that Mr. Grappone generally did not index 2003 costs to 4Q04 as BNSF did because electronics equipment, especially older models, tend to go down in price not up. Indeed, the microwave base station discussed below is a good example. BNSF's price from 2003 is \$38,433, which changed to \$42,953 when indexed to 4Q04, but WFA/Basin's price in 2004 was only \$27,850. Thus, WFA/Basin have not indexed these prices, unless they specifically accepted BNSF's revised unit costs.

**i. Microwave Base Station**

On Opening, WFA/Basin included a unit cost of \$27,850 for the LRR's microwave base station. BNSF's notes that it could not find the source of WFA/Basin's unit cost, so it used a different cost source that WFA/Basin also provided in their workpapers – the model of base station was the same. Id. at III.F-164 to 165. WFA/Basin's actual source "02702-Alcatel-Microwave-Radio-100904.pdf" was included on Opening, and the list price was the \$55,700 that BNSF references on page III.F-165 of its

Reply Narrative. WFA/Basin then took a 50 percent discount off the list price based on page 20 of their Opening electronic workpaper "02702C.doc," which is the master contract associated with the Alcatel price list. Thus, WFA/Basin continue to use their Opening microwave base station costs.

**ii. Microwave Radio Antennae**

On Opening, WFA/Basin used a unit cost of \$1,476 based on the Western States Contracting Alliance document "02702C.doc." However, WFA/Basin cited a Colorado pricing document, 84010YYY02P rather than "02702C.doc." BNSF used the price from 84010YYY02P instead, which was \$1987.20. See BNSF Reply Narr. at III.F-165 to 166. WFA/Basin agree with BNSF's unit costs except that BNSF neglected to take the available discount of 52 percent. See WFA/Basin Rebuttal electronic workpaper "S-C Workpapers 3.pdf," p. 64.

**iii. Land Mobile Radio**

The parties agree on the unit costs for VHF Duplexers and the Desktop Remote Control system. See BNSF Reply Narr. at III-F.166 to 167. However, BNSF has revised WFA/Basin's Opening radio base station and required voting comparator system. Id. at III.F-166. Mr. Grappone accepts BNSF's revisions as reasonable, and WFA/Basin have used BNSF's unit costs for these items on Rebuttal.

**iv. Multiplexor Equipment**

The parties agree on the multiplexor equipment that WFA/Basin selected on Opening. Id. at III.F-167. The parties also agree on the unit costs, but BNSF indexed those costs from 2003 to 4Q04. Id. WFA/Basin did not index the unit costs for the reasons discussed above.

**v. Microwave Tower Dehydration Equipment**

WFA/Basin included a unit cost of \$1,254.18 for dehydration equipment on Opening. As with microwave radio antennae, BNSF resourced the unit costs for this equipment to Colorado pricing document 84010YYY02P. Id. at III.F-165. WFA/Basin agree with this change except BNSF did not apply the 38 percent discount for this item. See WFA/Basin Rebuttal electronic workpaper "S-C Workpapers 3.pdf," p. 64.

**vi. Communications Shed**

The parties agree on the communications shed equipment that WFA/Basin selected on Opening. See BNSF Reply Narr. at III.F-167. The parties also agree on the unit costs, but BNSF's indexed those costs from 2003 to 4Q04. Id. WFA/Basin did not index their unit costs for the reasons discussed above.

**vii. Microwave Tower Structures**

On Opening, WFA/Basin included costs for several different heights of microwave towers from 25 feet to 200 feet tall. BNSF accepts all of the tower structure costs, but it changed WFA/Basin's costs for certain accessories, namely cable, waveguide

and waveguide connectors. Id. In each case, the unit costs were drawn from WFA/Basin Opening workpaper "02702C.doc." The cable and waveguide prices were on page 211 and the waveguide connectors were on page 212. WFA/Basin also applied the 65 percent discount for these items shown on page 215 of the same document. Thus, WFA/Basin have continued to use their Opening microwave tower structure costs, including accessories, on Rebuttal. WFA/Basin do note, however, that both parties understated the per tower costs because they inadvertently failed to add the site survey and permitting costs into their final calculations. WFA/Basin have fixed this on Rebuttal.

In total, WFA/Basin's communications equipment costs are \$8.2 million versus the \$8.5 million used on Opening, and BNSF's reply costs of \$9.9 million. The principal reductions are caused by the equipment discounts the parties missed in their previous submissions.

#### **7. Buildings and Facilities**

On Opening, WFA/Basin's engineering experts developed the basic parameters and costs for a wide variety of structures, including a headquarters building, a locomotive repair shop, fueling facilities, crew change buildings, MOW buildings, and waste water treatment plants. WFA/Basin's engineering experts based their costs on various sources, but they also relied on their extensive experience in designing and costing railroad buildings, as well as other structures. For example, the following is a representative list of building projects that Mr. Stone has designed:

### Wastewater Treatment Plants

|                                                  |             |
|--------------------------------------------------|-------------|
| Northwest Crawford County Sewer Authority        | 500,000 GPD |
| North & South Shenango Joint Municipal Authority | 750,000 GPD |
| Southwest Warren County Municipal Authority      | 250,000 GPD |
| Tionesta Borough Municipal Authority             | 250,000 GPD |
| Jackson Center Borough                           | 150,000 GPD |
| North Warren Municipal Authority                 | 750,000 GPD |
| Shinglehouse Borough                             | 150,000 GPD |

### Industrial Buildings

|                                                   |             |
|---------------------------------------------------|-------------|
| Warren County Industrial Development Corp.        |             |
| Renovation to Philips Building 120,000 SF         | \$950,000   |
| Euclid Ave. Industrial Building 10,000 SF         | \$300,000   |
| Greater Erie Industrial Development Corp.         |             |
| Johnson Control Building 100,000 SF               | \$3,200,000 |
| Renovations to GE Warehouse 60,000 SF             | \$750,000   |
| Renovations to ETHOX 40,000 SF                    | \$1,200,000 |
| Schmalbach-Lubecca Corp. 57,000 SF w/10 ton crane | \$3,000,000 |
| SPEDD Corp.                                       |             |
| Renovations to Deluxe Metals 136,000 SF           | \$850,000   |
| Reconstruction of Grand Valley Mfg.               |             |
| 150 Ton crane and RR track                        | \$450,000   |
| Berwick Industrial Park                           |             |
| 24,000 SF Building                                | \$1,120,000 |
| 30,000 SF Building                                | \$1,050,000 |
| 66,000 SF Building Renovation                     | \$950,000   |
| WNY&P Railroad                                    |             |
| Engine House & Office 6,900 SF                    | \$350,000   |
| Pit tracks for Locomotive Maintenance             |             |
| Flats Industrial Railroad                         |             |
| Duferco-Farrel Steel Corp.                        |             |
| Kenosha Transit                                   |             |
| Los Angeles Port Authority                        |             |

In addition, to projects that Stone Consulting has designed, two other WFA/Basin engineering witnesses, Mr. Claytor and Mr. Ellison, have significant experience with the requirements for fueling facilities and locomotive repair shops,

respectively. Mr. Claytor was in charge of all of the Southern Pacific Railroad's ("SP") 28 fueling facilities, including the purchasing of over 350 million gallons of diesel fuel annually. He also set the fueling policies for the railroad. Mr. Claytor was very active in the development of SP's new main line fueling facilities at Tower 196 and Hardy Street in El Paso, TX, which were completed in 1990. Mr. Ellison was Director of Strategic Rail Projects for OmniTRAX, a major locomotive contract-maintenance firm. He was also Vice President of Rome Locomotive Works.

In addition to the vast experience of WFA/Basin's engineering witnesses, they also sought a variety of quotes for the buildings that they specified. For example, the headquarters building and the locomotive shop costs were based on actual quotes from Kessel Construction, a major construction firm that regularly works on such projects. See WFA/Basin Rebuttal electronic workpaper "Kessel Info.pdf." WFA/Basin's experts strongly disagree with BNSF's claim that the LRR's buildings and facilities, as described on Opening, were inadequate, and that considerable increases in building costs are warranted. See BNSF Reply Narr. at III.F-172.

**a. Headquarters Building**

On Opening, WFA/Basin's engineering experts developed a 21,500 square-foot headquarters building at Guernsey, which was based on a similar building erected in Darlington, PA. WFA/Basin's costs for the building were based on the actual costs of the Darlington building as built by Kessel Construction, who provided the cost data. BNSF

accepts the basic parameters of the building, including its size and unadjusted costs per square foot. See BNSF Reply Narr. at III.F-173. However, BNSF disagrees with WFA/Basin's indexing of the costs. BNSF has also added an emergency generator, and it has included additional site costs, such as grading and parking lots. Id.

WFA/Basin disagree with BNSF's addition of a generator. The building cost that WFA/Basin used on Opening already includes a generator. See WFA/Basin Op. electronic workpaper "Headquarters.pdf," p. 6 (item number 57 states "CO#7 - Kohler Generator"). Thus, WFA/Basin have not added another generator on Rebuttal.

WFA/Basin also disagree with BNSF's addition of site costs, such as grading, drainage and parking lots. See BNSF Reply electronic workpaper "III F 7 Facilities.xls," tab "Summary," cell G25. Again, the building quote includes site preparation, drainage, parking lots, paving curbs, sidewalks, patio wall, patio pavers and even landscaping Coca mat. See WFA/Basin Op. electronic workpaper "Headquarters.pdf," pp. 4-9. Therefore, BNSF's additional site work costs are unwarranted.

WFA/Basin do, however, agree with BNSF that their location factor indexing was incorrect. They have corrected this on Rebuttal. However, BNSF did not use the correct historical factor to index the building to 4Q04. In particular, BNSF only updated the costs through July 2004 (cell B11 on the "Historical Factors" tab of BNSF Reply electronic workpaper "III F Construction.xls") rather than 4Q04 (cell D11 of the

same of spreadsheet). WFA/Basin have corrected this on Rebuttal. With the indexing adjustments, WFA/Basin's revised headquarters building cost is \$2.66 million versus BNSF's Reply cost of \$2.82 million.

**b. Fueling Facilities**

On Opening, WFA/Basin's fueling facility expert, Mr. Claytor, with the assistance of WFA/Basin's other engineering witnesses, developed the LRR's fueling facility capabilities and costs based on the fueling needs of the LRR as determined by its operating witnesses. Mr. Claytor's fueling facility included mainline and inside fueling capabilities, plus storage tanks, unloading facilities, and other necessities. As Mr. Claytor has been responsible for fueling facilities on the entire SP system, he is particularly qualified to determine what the LRR needs.

Nevertheless, BNSF takes issue with WFA/Basin's fueling facilities, and it has added an additional \$4 million in investment for a variety of reasons discussed below. Mr. Claytor and WFA/Basin's other engineering witnesses have thoroughly reviewed BNSF's Reply fueling facility costs and the criticisms that BNSF made of WFA/Basin's Opening materials and determined that BNSF's arguments and restated costs are unfounded. WFA/Basin's engineers also found that when BNSF's spreadsheets were adjusted to remove the superfluous items that BNSF added, the revised costs were essentially the same as WFA/Basin's.



i. Design

First, BNSF takes exception to the fact that WFA/Basin failed to provide a conceptual drawing for the locomotive fueling facility. See BNSF Reply Narr. at III.F-175. While a drawing is certainly a nicety, WFA/Basin's primary obligation is determine what the LRR needs and cost it accordingly. A full scale design is not necessary, and Mr. Claytor provided a wealth of details on Opening. In addition, WFA/Basin included track diagrams that detailed the locations of the fueling facilities, including the mainline and inside facilities<sup>15</sup> and fuel unloading locations. Thus, BNSF was more than able to reply to WFA/Basin's materials, which it did. Moreover, BNSF's "designs" of the facilities are just single-page schematics that show where the locomotives might be spotted on the fueling tracks and where the pumps might go. See BNSF Reply electronic workpapers "Inside Fueling Arrangement.pdf," "Inside Fueling Facility Sanding Arrangement.pdf," and "Mainline Fueling Arrangement.pdf." Thus, the quantities of materials and costs that BNSF proffered on Reply are no more certain than WFA/Basin's Opening.

Nevertheless, BNSF engages in an extended discussion about the perceived shortcomings of WFA/Basin's fueling facilities. See BNSF Reply Narr. at III.F-175 to 186. BNSF's arguments are without merit. In particular, Mr. Claytor thoroughly reviewed

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<sup>15</sup> WFA/Basin note that "inside" fueling means that the facility is inside the Guernsey Yard rather than located on the mainline. It does not mean that the facility is actually inside a building. The inside facility services locomotives removed in the empty direction at Guernsey and subsequently placed on empty trains bound for the mines.

BNSF's costs, and determined that BNSF had included a wide variety of unnecessary gold-plating. When these superfluous costs are removed, BNSF's revised costs (\$12.54 million) are actually slightly lower than those that Mr. Claytor and WFA/Basin's other engineering witnesses specified on Opening (\$12.94 million). Thus, WFA/Basin utilized BNSF's costs, as revised by Mr. Claytor, and explained below.

Before turning to the individual facility costs, WFA/Basin note that BNSF included a 30 percent allowance for fittings and an unexplained multiplier of 1.34 on a number of other line items. See, e.g., BNSF Reply electronic workpaper "III F 7 Facilities.xls," tab "Fueling - Mainline," cell B92. These adjustments are without merit. Neither Mr. Claytor nor Stone Consulting & Design have ever used a 30 percent allowance for plumbing fittings. A 20 percent allowance is standard practice in the plumbing world. As for BNSF's unexplained multiplier, it is incumbent on BNSF to provide a rationale for its increase, but it failed to do so. As Mr. Claytor can find no reason for it, he has eliminated the multiplier wherever BNSF used it.

**ii. Mainline Fueling Facility**

On Opening, WFA/Basin's experts design the LRR's mainline fueling facility at Guernsey as an express fueling station for eastbound (loaded) coal trains, meant to top off fuel, lube oil and radiator water only – essentially the same services that BNSF provides on its own platform at Guernsey today, which Mr. Claytor personally observed. It was not intended to provide a wide variety of services such as sanding, waste oil

evacuation, soap, high pressure wash system, toilets, glycol, industrial waste, and sanitary sewer drainage because those services are performed on the inside fueling tracks in Guernsey Yard when the locomotives are removed and serviced in the empty direction before heading to the mines. A second extended servicing is not needed in the loaded direction. Indeed, BNSF agrees that only a few trains a day heading south of Pueblo even need to stop at the mainline fueling facility. See BNSF Reply Narr. at III.C-19.

Despite the limited purpose of the mainline fueling facility, BNSF added over \$1 million in investment for sanding, waste oil evacuation, soap, high pressure wash system, toilets, glycol, industrial waste, and sanitary sewer drainage, none of which are necessary. See BNSF Reply electronic workpaper “III F 7 Facilities.xls,” tab “Fueling - Mainline,” rows 617-649. Mr. Claytor eliminated the costs for the facilities that provide these unnecessary services. See WFA/Basin Rebuttal electronic workpaper “Fuel Storage Costs Rebuttal.xls,” tab “Fueling - Mainline,” rows 617-649 (removed costs in blue).

In addition, BNSF included a canopy for the facility. Mr. Claytor rejects this addition because it is unnecessary. See BNSF Reply electronic workpaper “III F 7 Facilities.xls,” tab “Fueling - Mainline,” rows 41-50. In fact, BNSF does not have a canopy for its mainline fueling facility at Guernsey – nor did it add one in 1997 when it performed other fueling facility upgrades. See WFA/Basin Rebuttal electronic workpaper “BNSF Fueling Facilities.pdf.” Thus, Mr. Claytor eliminated the canopy-related costs from BNSF’s costs estimate. See WFA/Basin Rebuttal electronic workpaper “Fuel

Storage Costs Rebuttal.xls,” tab “Fueling - Mainline,” rows 41-50 (removed costs in blue).

BNSF also added costs for foundations and excavation for the concrete platforms. See BNSF Reply electronic workpaper “III F 7 Facilities.xls,” tab “Fueling - Mainline,” rows 35-39. These costs are unnecessary. The Hanson-Wilson estimate that both parties use for the platforms states that it includes the concrete fueling platform and “everything needed on a typical full service fueling platform including the associated support structures . . . .” See WFA/Basin Op. electronic workpaper “Wilson Co. email.pdf.” And while the quote does not mention foundation and excavation for the platforms, it is well understood in the engineering field that such platforms would be of little use without the foundations. Thus, BNSF is attempting to double-charge for structural excavation, hauling, backfill, compaction, and secondary containment membrane. Mr. Claytor, therefore, removed those additional costs from BNSF’s proposed mainline fueling facility costs. See WFA/Basin Rebuttal electronic workpaper “Fuel Storage Costs Rebuttal.xls,” tab “Fueling - Mainline,” rows 35-39 (removed costs in blue).

BNSF also included a separate pump house for the mainline fueling facility, and it increased the size of the main pump house that WFA/Basin provided on Opening. See BNSF Reply Narr. at III.F-177 to 178. A separate pump house for the mainline fueling facility is not required. First, BNSF itself has only one pump house – as observed

by Mr. Claytor and based on BNSF fueling facility upgrades in 1997. See WFA/Basin Rebuttal electronic workpaper "BNSF Fueling Facilities.pdf." Second, BNSF simply placed the pump houses closer to the mainline and inside fueling facilities rather than centrally locating one facility as Mr. Claytor did. See BNSF Reply Narr. at III.F-177 to 178. As BNSF has only one pump house, and its Reply design is inefficient, Mr. Claytor continues to use one pump house and he redlined BNSF's mainline pump house costs. However, Mr. Claytor accepted the larger pump house size that BNSF included with its version of the inside fueling facilities at Guernsey Yard. See WFA/Basin Rebuttal electronic workpaper "Fuel Storage Costs Rebuttal.xls," tab "Fueling - Mainline," rows 336-425 (removed costs in blue) (larger pump house included on "Fueling - Inside" tab at rows 234-349).

Finally, BNSF has also included a fueling platform, including a sewage system, and canopy, for distributed power locomotives at the west end of the Guernsey Yard and near Donkey Creek, where helper units are fueled. See BNSF Reply Narr. at III.F-184 to 185 and BNSF Reply electronic workpaper "III F 7 Facilities.xls," tab "Fueling - Mainline," rows 714-749 and tab "Fueling - Helper." BNSF's costs are without merit. In particular, Mr. Claytor notes that BNSF has no track pans, fueling platform, or canopy either where it fuels rear DP units on eastbound trains at Guernsey Yard, or near Donkey Creek for fueling helper units. Nor are there any such facilities where locomotives are fueled at LRS.

Moreover, helper locomotives at Donkey Creek, DP units at Guernsey (those moving in the loaded direction south of Pueblo) and all locomotives at LRS are fueled by Quality Rail Services ("QRS"), an outside contractor that the LRR will also use. QRS uses "spill buckets," one under the nozzle and one under the vent tube. If there is a threat to surface waters or storm drains, it puts booms around the truck to prevent any spillage making its way to the surface waters.

Mr. Claytor also notes that the SP used DTL ("Direct To Locomotive") trucks to fuel locomotives at approximately 50 locations without use of track pans, fueling platforms, or canopies. Likewise, UP, which has absorbed SP, continues to fuel at approximately 100 locations across its system without those items. CSXT, NS, and numerous short lines continue to do the same. Mr. Claytor has also provided a copy of the fueling guidelines for a UP contractor that explain the spill containment requirements for DTL service. See WFA/Basin Rebuttal electronic workpaper "Fueling Guidelines.pdf." Finally, with different-sized coal trains, DP units re-fueling on eastbound loaded trains at Guernsey seldom end up at exactly the same location, thereby making a stationary platform less useful.

In addition to the above adjustments, Mr. Claytor has reduced the plumbing fitting allowance to 20 percent and dropped the unexplained 1.34 multiplier that BNSF used. Otherwise, Mr. Claytor accepted BNSF's mainline fueling facilities costs, which come to \$5.44 million when adjusted. See WFA/Basin Rebuttal electronic workpaper

“Fuel Storage Costs Rebuttal.xls,” tab “Fueling - Mainline,” cell J29. These costs include all of the fuel storage and unloading facilities that BNSF included.

**iii. Inside Fueling Facility**

On Opening, WFA/Basin’s engineering experts provided for an inside fueling facility at Guernsey Yard that would perform major locomotive services, such as fueling, sanding, lubrication, servicing of retention toilets, etc. BNSF has attempted to substantially increase WFA/Basin’s costs for this facility. See BNSF Reply Narr. at III.F-182 to 183. However, like the mainline fueling facility, Mr. Claytor determined that BNSF’s costs, when properly adjusted, are almost the same as those proposed by WFA/Basin on Opening. Thus, Mr. Claytor again used BNSF’s costs as adjusted on Rebuttal.

First, BNSF included a canopy for the inside fueling facility. See BNSF Reply electronic workpaper “III F 7 Facilities.xls,” tab “Fueling - Inside,” rows 37-46. As with the mainline fueling facility, this canopy is unnecessary, and BNSF itself does not have a canopy for its inside fueling facility in Guernsey Yard, as Mr. Claytor has personally observed. Moreover, BNSF updated that facility in 1997 and it did not add a canopy then. See WFA/Basin Rebuttal electronic workpaper “BNSF Fueling Facilities.pdf.” Thus, Mr. Claytor excluded those costs. See WFA/Basin Rebuttal electronic workpaper “Fuel Storage Costs Rebuttal.xls,” tab “Fueling - Inside,” rows 40-49 (removed costs in blue).

BNSF also added costs for foundations and excavation for the platforms. See BNSF Reply electronic workpaper "III F 7 Facilities.xls," tab "Fueling - Inside," rows 31-35. These costs are unnecessary for the reasons cited above in discussing the mainline fueling facility at Guernsey. In particular, the Hanson-Wilson estimate that both parties use for the platforms states that it includes the concrete fueling platform and "everything needed on a typical full service fueling platform including the associated support structures . . . ." See WFA/Basin Op. electronic workpaper "Wilson Co. email.pdf." Therefore, Mr. Claytor, removed these additional costs from BNSF's inside fueling facility costs. See WFA/Basin Rebuttal electronic workpaper "Fuel Storage Costs Rebuttal.xls," tab "Fueling - Inside," rows 34-38 (removed costs in blue).

BNSF also added costs for containment facilities for the various smaller storage tanks (30,000 gallons or less), but this is unnecessary because the tanks that were specified by WFA/Basin are double-wall tanks. See WFA/Basin Op. electronic workpaper "Fuel Storage Costs," tab "Inside Fueling," row 28 and BNSF Reply electronic workpaper "III F 7 Facilities.xls," tab "Fueling - Inside," rows 215-228. Therefore, additional containment is not required, and Mr. Claytor removed the foundation mat, walls and stairs costs associated with the containment facility. See WFA/Basin Rebuttal electronic workpaper "Fuel Storage Costs Rebuttal.xls," tab "Fueling - Inside," rows 218-231 (removed costs in blue).



BNSF also added skylights to the pump house superstructure. See BNSF Reply electronic workpaper "III F 7 Facilities.xls," tab "Fueling - Inside," row 249. Skylights are not necessary because the facility already includes \$7,992 for lighting receptacles, \$900 for wall switches, and \$17,064 for Lights (HID) totaling \$25,956. See BNSF Reply electronic workpaper "III F 7 Facilities.xls," tab "Fueling - Inside," rows 338-340. Thus, Mr. Claytor removed the skylight costs from BNSF's calculations. See WFA/Basin Rebuttal electronic workpaper "Fuel Storage Costs Rebuttal.xls," tab "Fueling - Inside," row 252 (removed costs in blue).

Mr. Claytor also disagrees with BNSF's high-pressure wash system costs. In particular, BNSF used 16 Hotsy Hi-Pressure steam cleaners at a price of \$26,536.02 each. See BNSF Reply electronic workpaper "III F 7 Facilities.xls," tab "Fueling - Inside," row 133. Sixteen steam cleaners is overkill. There are only 12 service spots on the inside service facility, and one steam cleaner can service two spots because they are portable.

Second, BNSF's Hotsy unit cost was unexplained. BNSF did not provide a model number, series number, or any specifications at all. BNSF simply assigned a cost of \$26,536.02 each, for a grand total of \$424,576. Mr. Claytor has revised BNSF Hotsy costs to reflect real world pricing. He selected Hotsy model # 1267SS 3000 p.s.i., 4.3 gal./min., diesel powered with 15.2 hp Deutz.

WFA/Basin's locomotive repair expert, Mr. Ellison, regularly used similar Hotsy models at OmniTrax (a locomotive maintenance contractor). He found that these models are well suited to general locomotive cleaning, shop floor and platform cleaning, truck frame blasting, etc. They are portable enough for one laborer to move along a platform or aisle and manipulate, and yet they provide adequate cleaning at an economical cost, especially with the proper mix of soap.

Mr. Claytor's and Mr. Ellison's Hotsy cost of \$61,608 was based on a quote for six units at \$10,268 each. See WFA/Basin Rebuttal electronic workpaper "Hotsy Quote.pdf." Additionally, Mr. Claytor and Mr. Ellison provided for six portable gear set-ups at \$300 each for a total cost of \$1,800. They also added six 12-volt batteries at \$70 each because they were not part of the Hotsy quote. Finally they added \$500 per unit for shipping to Guernsey. Thus, the total unit cost is \$11,138 each, and the Hotsy total is \$66,828, as opposed to BNSF's cost of \$424,576. See WFA/Basin Rebuttal electronic workpaper "Fuel Storage Costs Rebuttal.xls," tab "Fueling - Inside," row 136.

Finally, BNSF appears to have made a data entry error for 8-inch sanitary sewer pipes because it included 9,500 feet of such pipe. See BNSF Reply electronic workpaper "III F 7 Facilities.xls," tab "Fueling - Inside," row 390. However, the distance from the middle of the fuel platforms to the waste treatment facility is only 950 feet. Thus, BNSF appears to have intended to use 950 feet, assuming the pipes were linked between the platforms and then run to the treatment facility. Mr. Claytor has corrected

this error. Likewise, Mr. Claytor has adjusted the number of 8-inch fittings that go with the pipe by 90% since the pipe length is reduced by the same percentage. See WFA/Basin Rebuttal electronic workpaper "Fuel Storage Costs Rebuttal.xls," tab "Fueling - Inside," rows 392-401.

As with the mainline fueling facilities, Mr. Claytor has reduced the fitting allowance to 20 percent and dropped the unexplained 1.34 multiplier that BNSF used. Otherwise, Mr. Claytor accepted BNSF's inside fueling costs, which come to \$7.09 million when adjusted. See WFA/Basin Rebuttal electronic workpaper "Fuel Storage Costs Rebuttal.xls," tab "Fueling - Inside," cell J24.

**c. Locomotive Repair Shop**

On Opening, WFA/Basin's engineering witnesses, led by their locomotive repair expert, Mr. Ellison, designed a locomotive shop that easily meets the needs of the LRR's locomotive fleet. Indeed, it can hold over 10 percent of the LRR's fleet at any time. BNSF does not disagree with the size proposed (its own facility is slightly larger to due to its larger number of locomotives), but from that point there is little if anything else on which the parties agree. Indeed, BNSF raises any number of objections and revisions to Mr. Ellison's proposal, but as discussed below, BNSF has often misconstrued Mr. Ellison's plans or otherwise gold-plated the facility. Thus, with a few minor revisions, Mr. Ellison continues to use his Opening costs.

i. Design

One of BNSF's principal misunderstandings is that it assumed that the LRR would actually repair major components, such as engines and turbo chargers, in-house. BNSF based this assumption on some basic work-area designations that Mr. Ellison made such as "Truck Shop." See BNSF Reply Narr. at III.F-186 to 187. BNSF's assumption that such area designations were intended to mean a massive shop to perform such work is incorrect. Indeed, there would not be adequate space for all the different equipment needed to perform such work.

In any event, performing such activities in-house is rare. In Mr. Ellison's experience these items are contracted out to vendor shops who specialize in this work and the components are repaired on a repair-and-return or unit-exchange basis, with the locomotive shop set up to remove such components from the locomotive and reinstall the repaired or replaced part. Thus, Mr. Ellison intended that the LRR shop would change out components that are rebuilt off site (contracted out), as opposed to removing and rebuilding all the individual components in-house. In other words, the shop designation was intended to mean the area where such components would be stored and prepped as they are changed in and out. Therefore, the locomotive shop does not need the additional equipment that BNSF included in its restatement, such as an engine block washer, traction motor stands, traction motor gearcase racks, or air brake test racks.

ii. Structure Costs

On Opening, WFA/Basin based their locomotive shop structure costs on a quote provided by Kessel Construction – the same company that provided the headquarters building costs used by both parties. In this case, Mr. Ellison provided Kessel with details about the building that was needed, and Kessel provided a quote. This quote formed the major cost backbone of the LRR’s locomotive shop at \$2.9 million.

BNSF rejected the Kessel costs for several unfounded reasons. First, BNSF suggests that the quote is devoid of any actual cost figures. See BNSF Reply Narr. at III.F-187 to 188. It appears that on Opening WFA/Basin inadvertently included a March 13, 2005 draft of the Kessel materials, which were not finalized until April 14, 2005. However, Mr. Ellison did use all of the figures from the April quote, which is included herein as “Kessel Locomotive Shop - Final.pdf.” Thus, on page 33 of the quote, Kessel’s total cost figure of \$2.9 million is noted. Mr. Ellison has, therefore, continued to use that cost on Rebuttal.

BNSF also criticized some of the specifications for the shop, which are detailed in the Kessel materials. First, BNSF argues that the 8-inch wall thickness of the shop is inadequate. See BNSF Reply Narr. at III.F-189. BNSF argues in its narrative for 10-inch thick walls instead, but then it actually used 8-inch thick walls in its cost restatement. See BNSF Reply electronic workpaper “III F 7 Facilities.xls,” tab “Locomotive Shop,” cells B11, B98, B120, B135. In any event, BNSF’s argument for

10-inch thick walls assumes that the walls are load bearing. See BNSF Reply Narr. at III.F-189. Mr. Ellison's shop walls are not load bearing, they are designed primarily for frost protection. Loads are carried through the building on the steel frame, which is the primary framing discussed on page 11 of the Kessel quote. Thus, an 8-inch wall is adequate. See BNSF Reply Narr. at III.F-189.

BNSF also suggests that the concrete floor slabs should be 10 inches thick rather than the 6 inches that Mr. Ellison used. Id. BNSF's thicker floor is another gold-plated item. Mr. Ellison's 6-inch concrete floor with one layer of steel reinforcement can handle 400-500 pounds per square foot. See WFA/Basin Rebuttal electronic workpaper "CRSI Design Handbook.pdf." This loading capability easily exceeds the AREMA recommend loading capability of 250 pounds per square foot. See WFA/Basin Rebuttal electronic workpaper "AREMA Shop.pdf." Thus, Mr. Ellison continues to use the Kessel costs on Rebuttal.

BNSF also argues for additional heating and ventilation systems because the system provided by Mr. Ellison might not heat the building sufficiently given the frequent opening of doors, or there might be no heat if the system failed. See BNSF Reply Narr. at III.F-189 to 190. The heating system is more than adequate during the winter months because the shop personnel who are moving locomotives in and out will need a coat anyway. Moreover, in Mr. Ellison's experience, there is no expectation that a shop of this kind will be heated to a certain temperature at all times. In any event, the

proposed shop heating unit operates at 100% efficiency with an 83% burner efficiency. In addition, the unit has an average operating life with regular maintenance of 30 or more years without a catastrophic failure, and it comes with a 15-year guarantee. See WFA/Basin Rebuttal electronic workpaper "HVAC.pdf." Thus, Mr. Ellison has not changed the heating and ventilation system on Rebuttal.

BNSF also suggests that the plumbing and electrical systems are somehow "limited." See BNSF Reply Narr. at III.F-190. BNSF offers no specifics on this point. Mr. Ellison, therefore, continues to rely on the Opening costs from Kessel for these items.

BNSF also disputes the various shop floor improvements that Mr. Ellison included, such as drop pits. Id. at III.F-192 to 193. Mr. Ellison disagrees that any potential conflicts on exact floor openings or pit clearances somehow represents a major flaw. Obviously, any installation of this sort will require minor tweaks, but these are not fatal nor do they involve any significant cost differences. For example, the pit clearance of 10.5 inches that BNSF discusses is a red herring. Id. at III.F-192 to 193. This pit design is in use today in a locomotive shop that Mr. Ellison and Mr. Stone designed. Second, even if this was a problem, it is easily remedied by slightly narrowing the pit. Thus, the suggestion that this might be a major flaw is absurd.

BNSF also argues that Mr. Ellison should have included concrete, multi-level shop floors so that all heights of the locomotives can be easily reached by the locomotive shop personnel. Id. at 192. Mr. Ellison agrees that multi-level structures are

needed. That is why he included multi-level steel platforms in his shop as many other Class I and regional railroad do in their shops. See WFA/Basin Op. electronic workpaper “Buildings and Sites.xls,” tab “Locomotive shop equip,” cell A29. See also WFA/Basin Rebuttal electronic workpaper “Locomotive Shop Photos.pdf” for photographs of typical steel platforms used in locomotive shops.

BNSF also suggests that Mr. Ellison omitted the concrete costs for pit floors, which it argues are typically 18 inches thick. See BNSF Reply Narr. at III.F-192. Again, BNSF’s suggestion is wrong. Mr. Ellison did not separately price the pit floor because he has already included concrete floor costs for the entire building, including the bottoms of the pits.

BNSF argues that WFA/Basin omitted reinforcement of the track structure under the embedded rails. Id. BNSF is incorrect. On Opening, Mr. Ellison’s cost for embedded track included any required reinforcement. See WFA/Basin Op. electronic workpaper “Buildings and Sites.xls,” tab “Locomotive shop equip,” cell A22 (Embedded #7). Mr. Ellison’s cost per cubic yard (converted from track foot costs) is \$233 versus BNSF’s cost of \$260. This difference is attributable to Mr. Ellison’s use of a concrete quote rather than the Means figure BNSF used, but the necessary costs are included nevertheless.

BNSF also argues that the LRR’s drop table and wheel truing machine pits are undersized. See BNSF Reply Narr. at III.F-192. BNSF’s argument is inconsistent



with its own evidence. In particular, in BNSF's restatement of the locomotive shop costs it included a 15'4" x 22'10" x 5' pit for the wheel truing machine. But Mr. Ellison's wheel truing pit was 30' x 20' x 9', considerably larger than BNSF's pit. Moreover, Mr. Ellison based his pit size on recommendations from the wheel truing machine manufacturer, Simmons. Likewise, BNSF included a 32' x 25' drop table pit, but Mr. Ellison proposed a much larger 49' x 27' pit. Thus, BNSF's pit size arguments are without merit.

In the estimation of WFA/Basin's engineering experts, BNSF appears to list these false criticisms so that it can present a design for a completely different, and much more costly, locomotive shop. As noted above, BNSF's criticisms miss the mark, and the locomotive shop designed and costed by WFA/Basin's experts is perfectly adequate for the LRR's purposes given the peak-year traffic volume moving through Guernsey.

### iii. Cranes

On Opening, WFA/Basin included a variety of jib cranes to meet the needs of the locomotive shop. During Mr. Ellison's employment as Vice President of Rome Locomotive Works and at Omnitrax, his shops employed jib cranes with great success. Thus, he rejects BNSF's general criticism of jib cranes. See BNSF Reply Narr. at III.F-190 to 192.

BNSF also suggests that the clearance height of the cranes is too narrow to effectively work on SD70MAC or SD40-2 locomotives. Id. at 192. Mr. Ellison disagrees. In particular, the carbodies and cooling fans will be removed outside by a

mobile crane in order to conserve space and alleviate the need for taller crane structures. These items must be removed outside because the parties' respective shop designs have no room for storage or placement of this equipment inside the shop. Thus, the minimal height clearance will be the overhead height needed to pull off a turbocharger, which is much lower than the 15 or more feet needed if the carbody and fan were still attached to a locomotive. In addition, Mr. Ellison's plan assumed that the cranes would be mounted on four-foot high pedestals thereby increasing their range.

BNSF also suggests that the cranes will be limited in their reach along the length of the locomotive because the cranes move in a circular arc that make it difficult or even impossible to reach the far ends of the locomotives. Id. Such potential problems are addressed by the lower height requirements just discussed and the fact that the shop has cranes located close to the prime mover components of the locomotive, which are not located at the far ends of the locomotive. Moreover, the cranes need only reach the carbody to pick up components such as waterpumps, fuel pump motors, power assembly components, air compressor heads, cam sections, governors, etc., from ground level to deck. Other components such as radiator fans, radiator sections, turbos, inertial air components, and dynamic brake grids will be lifted with one of the two overhead cranes or with an outside mobile crane. Therefore, the jib cranes that Mr. Ellison has specified can handle the required lifting.

Mr. Ellison does agree, however, that an additional crane is required on Track "A." Id. He has added this on Rebuttal.

**iv. Maintenance Tools**

As noted above, BNSF incorrectly assumed that the LRR would perform a variety of major overhaul work in-house, when in fact it will not. BNSF's maintenance tool discussion must be viewed in this context. In particular, BNSF has offered a laundry list of tools it argues the LRR should acquire, such as an engine block washer, traction motor stands, traction motor gearcase racks, and air brake test racks. Id. at III.F-193 to 194. Mr. Ellison's Opening maintenance tool selections recognized the actual scope of work being done in the locomotive shop. Therefore, he has not included any additional tools associated with these other repair operations.

For the repairs that the LRR will do in-house, BNSF also added a load box for SD40-2 locomotives. Id. at III.F-194. BNSF suggests that some SD40-2s may not have a self-loading feature, but the current generation of this locomotive normally includes this feature. Thus, Mr. Ellison did not include a load box.

**v. Wash House**

On Opening, WFA/Basin included a suitable one-track, manual wash facility in a 3,000 square foot building. As BNSF notes, a locomotive takes about an hour to wash. Id. at III.F196. At most, the LRR will only need to wash five or six locomotives in a day. Thus, the two track, 6,000 square foot facility proposed by BNSF is

unnecessary. As BNSF has no real criticisms of Mr. Ellison's wash house, other than size, Mr. Ellison continues to use his Opening wash house on Rebuttal.<sup>16</sup>

**vi. Site Development**

On Opening, Mr. Ellison included gravel parking and storage areas around the locomotive shop. BNSF argues for concrete or asphalt surfaces. Id. Concrete or asphalt is not necessary. As evidenced by a variety of photographs of locomotive repair facilities, many such facilities do not even have gravel surfaces, including BNSF's locomotive shop in Denver. See "Locomotive Shop Photos.pdf." Thus, Mr. Ellison continues to use gravel on Rebuttal.

**vii. Indexing**

BNSF points out several instances where WFA/Basin's indexing of costs was incorrect. See, e.g., BNSF Reply Narr. at III.F-188 (building cost indexing). These errors have been corrected on Rebuttal.

**viii. Outside Track Configuration**

On Reply, BNSF completely changed the track configuration leading into and out of the locomotive repair shop. See BNSF Reply Exhibit III.B-1. As noted in Part III-B-2-d above, BNSF provided no rationale or discussion for its revisions or its addition of 0.68 track miles for the shop. Mr. Ellison reviewed BNSF's reconfiguration and

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<sup>16</sup> WFA/Basin note that BNSF engaged in extensive boot-strapping of its wash house evidence presented in other cases. See BNSF Reply Narr. at III.F-195 to 196. However, those designs are not at issue here.

rejected it on the basis that WFA/Basin's track layout is better suited to the LRR's locomotive shop than BNSF's restated locomotive shop. Mr. Ellison does agree, however, that the shop would be enhanced by the addition of a lay-up track. This track will allow the shop to hold locomotives that are out of service because of a catastrophic failure or wreck damage. Therefore, WFA/Basin's engineering experts added a stub-ended lay-up track, 260 feet (0.05 miles) long, on the inbound (west) side of the locomotive shop. This track is shown in red on page 11 of Rebuttal Exhibit III-B-1.

**ix. BNSF's Restatement**

Based on its criticisms of Mr. Ellison's locomotive shop, BNSF decided to "restate" the costs of the locomotive repair shop. Restate is, of course, a misnomer. BNSF simply designed the most expensive shop it could muster without running afoul of the laugh test, as it did with right-of-way retaining walls. Mr. Ellison and WFA/Basin's engineering experts have carefully review BNSF's restatement and determined that any number of items are overbuilt or double counted.

Before turning to those items, WFA/Basin note that BNSF's costs are dubious on a macro level. In AEP Texas, BNSF proposed and costed a similar sized locomotive repair shop and wash house in Alliance, NE for \$16.8 million. See BNSF's AEP Texas Reply Narr. (Public Version) filed May 24, 2004, at III.F-178. One year later, BNSF has found another \$10 million in costs to add. Yet, the LRR has fewer

locomotives than the SARR in AEP Texas did. Given this significant disparity, BNSF's restatement is flawed on its face.

The major defects that Mr. Ellison has identified in BNSF's restatement are:

- Double Counting of Concrete: BNSF included 91,650 square feet of concrete floor for the shop. See BNSF Reply electronic workpaper "III F 7 Facilities.xls," tab "Locomotive Shop," cell I82. The total square footage of the shop work area is 94,850. Id. at cell D28. Thus, BNSF left 3,200 square feet of other area to accommodate the concrete floors of inspection pits. However, BNSF's square footage of inspection pit floors is 11,520. Id. at cell B83 (9' by 320' x 4=11,520). Thus, BNSF has double counted the concrete for over 8,000 square feet. BNSF made similar errors for track slabs and jack pads in both the locomotive shop and wash house. Id. at cells B84, B113, B128.
- Overbuilt Facilities: BNSF includes massive investment costs in "miscellaneous site structures." For example, BNSF includes costs for 100' foot long track pans on concrete track slabs on three inbound and six outbound tracks. Id. at cell B692. These additions are unnecessary. The maintenance facility can already hold 15 locomotives. The shop does not need any more work area inside or out. In addition, BNSF added a canopy and extra lighting for the outside work area at a cost of over \$1,000,000. Id. at cells K708-K709. BNSF even added 202 lockers, but it assumed only 103 employees would actually work at the shop. Id. at cells I336, F826.
- Unexplained Cost Items: BNSF included nearly \$500,000 for an emissions testing building, but offers no explanation as to what emissions testing is needed or why a separate building is required. Id. at cell K32. Indeed, Mr. Ellison is not aware of any reason why such a building would be necessary.
- Excessive Cost Items: BNSF included four 13-gallon trash cans at \$248 dollars each. Id. at cell K346. BNSF added \$43,000 in TV antennas and outlets. Id. at cell B505. BNSF included 84 bollards around the facility, including bollards around doors that the locomotives are using. Id. at cells B211, B251. BNSF included two

\$19,000 trash compactors. Id. at cell L352. BNSF included a fire sprinkler system for the wash house. Id. at cell I530. Finally, BNSF's reliance on Means for many unit costs inflated the overall costs versus the Kessel quote that Mr. Ellison used.

**x. Summary**

Mr. Ellison's Opening locomotive shop design is more than adequate. In addition, the main structural component costs were based on an actual quote rather than Means. Moreover, BNSF's shop assumes additional equipment, services and amenities that the LRR's shop simply does not require. Thus, Mr. Ellison has continued to rely on his Opening costs, with the few changes noted above. The Rebuttal cost of the facility is \$8.9 million.

**d. Car Repair Shop**

The parties agree that the car repair contractor will be responsible for providing the necessary shop. See BNSF Reply Narr. at III.F-198. The parties have included adequate space in the Guernsey Yard for this facility.

**e. Crew Change Facilities and Yard Offices**

On Opening, WFA/Basin provided 13,000 square foot buildings at Guernsey and Donkey Creek to accommodate crew changes facilities and MOW crews. BNSF agrees with WFA/Basin's building sizes and the underlying costs. Id. at III.F-198 to 199. However, BNSF notes that WFA/Basin incorrectly applied the necessary location factor adjustments. Id. at III.F-199. WFA/Basin have fixed this error on Rebuttal.

WFA/Basin also note that BNSF added site preparation work for each of the crew change buildings at a cost of \$235,425 per building. See BNSF Reply electronic workpaper “III F 7 Facilities.xls,” tab “Summary,” cell G36. However, as with the headquarters building, the Kessel building quote that the parties used already includes site preparation work. See WFA/Basin Op. electronic workpaper “MOW and Crew Buildings.pdf.” Therefore, WFA/Basin did not include such costs on Rebuttal.

**f. MOW Buildings**

On Opening, WFA/Basin included 6,500 square-foot buildings for MOW crews at Reno, South Logan and Bridger Jct. WFA/Basin based their costs on the same 13,000 square foot building used in Guernsey and Donkey Creek, except they halved the total cost to reflect the smaller size. BNSF’s argues that a smaller building will not necessarily be half the cost, but instead it is likely to be 6.2 percent more expensive on a square foot basis. Id. at III.F-200. WFA/Basin disagree that the square foot costs will necessarily be more than the crew change building costs. For example, the MOW buildings will require only one-quarter of the restroom space needed in the crew change building. Yet, 11.8 percent of the total cost of the crew change building cost is associated with the restrooms. The MOW buildings will realize additional cost savings due to such changes. Moreover, the Board has regularly scaled investment costs based on building size. See, e.g., TMPA I at 149 (scaling the size of the headquarters building). Thus, WFA/Basin’s adjustment is consistent with Board precedent.



WFA/Basin also note that BNSF added site preparation work for each of the MOW buildings at a cost of \$63,587 per building. See BNSF Reply electronic workpaper "III F 7 Facilities.xls," tab "Summary," cell G38. However, as with the headquarters building and the crew change facilities, the Kessel building quote that the parties used already includes site preparation work. See WFA/Basin Op. electronic workpaper "MOW and Crew Buildings.pdf." Therefore, WFA/Basin are not including such costs on Rebuttal.

**g. Waste Water Treatment**

WFA/Basin's Opening waste water treatment facilities were designed by its principal engineering expert, Mr. Stone. Mr. Stone has designed a wide-variety of waste water and sewage treatment facilities. Thus, he is well aware of the LRR's requirements. On Opening, he designed the primary waste treatment plant at Guernsey to handle sanitary waste, not industrial waste. Mr. Stone purposefully excluded industrial waste from the fueling and locomotive shop facilities because in today's regulatory environment it is important not to lump all waste types together into one facility.

More importantly, the cost for treating emulsified oil waste in a sewage treatment plan, as BNSF proposes, is extremely high. This requires facilities ten times as large as those designed just for sewage, and the type of treatment required is completely different than treating human waste. In addition, the sludge produced is difficult to dispose of and must be landfilled at a very high cost. By separating out the waste streams

and dealing with them in the most efficient manner possible, Mr. Stone has reduced the waste water treatment facility costs considerably versus BNSF's combined sewage treatment plan.

BNSF's Reply evidence misses the mark. BNSF assumed that the waste water treatment facility was intended to handle both sanitary and industrial waste. Id. at III.F-200 to 202. If that were the case, the LRR's facility would be inadequate, as BNSF suggests. Id. But Mr. Stone did not handle industrial waste streams in that manner.

First, Mr. Stone notes that the LRR will handle several types of industrial waste, including oil, detergents and fuel. Moreover, as BNSF notes, industrial facilities often create water streams with emulsified suspensions of the wastes as noted above. Id. at III.F-201. Mr. Stone addresses below each of the types of discharge that BNSF listed on pages III.F-201 to 202 of its Reply Narrative.

Emulsified suspensions are trapped in a closed circuit system and stored in drums to be treated by an industrial treatment contractor such as Safety-kleen. See WFA/Basin Rebuttal electronic workpaper "Safety-kleen.pdf." Wash water from the locomotive washing facility will be recycled so that there is no discharge of soap and oil to the wastewater treatment plant. Oil that is spilled or dripped from the locomotives will be handled by the oil-water separator that discharges to the storm water system. "Oily waste streams" from the locomotive maintenance facility will be trapped in the closed circuit internal system and stored in waste oil drums to be disposed of off site. Thus,

under Mr. Stone's plan, no oil products should find their way to the sewage treatment facility that has been provided to treat human waste. Mr. Stone also notes that even if a municipal treatment system is available for discharge, the system provider normally does not allow the discharge of emulsified oily waste to the municipal system. It must be treated separately and removed from the waste stream prior to the discharge point. Thus, BNSF's waste water treatment plan is not feasible.

BNSF also states that the 20-foot wide gate used to access the waste water treatment facilities should have been costed at \$1,450, not \$1,425, or a difference of \$300 for all 12 gates. Id. at III.F-202. BNSF's disputing of a \$300 cost item is absurd, but WFA/Basin agree that the unit cost was input incorrectly and have corrected it on Rebuttal.

**h. Yard Air and Lighting**

On Opening, WFA/Basin included a variety of yard preparation items, including inspection roads, drainage and lighting. Yard drainage is discussed above on pages III-F-50 and 69. Neither party included any yard air costs because there are no operational circumstances where it would be required on the LRR. On Reply, BNSF only took issue with WFA/Basin's costs for yard lighting.

On Opening, WFA/Basin included yard lighting costs based on a coverage formula included in their Opening electronic workpaper "Building Site Development

Costs.xls,” tab “Yard Lights Drainage Roads.” BNSF argues that WFA/Basin’s lighting coverage is inadequate and that certain costs were omitted. See BNSF Reply Narr. at III.F-203 to 204.

WFA/Basin’s engineers disagree with BNSF additional lighting locations because they have already provided far more lighting coverage than BNSF actually has in its own facilities. See WFA/Basin Op. Workpapers Vol. 10, pp. 5397-5414 (Guernsey yard photographs). See also WFA/Basin Rebuttal electronic workpaper files “Alliance BNSF.pdf,” “BNSF Denver Shops.pdf,” “BNSF yard lights.pdf,” and “BNSF Barstow.pdf.” These photographs show that BNSF has very few yard lights; in fact, most of the photos only show one or two light poles. Even UP’s Hinkle facility, often touted by BNSF’s Witness Primm, has only has two lights in the entire yard. See WFA/Basin Rebuttal electronic workpaper “UP Hinkle.pdf.” To add the additional light fixtures that BNSF proposes is simply overkill. Moreover, a car inspector would still need to carry a flashlight to inspect cars at night because even with the more intense lighting proposed by BNSF, a shadow will still be present under cars thereby necessitating additional lighting during an inspection.

As for the lighting fixtures, BNSF make a number of statements that suggest that WFA/Basin have somehow provided unsupported costs. See BNSF Reply Narr. at III.F-203 to 204. This is simply not true. WFA/Basin’s engineering witnesses included all of the relevant Means costs, and hyperlinked the costs entries on their

spreadsheet to the backup workpapers. Thus, BNSF's suggestion that WFA/Basin's unit cost of \$14.72 for wiring and conduit was unsupported (id. at III.F-204) is unfounded. The unit cost is simply a combination of cells F62 and F63 from WFA/Basin's Opening electronic workpaper "Building Site Development Cost.xls," tab "Develop unit cost." BNSF, on the other hand, does not cite where in Means it found the \$22.30 unit cost it used on Reply. See BNSF Reply Narr. at III.F-204. Thus, WFA/Basin continue to use their Opening unit costs.

BNSF has also added bollards around the light poles. This addition is unnecessary because there is little vehicular traffic in the yards, and if a train derails and hits the pole, a bollard will not help. Moreover, BNSF does not have bollards around any of the light poles shown in the photographs referenced above. Therefore, WFA/Basin have not added bollards on Rebuttal.

There is one cost adjustment that WFA/Basin accept. BNSF notes that WFA/Basin's lighting costs fail to include the actual 400-watt high pressure sodium fixture. Id. WFA/Basin have corrected this omission on Rebuttal.

## **8. Public Improvements**

### **a. Fencing**

#### **i. Right of Way Fencing**

On Opening, WFA/Basin provided right-of-way fencing for 90 percent of the Campbell Subdivision and 100 percent of the other Subdivisions. In addition,

consistent with Board precedent, WFA/Basin included an additional three percent for the Orin Subdivision. BNSF agrees with the quantity of right of way fencing provided by WFA/Basin for the mainline track. Id. at III.F-205 to 206. However, BNSF points out that WFA/Basin did not fence the mine spurs. Id. at III.F-206. WFA/Basin agree the mine spurs should be fenced, and they have added the appropriate quantities on Rebuttal.

BNSF also adjusted WFA/Basin's unit cost from \${ } per linear foot to \${ } per linear foot. WFA/Basin agree with this unit cost and have applied it on Rebuttal.

**ii. Snow Fence**

On Opening, WFA/Basin included snow fencing on three percent of the Orin Subdivision. BNSF points out that WFA/Basin misinterpreted the snow fence requirements as delineated in the TMPA I decision, and that the decision actually called for snow fence on 20 percent of the Orin Subdivision. Id. at III.F-206 to 207. On Reply, however, BNSF's linear feet of snow fence was not based on TMPA I, but rather on an inspection trip taken by one of its consultants. Id. at III.F-206. In any event, WFA/Basin agree that their Opening figure was in error. They have revised their quantities on Rebuttal to match BNSF's total linear feet. WFA/Basin have also used BNSF's unit cost for snow fences, which involve a larger fence that is apparently required by the Wyoming DOT. Id. at III.F-207.

**b. Roadway Signs**

WFA/Basin disagree that all of the signs suggested by BNSF are necessary, as signs such as 1-800 crossing signs are usually covered in crossing costs. However, the total difference between the parties is minimal, so WFA/Basin have accepted BNSF's sign investment costs of \$141,110.

**c. Crossings**

**i. At-Grade Crossings**

On Opening, WFA/Basin's engineers intended to build all at-grade crossings that exist on the lines being replicated. However, BNSF notes on Reply that WFA/Basin's crossing inventory omitted three crossings and they erred in 25 instances on the number of tracks for the crossing. Id. at III.F-211. WFA/Basin have reviewed these omissions and errors, and they agree that these additions are necessary except where BNSF included crossings over new set-out tracks that WFA/Basin are not adding as explained above.

As for crossing costs and types, on Opening WFA/Basin used rubber/asphalt crossings. On Reply, BNSF noted that concrete crossings are easier to remove and then put back in place when maintenance work is performed at the crossing, whereas, asphalt crossings must be torn up. Id. at 212 to 213. This is true, and WFA/Basin's engineers have determined that the frequency of repaving is such that concrete crossings are more economical in the long term. Therefore, WFA/Basin have

adopted BNSF's unit cost for concrete crossing panels and applied it to their corrected crossing count. See WFA/Basin Rebuttal electronic workpaper "Road Crossing Worksheet Rebuttal.xls."

**ii. Warning Devices**

On Opening, WFA/Basin's engineers included cross bucks at all road crossings, and they also included gates and flashers where necessary. On Reply, BNSF notes that WFA/Basin overstated the quantities needed for both cross bucks and gates and flashers. See BNSF Reply Narr. at III.F-213 to 214. However, BNSF agrees with the unit costs proposed by WFA/Basin. As such, WFA/Basin have revised their quantities to match BNSF's, and, therefore, the parties now agree on the costs for warning devices.

**iii. Overpasses**

WFA/Basin identified 20 overpasses, and consistent with Board precedent, they provided for the LRR to pay 100 percent of the costs for 18 of the overpasses and 10 percent of the cost for the remaining two overpasses. On Reply, BNSF agrees with the approach that WFA/Basin used. Id. at III.F-215. However, BNSF disagrees on the length of some of the overpasses, and it disagrees with WFA/Basin's per square foot unit cost. These disagreements are addressed below.

**(a) Length of Overpasses**

On Opening, WFA/Basin designed their overpasses with a back slope of 1:1. BNSF's raises no objection to this selection. Instead it simply states that it built the



Orin Line overpasses with a 2:1 back slope, and then it built the LRR's overpasses with the same back slope, which resulted in longer bridges. Id. at III.F-215 to 216. BNSF's wave-of-the-hand change is inappropriate. There is no engineering reason why a steeper back slope cannot be used nor has BNSF suggested otherwise. WFA/Basin's engineers, therefore, have used the same overpass lengths that they used on Opening with the following exception.

BNSF noted that the overpass over Wyoming Highway 59 at MP 77.54 on the Orin Subdivision is skewed, such that the overpass is longer than it would be if the highway were perpendicular to the railroad. Id. at III.F-216. Consequently, BNSF lengthened the overpass. WFA/Basin's engineers agree that the Highway 59 overpass should be lengthened, and they used a 45 degree angle to determine the extra length required. However, they did not use BNSF's revised bridge length because they still used their 1:1 back slope.

**(b) Unit Costs**

On Opening, WFA/Basin's engineers included costs for the overpass structures based on an Ohio DOT square foot unit cost for such structures. BNSF's acknowledges that WFA/Basin's cost per square foot for the structures is almost identical to its proposed cost. Id. at III.F-218. Nevertheless, BNSF opts for its higher per square foot cost. As WFA/Basin's cost is clearly reasonable, they have used their unit cost on Rebuttal.

While WFA/Basin's engineers provided for the LRR to pay for the structures, they did not include additional sums for items as road paving, approach grading or any other activities that are typically paid for by state departments of transportation. BNSF, on the hand, did include these costs on Reply – more than doubling the per linear foot costs that WFA/Basin used on Opening. Id. at III.F-218 to 219.

Costs for items other than the structure are generally borne by states and localities because the public also benefits from the separations – even the structures are often paid for by governmental entities. Indeed, Wyoming law specifically recognizes that the state will use federal funds first for a grade separation, and then apportion the remainder between the state, localities and the railroad, but in any case the State will presumably be contributing to the effort. See Wyo. Stat. § 37-10-103(c) (2003) and WFA/Basin Rebuttal electronic workpaper “WY DOT Handbook.pdf.” Moreover, Wyoming also places the maintenance burden for grade separations on itself and local entities. Wyo. Stat. § 37-10-104(c) (2003). Id.

BNSF's Narrative unintentionally supports WFA/Basin's position on the additional costs by noting that the Orin Line plan often marked overpass work as “Not in Contract” and “By Others.” See BNSF Reply Narr. at III.F-217. BNSF's engineering witnesses assume this meant that BNSF paid for the overpass work through other contracts, but BNSF presented any evidence that supports its position. Thus, WFA/Basin

believe that BNSF did not pay for this work at all. First, Wyoming law supports WFA/Basin's conclusion because it is likely that the State paid for parts of the improvements. Second, a Railfan & Railroad article from May 1980 discussing the building of the Orin Line states that work halted until the "Wyoming Highway Department could complete an overhead viaduct for Highway 59." Id. at 49 (included as WFA/Basin Rebuttal electronic workpaper "Orin Line Article.pdf"). This article comports with the Orin Line plan for this overpass, which states that the work was performed "by others." See BNSF's Reply electronic workpaper "Overpasses.pdf," p. 4. Thus, WFA/Basin's building of the overpass structures only is reasonable and well supported.

**9. Mobilization**

The parties agree on the application of a 3.5 percent mobilization additive to the total construction costs, excluding land acquisition costs. See BNSF Reply Narr. at III.F-221. The parties also agree that the additive applies for all items unless the contractor's bid already includes mobilization, namely track labor, subballast installation, and the Headquarters building. Id.

**10. Engineering**

The parties agree on the application of a 10 percent engineering additive to the total construction cost, excluding land acquisition costs. Id.

## 11. Contingencies

The parties agree on the application of a 10 percent contingency additive. Id. at III.F-222. However, BNSF has applied this additive to the total road property investment costs other than land, including mobilization and engineering, rather than to the construction total only (excluding land) as WFA/Basin did on Opening. Id. BNSF cites “Board precedent” in its favor for its approach, but fails to cite any cases. Id.

WFA/Basin’s approach is consistent with the Board’s decisions in cases such as WPL and FMC, where the Board has held that contingencies (and engineering) are “derivative expenses, calculated as a percentage of the total construction costs (excluding land).” WPL I at 30; FMC at 40. However, despite the Board’s acknowledgment of the proper calculation method, the Board has not in fact been calculating contingencies as described above in its most recent SAC cases. Rather, it appears from the Board’s publicly-reported calculations that it has been adding engineering costs to the construction subtotal (excluding land) before determining contingencies. See, e.g., TMPA I at 111; WPL I at 75; Xcel I at 85.

This method of calculating costs for contingencies is inconsistent with the Board’s own decisions and, according to WFA/Basin’s engineering witnesses, with practice in the construction industry. Moreover, the Board has never discussed, much less, reversed its previous decisions, and BNSF provides no rationale for a change in this case. In addition, contingencies typically arise in situations where an unexpected

condition is encountered (e.g., undercutting is needed where the engineers and contractor did not expect it). Such unexpected circumstances do not require an adjustment to engineering or mobilization additives. Accordingly, WFA/Basin urge the Board to ensure that contingencies are determined only on the basis of the construction subtotal (excluding land).

**12. Other**

**a. Construction Schedule**

The parties agree on the 30-month schedule proposed by WFA/Basin's engineers on Opening. See BNSF Reply Narr. at III.F-223.

**b. Cross-subsidy Construction Costs**

On Reply, BNSF included a small section covering the difference in investment costs based on its cross-subsidy arguments presented in Part III-A. Id. at III.F-224 to 225. As WFA/Basin dispute BNSF's cross-subsidy claim, their engineers have not calculated Rebuttal road property investment with a separate cross-subsidy-related cost.

**III-G Discounted Cash  
Flow Analysis**

### III. G. DISCOUNTED CASH FLOW ANALYSIS

In all recent STB maximum rate cases, the Board has used a DCF model. The Board's DCF model distributes the total SARR capital costs over a multi-year analysis period and determines the total revenues needed by the SARR to cover its operating expenses, meet its tax obligations, recover its investment and obtain a return on that investment equal to the railroad industry's current cost of capital (weighted SARR investment). The SARR's projected revenue requirements are then compared with the SARR's projected revenues, both discounted to a common point in time.<sup>1</sup>

In their opening evidence, WFA/Basin utilized the Board's DCF model and applied that model over the periods routinely utilized in past SAC cases. Consistent with past cases, the LRR is constructed in a thirty-month period (April 1, 2002 to September 30, 2004); the LRR commences operations immediately thereafter (on October 1, 2004); and the LRR DCF analysis is applied over the following twenty-year period (October 1, 2004 to September 30, 2024).<sup>2</sup>

In its reply evidence, BNSF also relied upon the Board's DCF model. BNSF accepts WFA/Basin's use of a thirty-month construction time period; accepts WFA/Basin's use of an October 1, 2004 starting date for LRR operations; and accepts

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<sup>1</sup> See, e.g. PPL I at 32; TMPA I at 159.

<sup>2</sup> See WFA/Basin Op. Exhibit III-H-1.

WFA/Basin's use of a twenty-year DCF period.<sup>3</sup> WFA/Basin respond below to BNSF's challenges to their DCF analysis.

**1. Cost of Capital**

BNSF accepts WFA/Basin's calculation of LRR capital costs, except as follows:

**a. Cost of Preferred Equity**

BNSF asserts that WFA/Basin artificially diluted the average cost of equity used in the DCF model by excluding the cost of preferred equity from its weighted average cost of capital ("WACC") calculations for 2003 and 2004.<sup>4</sup> BNSF's claim is just an empty argument since it has no impact on the LRR's WACC. The STB calculates the WACC by determining the railroad industry's average proportions of debt, common equity and preferred equity, and multiplying these proportions by the average rate of return for the comparable financing instruments.<sup>5</sup> As the BNSF clearly explains in its Reply, in both its 2003 and 2004 determinations of the railroad cost of capital, the Board found that there was no preferred stock outstanding in either year.<sup>6</sup> Therefore, because

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<sup>3</sup> See BNSF Reply Exhibit III.H-1.

<sup>4</sup> See BNSF Reply Narr. at III.G-1.

<sup>5</sup> See e.g., Railroad Cost of Capital – 2004, STB Ex Parte No. 558 (Sub-No. 8), (STB served June 30, 2005) at 8.

<sup>6</sup> The railroad industry did have preferred equity outstanding in 2001. WFA/Basin included the 2002 preferred equity cost in its 2001 WACC calculation.



the railroad industry had no preferred equity outstanding in 2003 or 2004, any cost of preferred stock would be given a weight of zero (0) in the WACC calculation and not factor in to determining the LRR's WACC. BNSF's claim that WFA/Basin somehow diluted the WACC is clearly false based on the simple arithmetic of the WACC calculation.

**b. Equity Flotation Costs**

BNSF argues that the LRR would incur an equity flotation fee of 4%.<sup>7</sup> The STB has consistently rejected imposing an equity flotation on a SARR<sup>8</sup>. In this case, as in prior cases, the SARR's cost of capital is based on the general rail industry cost of capital. In WPL, the STB properly rejected UP's request to add capital flotation costs to the general industry cost of capital:

A serious argument that an equity flotation cost should be included for a stand-alone railroad would require a re-examination of the use of the general rail industry cost-of-capital rate in the DCF model. Because of the complexities associated with such an endeavor, the parties to SAC cases have found it preferable to use the rail industry's cost-of-capital rate as a surrogate for that of the stand-alone railroad.

WPL at 107 n.200.

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<sup>7</sup> See BNSF Reply at III.G-2 to 3.

<sup>8</sup> See e.g. Xcel I at 76; TMPA I at 162; WPL at 107.

In TMPA and Xcel, BNSF specifically asked the STB to accept a 4% flotation fee. In each case the Board rejected the request as unsupported. As stated by the Board in Xcel I:

BNSF argues that the WCC would incur a 4% financing fee to raise the equity capital needed to construct the railroad. The Board has rejected such an expense in prior SAC cases as inadequately supported. See TMPA at 162; WPL at 107. Here, BNSF's evidence is largely the same as what the Board found inadequate in prior cases: a verified statement from the President and Chief Executive Officer of Anacostia & Pacific, a private consulting firm, estimating the size of this fee based on his experience and consultation with the Chief Financial Officer (CFO) of his company. The record is improved marginally here by a memorandum from the CFO purporting to reflect telephone conversations with three undisclosed financiers to support the 4% flotation fee. But absent evidence of the existence and size of equity flotation fees associated with equity issuances of a similar size, the Board will not depart from its precedent.

Id. at 76.

BNSF offers less evidence in this case than the evidence the Board found wanting in Xcel I. In Xcel I, BNSF's principal evidence in support of a 4% flotation fee was a verified statement from the President and Chief Executive of the Anacostia &

Pacific Railway estimating flotation fees.<sup>9</sup> Here, BNSF's principal evidence in support of 4% flotation fees is its witness McCarren's "discussions" with the same CEO.<sup>10</sup>

Aside from witness McCarren's "discussions," the only other evidence it offers is a Wall Street Journal article concerning IPO fees in 2004<sup>11</sup> – which certainly is not "evidence of the existence and size of equity flotation fees associated with equity issuance of a similar size [to the LRR's]" called for under Xcel I.

The Board should reject BNSF's proposed 4% equity flotation fee for the same reasons it has rejected these fees in WPL, TMPA and Xcel I.

**c.     Rounding**

BNSF object to WFA/Basin's use of a "rounding function" in making composite cost-of-capital calculations.<sup>12</sup> WFA/Basin remove the rounding function in their rebuttal evidence. The impact of the rounding function is to increase the composite cost-of-capital by one-hundredth of one percent from 9.50% to 9.51%.

**2.     Inflation Indices**

**a.     Land**

On Reply, BNSF accepts WFA/Basin's projection of land value inflation.

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<sup>9</sup> Id.

<sup>10</sup> See BNSF Reply Narr. at III.D-120.

<sup>11</sup> Id. n.159.

<sup>12</sup> See BNSF Reply Narr. at III.G-2 n.2.

**b. Other Road Property Assets**

On Reply, BNSF accepts WFA/Basin's indices used to forecast changes in road property assets other than land. WFA/Basin utilize these same forecasts, as updated, in their rebuttal evidence.<sup>13</sup>

**c. Revenues**

WFA/Basin discuss the procedures they use for SAC revenue forecasts in Part III-A of their opening and rebuttal evidence.<sup>14</sup> Where WFA/Basin revenue procedures call for forecasting changes in the Board's Rail Cost Adjustment Factor ("RCAF") indices, WFA/Basin utilize Global Insight's most recent RCAF forecasts.<sup>15</sup> Where WFA/Basin's revenue procedures call for forecasting EIA Retail On-Highway Diesel Prices, WFA/Basin utilize EIA's most recent forecast of these prices.<sup>16</sup> Finally, where WFA/Basin's revenue procedure calls for forecasting changes in the GDP/IPD

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<sup>13</sup> See WFA/Basin Rebuttal electronic workpaper "Exhibit III-H-1.xls."

<sup>14</sup> See WFA/Basin Op. Narr. at III-A-11 to 19; WFA/Basin Rebuttal Narr. at III-A-23 to 28.

<sup>15</sup> See, Xcel I at 34 (approving use of Global Insight RCAF forecasts). Global Insight's most recent RCAF forecast is included in WFA/Basin Rebuttal electronic workpaper "3Q05 RCAF.pdf."

<sup>16</sup> EIA's most recent forecast of Retail On-Highway Diesel Prices is included in Rebuttal electronic workpaper "LRR Traffic and Revenues \_WFABasin Rebuttal.xls."

index, WFA/Basin utilize EIA's most recent GDP/IPD forecast.<sup>17</sup> Similar procedures and forecasts have been relied upon by the STB in prior cases.<sup>18</sup>

On Rebuttal, WFA/Basin continue to rely on these forecasts, as updated to include the most recent forecasts available at the time the rebuttal evidence is filed. WFA/Basin discuss BNSF's revenue projection procedures in Part III-A-3 above.

**d. Operating Expenses**

In their opening evidence, WFA/Basin adjusted LRR operating expenses by a factor equal to 0.53% of the forecasted changes in the RCAF-U ("0.53 RCAF-U"). The 0.53 RCAF-U {

}.<sup>19</sup>

On Reply, BNSF utilized more recent Global Insight RCAF-A and RCAF-U forecasts produced in March, 2005.<sup>20</sup> Subsequent to BNSF's Reply, Global Insight issued an updated RCAF-A and RCAF-U forecast in June, 2005. WFA/Basin rely upon the more current June, 2005 forecast in their Rebuttal with the results shown in Rebuttal Exhibit III-G-1. {

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<sup>17</sup> EIA's most recent GDP/IPD forecast is included in Rebuttal electronic workpaper "LRR Traffic and Revenues \_ WFABasin Rebuttal.xls."

<sup>18</sup> See, e.g., Xcel I at 34 ("Board prefers impartial forecasts of future inflation").

<sup>19</sup> See WFA/Basin Op. Narr. at III-G-14.

<sup>20</sup> See WFA/Basin Rebuttal Exhibits III-G-1.

} On Rebuttal,

WFA/Basin substitute a 0.59 RCAF-U index for the 0.53 RCAF-U index.<sup>21</sup> Application of the 0.59 RCAF-U index produces an annual average increase in LRR's operating costs of { }. This average is {

}.<sup>22</sup> The

0.59 RCAF-U index contains an annual average productivity factor of { }.<sup>23</sup>

On Reply, BNSF objects to WFA/Basin's reliance on the 0.59 RCAF-U. BNSF argues that 0.59 RCAF-U overstates projected LRR productivity gains. BNSF opines that the LRR will enjoy no productivity gains until 2014, and thereafter will enjoy only marginal productivity improvements.<sup>24</sup>

BNSF asks the Board to adjust all LRR operating expenses by the RCAF-U until 3Q 2014. After 3Q 2014, BNSF asks the Board to continue to adjust approximately 75% of the LRR operating expenses using the RCAF-U, with the remaining 25% adjusted

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<sup>21</sup> For each citation, WFA/Basin's Rebuttal will refer to the 0.59 RCAF-U index exclusively.

<sup>22</sup> See WFA/Basin Rebuttal electronic workpaper "Exhibit III-G-1 p.1-2.xls."

<sup>23</sup> { }.

<sup>24</sup> See BNSF Reply Narr. at III.G-3 to 17.

using a “hybrid” RCAF-U/RCAF-A index.<sup>25</sup> For ease of reference, BNSF’s indexing procedure is referred to herein as the “BNSF Index”.

Application of the BNSF Index produces an annual average increase in the LRR’s operating cost of {            }. The BNSF Index contains an annual average productivity factor of 0 through 4Q2014 and thereafter an annual average productivity factor of {            }.<sup>26</sup> This results in a composite annual average productivity factor of {            } during the twenty-year DCF period.<sup>27</sup>

The parties’ differing forecasts of operating costs significantly impact the DCF results. For example, WFA/Basin projects the LRR’s 2005 operating costs will increase by \$50.3 million over the twenty-year DCF period. This increase factors in WFA/Basin’s use of the 0.59 RCAF-U index. If the BNSF Index is substituted for the 0.59 RCAF-U index, WFA/Basin’s projected operating costs would increase by \$74.4 million over the twenty-year DCF period – an increase of 48%.

The Board should utilize the 0.59 RCAF-U, not the BNSF Index, because the 0.59 RCAF-U is conservative; is more accurate than the BNSF Index; comports with the WRPI experience; is consistent with the results of the Board’s WPL decision; better correlates the LRR’s productivity-adjusted rates with the LRR’s productivity adjusted

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<sup>25</sup> See BNSF Reply Narr. at III.G-13 to 17; BNSF Reply Exhibit III.H-1.xls, sheet “operating SAC.”

<sup>26</sup> See WFA/Basin Rebuttal electronic workpaper “Productivity.xls.”

<sup>27</sup> Id.

operating costs; and is supported by one of the nation's leading experts in rail productivity – Dr. Douglas W. Caves.

**i. The 0.59 RCAF-U is a  
Conservative Forecast**

As WFA/Basin discussed in their opening evidence, in several recent maximum rate cases the complainant shippers have asked the Board to adjust SARR operating costs using the RCAF-A and defendant carriers have asked the Board to adjust SARR operating costs using the RCAF-U. Given the choice between the RCAF-A and RCAF-U, the Board has chosen the RCAF-U because the Board believes the RCAF-A overstates SARR productivity more than the RCAF-U understates it.<sup>28</sup>

In these cases, the Board has expressed concerns that the RCAF-A may overstate SARR productivity gains because an efficient SARR's initial cost structure captures some efficiencies that the railroad industry has yet to achieve.<sup>29</sup> On the other hand, the Board has repeatedly recognized that application of the RCAF-U would understate SARR productivity gains since a SARR "built today would realize future productivity gains."<sup>30</sup>

The 0.59 RCAF-U index responds to the Board's concerns. The 0.59 RCAF-U index provides that, over the 20 year DCF period, the LRR will obtain

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<sup>28</sup> See Xcel I at 34; Xcel II at 15-16; CPL at 28; TMPA I at 161.

<sup>29</sup> See e.g. Xcel I at 33-34.

<sup>30</sup> See WPL I at 106.



productivity improvements {

} . This approach factors in the productivity “head start” the Board attributes to the LRR, while also forecasting modest productivity gains for the LRR.

The 0.59 RCAF-U index is even more conservative when measured against the EIA’s PRB forecasts. EIA projects that western carriers will pass-through productivity gains of 4.0% annually<sup>31</sup> – gains that {  
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**ii. The 0.59 RCAF-U Index is More  
Accurate than the BNSF Index**

On Reply, BNSF argues that the 0.59 RCAF-U index vastly overstates LRR productivity gains. According to BNSF, the LRR will achieve all of its productivity “up front,” will enjoy no productivity gains for the next ten years; and then will enjoy only tiny productivity gains thereafter.<sup>32</sup> The BNSF Index is intended to capture and apply these assumptions.

BNSF is correct that in some ways the LRR is more efficient than BNSF. This is because the LRR removes some inefficiencies in the BNSF’s current PRB operations, including revamping BNSF’s inefficient crew districts; removing inefficient work rules; eliminating current BNSF inefficiencies created by its shared use of the

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<sup>31</sup> See WFA/Basin Rebuttal electronic workpaper “EIA Productivity.xls.”

<sup>32</sup> See BNSF Reply Narr. at III.G-3 to 17.

BNSF/UP PRB Joint Line; and modifying BNSF's physical plant to remove inefficient switching and train handling procedures.<sup>33</sup>

However, BNSF is incorrect when it asserts that removing some inefficiencies in BNSF's current-operations means that the LRR will not enjoy significant productivity gains. It will.

**(a) Sources of LRR Productivity Gains.**

WFA/Basin's opening evidence identified over 30 specific areas of forecasted productivity improvements in LRR unit coal train operations.<sup>34</sup> The cited productivity improvements were based on unit coal train productivity improvement

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<sup>33</sup> While the LRR removes some inefficiencies in BNSF's operations, BNSF's attempts to quantify these differences are so misguided that they require a brief response. At page III.G-8 of its Reply Narrative, BNSF calculates the asserted BNSF's "fully allocated" cost for providing LRR service at \$194.2 million. BNSF then calculates the LRR's 2005 Base Year operating expenses (\$169 million) and asserts the difference (\$25.2 million or 13%) equals the LRR's "productivity" advantage.

Productivity is measured by comparing changes in outputs (e.g., ton miles) with changes in input (e.g., factors used to produce outputs). BNSF's quantification has nothing to do with productivity, and certainly does not provide any quantification of the differences in projected future productivity gains the BNSF and the LRR will experience.

BNSF's costing analysis is also flawed. BNSF's "fully allocated" cost figure is based on BNSF's "2004 URCS system-average variable costs adjusted to remove depreciation and lease expenses and return of road property investment costs and converted to the full cost level using the URCS constant Mark-Up ratio of 1.33." BNSF Reply Narr. at III.G-7 n.6. However, BNSF failed to exclude road return total cost and variable cost in the constant cost mark-up ratio. As shown in WFA/Basin Rebuttal Exhibit III-G-2, substitution of the correct Mark-Up ratio revises BNSF's fully allocated cost calculation from \$194.2 million to \$170.2 million and the so-called "productivity percentage" to 0.7%.

<sup>34</sup> See WFA/Basin Op. Narr. at III-G-7 to 14.

measures being studied or tested by the rail industry. The areas of productivity cover the gamut of unit train rail operations, including more efficient locomotives, more efficient railcars, more efficient train sizes, more efficient train operating systems, more efficient maintenance procedures, more efficient deployment of labor, more efficient Information Technology (“IT”) systems, and more efficient use of physical plant through traffic-based efficiencies.

BNSF does not dispute – because it cannot – that it, along with other major coal-hauling railroads, is actively studying and continually implementing measures to increase unit coal train productivity. Instead, BNSF identifies the twelve categories of operating costs shown in DCF Table K. BNSF proceeds to argue on a category-by-category basis why the LRR will achieve no productivity for most expense categories or only minor productivity gains (after 3Q2014) for others.<sup>35</sup>

The basic problem with BNSF’s “category-by-category” discussion is that it ignores the multiple causative factors that drive railroad productivity improvement. For example, introduction of higher capacity rail cars can generate productivity over several rail expense categories – including railroad equipment costs, reduced labor costs, reduced fuel costs, reduced administration costs, etc.

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<sup>35</sup> See BNSF Reply Narr. at III-G-13 to 17.

The STB's predecessor, the ICC, properly defined railroad productivity as "aggregate [railroad] output divided by aggregate [railroad] input."<sup>36</sup> The RCAF-A applies and quantifies this definition of productivity. As described by the ICC:

productivity [under the RCAF-A is] measured as the change in the ratio of the output index (based on a composite, revenue-weighted, average of the year-to-year changes in ton-miles for various segments of traffic in the ICC Waybill Sample) over the input index (as measured by total freight expenses calculated using depreciation accounting, plus fixed charges).

Railroad Cost Recovery Procedures – Productivity Adjustment, 5 I.C.C. 2d 434, 435 (1989) ("Productivity Adjustment").

As a practical matter, the Board could never craft an RCAF-A index if one of the requirements was to pinpoint the exact causes of rail productivity growth. Identifying the exact causes for historical railroad productivity changes – *i.e.*, the reasons explaining the relationships between change in rail outputs and inputs – is a complex econometric exercise. Nor is it necessary to do so. As the ICC observed in its decision adopting the RCAF-A, "while the exact cause of productivity growth may have intrinsic interest, it is not genuine to the issue of cost recovery."<sup>37</sup>

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<sup>36</sup> See Productivity Adjustment – Implementation, 9 I.C.C.2d 1072, 1072 n.1 (1993).

<sup>37</sup> See Productivity Adjustment, 5 I.C.C.2d at 465.

The SARR productivity issue, properly framed, is whether it is reasonable to assume that a Class I railroad like the LRR will enjoy modest productivity gains (as reflected in the 0.59 RCAF-U) or virtually no productivity gains (as reflected in the BNSF Index). The record evidence clearly supports the use of the former.

- Traffic-Based Productivity. BNSF argues that the LRR would start out “void of any excess or obsolete plant.”<sup>38</sup> However, that is not the case. The LRR is designed and modeled to handle its peak-week traffic – traffic levels that the LRR will not achieve until 2024. Each year of the DCF period, the LRR should enjoy productivity growth brought on by economies of density.

As the Board observed in the Guidelines, “railroads exhibit significant economies of scope and density.” See id. at 526. These economies “refer[] to the fact that the greater use of fixed plant results in declining average cost.”<sup>39</sup> Inclusion of a productivity adjustment permits the LRR to enjoy benefits of density productivity on operating costs items that are considered to be a function of tons shipped.<sup>40</sup>

Similarly, the LRR train cycle times are modeled to equal the cycle times the LRR would experience in its peak week of its peak traffic year (2024). As a practical

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<sup>38</sup> See BNSF Reply Narr. at III.G-6.

<sup>39</sup> Id.

<sup>40</sup> These items are: train/engine personnel; locomotive lease expenses; locomotive maintenance expenses; locomotive operating expenses; rail car lease expenses; loss/damage; insurance; and maintenance-of-way expenses.

matter, the efficient LRR will be able to achieve faster cycles – particularly during its earlier years – when the traffic levels on the LRR are much lighter than they will be in the peak year. For example, in 2005, the LRR will transport 14.6 billion ton-miles of traffic.<sup>41</sup> By 2024, this traffic will be 16.0 billion ton-miles – an increase of 9.6%.<sup>42</sup>

As the Board has correctly observed, “(cycle time) is a prime measure of a railroad’s efficiency and an important determination of its personnel and equipment requirements.”<sup>43</sup> The LRR should enjoy significant productivity gains as a result of its excess capacity – and faster cycle times – particularly during its early years of operation.

- Trainset Productivity. The LRR should also enjoy substantial equipment-based productivity through the 20 year DCF period. This productivity will include use of higher capacity cars and longer trains.

BNSF reports that it has obtained significant productivity gains in its PRB coal service by increasing net tons per train.<sup>44</sup> Years ago, PRB trains were predominantly 100 ton steel cars, with average lengths of 110 to 115 cars.<sup>45</sup> Today, PRB trains are

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<sup>41</sup> See WFA/Basin Rebuttal electronic workpaper “LRR Traffic and Revenues\_WFABasinRebuttal.xls.”

<sup>42</sup> Id.

<sup>43</sup> TMPA I at 73.

<sup>44</sup> See BNSF Presentation, Financial Analysts’ Day (Nov. 13, 2003) at slide “Coal Train Set Productivity” (WFA/Basin Rebuttal electronic workpaper “financialanalysts.pdf.”)

<sup>45</sup> Id.

predominantly 120 ton aluminum cars, and average train length has increased to 125-135 cars.<sup>46</sup>

BNSF projects “continued productivity improvements” in trainset performance in the future.<sup>47</sup> The LRR will incorporate these trainset productivity improvements as well.

These improvements will come through continuing incremental changes in car capacities (e.g. substituting aluminum cars for steel cars) and incremental increases in train lengths up to current industry standard maximums (136 cars), as well as through introduction of the next generation of coal cars (e.g., 315,000 gross-weight-on-rail cars)<sup>48</sup> and substantially longer train sizes (e.g., UP is now testing 200-250 car coal trains).<sup>49</sup>

Most of the cars used for the LRR’s coal traffic are supplied by shippers.<sup>50</sup> BNSF argues that the LRR will not have the physical capacity to handle longer train or heavier trains. That is not true. The LRR’s train line has double-track over most of its route. All LRR sidings are located in areas where they can be extended, as necessary, to

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<sup>46</sup> See BNSF Presentation, Deutsche Bank Global Transportation Conference (Feb. 16, 2005) at 12 (“Deutsche Bank”) (WFA/Basin Rebuttal electronic workpaper “DeutscheBank.pdf.”)

<sup>47</sup> Id. at 13.

<sup>48</sup> See WFA/Basin Op. Narr. at III-G-8 to 9.

<sup>49</sup> Id. at III-G-9 to 10.

<sup>50</sup> See BNSF Reply electronic “LRR Traffic and Revenues\_WFABasin Opening\_BNSFRvisedMSP.xls.”

handle longer trains.<sup>51</sup> Also, the LRR can – and will – make the necessary investments to upgrade its facilities as necessary to handle longer trains for the same reason BNSF will – the upgraded facilities will reduce service costs.

- Train/Engine Personnel. BNSF argues that due to the LRR's asserted extremely high level of utilization, there is little room for future "productivity improvement."<sup>52</sup> However, as noted above, the LRR – particularly in its early years of operation – does not maximize utilization of its system. Faster cycle times in the early years of LRR should lead to significant reduction in the number of train and engine personnel needed.

In addition, projected continued productivity in all other areas of the LRR's operations (e.g., increased net train loadings, introduction of new dispatching technologies,<sup>53</sup> introduction of new locomotives, etc.) will also result in reductions in the number of train and engine personnel hours.

BNSF also states in its Reply that one-person crews "might some day be possible" but it "is too speculative at this time to be considered a realistic source of

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<sup>51</sup> Many of the LRR's passing sidings are two train-lengths long. These sidings are already long enough to accommodate 250-car trains, or they can easily be extended to accommodate two single trains.

<sup>52</sup> See BNSF Reply Narr. at III.G-7.

<sup>53</sup> See WFA/Basin Rebuttal electronic workpaper "dispatching technologies.pdf" for descriptions of new dispatching technologies that are being introduced.



productivity improvement for the LRR.”<sup>54</sup> Recent reports indicate otherwise – with a focal point being the introduction of one-person crews on PRB coal trains.

BNSF has already instituted one man-person service on PRB helper locomotives.<sup>55</sup> And, UP CEO Dick Davidson recently announced that UP is “ready to immediately begin using one-person crews” in PRB coal service.<sup>56</sup> What is currently holding up carriers from expanding one man train crews are union work rules – work rules that do not apply to the LRR.

- Locomotive Lease Expense. BNSF argues that the LRR will be locked into using SD70 MAC locomotives for the next twenty years.<sup>57</sup> Thus, under BNSF’s world view, the LRR will not be able to utilize more productive locomotives as they enter the marketplace.

In their opening evidence, WFA/Basin showed that, over the course of ten years, WRPI/UP turned over its principal locomotive fleet three times (going from SD40's to C-40-8's to C44-9W's).<sup>58</sup> Each generation of locomotives was more productive than

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<sup>54</sup> See BNSF Reply Narr. at III.G-13 to 14.

<sup>55</sup> See Don Geiger, “Rolling with Change,” Railway Age (May/June 2004), WFA/Basin Rebuttal electronic workpaper “singlecrews.pdf.”

<sup>56</sup> See “Union Pacific considers a train crew of one” Omaha World-Herald, Sept. 1, 2005. WFA/Basin Rebuttal electronic workpaper “UPtraincrew.pdf.”

<sup>57</sup> See BNSF Reply Narr. at III.G-10 to 11.

<sup>58</sup> See WFA/Basin Op. Narr. at III-G-6.

the last. The new locomotives substantially reduced WRPI's costs since they are more powerful and more fuel efficient, thus decreasing WRPI's locomotive costs per car.<sup>59</sup>

BNSF maintains that the LRR will not be able to do the same because the LRR has acquired its SD70 MAC's under a long-term 22 year lease.<sup>60</sup> BNSF overstates its case. WFA/Basin utilized a recent BNSF locomotive lease (with a 22 year term) to obtain a representative current market lease rate for SD70 MAC's. The LRR did not enter into this lease, and in any case, the lease in question applies to BNSF's lease of 5 SD70 MAC's – not the entire LRR fleet.<sup>61</sup>

Moreover, even assuming that the LRR did lease all of the SD-70 MAC locomotives under the BNSF lease in question, this lease – like most locomotive leases – allows the lessee carrier to assign the lease or terminate it by selling the locomotives in question to a third party.<sup>62</sup> BNSF speculates that the sale process may involve a “financial penalty” but any such “penalty” turns on whether the sales price obtained for the units are

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<sup>59</sup> Id. at III-G-7 to 8.

<sup>60</sup> See BNSF Reply Narr. at III.G-14.

<sup>61</sup> See WFA/Basin electronic workpaper “LRR Loco Lease Reb.xls” and WFA/Basin Op. Workpapers, Vol. 7, pp. 4448-4451. BNSF does not address the fact that each year the LRR adds new locomotives that it also leases. See WFA/Basin electronic workpaper “Exhibit\_III-H-1.xls.”

<sup>62</sup> See WFA/Basin Rebuttal electronic workpaper “SD70MAC Lease Termination.pdf.”

less than the specified amounts set forth in the contract.<sup>63</sup> If these minimums are obtained (or exceeded), there is no penalty.

In addition, WFA/Basin Witnesses Paul Reistrup and Richard McDonald confirm that it is common practice among locomotive manufacturers/lessors to facilitate railroad/lessees in “trading up” from one generation of locomotive to the next. The lessor benefits from leasing new equipment (and obtaining higher rents per locomotive) while the lessee carrier benefits by obtaining new more productive locomotive units that reduce its unit costs. For example, Mr. McDonald testifies that when he was in charge of operating WRPI, the locomotive manufacturers permitted CNW/WRPI to replace existing locomotives with newer, more efficient models during the terms of existing leases. In particular, GE allowed CNW/WRPI to switch from first-generation C40-8 locomotives to later-model “Dash 8s” and then to AC4400-9 locomotives several times in the late 1980's and early 1990's. There was an additional charge for this, but it was more than offset by the efficiencies (higher horsepower and tractive effort, meaning more tons could be pulled per locomotive,<sup>64</sup> and better fuel efficiency) produced by the newer models. GE was always able, when requested, to reassign the older model leased locomotives to other customers. Mr. Reistrup confirms that locomotive vendors have always cooperated with railroads in such locomotive swaps so that the railroads can benefit from technological

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<sup>63</sup> Id.

<sup>64</sup> For hauling heavy unit trains, improvements in tractive effort (pulling power), combined with new radial trucks, are more important than increases in horsepower.

advances, and that this includes agreeing to revisions in existing leases to accommodate them.

BNSF also opines that WFA/Basin have included no “costs” in the DCF model for new locomotives.<sup>65</sup> However, BNSF introduces no evidence on what it believes the LRR’s projected new locomotive rental payments would be or why these payments would be higher than WFA/Basin’s projection of its 4Q04 inflation-adjusted lease payment rates.

BNSF also appears to confuse “price” and “cost” here. Price refers to the price a railroad pays for inputs (e.g., lease payments). Cost refers to outputs (e.g. lease payments per revenue ton-mile). WFA/Basin’s new lease payment prices may – or may not – be higher than its inflation-adjusted 4Q04 lease payments. However, that is not the proper inquiry. The inquiry for productivity purposes is whether acquisition of the new locomotives will reduce the LRR’s overall service costs. BNSF and other carriers (including WRPI) have been able to substantially reduce their overall costs by substituting more productive locomotives when these locomotives become available in the marketplace. The LRR will do the same.

- Locomotive Maintenance Expense. In their opening evidence, WFA/Basin identified various technologies and methodologies the railroad industry is

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<sup>65</sup> See BNSF Reply Narr. at III.G-10 to 11.

now studying to reduce locomotive maintenance expenses.<sup>66</sup> On Reply, BNSF “concedes” that the LRR will experience productivity in its maintenance practices but claims the productivity “will likely be offset by additional maintenance costs as the LRR locomotive fleet ages.”<sup>67</sup> BNSF offers no evidence in support of this statement.

Improved procedures to reduce locomotive maintenance expenses will reduce the LRR’s maintenance costs – regardless of the age of the locomotive. BNSF’s assertions here also assume the LRR will retain the same fleet for the entire DCF period. This assertion is wrong for the reasons discussed above. BNSF also ignores productivity gains in other areas (e.g., incorporation of high net loadings per train, lower cycle times, improved railroad communications systems, introduction of electric-pneumatic braking, and other factors) that will reduce locomotive maintenance expenses on a unit basis.

- Locomotive Operating Expense. BNSF opines that the LRR will experience no productivity gains in operating its locomotives “[b]ecause the LRR traffic patterns remain relatively consistent over the 20-year DCF period and the locomotive fleet remains unchanged.”<sup>68</sup> BNSF’s assertions are wrong for the reasons discussed above. The LRR should experience lower cycle times (and reduced operating expenses) – particularly in its early years of operation which will directly translate into lower

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<sup>66</sup> See WFA/Basin Op. Narr. at III.G-10 to 11.

<sup>67</sup> See BNSF Reply Narr. at III.G-14.

<sup>68</sup> Id.

locomotive operating expenses. Also, BNSF erroneously assumes that the LRR will be locked into its initial SD70MAC fleet for the next twenty years.

- Railcar Leases. WFA/Basin modeled the LRR using BNSF's (and its customers') current coal car fleets.<sup>69</sup> WFA/Basin also predicated their 4Q04 base period car lease costs on lease rates BNSF is now paying for rental of similar coal cars. As with locomotives, BNSF assumes that over the next 20 years the LRR will be locked into the 2004 composition of its car fleet.

Twenty years ago BNSF's car fleet consisted principally of 100 ton (or less) steel railcars. Today, the fleet is primarily 120-ton aluminum railcars – reflecting advances in car technology over the last 20 years. As WFA/Basin described in their opening evidence, the railroad industry continues to look at ways to increase car capacity. BNSF's assumption that the LRR will keep the same car fleet over the next 20 years is absurd – BNSF need only look to the changing compositions of its own coal car fleet over time as proof.

BNSF also opines here, as it did with locomotives, that WFA/Basin want the benefits of car productivity (brought on by more higher capacity efficient cars) without paying for it. The answer is the same here. WFA/Basin's DCF model inflates LRR's operating costs by {        } annually. BNSF has introduced no evidence showing the projected new car costs would be higher than WFA/Basin's projected adjusted car

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<sup>69</sup> See WFA/Basin Op. Narr. at III-C-21 to 23.

lease rate. Even more significantly, BNSF has made no demonstration that the LRR's overall costs would not be decreased by substituting more efficient rail cars.

- Materials and Supplies. BNSF "concedes" that the LRR will experience productivity gains due to "technological improvement[s]" commencing in 2014.<sup>70</sup> BNSF offers no evidence, but only speculates that "technological improvement" would not exist prior to 2014.<sup>71</sup> BNSF also fails to acknowledge that material and supply unit costs will decrease due to many factors – including reduced cycle times, more efficient train sizes, etc.

- Ad Valorem Taxes. BNSF projects no productivity improvements that impact ad valorem taxes.<sup>72</sup> BNSF offers no evidence, however, that application of the 0.59 RCAF-U index will not cover the LRR's ad valorem tax obligations during the 20 year DCF period.

- Operating Managers. BNSF argues that the LRR will enjoy no productivity gains at the operating manager level. Again, BNSF is wrong. The LRR is modeled assuming an operating staff level needed for its peak year operations in 2024. As an efficient operation, the LRR would certainly find ways to reduce staffing levels – particularly in its early years when its traffic levels are lower.

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<sup>70</sup> See BNSF Reply Narr. at III.G-15 to 16.

<sup>71</sup> Id.

<sup>72</sup> Id. at III.G-15.

For example, 62 of the 104 operating manager positions the LRR models for its peak-week operations are equipment inspectors.<sup>73</sup> The number of equipment inspectors is tied to the number of trains being inspected. In its early years of operations, the LRR will need fewer train inspectors because it has fewer trains to inspect. Also, introducing train operation efficiencies over time (e.g., longer trains, more-efficient locomotives, etc.), will reduce the number of locomotives and trains that the LRR will need to inspect – which will also reduce the number of equipment inspector employees the LRR will need to add.

- General & Administrative. BNSF concedes the LRR's G&A expenses "would likely benefit from technological improvements."<sup>74</sup> However BNSF arbitrarily dictates that the LRR will obtain no such improvements until the 11th year of its operation. On Opening, WFA/Basin identified numerous technology innovations the rail industry now has under study.<sup>75</sup> These new technologies are not ten years away from being implemented. Indeed, ten years from now these new technologies may be themselves obsolete. The LRR – like any rail carrier – will be continually seeking better ways to run its business – starting on day one of its operations.

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<sup>73</sup> See WFA/Basin Rebuttal electronic workpaper "LRR Operating Expenses Reb.xls."

<sup>74</sup> See BNSF Reply Narr. at III.G-16.

<sup>75</sup> See WFA/Basin Op. Narr. at III-G-7 to 14.



- Loss and Damage. BNSF claims that the LRR will accrue no loss and damage claims productivity.<sup>76</sup> However, the LRR should enjoy productivity improvements over time for loss and damage claims since the total number of coal cars in its system should be reduced (e.g., through use of higher capacity cars). Also, the rail industry is constantly studying new technologies, and procedures, to operate in a safer fashion.<sup>77</sup> Loss and damage claims should be reduced, over time, on a per unit basis as a result.

- Insurance. The DCF model sets insurance payments as a percentage of other operating expenses. Therefore, productivity improvements in the LRR will automatically be reflected in the DCF insurance payment calculation.

- Maintenance-of-Way. In its opening evidence, WFA/Basin identified numerous technologies and procedures in the railroad industry in studying – and testing – to improve direct state-of-the-art maintenance procedures.<sup>78</sup> BNSF concedes that the LRR will enjoy productivity improvements in its maintenance practices but BNSF again arbitrarily claims that the productivity improvement will not start until

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<sup>76</sup> See BNSF Reply Narr. at III-G-16.

<sup>77</sup> See WFA/Basin Rebuttal electronic workpaper “carsafety.pdf” for a review of developments and initiatives to improve rail car safety.

<sup>78</sup> See WFA/Basin Rebuttal electronic workpaper “LRR Operating Expenses Reb.xls.”

4Q14. However, many of the technologies and procedures now under study are now being fully tested – and should be available very soon to the LRR and other carriers.<sup>79</sup>

**(b) Proper Productivity Calculation.**

BNSF's narrative explanation deliberately, and substantially, understates LRR productivity gains. As a consequence, the BNSF Index – which is modeled on BNSF's productivity assumptions – substantially understates LRR productivity gains.

Unlike BNSF, WFA/Basin's narrative evidence provides a realistic picture of forecasted LRR productivity gains over time. The 0.59 RCAF-U index – which is modeled to incorporate WFA/Basin's reasonable LRR productivity forecasts – provides a reasonable, conservative estimate of LRR productivity improvements. WFA/Basin's productivity estimations are far more credible than BNSF's.

BNSF also opines that WFA/Basin have not “tied” their productivity estimates to the DCF model.<sup>80</sup> BNSF appears to argue that the only way for WFA/Basin to factor productivity gains into the DCF model is to start inputting anticipated, specific productivity-driven unit cost changes into its calculations (e.g., assuming in year X an exact different locomotive mix, car mix, etc.).

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<sup>79</sup> See, e.g., Marybeth Luczak, “Going by the wayside,” Railway Age (Jan. 2005) at 64, contained at WFA/Basin Rebuttal electronic workpaper “MOW Initiatives,” which describes new systems for increasing the efficiency of MOW planning through the AAR's “Advanced Technology Safety Initiative.”

<sup>80</sup> See BNSF Reply Narr. at III.G-9.

SARR modeling is already extraordinarily complex. The level of specification that BNSF apparently is seeking to impose on WFA/Basin would make SARR productivity modeling impossible. The 0.59 RCAF-U index is intended to factor in a reasonable forecast of LRR productivity-adjusted LRR operating costs. This forecast, on an average basis, is intended to provide a realistic measure of LRR operating cost increases. The indexing mechanism itself incorporates anticipated changes in LRR service outputs and inputs (including the prices WFA/Basin will pay for these inputs). Indexing is the appropriate method to account for expected gains. Indexing recognizes that productivity growth is net of costs, and thus avoids the double counting of costs. It also does not require the impossible task of predicting with certainty the timing and sources of productivity gains.

WFA/Basin further observe that BNSF did not make any changes to specific DCF inputs (e.g., adding prices paid for new technology) when it made its proposed productivity adjustments for the LRR's costs.<sup>81</sup> BNSF did not do so for the same reasons WFA/Basin did not do so – it is simply not necessary, nor a viable modeling exercise.

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<sup>81</sup> Id. at III.G-16 to 17.

**iii. Use of the 0.59 RCAF-U Comports  
with the WRPI Experience**

BNSF's productivity assumptions and its resulting BNSF Index posit an implausible scenario – a supposedly efficient carrier suddenly ceasing to be efficient for the next twenty years. BNSF cites no real-world examples of any carrier start-ups who are similarly frozen in time for the next twenty years. None exist.

As WFA/Basin demonstrated on Opening, even highly efficient start-up carriers can, and do, become more efficient over time.<sup>82</sup> WFA/Basin pointed to WRPI as a very comparable real world example.<sup>83</sup> WRPI started out operations in the mid-1980's as a highly efficient PRB coal carrier. However, WRPI's operations were not frozen at its mid-1980 start-out levels. Instead, WRPI (like BNSF and UP), became substantially more productive over time through traffic growth and through introduction of more productive equipment, more productive train operations, more productive operating procedures, etc.<sup>84</sup>

On Reply, BNSF claims that WRPI's productivity growth is irrelevant because "[t]here is no evidence in the record that the LRR ... resembles the real world WRPI in any meaningful way."<sup>85</sup> BNSF obviously failed to read the record. WFA/Basin

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<sup>82</sup> See WFA/Basin Op. Narr. at III-G-5 to 7.

<sup>83</sup> Id.

<sup>84</sup> Id.

<sup>85</sup> See BNSF Reply Narr. at III.G-9.

introduced substantial evidence – which stands unrebutted – that WRPI and the LRR are mirror images of each other. The LRR enters the PRB market in 4Q04 as a short-haul carrier serving PRB mines. The LRR transports the coal in unit train service over short distances and, with the exception of the LRR traffic, interchanges its traffic with a major Class I railroad – the residual BNSF.<sup>86</sup> WRPI was identical to the LRR in all material respects. WRPI entered into the PRB market in 1984 as a short haul carrier serving PRB mines. WRPI transported this coal in unit train service over short distances and interchanged its traffic with a major Class I railroad – the UP.<sup>87</sup>

BNSF also argues that there is no evidence that WRPI enjoyed a cost advantage over other railroads. Had BNSF checked, it would have found that WRPI did enjoy such an advantage. For example, in 1992, WRPI's operating ratio was 52.2% – well below the operating ratios of all other Class I railroads.<sup>88</sup>

**iv. Use of the 0.59 RCAF-U Complies  
with the Board's WPL Ruling**

As WFA/Basin demonstrated on opening, the use of the 0.59 RCAF-U is supported by the Board's decision in WPL. In WPL, the Board adjusted the WPL

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<sup>86</sup> See WFA/Basin Op.Narr. at III-B-2.

<sup>87</sup> See WFA/Basin Op. Exhibit III-A-3, p.2, 9.

<sup>88</sup> See 1992 Chicago and Northwestern Annual Report to Shareholders at 2, copy in WFA/Basin Rebuttal electronic workpaper "CNW 1992 Annual Report.pdf." In 1992, operating ratios for other Class I carriers ranged from 80.65% for UP to 108.57% for the Soo Line. See 1992 Analysis of Class I Railroads (copy in WFA/Basin Rebuttal electronic workpaper "1992 Operating Ratios.pdf").

SARR's operating costs by 1.5% annually – a percentage similar to the percentage change produced in application of the 0.59 RCAF-U {        } annually.<sup>89</sup>

The Board predicated its 1.5% factor increase on an internal UP forecast. That forecast projected UP coal train costs to adjust upward at 1.5% annually.<sup>90</sup> In their opening evidence, WFA/Basin demonstrated that the UP coal train cost forecast the STB relied upon in WPL I is equally applicable to BNSF coal service in this case because the vast majority of coal traffic on both the BNSF and UP is PRB unit train coal traffic, this traffic moves under comparable cost structures, and BNSF and UP compete in many instances for the same pool of utility customers.<sup>91</sup> Given these market similarities, the BNSF and UP coal traffic should share similar market-driven productivity improvements over time.

BNSF's reply evidence demonstrates that the {        } annual increase WFA/Basin uses is conservative. In its reply evidence, the BNSF forecasted its anticipated PRB unit train cost changes. This forecast is included as part of BNSF's avoidable cost divisions analysis. Significantly, BNSF projected these cost changes as

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<sup>89</sup> UP also projected in WPL that the RCAF-U would increase at 3% annually. Thus, the UP's 1.5% increase factor contained a productivity adjustment of approximately 1.47% ( $1.03 \div 1.015$ ).

<sup>90</sup> See WPL I at 106.

<sup>91</sup> See WFA/Basin Op. Narr. at III-G-16 to 18.

equaling the changes measured by Global Insight's forecast of the RCAF-A.<sup>92</sup> This forecasts shows rail costs changing at {        } annually.<sup>93</sup>

**v.        Application of the 0.59 RCAF-U  
Provides a Better Fit with the  
Productivity-Adjusted LRR Rates**

WFA/Basin forecast LRR revenues using adjustment procedures that assume productivity-deflated rates. For example, the EIA AEO 2005 rate projections WFA/Basin utilize to forecast many LRR rates are productivity-deflated, on average, by 4.0% per year.<sup>94</sup> The 0.59 RCAF-U modestly utilizes only a {        } average annual productivity deflator to adjust the LRR's operating costs.<sup>95</sup>

As WFA/Basin demonstrated on Opening, use of the 0.59 RCAF-U conservatively assumes that a small fraction {        } of the productivity pass-through assumed in the LRR rate structure (4.0%) is in fact captured in the LRR cost structure. The BNSF Index, on the other hand, assumes virtually no meaningful inclusion of productivity in the LRR cost structure – thereby substantially overstating the LRR's costs, and substantially understating the revenue differential between the LRR's revenues and its costs.

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<sup>92</sup> See BNSF Reply electronic workpaper "LRR Traffic and Revenues \_ WFABasinOpen\_BNSF Revised.xls."

<sup>93</sup> Id.

<sup>94</sup> See WFA/Basin Rebuttal electronic workpaper "EIA Productivity.xls."

<sup>95</sup> See WFA/Basin Rebuttal electronic workpaper "EIA Productivity.xls."

**vi. Dr. Caves Endorses the 0.59 RCAF-U**

WFA/Basin's LRR productivity evidence is sponsored in part by, and endorsed by, Dr. Douglas W. Caves. Dr. Caves is one of the nation's leading experts on rail productivity. As WFA/Basin stated on opening, "Dr. Caves endorses without reservation the use of the 0.53 RCAF-U index as a reasonable – indeed conservative – forecast of productivity adjusted LRR operating costs."<sup>96</sup>

In the 1980's, the ICC was faced with a difficult decision – how to quantify rail industry productivity gains. Dr. Caves, along with his colleague Dr. Christensen, sponsored a new, creative means to solve the ICC's problem. The ICC went on to adopt the Caves/Christensen productivity approach – an approach the Board continues to rely on in making its RCAF-A calculations.<sup>97</sup>

The Board is faced here with a task the Board finds difficult – forecasting future productivity for the SARR's. WFA/Basin has developed a creative approach to resolving this problem – the 0.59 RCAF-U – an approach Dr. Caves endorses without reservation. BNSF argues that Dr. Caves' views are entitled to "no weight."<sup>98</sup> In fact, it is BNSF's trumped up productivity discussion that is entitled to no weight. BNSF's SARR productivity discussion is not sponsored by any witness with any nationally

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<sup>96</sup> See WFA/Basin Op. Narr. at III-G-21.

<sup>97</sup> See Productivity Adjustment, 5 I.C.C.2d 434 (1989).

<sup>98</sup> See BNSF Reply Narr. at III.G-6.



recognized experience in rail productivity matters. This stands in sharp contrast to WFA/Basin's evidence. Indeed, it is difficult to tell from BNSF's Reply filing whether any of its witnesses sponsored BNSF's discussion of productivity issues. In any event, none of BNSF's witnesses are nationally recognized experts in rail productivity matters. Dr. Caves is such an expert. His opinions are entitled to substantial weight.

**3. Tax Liability**

BNSF accepts WFA/Basin's determination of the LRR's tax liabilities.

**4. Asset Lives**

BNSF accepts the asset life assumptions used by WFA/Basin with one exception. BNSF contends that a portion of the LRR would be constructed with concrete ties, which have a longer average life than wood ties.<sup>99</sup> BNSF's contention is incorrect. As WFA/Basin's Opening workpapers clearly show, the LRR was constructed utilizing only wood ties.<sup>100</sup> WFA/Basin based its Opening asset life of 19 years for wood ties on the average depreciation rates for ties included in Schedule 332 of BNSF's 2004 Annual Report R-1.<sup>101</sup> However, this asset life reflects the average life of both wood and concrete ties used on the BNSF system. To reflect only the asset life of wood ties in its rebuttal

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<sup>99</sup> Id. at III.G-18.

<sup>100</sup> See WFA/Basin Opening electronic workpaper "Track Quantities.xls."

<sup>101</sup> See WFA/Basin Opening electronic workpaper "Exhibit\_III-H-1.xls."

evidence, WFA/Basin rely upon BNSF's Reply workpapers to develop an average asset life for wood ties of { } years.<sup>102</sup>

**5. Other – Capital Cost Recovery**

**a. Change of the Board's Debt Amortization Procedures**

In its opening evidence, WFA/Basin amortized debt issued by the LRR over the estimated assets lives of the assets acquired with the debt.<sup>103</sup> BNSF in Reply asserts that WFA/Basin improperly deviated from the STB's precedent of using a 20-year amortization schedule, and has provided no proof that the LRR could obtain debt-financing with maturities of greater than 20 years.<sup>104</sup> Both of BNSF's assertions are incorrect.

With regard to WFA/Basin's supposed deviation from the STB's "standard" 20-year amortization schedule, there is nothing "standard" about the DCF-model's 20-year period. The 20-year DCF period is in-fact arbitrary and has no attachment to real world financing. The ICC settled on a 20-year DCF model because that was the time frame selected by the shipper in McCarty Farms.<sup>105</sup> In Nevada Power, the ICC used a 25-year DCF model because, once again, that was the time period selected by the shipper,

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<sup>102</sup> See WFA/Basin Rebuttal electronic workpaper "Exhibit\_III-H-1.xls."

<sup>103</sup> See WFA/Basin Opening Narr. at III-H-4.

<sup>104</sup> See BNSF Reply Narr. at III.G-19.

<sup>105</sup> See id. at 469.

and the ICC was hesitant to attempt to forecast tonnages, tax rates, depreciation, cost of capital and inflation for extended periods.<sup>106</sup> There is nothing magical about the 20-year DCF period, and it has no link to real world financing. It was a time-period adopted early on to facilitate accuracy in forecasting, and has nothing to do with the length of the maturity of debt instruments used in financing the SARR.

Relying upon an arbitrary so-called “standard” as a primary reason for not amortizing debt over the average life of the assets ignores real world finance and economics principles, is contradictory to how debt is amortized in other sections of the STB’s DCF-model, and imposes additional costs on the LRR not incurred by the incumbent BNSF.

From the real world perspective, companies attempt to match debt maturity with the life of the assets being financed. Companies do not normally finance short-term investments using long-term financing, or long-term investments using short-term financing. For example, a retail store that is building-up inventory for holiday sales will not issue long-term debt to finance the increased inventory, but would rather use short-term credit instruments. Likewise, a company that is building a factory that will have a useful life of 30 years will not finance the investment with just a credit-line, but rather will use long-term debt instruments that will more closely match the useful life of the asset. In the case of the LRR, the average useful life of the assets is roughly 50 years,

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<sup>106</sup> See Nevada Power I at 67.

suggesting that, in the real world, the financing instruments used to construct the railroad would be long-term obligations with maturities greater than 20 years.

Moreover, matching debt amortization with asset lives is already being performed in the STB's DCF model. In the replacement level of the STB's DCF model, any asset that has a useful life of less than 20 years has its debt amortized over the useful life of the asset, not the full 20 years of the DCF period.<sup>107</sup>

Finally, having WFA/Basin amortize debt over only 20 years forces the LRR to incur additional tax costs not incurred by the incumbent. The interest costs determined in the amortization schedule in the DCF model are used to calculate the tax-shield in the Investment SAC portion of the DCF model. As will be discussed further below, the debts of real world railroads have maturities of extremely long lengths, with many maturities extending to over 100-years (the Canadian Pacific has in the past issued perpetuities, bonds that have no specified maturity).<sup>108</sup> This means that the existing railroads have long-term interest expenses that provide long-term tax shields. By forcing the LRR to amortize its debt over a shorter period of time than real world railroads causes the SARR to incur less interest expense, and, therefore, shoulder larger income tax liabilities due to the depleted income-tax shielding impact of interest expenses. This

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<sup>107</sup> For example see WFA/Basin Rebuttal electronic workpaper "Exhibit\_III-H-1.xls" worksheet "Replacement," cell V19.

<sup>108</sup> See WFA/Basin Rebuttal electronic workpaper "Canadian Pacific.pdf."

leads to the LRR incurring additional income tax expenses and higher capital recovery costs not incurred by the incumbent real world railroads.

BNSF's assertion that there is no proof that the LRR could obtain debt-financing with maturities of greater than 20 years is belied by the financing recently obtained by Class I railroads. Over the last 10 years, the U.S. based Class I railroads have obtained over \$5.6 billion in debt-financing with maturities ranging from 30 to 100 years.<sup>109</sup> Moreover, 32 percent of the \$5.6 billion was obtained by the BNSF in the form of 20 and 40-year debentures.<sup>110</sup> Needless to say, BNSF's assertion that a Class I carrier like the LRR could not obtain long-term financing is absurd.

**b. Initial Hiring and Training Costs**

WFA/Basin and BNSF agree that the LRR will incur initial hiring and training costs before the LRR starts operations. These costs include "costs to recruit professional employees and to train other employees."<sup>111</sup> In their opening evidence, WFA/Basin capitalized these costs and amortized them over a 60 month period

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<sup>109</sup> See WFA/Basin Rebuttal electronic workpaper "RR Debt Issues-Update.xls."

<sup>110</sup> Id.

<sup>111</sup> See Xcel I at 74.

commencing in the quarter the LRR commences operations (4Q04).<sup>112</sup> BNSF maintains that all initial hiring and training costs should be expensed in 4Q04.<sup>113</sup>

BNSF cites the Board's decisions in Duke/CSXT I and Xcel I in support of its position.<sup>114</sup> In those decisions, the STB expensed initial hiring and training costs. The Board based its decisions to expense these costs on the GAAP principle that the "[c]osts of start-up activities, including organization costs, should be expensed as incurred."<sup>115</sup>

As WFA/Basin explained in their opening evidence, including the LRR's initial hiring and training costs as a 4Q04 expense violates GAAP because the involved expenses were incurred in periods prior to 4Q04.<sup>116</sup> Including these costs as a 4Q04 expense violates the GAAP rule that these costs "be expensed as incurred."<sup>117</sup>

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<sup>112</sup> See WFA/Basin Op. Narr. at III-H-1 to 3.

<sup>113</sup> See BNSF Reply Narr. at III.G-20 to 21.

<sup>114</sup> Id. at III.G-20.

<sup>115</sup> Accounting Standards Executive Committee "Statement of Position 98-5 Reporting on the Costs of Start-Up Activities" (Apr. 3, 1998) at 12, WFA/Basin Op. Workpapers Vol. 11, pp. 6429-6441 ("Statement of Position 98-5").

<sup>116</sup> See WFA/Basin Op. Narr. at III-H-2.

<sup>117</sup> See Statement of Position 98-5 at 12.

As an accounting matter, the LRR's initial start-up costs would be included in the LRR's pre-commencement-of-service financial reports.<sup>118</sup> They would not be included in the LRR's 4Q04 expense reports because they were not incurred in 4Q04.

The monies used to pay the LRR start-up costs come from the capital LRR raised to finance the construction of its railroad.<sup>119</sup> Since capital monies, and not operating revenues, are the funding source for the LRR's initial start-up costs, the capital dollars should be recovered as capital dollars, not as operating expenses.

**c. Capitalizing Rail Grinding**

On Opening, WFA/Basin developed the LRR's capitalized rail grinding expense using the following procedure. First, WFA/Basin determined the annual pass mile requirements for the LRR based on the SARR operating characteristics. Second, it applied rail grinding unit costs incurred by the BNSF in the real world to the annual pass mile requirement to develop annual rail grinding expense. Third, WFA/Basin developed the present value of the annual rail grinding expense assuming the same expense amount would be incurred in every year of the 20-year DCF model. Fourth, the present value of the cumulative annual rail grinding expenses was included in the LRR initial investment costs, and capitalized over the 20-year DCF period.

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<sup>118</sup> See Financial Accounting Standards Board, "Statement of Financial Accounting Standards No. 7" (June 1975), WFA/Basin Rebuttal electronic workpaper "FAS7.pdf."

<sup>119</sup> See WFA/Basin Rebuttal electronic workpaper "Exhibit III-H-1.xls."

On Reply, BNSF accepted the capitalization of the expense, but asserted that WFA/Basin used incorrect pass mile requirements, incorrect rail grinding unit costs and did not account for inflation in rail grinding prices over the 20-year period. Each of BNSF's claims is discussed below.

BNSF asserts that WFA/Basin understated the annual pass mile requirements in its rail grinding cost determination. WFA/Basin assumed in its opening evidence that pass mile requirements would equal { } pass miles per year. BNSF in Reply asserted that this figure was understated, and in fact the LRR would expect an annual pass mile requirement of { } pass miles per year. On Rebuttal, WFA/Basin's maintenance of way witnesses accept that annual pass mile requirements were understated in Opening, and have determined annual pass mile requirements should be { } pass miles per year. WFA/Basin uses the revised pass mile requirements on Rebuttal.

BNSF's assertions regarding WFA/Basin's use of incorrect unit cost are invalid. In Opening, WFA/Basin utilized a rail grinding unit cost of { } per pass mile as taken directly from invoices produced in discovery, and issued to BNSF for rail grinding by outside contractors. BNSF in its Reply ignored its own invoices and instead used a unit cost of {

}.<sup>120</sup> There is no support for BNSF's unit cost other than the person who wrote the e-mail contends it was used as a

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<sup>120</sup> See BNSF Reply Workpaper BNSF.RP.WP.II.D.4-120.



bases for rail grinding unit cost in other STB cases. Based on the clear support for WFA/Basin's unit costs, and clear lack of support for BNSF's unit cost, WFA/Basin continue to rely upon their opening unit cost in Rebuttal.

Finally, BNSF asserts that rail grinding costs should be adjusted for inflation before determining the present value of the annual rail grinding expenses. WFA/Basin agree that the annual expenses should be adjusted for inflation before discounting, but disagree with BNSF on the proper inflation index to adjust the annual expense. In its reply evidence, BNSF used the RCAF-U to adjust the annual cost of rail grinding. The RCAF-U, however, is the incorrect index to use to adjust capitalized costs. Because the rail grinding will be capitalized, its prices should be adjusted by the same index used to adjust other rail related capital costs, in this instance the AAR's Materials and Supplies index. In Rebuttal, WFA/Basin have adjusted the annual operating expenses annually by the forecasted change in the Materials and Supplies index before discounting the rail grinding expense stream to the initial investment period.

**d. Capitalizing Maintenance-of-Way Work Equipment**

On Opening, WFA/Basin capitalized the LRR's costs for maintenance-of-way work equipment. On Reply, BNSF took exception to WFA/Basin's procedure, stating that WFA/Basin's equipment ownership costs are understated and unsupported. BNSF also claims that WFA/Basin used an arbitrary and unsupported five-year equipment life.

In Part III-D-4, WFA/Basin has addressed BNSF's claims with regard to its maintenance-of-way equipment ownership costs. With regard to WFA/Basin's capitalization of the costs for the LRR's maintenance-of-way equipment, WFA/Basin's approach is what a least cost, most efficient railroad would do. Maintenance-of-way work equipment is an asset like many other assets of the LRR and should be treated accordingly. Purchasing the equipment and reflecting the associated capital costs is more cost-effective than incurring operating costs from leasing the equipment. Also, WFA/Basin's five-year equipment life is not arbitrary nor unsupported. The five-year life is based on the definition of five-year property contained in the U.S. Master Tax Guide. See WFA/Basin Rebuttal electronic workpaper "MOW Equipment Life.pdf."

WFA/Basin's costs for maintenance-of-way work equipment and treatment of these costs are valid and should be accepted by the Board.<sup>121</sup>

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<sup>121</sup> WFA/Basin address BNSF's DCF-related challenges to WFA/Basin's treatment of maintenance-of-way costs at pages III-D-174 to 75, above.

**III-H Results of  
SAC Analysis**

### III. H. RESULTS OF SAC ANALYSIS

#### 1. DCF Analysis

On Opening, WFA/Basin utilized the Board's DCF model to develop LRR stand-alone costs. BNSF also used the Board's DCF model to develop LRR stand-alone costs. The Board's DCF model is comprised of thirteen (13) tables labeled Table A through Table L.

#### 2. DCF Results

##### a. WFA/Basin

The results of WFA/Basin's Rebuttal DCF calculations are shown in Rebuttal Exhibit III-H-1 and are summarized in Table III-H-1:

| <b>Rebuttal Table III-H-1</b><br><b>Discounted Cash Flow Analysis</b><br><b>(\$millions)</b> |                     |                     |                                 |                                 |                              |
|----------------------------------------------------------------------------------------------|---------------------|---------------------|---------------------------------|---------------------------------|------------------------------|
| <u>Period</u>                                                                                | <u>LRR SAC Cost</u> | <u>LRR Revenues</u> | <u>Overpayments In Revenues</u> | <u>Present Value Difference</u> | <u>Cumulative Difference</u> |
| 4Q04                                                                                         | \$46.1              | \$76.6              | \$30.5                          | \$31.2                          | \$31.2                       |
| 2005                                                                                         | 193.7               | 329.3               | 135.5                           | 126.6                           | 157.8                        |
| 2006                                                                                         | 200.0               | 339.4               | 139.4                           | 118.9                           | 276.7                        |
| 2007                                                                                         | 202.6               | 347.1               | 144.4                           | 112.5                           | 389.2                        |
| 2008                                                                                         | 207.8               | 354.7               | 146.9                           | 104.5                           | 493.7                        |
| 2009                                                                                         | 212.5               | 368.6               | 156.1                           | 101.4                           | 595.0                        |
| 2010                                                                                         | 216.7               | 376.6               | 159.8                           | 94.8                            | 689.8                        |
| 2011                                                                                         | 221.0               | 385.4               | 164.4                           | 89.0                            | 778.8                        |
| 2012                                                                                         | 225.2               | 394.1               | 169.0                           | 83.6                            | 862.4                        |
| 2013                                                                                         | 229.0               | 402.4               | 173.4                           | 78.3                            | 940.7                        |
| 2014                                                                                         | 232.6               | 409.8               | 177.2                           | 73.1                            | 1,013.8                      |

|           |       |       |       |      |         |
|-----------|-------|-------|-------|------|---------|
| 2015      | 237.2 | 419.5 | 182.3 | 68.6 | 1,082.4 |
| 2016      | 242.5 | 427.3 | 184.8 | 63.5 | 1,145.9 |
| 2017      | 247.9 | 436.0 | 188.1 | 59.1 | 1,205.0 |
| 2018      | 253.6 | 446.3 | 192.6 | 55.2 | 1,260.2 |
| 2019      | 259.6 | 460.8 | 201.2 | 52.7 | 1,312.9 |
| 2020      | 265.5 | 471.5 | 206.0 | 49.3 | 1,362.2 |
| 2021      | 271.5 | 482.8 | 211.3 | 46.1 | 1,408.3 |
| 2022      | 277.8 | 496.2 | 218.4 | 43.5 | 1,451.8 |
| 2023      | 284.3 | 512.8 | 228.5 | 41.6 | 1,493.4 |
| 1Q-3Q2024 | 217.6 | 397.2 | 179.6 | 30.5 | 1,524.0 |

**b. BNSF**

BNSF presents the Board with four (4) different DCF runs. They are a DCF using BNSF's avoidable cost divisions and removal of asserted "cross-subsidy traffic;" a DCF using BNSF's modified MSP divisions and removal of asserted "cross-subsidy traffic;" a DCF using BNSF's avoidable cost divisions without removal of asserted "cross-subsidy traffic;" and a DCF using BNSF's modified MSP divisions without removal of asserted "cross-subsidy traffic."<sup>1</sup>

In each of BNSF's four DCF runs, stand-alone costs substantially exceed LRR revenues in each year (or fraction thereof) during the twenty year DCF period. BNSF's DCF model produces these results because BNSF has vastly understated LRR revenues and vastly overstated LRR costs. BNSF's LRR revenue calculations are understated for the reasons set forth in Parts III-A and III-G, above. BNSF's LRR cost

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<sup>1</sup> See BNSF Reply electronic workpapers "BNSF Reply Exhibit III.H-1.xls," "BNSF Reply Exhibit III.H-2.xls," "Full SARR 1.xls," and "Full SARR 2.xls."

calculations are vastly overstated for the reasons set forth in Parts III-B, C, D, E and F above.

### 3. LRR SAC Rates

As shown in Rebuttal Table III-H-1, the present value of the LRR's expected revenues exceeds the present value of the LRR's costs by approximately \$1,524.0 million. Accordingly, the LRR revenues must be reduced to equal the LRR's costs. And, the reduction process needs to calculate movement-specific SAC rates. The Guidelines do not set forth a specific method for determining movement-specific SAC rates. Xcel I at 36. Instead the Guidelines "leave[] the inquiry to a case-by-case analysis." Id.

In their opening evidence, WFA/Basin demonstrated that the Board should not apply its flawed percentage reduction method to set movement-specific LRR rates in this case. Instead, WFA/Basin urged the Board to apply the reasonable allocation method ("RAM")<sup>2</sup> or, if the Board chose to continue to utilize a percentage reduction method, to modify its current approach using WFA/Basin's proposed Reduced Mark-Up allocation procedure.<sup>3</sup>

On Reply, BNSF includes a long-winded discussion of how the STB should set movement-specific LRR SAC rates, even though, under BNSF's evidence,

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<sup>2</sup> See WFA/Basin Op. Narr. at III-H-13 to 33.

<sup>3</sup> Id. at III-H-34.

WFA/Basin is entitled to no rate relief.<sup>4</sup> Obviously, BNSF has little faith in its LRR SAC revenue and cost calculations – and with good reason. BNSF’s reply endeavors to defend the Board’s current percentage reduction procedure, attacks WFA/Basin’s RAM and Reduced Mark-Up methods, and introduces two new methods to set LRR movement-specific SAC rates – an avoidable cost method and a through rate percentage reduction method. Finally, BNSF asks that the STB set mine-specific LRR maximum rates. As discussed below, BNSF’s contentions are all misguided and without any factual, legal or theoretical support.

**a.     The Board’s Flawed Percentage  
       Reduction Methodology**

The Board’s percentage reduction methodology has a fundamental flaw – the defendant carrier’s initial starting tariff rate dictates the resulting maximum SAC rate.<sup>5</sup> This fundamental flaw must be rectified. As the Board acknowledged in CPL, “the railroad should not be allowed to ... pre-ordain the outcome of the case through the selection of the rate level to which the percentage reduction approach would be applied.”<sup>6</sup>

BNSF unwittingly provides an example that demonstrates the percentage reduction method is arbitrary. BNSF hypothesizes a case where its tariff allows WFA/Basin to ship LRS traffic at no charge. BNSF opines that under the percentage

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<sup>4</sup> See BNSF Reply Narr. at III.H-6 to 31.

<sup>5</sup> See WFA/Basin Op. Narr. at III-H-10 to 13.

<sup>6</sup> CPL at 33.

reduction method, WFA/Basin would be entitled to a rate reduction – a result BNSF characterizes as “produc[ing] illogical and totally unreliable results.”<sup>7</sup> Of course, BNSF does not provide WFA/Basin with free coal transportation. The practical problem with percentage reduction is not tariff rates that are extraordinarily low, but tariff rates that are extraordinarily high. High tariff rates produce high percentage reduction answers – as BNSF knows. Nevertheless, BNSF’s example illustrates the arbitrariness inherent in the Board’s percentage reduction methodology.

In this case, BNSF has imposed draconian rate increases that produce tariff rates at levels never seen before in the western coal transportation markets. BNSF’s actions follow what appears to be a pattern – BNSF is progressively increasing rates in each successive maximum rate case.<sup>8</sup> The Board’s percentage reduction method encourages and incites BNSF to take such the actions because, in the end, BNSF’s starting tariff rates control the STB’s SAC rate answer.

**b. BNSF’s Commercial  
Reasonableness Gyrations**

BNSF opines that it is not “gaming” the percentage reduction process because its tariff rates, and the procedures it uses to adjust those rates, are “commercially

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<sup>7</sup> BNSF Reply Narr. at I-7. BNSF’s hypothetical is overstated since the Board will not set a maximum rate at less than 180% of the defendant carrier’s variable service costs.

<sup>8</sup> See WFA/Basin Op. Narr. at III-H-13.



reasonable.”<sup>9</sup> BNSF argues that it is acceptable for the Board to apply the percentage reduction test where the carrier’s starting tariff terms are “commercially reasonable.”

BNSF’s commercial reasonableness test fails for several interrelated reasons:

First, BNSF’s commercial reasonableness test focuses on BNSF’s subjective intent – i.e., why BNSF decided to impose the LRS tariff rates. The Board need not go down this diversionary path. Regardless of a carrier’s intent, the percentage reduction method permits the carrier to dictate the regulatory answer.

As WFA/Basin explained in their opening evidence, the law requires the Board to make an independent judgment on whether BNSF’s tariff rates are unreasonably high. See 49 U.S.C. §10701(d)(1). The Board cannot make such decisions and cannot fulfill its statutory mandate to engage in “meaningful rate regulation”<sup>10</sup> if BNSF – not the Board – sets the regulatory answer via its choice of the initial tariff rates.

Second, BNSF’s rate actions speak for themselves. BNSF has imposed massive – and unprecedented – rate increases on the LRS traffic. The resulting rates are grotesquely high when measured against any common transportation metric, including the following:

- BNSF’s rate increases initially more than doubled the expiring LRS contract rates and then the more-than-doubled rates will more-than-double again over the

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<sup>9</sup> See BNSF Reply Exhibit III.A-5.

<sup>10</sup> Farmers Union Cent. Exch. Inc. v. FERC, 737 F.2d 1486, 1507 (D.C. Cir. 1984).

20 year DCF period.<sup>11</sup> No coal shipper has ever been faced with percentage increases of this magnitude.

- BNSF's massive rate increases translate into massive payment increases for the high-volume LRS traffic. In the last year of their LRS contract, WFA/Basin paid approximately { } to BNSF.<sup>12</sup> In 2005, WFA/Basin will pay approximately { }, an increase of { }.<sup>13</sup> By the end of 2007, the annual increase in payment is projected at over { }.<sup>14</sup> During the 20 year DCF period, the total increase is over \$1 billion.<sup>15</sup> No western coal shipper has ever been faced with payment increases of this magnitude.

- BNSF's system-average R/VC ratio in 2004 equaled 131%.<sup>16</sup> The system-average R/VC ratio BNSF needed to be considered revenue adequate in 2004 equaled 144%.<sup>17</sup> BNSF's initial 4Q04 tariff rates produced average R/VC ratios of

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<sup>11</sup> See WFA/Basin Op. Narr. Part IV.

<sup>12</sup> WFA/Basin Rebuttal electronic workpaper "LRR Traffic and Revenues \_WFABasin Rebuttal\_Alt.xls."

<sup>13</sup> Id.

<sup>14</sup> Id.

<sup>15</sup> WFA/Basin Op. electronic workpaper "LR 20 Year Rate.xls."

<sup>16</sup> WFA/Basin Rebuttal electronic workpaper "BNSF RVC Ratios 2004.xls."

<sup>17</sup> Id.

478%.<sup>18</sup> These averages will increase to 649% in 2007 and, by the end of the DCF period, will exceed 847%.<sup>19</sup>

- BNSF's system-average rates per revenue ton-mile equaled 9.6 mills in 2004.<sup>20</sup> BNSF's initial 4Q04 tariff rate (with surcharges) equaled 38.2 mills.<sup>21</sup> These averages will increase to 44.5 mills in 2007<sup>22</sup> and, by the end of the DCF period, will exceed 88.0 mills.<sup>23</sup>

- As shown in Rebuttal Exhibit III-H-2, WFA/Basin is now paying per ton rates that are substantially higher than the rates BNSF is charging on movements that are hundreds of miles longer than the LRS movement.

Third, BNSF must go through evidentiary gyrations of epic proportions to support its claim that BNSF based the massive LRS rate increases on so-called "commercial" factors – not regulatory factors (i.e., the Board's percentage reduction methodology).

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<sup>18</sup> See WFA/Basin Rebuttal electronic workpaper "VC WFA 2004 Summary Rebuttal2.123."

<sup>19</sup> See WFA/Basin Rebuttal electronic workpaper "LRS\_RVCRebuttal v5.xls."

<sup>20</sup> See WFA/Basin Op. electronic workpaper "LRS\_BNSF\_ratesandrvc.xls."

<sup>21</sup> See WFA/Basin Rebuttal electronic workpaper "LRR Traffic and Revenues\_WFABasinRebuttal\_Alt.xls."

<sup>22</sup> Id.

<sup>23</sup> Id.

During discovery, and thereafter, WFA/Basin has repeatedly requested BNSF to provide internal documents explaining why BNSF decided to impose massive rate increases on the LRS traffic. BNSF has stonewalled in response. BNSF has not submitted a single internal e-mail, memorandum or other document prepared by any BNSF official that explains the real basis for its tariff pricing actions. All of the documents are being withheld under the attorney/client privilege.<sup>24</sup>

BNSF proceeds to create a made-for-litigation explanation for its pricing actions. On Opening, the explanation was provided by Professor Kalt. He claimed BNSF relied on “commercial” factors to set the LRS rates. On Reply, BNSF witness Brautovich, a BNSF marketing official, parrots Professor Kalt’s asserted commercial justifications for BNSF’s pricing actions.<sup>25</sup> Neither Professor Kalt nor Mr. Brautovich produced any internal BNSF prepared documents that explain BNSF’s pricing actions. These documents are still being withheld.

BNSF is forced to go through these complex evidentiary hoops to avoid disclosing an obvious fact – BNSF management was aware of how the Board’s percentage reduction process works and set its tariff rates accordingly.

Fourth, BNSF’s alleged “commercial justifications” for its tariff actions have no basis in fact. As WFA/Basin demonstrated in their reply evidence, BNSF is not a

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<sup>24</sup> See WFA/Basin Reply Narr. at IV-2 to 3.

<sup>25</sup> See BNSF Reply Exhibit III.A-5.

benign “commercially reasonable” monopolist. A review of BNSF’s make-weight commercial defenses for its pricing actions demonstrates these facts:

- BNSF argues that its price actions are justified because the expiring LRS contract rates were “low.”<sup>26</sup> That is not true. As WFA/Basin demonstrated in their opening and reply evidence, the LRS contract was very lucrative to BNSF. During the term of the contract, the R/VC ratios on the LRS traffic exceeded 200% – returns that substantially exceeded BNSF’s system-average R/VC ratios (e.g., 131% in 2004) and the ratios BNSF needed to reach revenue adequacy (e.g., 144% in 2004).<sup>27</sup> Overall, BNSF earned more than \$311 million in profit from the LRS traffic during the contract term.<sup>28</sup>

- BNSF argues that its tariff pricing actions are justified because LRS delivered coal costs, and LRS electric generation costs, are lower than those at other coal-fired plants BNSF has identified. BNSF’s plant analysis is skewed. Many of the plants it cites obtained coal from non-Wyoming PRB mines. As shown in Exhibit III-H-3, the price of the coal from these non-Wyoming PRB areas is significantly higher than LRS PRB coal prices. Similarly, the PRB-coal fired plants included in BNSF’s study group include many plants with substantially longer PRB coal hauls than the LRS haul.

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<sup>26</sup> BNSF Reply Exhibit III.A.5 at 3.

<sup>27</sup> See WFA/Basin Op. electronic workpaper “BNSF Contribution\_LRS Contract.xls.”

<sup>28</sup> Id.

In the end, BNSF's plant analysis demonstrates that BNSF wants to use its monopoly power to increase WFA/Basin's production prices so that BNSF – not WFA/Basin's customers – benefit from WFA/Basin's decision to utilize PRB coal and to site the LRS plant close to the PRB. The Board's predecessor, the ICC, properly referred to this form of monopoly carrier pricing as “extort[ion].”<sup>29</sup>

- BNSF argues that WFA/Basin should pay higher rates because the “recent high demand for PRB coal and PRB coal transportation services, with corresponding need to increase capital investment, has led BNSF to seek higher PRB coal transportation rates.”<sup>30</sup> “High demand” for PRB coal is not a recent phenomenon. BNSF's own evidence shows that the market for PRB coal has gone from 100 million tons in 1980 to nearly 500 million tons in 2004.<sup>31</sup> WFA/Basin, and other utilities, have made this market for BNSF. And this market has been a highly profitable one for BNSF – as most recently confirmed in an extensive AASHTO Study.<sup>32</sup> The AASHTO Study shows that BNSF has earned substantial profits on its coal traffic at historic pricing levels. These profits – which include the substantial profits BNSF earned under the expired LRS

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<sup>29</sup> In re: Investigation of Advances in Rates by Carriers in Western Truck Line, Trans-Missouri and Illinois Freight Committee Territories, 20 I.C.C. 307, 350-51 (1911).

<sup>30</sup> BNSF Reply Exhibit III.A-5 at 3.

<sup>31</sup> Id.

<sup>32</sup> See AASHTO Study at 117; WFA/Basin Reply electronic workpaper “Freight Rail Report.pdf.”

contract – have been more than enough to finance infrastructure growth, and will continue to do so in the future.<sup>33</sup>

- BNSF argues that its pricing actions are justified because it wants the additional revenue, WFA/Basin's customers can "absorb" its rate increases, etc.<sup>34</sup>

WFA/Basin have already addressed these arguments in detail in their reply filing, and will not repeat that discussion again. Suffice it to say here that BNSF's arguments highlight the fact that BNSF is a monopolist, the LRS plant is captive to BNSF, and, left to its own devices, BNSF feels no compunction whatsoever to use its monopoly power to extract punitive monopoly profits from WFA/Basin's rural electric and small municipal customers.<sup>35</sup>

Fifth, the Board adjudicates the reasonableness of coal rates by applying the regulatory standards set forth in the Coal Rate Guidelines. The Guidelines do not contain the "commercial reasonableness" test BNSF posits. Accordingly, the STB has no legal basis to apply it.

BNSF's commercial reasonableness test also does not address the question of what the Board should do if the Board finds that BNSF's tariff rates are "commercially

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<sup>33</sup> Id.

<sup>34</sup> BNSF Reply Exhibit III.A-5 at 5.

<sup>35</sup> BNSF also argues its pricing actions are justified based upon a study prepared by a consultant – Norbridge, Inc. However, BNSF has repeatedly refused WFA/Basin's requests to produce this study and the workpapers supporting it.

unreasonable.” Is the Board to unilaterally reduce BNSF’s tariff rates to some “commercially reasonable level” if it finds the tariff rate to be “commercially unreasonable?” BNSF does not address these questions for obvious reasons: the Board has the statutory authority to reduce coal rates only if it finds the rates unreasonable under the Guidelines – and the Guidelines do not contain BNSF’s “commercial reasonableness” test. Instead, the Guidelines contain the regulatory SAC test to determine rate reasonableness,<sup>36</sup> and the Board uses the percentage reduction method (which BNSF controls) to set maximum SAC rates.

Finally, BNSF offers no regulatory justification for its actions because none exists. Percentage reduction incites monopoly carriers to charge high tariff rates. These high tariff rates pre-ordain the SAC answers. BNSF knows this but does not want to acknowledge it – for obvious reasons – since it (not the STB) controls the regulatory answer. The best BNSF can do is to make up a fictitious, legally meaningless side-bar test – “commercial reasonableness” – and then mistakenly claim it has passed its own self-proclaimed test.

**c.     The Fair Alternative – RAM**

WFA/Basin utilized the Reasonable Allocation Method (“RAM”) to calculate movement-specific LRR SAC rates. Under RAM, each LRR shipper pays its variable costs. Captive LRR shippers pay an additional sum equal to a pro-rata share of

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<sup>36</sup> See Guidelines, 1 I.C.C.2d at 542.



the non-attributable LRR costs (i.e., the difference between the total LRR SAC costs and the LRR system variable traffic costs). RAM also contains a default rule – no shipper is required to pay more than its current rate.<sup>37</sup>

As WFA/Basin explained in their opening evidence, RAM has many attributes: it is consistent with the Coal Rate Guidelines; it follows procedures the ICC initially used to set maximum SAC rates; it avoids the many problems with the percentage reduction method; and it produces results that are fair to both WFA/Basin and BNSF.<sup>38</sup>

On reply, BNSF maintains that the Board should reject RAM because: (i) WFA/Basin are “gaming” the SAC process; (ii) RAM does not comply with the Coal Rate Guidelines; (iii) the RAM approach has been rejected in prior cases; and (iv) WFA/Basin have not presented sufficient evidence to support RAM.<sup>39</sup> WFA/Basin address each of BNSF’s erroneous contentions in turn.

**i. RAM Solves the Flaws in  
Percentage Reduction Methodology**

BNSF’s principal contention in its reply evidence is that WFA/Basin are “gaming” the SAC process. BNSF repeats this charge ad nauseam throughout its reply. All told, BNSF makes over 60 references to “gaming.” Of course, WFA/Basin are not “gaming” the SAC process. BNSF has imposed a \$1 billion dollar rate increase on LRS’s

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<sup>37</sup> See WFA/Basin Opening at III-H-28 n.34.

<sup>38</sup> See WFA/Basin Op. Narr. at III-H-29 to 33.

<sup>39</sup> See BNSF Reply Narr. at III-H-20 to 25.

rural and small municipal customers. WFA/Basin seeks rate relief under the SAC test and its evidence comports with governing Board precedent in all respects.

What really appears to be bothering BNSF is not WFA/Basin's "gaming" but, the fact that the LRR revenues – calculated using mileage-based procedures the Board has applied in its last nine (9) cases – substantially exceed the LRR's SAC. The magnitude of this differential is critical under percentage reduction since, under that method, higher differentials mathematically translate into lower movement-specific SAC rates.

RAM addresses BNSF's concerns about high SARR revenue/cost differentials. Under RAM, high differentials do not impact the SARR movement-specific SAC rates. For example, assume that on a captive cross-over movement, SARR revenues equal \$10.00 per ton, SARR variable costs equal \$3.00 per ton, and the pro rata share of unattributable SARR costs equals \$2.00 per ton. Under RAM, the shipper's movement-specific SAC rate equals \$5.00 per ton (\$3.00 variable cost + \$2.00 unattributable cost). The remaining differential \$5.00 per ton (\$10.00 – \$5.00) has no impact on the calculation of the complaining shipper's maximum rate.

More importantly, RAM addresses, and solves, the overriding problem with percentage reduction – the carrier's starting rate dictating the maximum SAC rate. The above-example also illustrates the following point: assume exactly the same hypothetical inputs shown above but further assume they apply to the complainant's traffic. Under

RAM, the carrier starting rate of \$10.00 per ton has no impact on the resulting SAC maximum rate – \$5.00 per ton. Thus, RAM closes a gaping loophole in percentage reduction -- i.e., the carrier's starting rate no longer pre-ordains the resulting maximum SAC rate.

**ii. RAM Complies with the Guidelines**

RAM complies with the Coal Rate Guidelines. The fundamental RAM SARR revenue allocation principle is that captive shippers with reasonably similar demand elasticities can pay a pro rata share of a SARR's unattributable costs. This basic RAM principle was championed by the western railroads in the mid-1980s; was adopted by the ICC in the Guidelines; and was applied by the ICC in the first two major coal rate cases the ICC decided after it promulgated the Guidelines.<sup>40</sup>

BNSF's truncated, and tortured, reading of the Guidelines cannot overcome what the Guidelines say and how the ICC applied them after they were issued. The gravamen of BNSF's argument is that the Guidelines permit a pro rata distribution of unattributable costs among SARR shippers only if those shippers have "identical demand characteristics" and "equal elasticities" of demand.<sup>41</sup> BNSF's reading of the Guidelines is clearly wrong – the Guidelines expressly permit, and encourage, complainant shippers to

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<sup>40</sup> OPPD and APL.

<sup>41</sup> BNSF Reply Narr. at III.H-21 to 22.

allocate unattributable costs on a pro rata basis among SARR traffic group members with “similar demand elasticit[ies].”<sup>42</sup>

As WFA/Basin explained in its opening evidence,<sup>43</sup> the Coal Rate Guidelines were issued in the summer of 1985. At that time the ICC had a tremendous backlog of coal rate cases. Many of these cases had been in limbo for years while the Guidelines were being formulated. As a consequence of the backlogged docket, the ICC needed not only a set of defensible ratemaking standards that could withstand judicial review, but also standards that could be implemented practically in pending cases to produce fair results.

One consequential issue the ICC knew it had to address in the Guidelines was how to calculate shipper-specific SAC rates. Without this discussion, the Guidelines would not have been of much use in solving the ICC’s underlying problem – deciding pending coal rate cases. In Guidelines, the ICC called for the determination of shipper-specific SAC rates “on the basis of Ramsey [pricing] principles.” Id. at 546. These principles allocate unattributable SAC costs to traffic group members “in inverse proportion to demand elasticities.” Id. at 554. The ICC was fully aware, however, that translating Ramsey pricing into case-specific rate relief was an impossible proposition. As stated by the ICC:

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<sup>42</sup> Guidelines at 533.

<sup>43</sup> See WFA/Basin Op. Narr. at III-H-17.

We did not consider it to be practical to impose pure Ramsey pricing as a regulatory requirement for across-the-board application in all cases. Ramsey pricing is based on a mathematical formula which requires both the marginal cost and the elasticity of demand to be quantified for every movement in the carrier's system. Thus, the amount of data and degree of analysis required seemed overwhelming. We concluded that while formal Ramsey pricing is useful as a theoretical guideline, it is too difficult and burdensome for universal application.

Id. at 527 (footnote omitted). Of course, impossible propositions did not solve the ICC's pending case crunch.

The ICC addressed and resolved this issue by suggesting a practical answer – shippers could evenly allocate unattributable SARR costs to SARR traffic group members that shared similar demand elasticities. Thus, the Guidelines provide:

We will consider evidence that particular [SARR] shippers face similar market conditions and therefore have similar demand elasticity.

Id. at 533. The ICC also held that shippers could present practical, qualitative evidence to demonstrate these similar demand elasticities:

[w]here information on demand elasticity is required ... we will consider qualitative (rather than necessarily quantitative) evidence on the relative demand elasticity of specific movements and/or commodities.

Id. at 527.

The ICC's solution found support in the filings made by a large group of western railroads ("Western Railroads") that included BNSF's corporate predecessors. In their comments, the Western Railroads urged the ICC to set shipper specific SAC rates by allocating a "pro-rata sharing of costs" to "movements of the same commodity – or at the very most, commodities the transportation of which (if not identical) is characterized by similar elasticity of demand."<sup>44</sup>

The ICC proceeded to apply these elasticity principles in its landmark OPPD<sup>45</sup> and APL<sup>46</sup> decisions. Each of these cases involved a shipper challenge to carrier rates from the PRB to its utility plant. In each case the shipper designed a SARR to provide PRB-to-plant service. The ICC found in each case that SARR revenue exceeded SARR costs, and also adopted the shippers' proposed method to determine SARR-specific SAC rates. That method called for each SARR shipper to pay its variable costs. The remaining unattributable SARR costs were distributed on a pro rata ton-mile basis among the SARR's coal shippers – all of whom were captive shippers.

The ICC found in each case that this distribution of unattributable costs was permissible because the Guidelines permitted shippers to allocate these costs among

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<sup>44</sup> Comments of Western Railroads, ICC Ex Parte No. 347 (Sub. No. 1)(filed July 28, 1983) at 75 (emphasis in the original), excerpted in WFA/Basin Op. Workpapers Vol. 11, pp. 6447-6451.

<sup>45</sup> 3 I.C.C. 2d 123 (1986).

<sup>46</sup> 3 I.C.C. 2d 757 (1987).

traffic group members "with reasonably comparable elasticities of demand." As stated by the ICC in OPPD:

As noted, Omaha Power distributed all unattributable costs of [the SARR] system uniformly over all unit-train coal shipments, the hypothesis being that the strength of demand for each coal shipper is sufficiently similar to recover an average contribution. The qualitative evidence for OPPD's methodological short-cut is derived principally from the fact of similarity among members of the group. The grouping consists of the same commodity, shipped from the same general origin, with similar unit-train service characteristics, destined for the same end use (consumption in domestic electric utility plants).

\* \* \*

In deciding this issue ... we do not withdraw from the principle that allocation of unattributable costs among captive shippers is based ideally on relative demand elasticities. Indeed, complainant has not asked for repudiation of this principle. In complainant's view,

\* \* \* the issue comes down to the extent to which it is feasible, *given the facts in each contested proceeding*, to make groupings of shipments with reasonably comparable elasticities of demand \* \* \* without jeopardizing the ability of the railroad to recover its aggregate stand-alone costs.

We agree with this formulation....

Id. at 139-40 (emphasis in original).

Similarly, the ICC held in APL:

We find that in this case [Arkansas Power & Light's] assumption regarding the like elasticity for its group is reasonable and we accept it. As in *Omaha*, the non-issue traffic consists of the same commodity (coal), with similar service characteristics (unit-train service), destined for the same end use (consumption in electric utility plants), and shipped from the same general origin (Powder River Basin). On this record, we are satisfied that any degree of variation in the demand elasticities of the non-issue shippers is not significant and therefore each shipper can reasonably be assigned an equal portion of the non-attributable costs of the stand-alone system.

Id. at 774.

Thus, BNSF clearly misinterprets the Guidelines. The Guidelines do not limit pro rata sharing of SARR unattributable costs to situations where SARR traffic group member have "identical" demand elasticities. Instead, the Guidelines, as authoritatively and contemporaneously construed and applied by the ICC in OPPD and APL, permit shippers to make pro rata allocations of SARR unattributable costs to SARR shippers that "face similar market conditions and therefore have similar demand elasticity."<sup>47</sup>

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<sup>47</sup> Guidelines at 533.



**iii. RAM has not been  
Rejected in Prior Cases**

BNSF argues that the Board has “rejected” RAM in prior cases.<sup>48</sup> That is simply not correct. The RAM procedure is modeled on the methodology that the ICC used and approved in OPPD and APL to set SARR-specific SAC rates. In those cases, all SARR shippers paid their variable costs and captive coal shippers paid the unattributable costs on a pro rata ton-mile basis. The ICC approved the pro rata distribution of unattributable costs because the complainant shipper demonstrated that the group of captive PRB coal shippers had similar elasticities of demand.

In cases presented and decided since OPPD and APL, complainant shippers have not asked the ICC, or the STB, to apply a procedure where each SARR shipper pays its variable costs and unattributable SAC costs are distributed among a class of shippers with similar demand elasticities. Thus, the ICC and the Board have not rejected the methodology used in OPPD and APL – and the methodology RAM is based upon – because it has not been presented in subsequent cases.

The ICC, and the Board, however, have considered – and rejected – other methodologies involving pro rata distribution of all SAC costs, but these cases are distinguishable on their facts.

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<sup>48</sup> See BNSF Reply Narr. at III.H-22.

• In Coal Trading,<sup>49</sup> the complainant shippers challenged rates posted by two carriers (CSX and NS) to apply from coal mines located in five eastern states to three eastern export coal piers. All told, the complaint covered 507 origin-to-destination pairs. The complainants' SARR included both competitive and captive shippers moving coal from different eastern coal producing regions to different ports for export.

The complainants in Coal Trading asked the ICC to set movement-specific SAC rates by allocating all SAC costs on a ton-mile basis, not just unattributable SAC costs.<sup>50</sup> And, the complainants did not – because they could not – demonstrate that all members of their SARR traffic group had similar demand elasticities. The ICC, in an interim decision, issued a preliminary ruling that, on the facts presented, the complainants' ton-mile allocation approach, “preclude[ed] differential pricing.”<sup>51</sup> The case went on to settle before the ICC entered a final decision and the “proceeding was discontinued without a rate prescription.”<sup>52</sup>

Coal Trading is clearly distinguishable from the instant case. Here, unlike Coal Trading, all SARR traffic originates in a single coal producing area (the PRB); the coal is originated by a single carrier (BNSF); and, unlike the case in Coal Trading,

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<sup>49</sup> 6 I.C.C. 2d 361 (1990).

<sup>50</sup> Id. at 380.

<sup>51</sup> Id.

<sup>52</sup> WTU, 1 S.T.B. at 716 n.171.

WFA/Basin demonstrate that a pertinent subset of the LRR traffic group (the captive coal shippers) does have similar demand elasticities. Accordingly, a pro rata distribution of unattributable costs in this case, unlike Coal Trading, does permit differential pricing.

- In WTU, WTU challenged BNSF's rates from the PRB to WTU's Oklaunion generating station, near Vernon, Texas. WTU's SARR consisted of PRB coal shippers – some were captive and others competitive.<sup>53</sup> WTU asked the Board to distribute all SAC costs (not just SARR unattributable costs) on a pro rata basis amongst its traffic group members. BNSF asked the Board to utilize the percentage reduction method to set the SARR members' SAC rates. The STB held that “[w]e need not address the validity of either of the parties proposed methods, because both WTU's and BN's suggested methods would result in an R/VC percentage of less than 180.”<sup>54</sup>

WTU is distinguishable from the current case, inter alia, because WTU's proposed allocation method (unlike RAM) did not allocate unattributable SARR costs solely to the captive coal shippers in its SARR. And, as noted above, the STB did not decide the revenue allocation issue.

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<sup>53</sup> The WTU traffic group consisted of eleven PRB coal shippers. Nine were served by a single railroad at destination. Two (SPS at Tolk and NPPD at Gerald Gentlemen) were competitive since the generating plants were served by two rail carriers. See WTU at 657-664.

<sup>54</sup> WTU at 716.

- In APS I,<sup>55</sup> APS challenged BNSF's rates on APS coal traffic originating at Gallup, New Mexico and terminating at APS's Cholla Station in Joseph City, Arizona. The APS traffic group included only two coal shippers – APS and Salt River Power Project – and two O/D pairs.

APS asked the STB to allocate all SARR costs on a ton-mile basis between the APS and Salt River SARR traffic. BNSF asked the Board to apply the percentage reduction method. The Board found that APS and Salt River had similar demand elasticities but chose not to apply APS's ton-mile allocation method because "the long-run marginal cost of serving these shippers would appear to differ significantly."<sup>56</sup> The Board also noted that APS's "ton-mile allocation method could potentially yield a rate for a non-complaining shipper that is higher than the rate actually paid by that shipper."<sup>57</sup>

WFA/Basin's RAM methodology solves both of the issues the STB raised in APS. Under RAM, shippers (including WFA/Basin) pay all of their long-run marginal costs since – subject to the default rule – each SARR shipper pays its variable costs. The RAM default rule also caps each SARR shipper's rates at its current level – thus precluding a non-complainant shipper from paying more than its current rate.

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<sup>55</sup> 2 S.T.B. 367 (1997).

<sup>56</sup> Id. at 392 n.73.

<sup>57</sup> Id. at 392 n.72.

- In CPL,<sup>58</sup> Carolina Power & Light (“CP&L”) challenged coal rates established by NS on CP&L coal traffic moving from various origins in three eastern states to two CP&L generating stations in North Carolina. The CP&L SARR served captive and competitive coal customers, and also transported grain.

CP&L contended that NS had “gamed” the percentage reduction process by imposing tariff rates that were fifty percent higher than its expiring contract rates for the involved movements.<sup>59</sup> CP&L proposed various methods to solve the gaming issue, including a “‘ton-mile approach’ under which the total revenue requirements of the SARR would be distributed among the traffic in the stand-alone group on a ton-mile basis so that all traffic in the group would contribute the same per-ton-mile amount.”<sup>60</sup> The Board rejected CP&L’s suggested allocation method because, the Board found, it “would not allow for demand-based differential pricing.”<sup>61</sup> The Board went on to explain that “[i]f a railroad attempted to collect the average per-ton-mile amount from all of its traffic, competitive traffic that is lower-priced would shift to other transportation options, depriving the railroad of the revenues assigned to that traffic.”<sup>62</sup>

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<sup>58</sup> STB Docket No. 42072 (STB served Dec. 23, 2003).

<sup>59</sup> Id. at 31.

<sup>60</sup> Id. at 33.

<sup>61</sup> Id.

<sup>62</sup> Id.

RAM solves the Board's concerns in CPL. Under RAM, SARR shippers do not contribute the same amount per ton. Each shipper pays its variable service costs (which differ from shipper to shipper depending on the length of the shipper's haul on the LRR, and the movement-specific characteristics of the traffic). And, under RAM, only captive shippers pay amounts in excess of their variable costs. Thus, under RAM, competitive traffic would not "shift to other transportation options"<sup>63</sup> because, unlike the case in CPL, LRR competitive shippers are not asked to make any contribution to the LRR's fixed costs, much less a pro rata ton-mile allocation of all SARR costs.

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BNSF is simply wrong when it says RAM has been rejected in prior cases. The RAM approach – having all LRR shippers pay their variable costs, and allocating SARR unattributable costs only to the captive traffic, was utilized in OPPD and APL. No subsequent complainant shipper – prior to the instant case – has asked the ICC or the Board to employ this accepted methodology. As shown above, Coal Trading, WTU, APS I and CPL involved shipper proposals to use different methods to calculate movement-specific SARR rates than RAM. RAM also addresses and corrects the problems the ICC and the Board identified with these other methodologies.

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<sup>63</sup> Id.

#### iv. The Record Supports RAM

BNSF argues that WFA/Basin have not submitted sufficient evidence to support RAM. BNSF's various evidentiary points are wrong.

- BNSF claims the Guidelines require a shipper to demonstrate that SARR members have "identical" demand elasticities before they are asked to share a pro rata allocation of unattributable SARR costs. As discussed above, BNSF mistakes what the Guidelines require. The Guidelines permit shippers to allocate unattributable costs, on a pro rata basis, to "shippers [that] face similar market conditions and therefore have similar demand elasticity."<sup>64</sup>

- WFA/Basin presented extensive qualitative evidence on Opening demonstrating that the captive coal shippers in the LRR "face a similar market condition and therefore have similar demand elasticity."<sup>65</sup> The evidences demonstrated, inter alia:

- WFA/Basin limited their captive traffic group to sub-bituminous coal – a commodity that constitutes 0.003% of the total commodities carried by rail.

- Each LRR captive shipper originates its coal from the same producing area (the PRB), each LRR captive shipper has the coal transported in the same form of service (unit train service), and each LRR captive shipper's coal is delivered to similar destinations (utility coal-fired power plants).

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<sup>64</sup> Guidelines, 1 I.C.C. 2d at 533.

<sup>65</sup> See WFA/Basin Op. Narr. at III-H-25 to 28.

– Each LRR captive shipper is sole-served by BNSF or LRR. The Board has consistently acknowledged the substantial market power that a railroad has over pricing to its sole-served utility coal customers.<sup>66</sup> Similarly, the Board’s predecessor, the ICC observed: “long-haul, large-volume, heavy-loading traffic such as coal is likely to be captive to rail, and hence have relatively low demand elasticity.”<sup>67</sup>

– The LRR captive coal traffic is delivered to base-load coal-fired facilities.<sup>68</sup> Base-load plants are typically must-run plants a utility needs to operate to meet its native load.<sup>69</sup> Railroad pricing power is at its highest – and shipper price elasticity is at its lowest – for coal transportation to captive base-load plants.<sup>70</sup>

– The criteria WFA/Basin utilize to classify utility coal movements as competitive or captive are identical to the criteria BNSF has itself used in its recent submissions in coal rate cases.<sup>71</sup> In these submissions, BNSF has acknowledged the

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<sup>66</sup> See TMPA at 11; WTU at 648-52; APS I at 374-79.

<sup>67</sup> Coal Rate Guidelines – Nationwide, 364 I.C.C. at 360, 365 (1980).

<sup>68</sup> Base load plants are defined as having a “nominal annual capacity factor of 65%.” APS I at 377 n.24. {  
}

<sup>69</sup> See WTU, 1 S.T.B. at 653.

<sup>70</sup> Id. at 652-654; APS I at 377-79; APS II at 72-74.

<sup>71</sup> See Reply Evidence of The Burlington Northern and Santa Fe Railway Company in Docket No. 41191 (Sub No. 1), AEP Texas v. BNSF, Public Version at III-A-99, and Reply Evidence of The Burlington Northern and Santa Fe Railway Company in Docket No. 42071, Otter Tail Power v. BNSF, Public Version at III-A-111 to 112.



practical demand-based differences between competitive and captive sole-served plants.

- BNSF does not dispute or challenge WFA/Basin's evidence

demonstrating that LRR captive shippers have reasonably similar demand elasticities.

Nor does BNSF dispute that WFA/Basin have met their burden of proof under the standards set forth OPPD and APL. In these cases, the ICC found that the shipper met its burden to show "similarity [of demand elasticities] among members of the [SARR] group"<sup>72</sup> by presenting evidence demonstrating "[t]he grouping consists of the same commodity, shipped from the same general origin, with similar unit-train service characteristics, destined for the same end use (consumption in domestic electric utility plants)."<sup>73</sup>

Instead, BNSF argues that shippers within the LRR traffic group have different elasticities of demand because they have differing generating capabilities. BNSF theorizes that some utilities in the LRR traffic group can respond to the BNSF price increases at the LRR captive group plants by substituting power from other, lower-cost generating facilities within their systems, or by purchasing lower cost power on the electric grid. These asserted grid options, BNSF further theorizes, allow some LRR shippers to "discipline" BNSF if its prices get too high.<sup>74</sup>

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<sup>72</sup> OPPD, 3 I.C.C. 2d at 139-40.

<sup>73</sup> Id.

<sup>74</sup> See BNSF Reply Narr. at III.H-24.

BNSF's contentions here are far-fetched. The LRR captive plants are low-cost base load generators. BNSF exerts tremendous market power over all of these plants because of the wide spread differential between the delivered fuel costs at these plants and delivered fuel costs for other generating facilities (e.g., gas fired generation).<sup>75</sup>

At some point, BNSF, like any other monopolist, can price itself out of a market. As the D.C. Circuit once observed, "[a]t some point the availability of an alternative such as the horse and buggy or even people carrying [the involved commodity in] buckets theoretically prevents railroads from raising their rates beyond an outer bound."<sup>76</sup> Here the LRR traffic group shippers face similar electric generating market conditions – conditions that give BNSF tremendous pricing power over their transportation service.

BNSF also opines that a utility with multiple plants may have lower elasticity of demand transportation than a utility with few plants. BNSF's submissions in recent STB cases also directly conflict with its contentions in this case. For example, in Xcel, Xcel challenged BNSF's rate from the PRB to the Pawnee power plant in Colorado – a generating station that is captive to BNSF. Xcel has many other generating plants. In Xcel, BNSF did not argue that Xcel's ownership of other generating stations, or its access

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<sup>75</sup> BNSF touts these spreads – and BNSF's corresponding market power – in its presentation to Wall Street analysts. See WFA/Basin electronic workpaper "Financial Analysts.pdf" at "Demand Drivers."

<sup>76</sup> Arizona Pub. Serv. Co. v. United States, 742 F.2d 644, 650-51 (D.C. Cir. 1984).

to the electric grid, provided Xcel with any practical market leverage against BNSF. Instead, BNSF candidly acknowledged that Xcel “was one of BNSF’s most demand-inelastic shippers.”<sup>77</sup>

The Board made similar findings in the WTU case. In that case, BNSF argued that WTU could discipline BNSF by swinging power generation away from its captive Oklaunion plant to other plants in the CSW system. The Board rejected this contention:

Oklaunion is the lowest-cost unit in the WTU system. As such, it operates as a “base-load, must run” plant. In an economic dispatch system, a utility dispatches its lowest-cost generation first to serve its “native load.” Because other utilities tend to use their least expensive incremental generation for their own territorial customers, the power that would be available for regular transfer between utilities is typically the highest-cost power, not the lowest. Therefore, obtaining power from other sources – whether from other CSW utilities or from elsewhere on the power grid – would not be an economical alternative to Oklaunion’s output.

Id. at 653.

BNSF also theorizes that a shipper with multiple plants may be able to obtain competitive leverage by packaging competitive plants and captive plants together

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<sup>77</sup> See Rebuttal Evidence and Argument of the Burlington Northern and Santa Fe Railway Company in Xcel dated May 19, 2003 at page I-8 (Public Version).

in a bidding competition.<sup>78</sup> However, any such strategy cannot work. A profit maximizing carrier serving a shipper's captive and competitive plants will try to win business at the competitive plants by submitting a bid that "just beats" other carriers' bids, while maximizing its prices at the captive plant (up to the maximums permitted under the Guidelines).

**d. WFA/Basin's Other  
SAC Relief Methods**

In their opening evidence, WFA/Basin asked the Board to set SARR-specific rates using RAM. WFA/Basin also calculated SARR-specific rates using the Board's current percentage reduction methodology – but asked the Board not to use this approach. Finally, WFA/Basin presented the Board with a third alternative – the Reduced Mark-Up method. The Reduced Mark-Up method is intended to work in the general form of the Board's current, flawed percentage reduction methodology but it makes some obvious corrections – e.g., it reduces SARR shippers' profit contributions, not simply their rates.

Under the Reduced Mark-Up method, the profit contribution made by each LRR shipper is calculated. The profit contribution is the difference between the revenues paid by each LRR shipper and the variable costs the LRR incurs to provide that shipper

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<sup>78</sup> See BNSF Reply Narr. at III.H-25.

with service. The contribution is then reduced on a pro rata basis so that LRR revenues equal LRR costs.<sup>79</sup>

The Reduced Mark-Up method uses R/VC ratios as a surrogate for Ramsey demand elasticity calculations. It also responds to the Board's Xcel I decision. In Xcel I, the Board criticized Xcel's proposed R/VC ratio methodology for determining movement-specific SARR rates because "all movements in the traffic group with R/VC percentages in excess of the R/VC cap would be expected to bear equal shares of the SAC costs on an R/VC basis, even where they have differing demand elasticities."<sup>80</sup>

The Reduced Mark-Up method, unlike the method the Board rejected in Xcel, does not require LRR group members "to bear equal shares of the SAC costs ... even where they have differing demand elasticities."<sup>81</sup> Instead, the Reduced Mark-Up method provides for each LRR shipper to bear different shares of SAC costs based on the profit contribution.

BNSF argues that the Reduced Mark-Up method should be rejected because it (i) is "inconsistent" with RAM; (ii) does not address "through" movement revenues and

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<sup>79</sup> See WFA/Basin Op. electronic workpaper "LRR Mark-Up Rate Reduction.xls."

<sup>80</sup> Xcel I at 38.

<sup>81</sup> Id.

costs; (iii) improperly uses LRR costs, not BNSF's costs; and (iv) improperly relies on URCS costs to calculate marginal costs.<sup>82</sup> Each contention is addressed below.

- BNSF's claims that RAM and Reduced Mark-Up methods are "inconsistent" with the purpose of each method. RAM is intended to replace percentage reduction with a superior approach.<sup>83</sup> The Reduced Mark-Up method simply endeavors to take the flawed percentage reduction approach and, within the flawed contours of the methodology, redirect its focus from rate reduction to contribution reduction.<sup>84</sup> As WFA/Basin demonstrated on opening, RAM produces conservative results when compared to the Reduced Mark-Up method.

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<sup>82</sup> See BNSF Reply Narr. at III.H-25 to 28.

<sup>83</sup> See WFA/Basin Op. Narr. at III-H-29 to 33.

<sup>84</sup> Both RAM and Reduced-Mark-Up start with a calculation of LRR variable costs. RAM and Reduced-Mark-Up use different procedures to allocate unattributable costs. WFA/Basin's Reduced Mark-Up approach takes a "snapshot" approach by using R/VC ratios as a substitute for Ramsey pricing elasticities. R/VC ratios at any time can reflect a number of factors. A principle factor impacting captive coal traffic R/VC ratios is the Board's application of the Coal Rate Guidelines. Carriers look to the Board's application of these Guidelines in setting maximum coal rates. See WFA/Basin Op. Narr. at III-H-32. Thus, the rate levels on captive coal traffic generally reflect regulatory policies that are intended to preclude carriers' from earning excessive profits on captive coal traffic. RAM takes a longer-term view by looking at basic coal transportation market demand fundamentals. For example, the R/VC ratios on the LRS traffic jumped dramatically when the LRS contract expired and BNSF imposed its massive tariff price increases. The LRS plant was captive to the BNSF both before and after the price increases, and the price increases were not predicated upon any change in the LRS plant's transportation demand elasticity. Rather, they reflected BNSF's STB rate litigation strategy.

WFA/Basin also observe that BNSF has presented to the Board a new methodology to replace percentage reduction as well as approaches that modify percentage reduction. These different approaches employ wildly different theoretical underpinnings,<sup>85</sup> but, of course, BNSF sees no harm in its presenting “[in]consistent” methodologies to the Board.

- BNSF argues that the Reduced Mark-Up methodology should be rejected because it does not utilize through movement revenues and costs.<sup>86</sup> This contention is far-fetched. The Board’s SAC methodology calculates SARR revenue and SARR costs. The issue in this case, and others, is the method for calculating movement-specific SARR rates where SARR revenue exceed SARR costs. Through movement revenue (i.e., the LRR’s revenue + BNSF’s revenue) and through costs (i.e. the LRR’s costs + BNSF’s costs) play no roles here. The issue is how to set movement-specific rates on the SARR – a carrier that is separate from BNSF and has its own separate revenue and cost structures.

- Similarly, BNSF’s arguments that the LRR should utilize BNSF’s costs for distributing LRR revenues are wrong. The LRR has its own cost structure which is different than BNSF’s. No real world carrier would rely on another carrier’s costs in setting its rates – it would, of course, look to its own costs.

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<sup>85</sup> See BNSF Reply Narr. at III.H-6.

<sup>86</sup> Id. at III.H-27.

• Finally, BNSF argues that URCS costs are not an accepted surrogate for long run marginal costs needed to calculate Ramsey prices.<sup>87</sup> However, the STB has ruled otherwise. As stated by the Board, “[b]ecause the marginal costs associated with handling particular rail traffic are not readily measurable, we rely on the variable costs produced by the URCS formula as proxy for LRMC [long run marginal costs].”<sup>88</sup>

BNSF also forgets the purpose of the Reduced Mark-Up method. Ramsey pricing calls for a calculation of profit contributions. In a SAC analysis, these contributions must be reduced if they generate SARR revenues in excess of the SARR’s revenue requirements. Percentage reduction, as the Board currently applies it, simply reduces rates without any consideration of contribution.

**e. BNSF’s Rate Relief Methods**

BNSF serves up two methods to determine shipper-specific SARR rates – avoidable costs and a modified percentage reduction approach.

**i. Avoidable Costs**

BNSF’s misguided calculation of “avoidable cost” divisions is discussed above in Part III-A. Under BNSF’s flawed methodology, the LRR’s initial revenue divisions are set at BNSF’s URCS 4Q04 variable costs for providing LRR service, and the LRS rates are set at BNSF’s 4Q04 tariff levels. BNSF proceeds to adjust the 4Q04

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<sup>87</sup> Id. at III.H-27 n.19.

<sup>88</sup> Rate Guidelines – Non-Coal Proceedings, 1 S.T.B. 1004, 1027 (1996).



divisions for future time periods using the RCAF-A and adjust the LRS rates using its forecast of the tariff adjustment procedures.

Under BNSF's approach, if LRR SAC revenues exceed LRR SAC costs, the overages should be used to reduce the LRS rates.<sup>89</sup> Of course, BNSF's avoidable cost divisions methodology ensures that LRR revenues will never exceed LRR costs since, under BNSF's approach, the LRS traffic is required to pay all unattributable SARR costs above the BNSF URCS variable costs.

BNSF's avoidable cost maximum rate relief methodology must be rejected because it vastly understates divisions on cross-over traffic and – by design – requires the LRS traffic to pay a vastly disproportionate share of the LRR's unattributable costs for the 218-mile LRR route (carrying over 14.5 billion ton-miles annually).<sup>90</sup>

**ii. Through Rate Percentage Reduction**

BNSF serves up a second mechanism to determine movement-specific SARR rates – its through rate percentage reduction approach. Under the Board's current percentage reduction approach, SARR revenues are reduced by an equal percentage so that total SARR revenues equals total SARR costs. Application of the Board's percentage reduction approach in the instant case produces a different percentage

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<sup>89</sup> See BNSF Reply Narr. at III.H-6 to 8.

<sup>90</sup> See WFA/Basin Rebuttal electronic workpaper "LRR Route Miles Rebuttal.xls" for LRR route miles and "LRR Traffic and Revenues \_ WFABasinRebuttal.xls" for system annual ton miles.

reduction in each year of the DCF period. For example, in 2005, the LRR percentage reduction (using RAM) equals 50.4%.<sup>91</sup>

Under BNSF's through rate percentage reduction approach, "when cross-over traffic is involved, the percentage reduction ... should be calculated by dividing the overage of SAC revenues minus SAC costs by the sum of through revenues for both local and cross-over traffic...."<sup>92</sup> Application of BNSF's proposed through rate percentage reduction approach would reduce WFA/Basin's calculation of the 2005 LRR percentage reduction from 41.16 % (using standard percentage reduction) to 6.9%.

BNSF's through rate percentage reduction approach must be rejected because it violates the Guidelines. The Guidelines provide that if SARR revenues exceed SARR costs, SARR revenues must be reduced so they equal SARR costs. These SAC costs equal "the least cost at which an efficient competitor could provide the service."<sup>93</sup>

BNSF's through movement percentage reduction method violates these basic SAC principles. Under BNSF's approach, SARR revenues are not reduced to equal SARR costs. For example, as shown in Rebuttal Table III-H-2, application of BNSF's percentage reduction approach would leave LRR revenues exceeding the LRR costs by \$112.8 million in 2005.

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<sup>91</sup> See WFA/Basin Rebuttal electronic workpaper "LRR RAM RATES\_4Q 2004-2024 REBUTTAL.xls."

<sup>92</sup> BNSF Reply Narr. at III.H-15.

<sup>93</sup> Guidelines, 1 I.C.C. 2d at 542.

| <b>Rebuttal Table III-H-2</b><br><b>Application of BNSF's Through Rate</b><br><b>Percentage Reduction Procedure to LRR – 2005</b> |                                                                                       |                                              |                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------|
| <u>LRR-SAC Revenues</u><br>(millions \$)<br>(1)                                                                                   | LRR-SAC Revenue<br>with BNSF through<br><u>Rate Reduction</u><br>(millions \$)<br>(2) | <u>LRR-SAC Costs</u><br>(millions \$)<br>(3) | <u>Difference</u><br>(millions \$)<br>(Col. 2 - Col. 3) |
| \$329.3                                                                                                                           | \$306.5                                                                               | \$193.7                                      | \$112.8                                                 |

BNSF claims its percentage reduction method conforms to the principle that percentage reduction maintains existing rate relationships.<sup>94</sup> As a practical matter, granting WFA/Basin the relief they seek in this case will have no impact on any BNSF rates other than the LRS rates. All of BNSF's other rates will remain unchanged. Only the LRS rates will be changed because they are unreasonably high.

Moreover, as is clear from the ICC and STB case rulings, the ICC and STB have sought to preserve the rate relationships within the SARR traffic group. BNSF's through rate percent-reduction method, like its avoidable cost method, finds no support in the Guidelines, the ICC and Board decisions implementing the Guidelines or SAC theory. It is just another one of BNSF's many proposals designed to gut the SAC test as a meaningful measure of rate reasonableness.

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<sup>94</sup> See BNSF Reply Narr. at III.H-18.

#### 4. Maximum Rates

##### a. 4Q04 Rates

The maximum rates for BNSF service to LRS equal the greater of the stand-alone cost or the jurisdictional threshold. Table III-H-3 compares BNSF's 4Q04 rate levels (Column 2) to the 4Q04 jurisdictional threshold calculation (Column 4) and the 4Q04 stand-alone costs (calculating using RAM)(Column 5).

| <b>Rebuttal Table III-H-3</b><br><b>Summary of Maximum Rate Calculations for Issue Traffic in 4Q04</b> |                                                                    |                                                    |                                                          |                                                  |                                              |
|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------|--------------------------------------------------|----------------------------------------------|
| <u>Origin</u><br>(1)                                                                                   | <u>BNSF Rate</u><br><u>With Surcharge</u><br><u>Per Ton</u><br>(2) | <u>BNSF Variable</u><br><u>Cost Per Ton</u><br>(3) | <u>Jurisdictional</u><br><u>Threshold Per Ton</u><br>(4) | <u>Stand-Alone</u><br><u>Cost Per Ton</u><br>(5) | <u>Maximum</u><br><u>Rate Per Ton</u><br>(6) |
| Dry Fork                                                                                               | \$6.71                                                             | \$1.45                                             | \$2.61                                                   | \$3.37                                           | \$3.37                                       |
| Eagle Butte                                                                                            | 6.72                                                               | 1.50                                               | 2.70                                                     | 3.37                                             | 3.37                                         |
| Cordero                                                                                                | 6.48                                                               | 1.31                                               | 2.36                                                     | 3.37                                             | 3.37                                         |
| Caballo Rojo                                                                                           | 6.53                                                               | 1.31                                               | 2.36                                                     | 3.37                                             | 3.37                                         |
| Jacobs Ranch                                                                                           | 6.25                                                               | 1.24                                               | 2.23                                                     | 3.37                                             | 3.37                                         |

WFA/Basin ask the Board to prescribe the maximum rates shown in Column 6 of Table III-H-3.<sup>95</sup>

In its reply, BNSF asks the Board to depart from prior precedent and prescribe mine-specific maximum LRR SAC rates.<sup>96</sup> The Board should not do so. In all

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<sup>95</sup> WFA/Basin also quantify relief under the Reduced Mark-Up Methodology and the Board's percentage reduction methodology. See WFA/Basin Rebuttal electronic workpaper "LRR Mark-Up Rate Reduction\_Rebuttal.xls" and "Exhibit\_III-H-1.xls."

<sup>96</sup> See BNSF Reply Narr. at III.H-28 to 31.

prior cases, the STB has prescribed a single SAC rate to apply to all PRB mine origins. BNSF argues that the Board should depart from this consistent precedent because of the differences in costs of providing service from different PRB mines. However, these asserted per ton cost differences are no different here than in other cases where the Board has prescribed a single SAC rate to apply to all PRB origins. BNSF also complains that use of an average SAC rate will reduce BNSF's revenue if WFA/Basin does not secure coal from southern PRB mines. Conversely, when WFA/Basin obtains coal from those locations, BNSF earns more revenue than it would using the average figure.

The BNSF normally publishes the same price to apply from all PRB mines.<sup>97</sup> This is true for both tariff pricing and contract pricing – {  
}.<sup>98</sup> BNSF appears to be following a different course here because WFA owns the Dry Fork mine and BNSF wants to further punish WFA/Basin for instituting this suit by imposing the highest prices on Dry Fork-originated coal. The Board should see BNSF's pricing actions for what they are and rule accordingly.<sup>99</sup>

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<sup>97</sup> See e.g., BNSF Common Carrier Tariff 90068, WFA/Basin Rebuttal electronic workpaper "BNSF90068.pdf."

<sup>98</sup> See WFA/Basin Reply electronic workpaper "Contract 1\_001.pdf" and "contract2\_001.pdf."

<sup>99</sup> If the Board does decide to depart from prior precedent, WFA/Basin include mine-specific SAC cost computations in Rebuttal electronic workpaper "LRR RAM Rates\_4Q 2004-2024 Rebuttal.xls."

**b. 4Q04 Reparations**

WFA/Basin calculated the reparations they are due for overcharges incurred during 4Q04. This amount equals the difference between the freight charges BNSF collected and the maximum permitted, plus applicable interest. These amounts are calculated in Rebuttal Exhibit III-H-3 and equal \$6,435,821.52, exclusive of interest

**c. Post-4Q04 Rates and Reparations**

WFA/Basin request the Board to prescribe SAC rates (using RAM) as set forth in Rebuttal Table III-H-5 to apply in 4Q04 through 3Q2024.

| <b>Table III-H-5<br/>Maximum SAC Rates</b> |                     |
|--------------------------------------------|---------------------|
| <u>Period</u>                              | <u>Maximum Rate</u> |
| 4Q04                                       | \$3.37              |
| 2005                                       | 3.16                |
| 2006                                       | 3.16                |
| 2007                                       | 3.08                |
| 2008                                       | 3.13                |
| 2009                                       | 2.97                |
| 2010                                       | 3.01                |
| 2011                                       | 3.06                |
| 2012                                       | 3.10                |
| 2013                                       | 3.15                |
| 2014                                       | 3.20                |
| 2015                                       | 3.26                |
| 2016                                       | 3.35                |
| 2017                                       | 3.43                |
| 2018                                       | 3.51                |
| 2019                                       | 3.57                |
| 2020                                       | 3.66                |

|           |      |
|-----------|------|
| 2021      | 3.75 |
| 2022      | 3.83 |
| 2023      | 3.90 |
| 1Q-3Q2024 | 3.95 |

WFA/Basin further request the Board to (i) direct the parties to calculate the jurisdictional threshold for all movements consistent with the costing procedures set forth in Part II-A above; (ii) order for all time periods that the maximum rate on the issue traffic equals the greater of the jurisdictional threshold or the SAC rate; (iii) award additional reparations, plus interest, to WFA/Basin for all payments made under rates that exceed the maximums calculated under (i) and (ii) above; (iv) order BNSF to strike the surcharge and rate adjustment provisions from its LRS tariff (90077); and (v) order BNSF not to take any actions to increase the prescribed rates.





#### IV. OTHER EVIDENCE

Western Fuels CEO Duane L. Richards and Basin Electric's CEO and General Manager Ronald R. Harper direct the Board's particular attention to the following portions of the extensive record in this case.

- Massive Rate Increases. As shown in Rebuttal Exhibit IV-A-1, BNSF has imposed massive and unprecedented increases on the LRS traffic. Overall, WFA/Basin Electric project that these increases will total over \$1 billion during the 20 year DCF period.<sup>1</sup>
- Resulting Rates. As shown in Rebuttal Exhibits IV-A-2 and IV-A-3, BNSF's massive rate hikes produce rates that are wildly in excess of those found in today's western coal transportation markets.
- BNSF's Justifications. BNSF claims that its massive LRS rail rate increases are "commercially justified" given the assertedly "low" prices under the expired LRS transportation contract. In fact, the expired LRS contract was a highly lucrative one for BNSF – producing average returns in excess of 200% of BNSF's costs and generating over \$311 million in profits during the contract term.<sup>2</sup>

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<sup>1</sup> See WFA/Basin Op. Exhibit IV-A-1.

<sup>2</sup> See WFA/Basin Op. electronic workpaper file "BNSF Contribution\_\_LRS Contract.xls."

- Gaming. In its reply evidence, BNSF repeatedly accuses WFA/Basin Electric of seeking to “game” the STB maximum ratemaking process. This case is no “game” to Western Fuels and Basin Electric. Nor is it a game for WFA/Basin Electric’s customers, their elected representatives, and their national trade associations – all of whom have made their views known to the Board.<sup>3</sup>

Western Fuels and Basin Electric, and the other owners of LRS (Heartland Consumers Power District, Lincoln Electric System, Tri-State Generation and Transmission Association, Inc., The Western Minnesota Municipal Power Agency and The Wyoming Municipal Power Agency) are not-for-profit organizations. They seek no gain or commercial advantage from bringing this case. Instead, they seek only to protect the interests of the ultimate payors of BNSF’s LRS freight rates – the rural electric and small municipal customers served by LRS.

By its pricing actions, BNSF seeks to transfer \$1 billion in monies from primarily rural consumers – most of whom are of modest means – to BNSF’s monopoly coffers. The STB stands as the last line of defense to stop BNSF from abusing its monopoly powers.

- Relief. As illustrated in Rebuttal Exhibit IV-A-4, WFA/Basin Electric seek rate relief in this case that is in line with the relief that the Board has awarded in prior cases. BNSF, on the other hand, claims the maximum SAC rates sought

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<sup>3</sup> See WFA/Basin Op. Narr. at IV-B-1 to 6.

in this case vastly exceed the relief the Board has ordered in prior cases. BNSF's SAC calculations are wrong for the reasons detailed in Part III of this filing.

WFA/Basin Electric also request that the Board close the loophole in its present SAC procedure where maximum rates are set using a "percentage reduction" from the carrier's tariff rates. As illustrated in Rebuttal Exhibit IV-A-5, BNSF is clearly attempting to exploit this loophole to force the Board to set even higher maximum coal rates. This loophole must be closed for WFA/Basin Electric – or any other captive shipper – to obtain meaningful relief from the STB.

V Witness  
Qualifications

**V.            WITNESS QUALIFICATIONS AND VERIFICATION**

This Part contains the Statement of Qualifications and Verifications of one additional witness who has not previously sponsored evidence on behalf of WFA/Basin in this proceeding. It also contains the Verifications of WFA/Basin's other witnesses, whose Statements of Qualifications appear in Part V of WFA/Basin's Opening and Reply Narratives.

**1.        DR. GEORGE H. BORTS**

Dr. Borts is a Professor of Economics at Brown University. His address is 220 Slater Avenue, Providence, Rhode Island 02906. The specific evidence Dr. Borts is sponsoring is WFA/Basin's evidence concerning SAC revenue divisions (in Part III-A) and the methodology for calculating SAC rate relief (in Part III-H).

Dr. Borts holds a B.A. degree from Columbia University, a Master of Arts degree in Economics from the University of Chicago, and a Ph.D. degree in Economics from the University of Chicago. The title of his doctoral thesis is "Cost and Production Relations in the Railway Industry." He is a member of the American Economics Association, the Econometric Society, and Phi Beta Kappa.

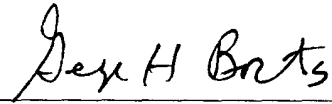
Dr. Borts has had nearly forty years of experience in transportation economics, including statistical and econometric research and its application to regulation. He has presented evidence on economic issues before the Surface Transportation Board and its predecessor, the Interstate Commerce Commission, the

Canadian Transport Commission, the Federal Energy Regulatory Commission and other regulatory authorities in the United States and Canada. He has testified on matters concerning railroad economics, including the cost of capital; the pricing of rail services; discounted cash flow methodology in stand-alone cost maximum rate cases; and issues relating to market power, productivity, revenue adequacy and the hire of freight cars.

In addition to research in transportation, Dr. Borts is co-author with J.L. Stein of a book entitled Economic Growth in a Free Market, published by the Columbia University Press in 1984. He is also author of a monograph entitled Regional Cycles of Manufacturing Employment, published by the National Bureau of Economic Research in 1959, and he has written a number of articles on regulatory matters (including railroad cost and production functions) and on international economics, which were published in Econometrica, the American Economic Review, the Journal of Political Economy and the Journal of International Economics.

**VERIFICATION**

I, Dr. George H. Borts, verify under penalty of perjury that I have read the Rebuttal Evidence of WFA/Basin in this proceeding that I have sponsored, as described in the foregoing Statement of Qualifications, 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.

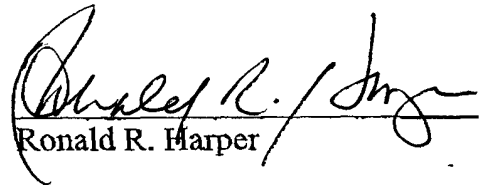


\_\_\_\_\_  
Dr. George H. Borts

Executed on: September 23, 2005

VERIFICATION

I, Ronald R. Harper, verify under penalty of perjury that I am the same Ronald R. Harper whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible (along with Mr. Richards) for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to BNSF's common carrier rates on LRS traffic being challenged in this proceeding in Part IV; 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.

  
Ronald R. Harper

Executed on: September 26 2005



### VERIFICATION

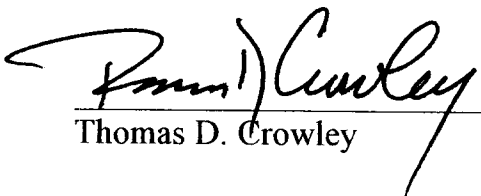
I, Duane L. Richards, verify under penalty of perjury that I am the same Duane L. Richards whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible (along with Mr. Harper) for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to BNSF's common carrier rates on LRS traffic being challenged in this proceeding in Part IV; 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.

  
Duane L. Richards

Executed on: September 26, 2005

## VERIFICATION

I, Thomas D. Crowley, verify under penalty of perjury that I am the same Thomas D. Crowley whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to BNSF's unit coal train rates (Exhibit I-1); the SARR traffic group volumes and revenues (Part III-A-1, 2 and 3); development of SARR route miles ( Part III-B-1); identification of the SARR peak traffic period and peak period train counts (part of Part III-C-1); development of the peak year traffic density by line segment and identification of movements in railroad-owned cars (part of Part III-C-1); the discounted cash flow analysis (Part III-G); the DCF analysis and reparations (Part III-H); and the comparison of BNSF's rates for WFA/Basin to other shippers and the rate relief requested by WFA/Basin (Part IV); 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

Executed on: September 29, 2005

### VERIFICATION

I, Joseph Plaistow, verify under penalty of perjury that I am the same Joseph Plaistow whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to quantitative market dominance, and specifically the defendant railroad's variable cost of transporting the complainant's traffic (Part II-A); 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.

  
Joseph Plaistow

Executed on: September 26, 2005

### VERIFICATION

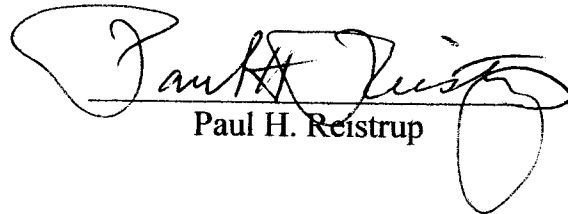
I, David G. Weishaar, verify under penalty of perjury that I am the same David G. Weishaar whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible for the portions of WFA/Basin's Rebuttal Evidence in this proceeding related to commercial divisions for cross-over coal traffic contained in Part III-A-3-c-iii and the description of WRPI's marketing function contained in Part III-D-3-c-i-(b); 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.

  
David G. Weishaar

Executed on September 19, 2005

## VERIFICATION

I, Paul H. Reistrup, verify under penalty of perjury that I am the same Paul H. Reistrup whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible, along with Paul Smith, for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to the SARR system, operating plan and operating expenses (Parts III-B, III-C and III-D) except for equipment lease costs, information technology expenses and compensation for Operating and General & Administrative employees; that I also collaborated with Walter Schuchmann in the Rebuttal application of the RTC Model to verify the SARR's capacity and develop certain operating statistics as described in Parts III-B-3 and III-C-2; that I also collaborated with Michael Kenyon, Richard McDonald and Alan Blackwell in developing WFA/Basin's rebuttal evidence related to SARR maintenance-of-way in Part III-D-4; and that I am also co-sponsoring (with Richard McDonald) the description of sources of future SARR operating productivity in Part III-G-2-d. I further verify that I know the contents of the portions of WFA/Rebuttal Evidence described above; and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.

  
Paul H. Reistrup

Executed on September 23, 2005

### VERIFICATION

I, Paul E. Smith, verify under penalty of perjury that I am the same Paul E. Smith whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I collaborated with Paul Reistrup in preparing, and am co-sponsoring with Mr. Reistrup, the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to the SARR system configuration and operating plan contained in Parts III-B and III-C and the portion of Part III-D related to SARR locomotive and railcar requirements and the Operating and General & Administrative organization, personnel and expenses; 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.

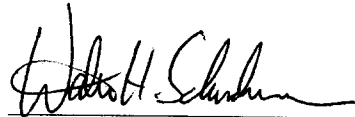


Paul E. Smith

Executed on September 8, 2005

## VERIFICATION

I, Walter H. Schuchmann, verify under penalty of perjury that I am the same Walter H. Schuchmann whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I conducted the Rebuttal simulation of the SARR's operations using the RTC Model under the direction of Paul Reistrup, and am co-sponsoring (with Mr. Reistrup) the portion of Parts III-B and III-C of WFA/Basin's Rebuttal Evidence in this proceeding related to the RTC Model simulation; 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.



Walter H. Schuchmann

Executed on September 15<sup>th</sup>, 2005

Washington, District of Columbia

The foregoing instrument was subscribed and sworn before

me this 15<sup>th</sup> day of September, 2005

by Walter H. Schuchmann

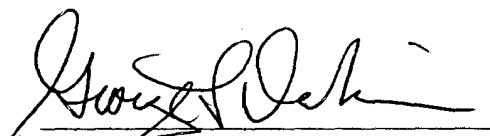
Gwendolyn M. Penn Notary Public

My commission expires \_\_\_\_\_

GWENDOLYN M. PENN  
NOTARY PUBLIC, DISTRICT OF COLUMBIA  
MY COMMISSION EXPIRES 9-14-2009

### VERIFICATION

I, George L. Donkin, verify under penalty of perjury that I am the same George L. Donkin whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to the sources and cost of diesel fuel delivered to the SARR at Guernsey, WY (Part III-D-1-d-i); 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.

  
George L. Donkin

Executed on: September 13, 2005



### VERIFICATION

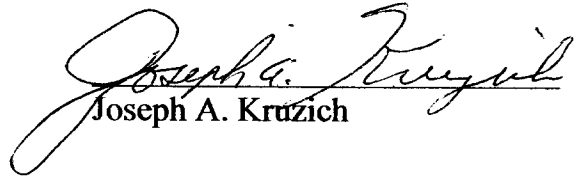
I, K.M. Claytor, verify under penalty of perjury that I am the same K.M. Claytor whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible, along with Douglas J. Ellison, for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to the size, configuration and cost of the SARR's locomotive fueling facilities at Guernsey, WY, contained in Part III-F-7; 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.

  
\_\_\_\_\_  
K.M. Claytor

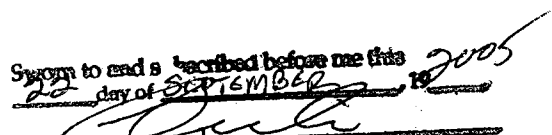
Executed on September 9, 2005

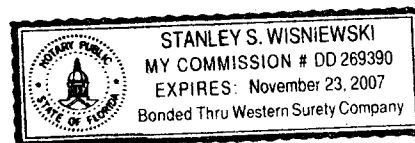
## VERIFICATION

I, Joseph A. Kruzich, verify under penalty of perjury that I am the same Joseph A. Kruzich whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to the SARR's information technology capital (hardware) and personnel requirements and related operating expenses for the SARR, contained in Part III-D-3-d; 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.

  
Joseph A. Kruzich

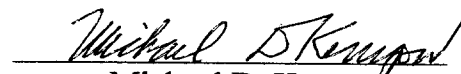
Executed on: September 22 2005.

Subscribed to and scribed before me this 22 day of SEPTEMBER, 2005  
  
Signature of Notary Public State of Florida  
STANLEY S. WISNIEWSKI  
Print, Type or Stamp Name of Notary Public  
☒ Personally known to me, or  
☐ Produced Identification:  
Type of Identification



### VERIFICATION

I, Michael D. Kenyon, verify under penalty of perjury that I am the same Michael D. Kenyon whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible, along with Alan Blackwell, Richard McDonald and Paul Reistrup, for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to the SARR maintenance-of-way plan and related expenses contained in Part III-D-4; 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.

  
Michael D. Kenyon

Executed on September 12<sup>th</sup>, 2005

### VERIFICATION

I, Alan J. Blackwell, verify under penalty of perjury that I am the same Alan J. Blackwell whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible, along with Michael Kenyon, Richard McDonald and Paul Reistrup, for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to the SARR maintenance-of-way plan and related expenses contained in Part III-D-4; 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.

  
\_\_\_\_\_  
Alan J. Blackwell

Executed on September 9, 2005

### VERIFICATION

I, Richard H. McDonald, verify under penalty of perjury that I am the same Richard H. McDonald whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible, along with Michael Kenyon, Alan Blackwell and Paul Reistrup, for the portions of WFA/Basin's Rebuttal Evidence in this proceeding related to the SARR maintenance-of-way plan and related expenses contained in Part III-D-4, including Rebuttal Exhibit III-D-3; that I am also responsible (jointly with Paul Reistrup) for the portion of Part III-G-2-d describing the sources of future SARR operating productivity; 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.



Richard H. McDonald

Executed on September 14<sup>th</sup>, 2005

### VERIFICATION

I, Robert J. Brockman, verify under penalty of perjury that I am the same Robert J. Brockman whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to the appraisal and determination of unit-land prices for the acquisition of the right-of-way for the SARR, contained in Part III-F-1; 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.

  
Robert J. Brockman

Executed on: September <sup>14</sup>24, 2005

## VERIFICATION

I, Philip H. Burris, verify under penalty of perjury that I am the same Philip H. Burris whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to the development of equipment lease, maintenance and servicing costs (Parts III-D-1 and III-D-2), operating unit costs (Parts III-D-3 and III-D-5 through III-D-9) and compensation levels for all the SARR Train and Enginemen, other operating employees, maintenance of way employees, nonoperating (General and Administrative) personnel, and for training and recruiting costs ( Part III-D-3); as well as the application of the SARR operating unit costs to the operating statistics, thus yielding the SARR operating expenses in the base year and evidence related to the development of the land value index for use in the DCR model (Part III-G-2); 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.



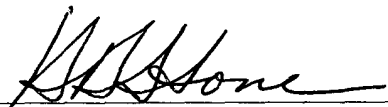
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Philip H. Burris

Executed on: September 23, 2005

### VERIFICATION

I, Harvey H. Stone, verify under penalty of perjury that I am the same Harvey H. Stone whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to maintenance-of-way contained in Part III-D-4 and road property investment contained in Part III-F for the SARR;<sup>1</sup> 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.

  
\_\_\_\_\_  
Harvey H. Stone

Executed on: September 21, 2005

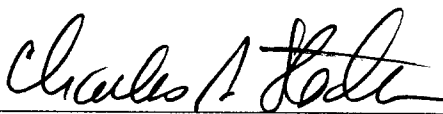
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<sup>1</sup> The maintenance-of-way evidence in Part III-D-4 is being co-sponsored by WFA/Basin witnesses Michael Kenyon, Richard McDonald, Alan Blackwell and Paul Reistrup. The road property investment evidence in Part III-F is being co-sponsored by WFA/Basin witnesses Robert Brockman (land valuation), Victor Grappone (signals and communications), Mel Claytor (fueling facilities) and Douglas Ellison (locomotive maintenance and fueling facilities).



### VERIFICATION

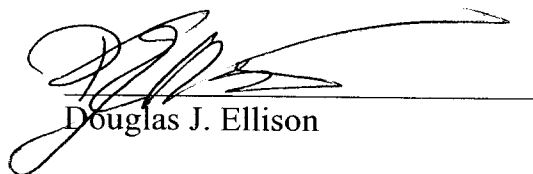
I, Charles A. Stedman, verify under penalty of perjury that I am the same Charles A. Stedman whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible for the portion of WFA/Basin's Rebuttal Evidence in this proceeding, along with Mr. Stone, related to the roadbed preparation/earthworks components of the road property investment cost of the SARR, exclusive of culverts, roadbed specifications and yard drainage (Part III-F-2); 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.

  
Charles A. Stedman

Executed on: September 26, 2005

### VERIFICATION

I, Douglas J. Ellison, verify under penalty of perjury that I am the same Douglas J. Ellison whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible, along with Mr. Stone for the evidence that relates to road property investment (excluding land valuation, signals and communications) (Part III-F) for the LRR; 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.

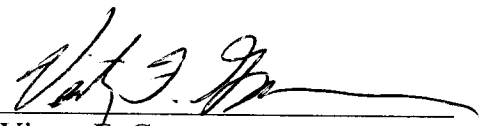


Douglas J. Ellison

Executed on: September 27, 2005

**VERIFICATION**

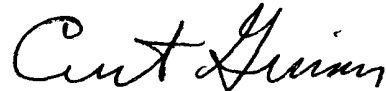
I, Victor F. Grappone, verify under penalty of perjury that I am the same Victor F. Grappone whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible for the portion of WFA/Basin's Rebuttal Evidence in this proceeding, along with Mr. Stone, related to signals and communications contained in Part III-F-6; 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.

  
\_\_\_\_\_  
Victor F. Grappone

Executed on: September 21, 2005

**VERIFICATION**

I, Dr. Curtis M. Grimm, verify under penalty of perjury that I am the same Dr. Curtis M. Grimm whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am sponsoring (jointly with Dr. George H. Borts) the portion of WFA/Basin's Rebuttal Evidence in this proceeding concerning SAC revenue divisions (in Part III-A) and the methodology for calculating SAC rate relief (in Part III-H); 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.



\_\_\_\_\_  
Dr. Curtis M. Grimm

Executed on: September 27, 2005

### VERIFICATION

I, Dr. Douglas W. Caves, verify under penalty of perjury that I am the same Dr. Douglas W. Caves whose Statement of Qualifications appears in Part V of the Narrative portion of WFA/Basin's Opening Evidence in this proceeding; that I am responsible for the portion of WFA/Basin's Rebuttal Evidence in this proceeding related to the proper method of indexing stand-alone operating costs (Part III-G-2); 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.

  
Dr. Douglas W. Caves

Executed on: September 27, 2005