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SURFACE TRANSPORTATION BOARD

DECISION

STB Docket No. 42088

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

v.

BNSF RAILWAY COMPANY

Decided: February 17, 2009

The Board finds that the defendant railroad has market dominance over the
transportation at issue and that the challenged rates are unreasonably high.
Maximum reasonable rates are prescribed and reparations are ordered.

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ACRONYMS

ATC	Average Total Cost
BNSF	BNSF Railway Company
CMP	constrained market pricing
DCF	discounted cash flow
e-WP.	electronic workpaper
G&A	general and administrative
JEC	Jeffrey Energy Center
LRR	The hypothetical “Laramie River Railroad”
LRS	Laramie River Electric Generating Station
MOW	maintenance-of-way
MMM	Maximum Markup Methodology
PRB	Powder River Basin
R-1	Annual Report Form R-1
ROW	right-of-way
RTC	Rail Traffic Controller
R/VC	revenue-to-variable cost
SAC	stand-alone cost
SARR	stand-alone railroad
T&E	train and engine
TS	Third Supplemental
URCS	Uniform Railroad Costing System
WFA	Western Fuels Association, Inc., and Basin Electric Power Cooperative

BY THE BOARD:**OVERVIEW**

This case involves a rate dispute between Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. (collectively, WFA), and BNSF Railway Company (BNSF). The dispute is over the reasonableness of the rates BNSF charges to WFA for hauling 8 million tons of coal each year from mines in the Powder River Basin (PRB) in Wyoming to WFA's Laramie River Station plant (LRS) at Moba Junction, WY. Because the rate is a common carriage rate and the LRS plant is captive to BNSF, the reasonableness of the rate is subject to our jurisdiction.

In its first attempt, WFA failed to show the challenged rates to be unreasonable under our stand-alone cost (SAC) test. But WFA had designed its SAC presentation under one set of rules, only to have those rules changed during the course of the proceeding. See Major Issues in Rail Rate Cases, STB Ex Parte 657 (Sub-No. 1) (STB served Oct. 30, 2006), aff'd sub nom. BNSF v. STB, 526 F.3d 770 (D.C. Cir. 2008) (Major Issues). We recognized that the change in revenue allocation procedure could have affected the optimal size and configuration of the stand-alone railroad (SARR) designed by WFA. Therefore, in our decision in the proceeding served on September 10, 2007 (Sept. 2007 Decision), we afforded WFA the opportunity to redesign the SARR to address the new revenue allocation procedure and to submit supplemental evidence based on that redesign.

In this second attempt, WFA has succeeded in making its case. Although the challenged rates are among the lowest transportation rates any utility pays to receive PRB coal, WFA has shown that its rates far exceed the level BNSF needs to charge to earn a reasonable return on the full replacement cost of the facilities used to serve WFA, because the Laramie River Station plant is located so close to the PRB. As such, it is now clear that BNSF has been forcing WFA to cross-subsidize other parts of BNSF's broader rail network that WFA does not use. This is prohibited. So although the challenged rates appeared on their face to be commercially reasonable, they exceed by a wide margin the level BNSF is permitted to charge under the SAC test.

Accordingly, we will order BNSF to pay reparations to WFA (with interest) for shipments dating back to the fourth quarter of 2004, and we will prescribe the maximum lawful rate that BNSF can charge until 2024. The maximum lawful rate is expressed as a revenue-to-variable cost ratio. Although it varies from year-to-year, the maximum lawful rate BNSF may charge in 2009 is roughly 240% of its variable costs, which translates to a roughly 60% reduction in the transportation rate.

This amounts to the single largest reduction in rail rates ever ordered by this agency. Although the record does not provide the data needed to calculate precisely the total amount of reparations due to WFA, we estimate that reparations are roughly \$28 million per year. We further estimate that the total relief WFA will obtain as a result of this order – including both reparations and the lower prescribed rate through 2024 – will approximate \$345 million (in current dollars).

Following our standard practice, the parties are to calculate the total amount of reparations and interest due, in accordance with this decision. If they cannot agree, the parties should bring the dispute to our attention for prompt resolution.

PRELIMINARY MATTERS

A. Motion to Dismiss

As an initial matter, BNSF maintains that WFA did not comply with the limited scope of reopening and, therefore, this proceeding should be terminated. BNSF argues that the reopening of the record was limited to only those adjustments to the existing SAC case required because of the new method for allocating revenue from cross-over traffic. To that end, BNSF maintains that it is unnecessary, and indeed inconsistent with the purpose of the limited reopening of the record, to allow WFA to submit an essentially new SARR, including new facilities and rerouted traffic. BNSF argues that the new revenue allocation procedure did not create a new incentive to include rerouted traffic, so WFA should not be allowed to modify its SAC evidence to rely on rerouted traffic now.

We disagree. In the Sept. 2007 Decision, we stated that the change to an average total cost (ATC) method of allocating revenue from cross-over traffic¹ would affect the basic design of a SAC case.² The decision acknowledged that WFA might wish to change its traffic group and resulting design of its SARR. Thus, WFA was allowed to rework its SAC presentation, so long as the modifications were based on evidence already in the administrative record, including the discovery record.³

WFA's revisions to the SARR complied with our instructions. The shipper has the right to specify the traffic group and, here, WFA properly changed the traffic group and configuration of the SARR because of the new revenue allocation procedure. Whether the rerouted traffic and new geographic scope are reasonable will be determined by our rules. We will therefore deny BNSF's motion to dismiss.

B. BNSF Motion to Strike

Our general rules of practice limit the permissible scope of rebuttal statements "to issues raised in the reply statements to which they are directed." 49 CFR 1112.6. Thus, as the Board explained in Duke/NS,⁴ in rail rate cases the shipper may use its rebuttal presentation either to demonstrate that its opening evidence was feasible and supported, to adopt the railroad's evidence, or in certain circumstances to refine its opening

¹ Cross-over traffic refers to movements for which the SARR would replicate only a portion of the defendant railroad's service; the SARR would interchange the traffic with the defendant to handle the remainder.

² Sept. 2007 Decision at 20.

³ Id.

⁴ Duke Energy Corp. v. Norfolk S. Ry., STB Docket No. 42069 (STB served Nov. 6, 2003) (Duke/NS) at 14-15.

evidence. Where the railroad has identified flaws in the shipper's evidence but has not provided evidence that can be used in the Board's SAC analysis, or where the shipper shows that the railroad's reply evidence is itself unsupported, infeasible or unrealistic, the shipper may supply corrective evidence in its rebuttal. See General Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases, 5 S.T.B. 441, 445-46 (2001).

Here there is a dispute over whether WFA exceeded the permissible scope of rebuttal with regard to substituting culverts for certain bridges in the Orin Yard. On opening, WFA relied on BNSF's bridge charts when deciding to use culverts in the yard. On reply, BNSF corrected an error in the bridge inventory list, which BNSF asserts would make culverts inappropriate because they would not provide for sufficient drainage. On rebuttal, WFA defended the use of culverts with a study relying on a Drainage Area Map.

BNSF filed a motion to strike the rebuttal evidence. It argued that WFA was attempting to justify its substitution of culverts, for the first time on rebuttal, by using the Drainage Area Map. BNSF argues that WFA did not support its use of culverts in its case-in-chief and therefore the Board should assume that, where the SARR's yard traverses drainages now crossed by bridges, the SARR should construct bridges. BNSF asserts that presenting this evidence on rebuttal deprives it of a meaningful opportunity to respond and, had WFA presented this evidence on opening BNSF would have submitted evidence in its reply to show that one of the culverts involved had a too narrow entry. WFA defended its rebuttal evidence, arguing that the evidence on the use of culverts instead of bridges in the yard was permissible rebuttal because it responded to an issue raised by the parties in a prior filing.

Applying the above evidentiary standards, we find that WFA's evidence on drainage and its reliance on the Drainage Area Map was permissible rebuttal to demonstrate the feasibility and accuracy of its opening evidence in light of BNSF's reply evidence. In this case, WFA did not raise a new issue; the feasibility of culverts was addressed in WFA's opening evidence. WFA's additional evidence in rebuttal on drainage was in direct response to BNSF's argument that culverts were inappropriate. WFA used its rebuttal to respond to the evidence BNSF submitted on reply by showing that its opening use of culverts remained feasible. Therefore, we will deny BNSF's motion to strike.

C. Collateral Attack on Major Issues by BNSF

In Major Issues, we changed the SAC test in two ways that are significant here. First, we created a new revenue method to allocate revenue from cross-over traffic, called the Average Total Cost (ATC) method. Second, we created a new rate prescription method to allocate the SAC costs among the traffic group, called the Maximum Markup Method (MMM). Both changes were affirmed by the reviewing court. On a less significant issue, but of relevance here, we also concluded that we would allow a 20-year SAC analysis for this pending case, notwithstanding our decision to move to a 10-year analysis period for future SAC cases.

BNSF now urges us to depart from Major Issues. It asks that we not apply the ATC method to allocate the revenue from rerouted cross-over traffic.⁵ It also advocates an alternative to MMM that would allocate more SAC costs to short-haul traffic such as the issue movement.⁶ Finally, it argues that, if we prescribe a rate here, the prescription should be limited to 10 years, notwithstanding that in Major Issues we stated that the rate analysis for this pending case would be 20 years.

BNSF may not collaterally attack the new procedures adopted in Major Issues in this case. Those changes were the product of an elaborate rulemaking with public comment from numerous interested parties. BNSF had a full opportunity to participate in that rulemaking, and to challenge those aspects of the new rules in court. It would defeat the purpose of that rulemaking if parties were permitted to advocate for different rules in individual rate cases.

Accordingly, we will treat BNSF's challenges as a request to reopen and reconsider the policies and rules adopted in Major Issues. As such, BNSF must demonstrate that reconsideration is warranted because of "material error, new evidence, or substantially changed circumstances." 49 U.S.C. 722(c). If a change is warranted, we will either address the matter within the context of that adjudication or, if the advocated change is substantial, we will hold the case in abeyance and seek broader public input.

Here, however, neither step is warranted. BNSF's evidence amounts to a charge that the rules adopted in Major Issues constituted material error, as illustrated in their application in this case.⁷ For the reasons discussed below, we find no merit to BNSF's claims that the rules adopted in Major Issues are not working as intended. Accordingly, we will use ATC to allocate revenue from all cross-over traffic, we will use MMM to set the rate prescriptions, and the rate prescriptions here will extend out to the full 20 years of the SAC analysis period.

1. BNSF's Arguments Against ATC

In its supplemental evidence, WFA changed the traffic group of the SARR by dropping traffic with low markups over variable costs and replacing that traffic with rerouted traffic with higher markups. BNSF objects, claiming this swapping of traffic is done solely to manipulate the rate prescription approach adopted in Major Issues. To remedy this perceived wrongdoing, BNSF advocates a large adjustment to the revenues

⁵ See BNSF TS Reply at I-19.

⁶ See *id.* at I-19-21.

⁷ The evidence submitted by BNSF is not "new evidence." New evidence is not evidence newly submitted, but evidence that could not have reasonably been presented to the agency during the rulemaking proceeding. All of the arguments raised by BNSF could and should have been raised in the rulemaking, particularly because this case was already pending and BNSF was forewarned that the agency intended to apply the proposed rules to this case. As such, we find BNSF's challenge to be one based on alleged material error, rather than seeking change based on new evidence.

from this rerouted cross-over traffic. Rather than using the Average Total Cost approach adopted in Major Issues, BNSF would adjust the revenue from the new rerouted cross-over traffic to produce the same average revenue-to-variable cost (R/VC) ratio as the traffic WFA excluded from the traffic group.

We reject BNSF's arguments and adjustment. The point of this supplemental round of evidence is to offer WFA an opportunity to modify its traffic group and better tailor its case to the new ATC revenue allocation method. WFA therefore properly, as expected, replaced marginal cross-over traffic with more profitable (rerouted) cross-over traffic. BNSF has shown no material error in the application of ATC to that traffic, other than the perceived injustice of our having permitted WFA to change the traffic group in the first place. We will not first encourage WFA to modify the traffic group to take advantage of the new revenue allocation method, and then disallow its attempt to actually apply that approach in this case.

2. BNSF's Arguments Against MMM

BNSF raises two separate arguments challenging how WFA designed its new SAC analysis to take full advantage of the MMM rate prescription approach. First, BNSF complains that, in its supplemental evidence, WFA seeks to exploit this process by including (rerouted) high-rated traffic and dropping low-rated traffic (the rerouting issue). BNSF also claims to have found a "flaw" in MMM in that it favors short-haul movements over longer-haul movements. We elaborate on each objection below.

a. Rerouting Issue

BNSF asserts that WFA is using rerouted traffic to manipulate the procedures used in MMM to create a much larger rate reduction than would otherwise be available. Specifically, BNSF argues that WFA excluded 19 million tons of lower rated traffic and replaced it with an equivalent volume of higher-rated rerouted traffic.⁸ Although the excluded traffic generated lower R/VC ratios than the rerouted traffic, it nonetheless generated a substantial positive contribution for the SARR, according to BNSF. When the excluded traffic is added back to the SARR, the revenues it generates exceed incremental costs by more than 30% and BNSF argues that a rational SARR thus would have included that traffic.⁹

WFA maintains that it is not "gaming" the system, rather it is doing what a shipper is supposed to do, designing a feasible SARR that maximizes revenues and minimizes expenses.¹⁰ WFA argues that it is not impermissibly excluding or adding traffic; instead, it is following the Board's instructions allowing it to increase or decrease the traffic carried by the revised SARR.

⁸ BNSF TS Reply at III.A-13, III.A-27.

⁹ BNSF TS Reply at III.A.-13, Exh. III.A-3.

¹⁰ WFA TS Reb. at I-28.

The new revenue allocation method was adopted specifically to prevent gaming.¹¹ Under MMM, traffic group members' rates are arrayed on an R/VC ratio basis.¹² MMM then utilizes an iterative process that first determines the average R/VC ratio for the SARR traffic group movements and adjusts that average upward (if necessary) to the benchmark R/VC ratio at which, if all traffic with R/VC ratios above the average are reduced to the benchmark average R/VC level, and all other rates are left unchanged, the SARR would cover its SAC costs.¹³ Under MMM, carrier gaming is eliminated because high-R/VC-ratio traffic obtains reductions to the benchmark, and shipper gaming is eliminated because low-R/VC-ratio traffic that is under the benchmark obtains no relief.

BNSF confuses the kind of “gaming” by carriers that led to the adoption of MMM with the logical and proper steps taken by WFA to design the strongest possible case against the challenged rates, while adhering to the new procedures adopted in Major Issues. WFA's choice to replace low-rated traffic with higher-rated traffic is both logical and permissible. Indeed, every choice made by a complainant in designing a SARR will be done with an eye to reducing the maximum lawful rate produced under the SAC test. So long as the complainant does not violate any SAC rule or principle in the process, the defendant carrier cannot complain simply because the choice of the traffic group (which rests with the complainant) is aimed to show the challenged rate to be too high. In short, WFA is not engaged in improper “gaming” by trying to build the strongest possible case by selecting the optimal traffic group, so long as it plays by the rules, as it did here.

b. Short-Hauls

BNSF also argues that there is a flaw in MMM that biases the result in favor of short-haul traffic. BNSF claims that MMM establishes a benchmark R/VC ratio that caps rates at the same level regardless of whether a shipper is a short-haul or long-haul shipper, and that this unintended consequence eliminates a railroad's differential pricing based on market factors. BNSF asserts that short-haul shippers are given an inappropriately large rate reduction under MMM, while long-haul shippers are less likely to receive rate reductions, even if their rates are high relative to other long-haul shippers. BNSF states that, because it cannot allocate loading slots at the mines to shippers offering the highest contribution, it incurs an opportunity cost when a low-contribution movement displaces a high-contribution movement for access to the PRB. BNSF believes that to avoid these lost opportunity costs, a railroad will try to equalize the contribution from all traffic. Because the variable costs of short-haul movements are significantly less than the variable costs of long-haul movements, a higher R/VC ratio is necessary on short-haul movements to generate a dollar contribution that is comparable to that generated on long-haul movements.

¹¹ See Major Issues at 15-16.

¹² Id. at 14-15.

¹³ Id.

To correct this flaw, BNSF developed a regression equation to normalize the R/VC ratios of the shippers in the SARR traffic group to account for the impact of distance on R/VC ratios. This approach, according to BNSF, would eliminate the bias in the rate reductions that would be produced by applying MMM without a length-of-haul adjustment.

We are not persuaded that there is a fundamental flaw in MMM that would justify a departure from Major Issues. MMM is designed to calculate the maximum mark-up over variable cost that a carrier can charge any movement in the traffic group. In layman's terms, the SAC analysis calculates the total revenue the defendant may reasonably charge for all of the traffic in the traffic group. Once we have determined how big that pie is, MMM figures out how to cut the pie into individual sized pieces: one piece for each shipper in the traffic group. This piece of the pie reflects the part of the total SAC costs that each shipper is responsible for covering.

Because the share of total SAC costs is expressed on an R/VC basis, a longer movement will have a bigger piece of the pie than a shorter movement. This was by design. It is entirely reasonable for a movement with an R/VC ratio of 500% to receive more rate relief than a movement with an R/VC ratio of 200%. Whether such an imbalance in R/VC ratios is attributable to differences in distance or other factors, we see no fundamental flaw with the general principle in MMM that relief should be provided to those shippers making the highest contribution over variable cost.

3. BNSF's Arguments Against 20-Year Rate Prescription

BNSF urges that—if the evidence supports a finding that the challenged rate is unreasonable—we limit any rate prescription to 10 years. BNSF acknowledges that in Major Issues we decided to conduct a 20-year analysis in this case because WFA had already designed its SARR to accommodate projected traffic growth over a 20-year period. BNSF claims that the rationale for using a 20-year analysis period no longer applies to this round of evidence, however, because the new SAC analysis has less traffic and most of the traffic growth takes place in the first 10 years.

We find these arguments unpersuasive. In Major Issues, we noticed our intention to continue to use a 20-year analysis period for this case. BNSF did not object and WFA has performed a 20-year analysis of the reasonableness of the challenged rates. Having done so, we should issue a rate prescription for the corresponding period, as is our long-standing practice. Should circumstances change materially, either party has the right to seek to have this case reopened and the rate prescription modified or vacated. As such, BNSF's request to limit the scope of the rate prescription and depart from our decision in Major Issues will be denied.

D. Scope of Recoverable Relief

BNSF makes three arguments for why the Board should award no damages for movements before the date of the Sept. 2007 Decision. First, it claims that Arizona Grocery Co. v. Atchison, Topeka & Santa Fe Railway Co., 284 U.S. 379 (1932) (Arizona Grocery), precludes the Board from awarding retroactive relief before this phase of the

proceeding. BNSF asserts that the Arizona Grocery principle applies here because the Board conclusively resolved WFA's rate complaint when we found the challenged rate reasonable in the Sept. 2007 Decision and that the rate then became the lawful rate. Thus, the shipments that moved under the rate addressed in the Sept. 2007 Decision cannot be subject to retroactive change, it argues. Alternatively, if the Board considers the Sept. 2007 Decision as a preliminary decision in this proceeding, rather than a final decision under Arizona Grocery, BNSF argues that the Board violated the requirement of 49 U.S.C. 11701(c) that the proceeding be completed within 3 years. Finally, BNSF asserts that fairness dictates that this decision be given only prospective relief.

We will deny BNSF's request to limit the damages available to WFA. First, Arizona Grocery is not applicable, as we did not conclusively resolve WFA's rate complaint in the Sept. 2007 Decision. Rather, we concluded that, based on WFA's submission, the rates did not *appear* to be unreasonably high. But we also recognized that, by our having changed the substantive standards, WFA had not had a fair chance to make its case. It had designed its case under one standard, only to have it judged under another. Following well-established legal precedent, we therefore provided WFA an opportunity to redesign pertinent aspects of its case and submit revised evidence under the new legal standards. Accord Hatch v. FERC, 654 F.2d 825, 835 (D.C. Cir. 1981). Thus, there was nothing final about the Sept. 2007 Decision.

Second, the 3-year timetable in 49 U.S.C. 11701(c) does not apply to rate cases begun on complaint. See AEP Texas North v. BNSF Ry., STB Docket No. 41191 (Sub-No. 1) (STB served Nov. 13, 2006); Complaints Filed Pursuant to the Savings Provision of the Staggers Rail Act of 1980, 367 I.C.C. 406 (1983). The timetable applies only in those circumstances where the Board institutes a proceeding on its own initiative.

Third, fairness dictates that WFA receive the full relief afforded it under the statute. WFA has shown the challenged rate to be unreasonable under the standards adopted in Major Issues. Accordingly, WFA has a statutory right to reparations. 49 U.S.C. 11704. Under the SAC test, BNSF can charge a rate that provides a reasonable return on the full replacement cost of the rail assets needed to serve WFA, but no more.

STAND-ALONE COST ANALYSIS

WFA has adjusted the design of its hypothetical SARR, which it calls the "Laramie River Railroad" (LRR). The revised LLR would continue to serve a traffic group consisting of coal traffic moving in unit-train service from PRB coal fields in Wyoming. In addition to the LRS traffic, the LRR would serve other PRB coal traffic that would be interchanged with the residual BNSF (i.e., the portion of the BNSF system that would not be replicated by the LRR) and the Union Pacific Railroad Company (UP). The following analysis will rely on the determinations made in the prior decisions in this proceeding unless otherwise discussed.

A. LRR Configuration

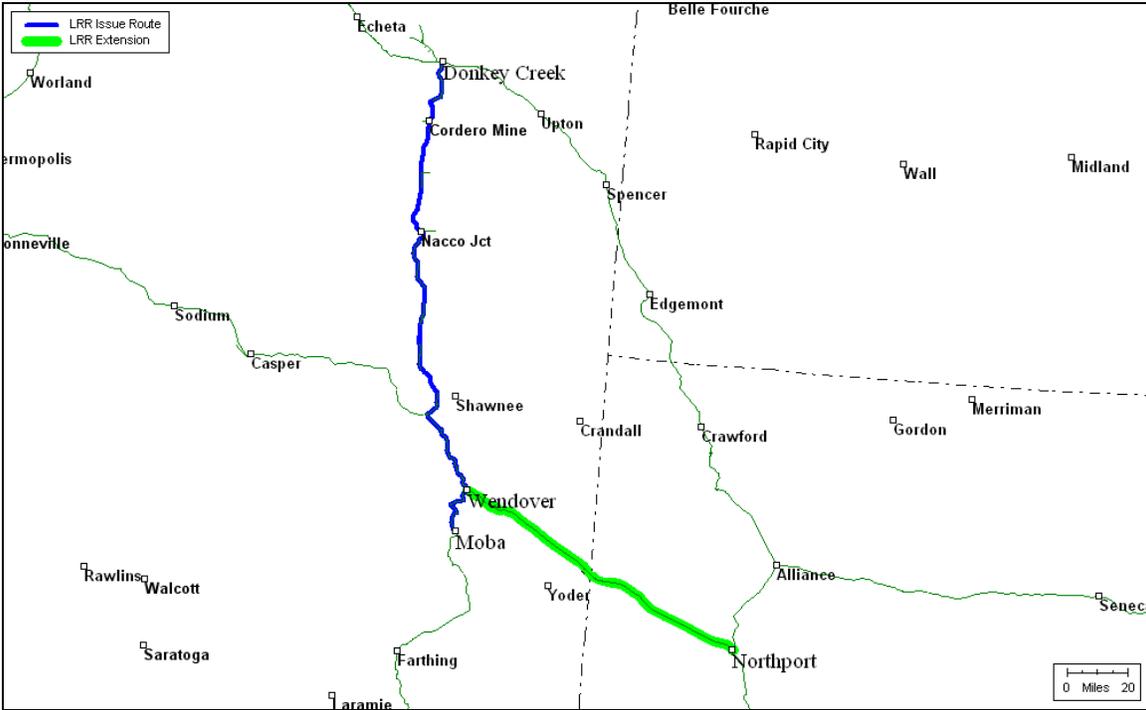
The original LRR would have replicated a portion of BNSF's operating division known as the Powder River Division. Its route would have been primarily within the PRB, extending from Eagle Butte Junction, WY, on the north, to Guernsey and Moba

Junction (near Wheatland), WY, on the south. The LRR’s main line would have started at Donkey Creek, WY, proceeding south to East Guernsey, WY, replicating BNSF’s Orin and Canyon Subdivisions. The LRR would have had three branch lines: the Campbell, Reno, and Moba Branches. The Moba Branch would have connected with the main line at Wendover, WY, and served LRS.

The original LRR would have interchanged traffic with the residual BNSF at Campbell, Donkey Creek, Orin Junction, Guernsey, and Moba Junction, WY. At Donkey Creek and Guernsey, the LRR would have interchanged with BNSF at yards. At Campbell, Orin Junction, and Moba Junction, the interchange points would have consisted of interchange tracks.

The reconfigured LLR, depicted below, would extend from the northern PRB south to Moba Junction, WY, and east from Wendover, WY, to Northport, NE.¹⁴ The reconfigured LLR would interchange traffic with the residual BNSF at Moba Junction, Orin Junction, and Northport. The LLR also would interchange traffic with the UP at Northport.

The Revised Laramie River Railroad



¹⁴ The parties agree on the route and track miles of the revised LLR.

B. LRR Traffic Group

WFA included 76 power plants that procure coal from the PRB coal fields in its original traffic group. WFA's modified traffic group includes 24 power plants that procure coal from the PRB coal fields. The only significant issues pertaining to the traffic group is the reasonableness of the rerouted traffic and how to allocate revenue from cross-over traffic. We discuss each issue in turn below.

1. Rerouted Traffic

BNSF objects to WFA's rerouting of approximately 19 million tons of PRB coal traffic on to the reconfigured LRR's longer network.¹⁵ This includes the movement to Westar Jeffrey Energy Center (JEC), which accounts for almost half of the rerouted traffic. In the real world, this traffic leaves the PRB from the north at Donkey Creek, WY, and proceeds to Northport via Edgemont, SD, and Alliance, NE. Here, WFA would reroute this traffic south to exit the PRB via Guernsey to Northport.

WFA maintains that this rerouting of traffic meets the test set forth in Texas Municipal Power Agency v. Burlington N. & S.F. Ry., 6 S.T.B. 573, 589 (2003) (TPMA)—that the route is reasonable and would meet the shipper's transportation needs. WFA argues that the LRR would meet shippers' needs because the LRR could move the rerouted traffic, even in its peak week, at substantially faster transit times than the BNSF. WFA also asserts that its design for the LRR is reasonable because the LRR would achieve increased efficiencies and create densities by moving traffic south out of the PRB.

We find that WFA has satisfied the test for the inclusion of this traffic in the traffic group.¹⁶ These reroutes—which do not affect the routing beyond the SARR—are

¹⁵ WFA TS Open. at III-C-3.

¹⁶ BNSF has relied on the wrong test from TPMA. In that case, the Board was presented with two different kinds of rerouted traffic: (1) internal rerouted cross-over traffic (the Big Brown movement) and (2) rerouted cross-over traffic where the complainant also proposed to reroute the off-SARR portion of the movement through the congested Houston area (the three other movements discussed in TPMA). The tests for whether a complainant can include these kinds of traffic in the traffic group are very different. A complaint may include internally rerouted traffic so long as the operating plan meets the shipper's needs—the same test we apply for all traffic in the SAC analysis, rerouted or not. The Board created a more stringent test for the second kind of rerouted traffic because the SAC analysis does not account for all off-SARR operating and capacity costs that might flow from such rerouted traffic. See TPMA at 595; see also Duke/NS at 25-26 (shifting the burden of persuasion to the carrier if the proposed reroute would reduce the total distance of the movement). Here, BNSF argues that WFA has not satisfied this more stringent test. See BNSF TS Reply Nar. at I-13-14. But as WFA correctly observed, this is the wrong legal standard, as WFA has not included any traffic with off-SARR reroutes.

permissible so long as the new route is reasonable and would meet the receiving shipper's transportation needs. Under WFA's operating plan, the shippers in question will receive the same or superior service along the new route. As such, the reroute meets the shippers' needs and is thus reasonable.

2. Cross-Over Traffic

As in many recent cases, the complainant here relies on "cross-over" traffic to simplify its SAC presentation. Cross-over traffic refers to movements for which the LRR would not replicate all of BNSF's current movement, but would instead interchange the traffic with the residual portion of the BNSF system. The use of cross-over traffic to simplify the SAC presentation is a well-established practice.¹⁷ It enables the SAC analysis to take into account the economies of scale, scope, and density that the defendant carrier enjoys over the routes replicated.¹⁸

When cross-over traffic is used to simplify the SAC presentation, a key issue is what portion of the revenues from cross-over traffic should be attributed to the part of the move handled by the SARR network and what portion to the part of the move occurring off-SARR on the defendant's residual network. The objective is to reflect, to the extent practicable, the defendant carrier's relative costs of providing service over each of the two segments.¹⁹ In Major Issues, the Board adopted the ATC approach to reflect economies of density. See Major Issues at 31. ATC uses URCS variable and fixed costs for the carrier, and the density and miles of each segment, to develop the average total cost per segment of a move. Revenues from the cross-over traffic are then allocated in proportion to the average total cost of the movement on- and off-SARR. See id. at 34.

Three issues are discussed below. First, we address BNSF's renewed request to apply ATC to total revenues rather than to total revenue contribution, a modification we made in our earlier decision in this case. Second, we clarify how the density of each segment should be developed for the application of ATC. Finally, we address the application of ATC to rerouted traffic.

a. Application of ATC to Total Revenue Contribution

In their evidence submitted in early 2007, the parties allocated the total revenues from the cross-over movements in accordance with the ATC procedure described in

¹⁷ See, e.g., Duke Energy Corp. v. CSX Transp., Inc., STB Docket No. 42070, slip op. at 20-22 (STB served Feb. 4, 2004) (Duke/CSXT); TMPA; Bituminous Coal—Hiawatha, UT to Moapa, NV, 10 I.C.C.2d 259, 265-68 (1994) (Nevada Power).

¹⁸ TMPA (citing Nevada Power, 10 I.C.C.2d at 265 n.12). For a lengthy discussion of the use of this modeling device in SAC decisions, see Public Serv. Co. of Colo. d/b/a Xcel Energy v. Burlington N. & S.F. Ry., STB Docket No. 42057, slip op. at 13-17 (STB served June 8, 2004) (Xcel).

¹⁹ Duke/NS at 18-20.

Major Issues. However, in applying ATC to this case in the Sept. 2007 Decision, we found it necessary to refine the procedure slightly so as to avoid an illogical and unintended result. Because the LRR traffic group included considerable traffic generating revenue either below or barely above variable cost, and because the off-SARR segments of the movements have lower densities (meaning those segments are to be assigned a higher pro rata share of the revenues), the practical effect would have been to drive the R/VC percentages of the on-SARR movements below 100% (or, if the total revenue is already less than variable costs, even lower). Thus, the revenue allocation for the on-SARR portion of those movements would have been insufficient to cover the variable cost of handling traffic on the highest-density portion of the movement. To avoid such an illogical result, instead of applying the ATC allocation procedure to total revenue, we applied the procedure to total revenue contribution (i.e., revenue in excess of variable cost). Accordingly, the revenue assigned to the on-SARR part of a cross-over movement should equal the variable cost to haul the traffic over the facilities replicated by the SARR plus the portion of additional available revenue contribution allocated in accordance with ATC.

BNSF sought reconsideration of that determination, which we denied in a decision served on February 29, 2008) (Feb. 2008 decision). BNSF has renewed its objection to this modification here. First, it claims its arguments on reconsideration were ignored. However, we addressed BNSF's arguments in our reconsideration decision and found them unpersuasive. Alternatively, BNSF argues that the modification is no longer necessary, because WFA was permitted to redesign its traffic group and exclude the traffic that caused the illogical result. We disagree. While there may be less traffic with revenue at or near its variable costs in this traffic group, the approach we use here will be applied in all SAC cases, including in cases decided under our simplified SAC procedures. We seek a uniform revenue allocation method and remain convinced that the modification adopted in the Sept. 2007 Decision is reasonable and necessary to preserve the integrity of the ATC approach.

b. Densities

BNSF has raised an unresolved question over how the densities of each segment are to be developed: for the line segment being replicated by the SARR, should ATC use the real-world densities of BNSF line segment or the hypothetical densities of the SARR. Because WFA designed the SARR to exclude considerable traffic that BNSF serves over the segments in question, the hypothetical "on-SARR" densities are much lower than BNSF's actual densities. Using those lower densities would mean that more revenue from a given cross-over movement (holding all other factors constant) would be attributed to the facilities being replicated by the SARR.

We conclude that the proper approach is to use the actual densities of the incumbent railroad. We reach this conclusion for three reasons. First, as stated in Major Issues, the objective of ATC is to reflect the defendant carrier's relative costs of providing service over the relevant segments of its network.

Second, using the hypothetical densities would create mismatches in the analysis. ATC uses the actual variable costs of the incumbent and the actual fixed cost per route

mile. It would bias the result and create an apples-to-oranges comparison to combine those estimates with hypothetical densities. Moreover, while WFA would lower the densities on-SARR by excluding considerable PRB traffic, that traffic is not excluded from the off-SARR density calculation, leading to a further mismatch if traffic were omitted in the on-SARR densities but reflected in the off-SARR densities.

Finally, using the densities of the hypothetical SARR makes no sense, as under SAC the hypothetical competitor to BNSF does not even need to be a railroad at all. WFA could elect to construct a hypothetical truck-transload facility, where the coal would be trucked from the PRB to a transload facility, where it would be loaded back into rail cars for delivery by BNSF. Or it could construct a coal-slurry pipeline. These examples are offered to illustrate the problems with WFA's approach: in neither case would it make any sense to use BNSF's variable costs and fixed costs per route mile in combination with the densities (including the weight of the water, we suppose, in the coal slurry pipeline instance) of the hypothetical competitor designed by WFA.

Noting that this issue has only a marginal effect on this case, WFA objects nonetheless, claiming that basing the revenue allocation on the incumbent's greater densities would penalize the SARR for being more efficient than BNSF. We find this argument unpersuasive. WFA still benefits from designing the SARR to be more efficient than BNSF, because this lowers the SAC costs and the resulting maximum lawful rates. The revenue allocation method is not designed or intended to provide an additional reward for designing a more efficient SARR. It is designed to reflect the defendant carrier's relative costs of providing service over the relevant segments of its network and thereby create a reasonable and fair allocation of revenue from cross-over movements.

c. Rerouted Cross-Over Traffic

Having clarified that ATC will allocate revenue contribution in accordance with the defendant's costs and using the defendant's densities, we also need to clarify which route we will use in performing that calculation: the historical route actually used by the defendant or, where rerouting is hypothesized, the route assumed by the complainant in its SAC analysis. In general, we witness two kinds of rerouted cross-over traffic in SAC cases. There can be rerouting that is local to the SARR, meaning that any difference in routing would be limited to the portion of the move handled by the SARR; there would be no difference from the historical route in the portion of the move handled by the defendant railroad. There is a rare second category of cross-over traffic where a complainant seeks to interchange the traffic with the defendant carrier on a route other than the route actually used by the defendant for that traffic, which thus assumes a rerouting of traffic beyond the SARR and is referred to as "off-SARR rerouted traffic." (For three examples of off-SARR rerouted traffic, see TMPA.)

In this case, the traffic group contains some local rerouted cross-over traffic that BNSF historically moves out of the PRB through the northern route (via Donkey Creek), but which WFA assumes would be rerouted over the SARR, which replicates only BNSF's southern route. The traffic would be interchanged with BNSF at Northport, which is a point on its historical route. To be consistent with the use of the defendant's

costs, ATC will allocate revenues using the relative densities (and mileage) along the predominant route actually used by the defendant carrier to move the traffic in question. Thus, regardless of whether the SARR is designed to shorten or lengthen the distance traveled for that portion of the cross-over movement, the revenue allocation for that portion of the movement is unaffected.

Fortunately, WFA included no *off-SARR* rerouted cross-over traffic in this case. But we are concerned that complainants might seek to include such traffic in the future. There is seemingly no coherent way to allocate the revenue contribution in accordance with the defendant's costs of providing service in such circumstances, as the defendant does not actually provide those services in that manner in the real world. The off-SARR rerouting would affect the densities, mileages, and perhaps even the operating costs of the route, thus making it difficult to rely on URCS and the historical traffic densities to allocate revenue contribution in accordance with the average total cost of providing service over the segments in question.

Given the inherent problems with such off-SARR rerouted traffic, the extraordinarily complex issues those reroutes introduce into the SAC analysis, and the inability to allocate revenues in accordance with the actual costs of the defendant railroad, we are disinclined to permit such reroutes. If a complainant seeks to include such rerouted cross-over traffic in the SAC analysis, even if it shortens the overall length of the total movement (*see Duke/NS*), it should both (1) address how to allocate revenues in accordance with the defendant carrier's *actual* costs of providing the transportation service and (2) provide an alternative SAC analysis where there are no off-SARR reroutes.

3. Tonnage and Revenues

The annual tonnage and revenues for the revised LRR traffic group are addressed in **Appendix A**.

C. Operating Expenses

We will use the operating expenses as determined in the Sept. 2007 Decision and Feb. 2008 Decision with adjustments based on the reconfigured LRR, as discussed below.

1. Operating Plan

How a SARR would operate is a prime determinant of the configuration (physical plant) and annual operating expenses of the SARR. The operating plan must be able to meet the transportation needs of the traffic the SARR proposes to serve. It need not match existing practices of the defendant railroad, as the objective of the SAC test is to determine what it would cost to provide the service with optimal efficiency. However, the assumptions used in the SAC analysis, including the operating plan, must be realistic, i.e., consistent with the underlying realities of real-world railroading.

WFA based the reconfigured LRR's operating plan on the original LRR's operating plan as modified in the Sept. 2007 Decision. The primary changes that WFA

made to that operating plan include revisions to the LRR's route, track configuration, and traffic group. WFA continues to use the Rail Traffic Controller (RTC) model, which it used to test the revised operating plan against the LRR's revised configuration. The model simulates the flow of traffic projected for the peak week (September 2 through September 8) of the peak year (2024) over the revised LRR. The model permits WFA to both test the adequacy of the configuration (to make sure the LRR would have sufficient capacity to handle the peak forecast demand) and then to derive the segment-by-segment cycle times (which it then used to develop the operating costs of the revised LRR in the base year).

The parties agreed on most elements of the revised LRR operating plan and WFA incorporated agreed-upon modifications into its rebuttal RTC simulation. We accept WFA's operating plan based on its adjusted RTC simulation and the transit times generated. The substantive disagreements—which relate to the interchange at Northport and train and engine (T&E) personnel—are discussed below.

2. Interchange at Northport

BNSF currently interchanges JEC traffic with UP at Northport, and LRR would need to do so as well. Two issues have been raised concerning that interchange of JEC traffic.

a. Interchange Location

BNSF first disputes the location specified for the LRR interchange with UP at Northport.²⁰ BNSF argues that WFA's operating plan does not provide for SARR crews to take the JEC trains that would need to be interchanged with UP all the way to the UP interchange tracks. Instead, the SARR crews would stop at the end of the SARR's tracks, 2.6 miles short of the point where BNSF crews currently deliver JEC trains to UP. BNSF also asserts that WFA did not allot time to move the JEC trains which BNSF estimates would take approximately 15 minutes.

On rebuttal, WFA argues that its RTC simulation included operating the JEC trains over 2.0 miles of UP trackage east of the Angora Subdivision to reach the UP interchange.²¹ For purposes of its rebuttal RTC simulation, WFA accepted BNSF's configuration and distance for the UP trackage in its RTC simulation²² and let the model determine how long it takes a train to travel the total distance of 2.6 miles to and from the interchange point, rather than using the 15 minutes added by BNSF. We agree with WFA that the modification of its RTC model to include the 2.6 miles and to simulate the running times on the UP track is the proper way to address the interchange distance at Northport.

²⁰ See BNSF TS Reply at III.C-4, C-11.

²¹ See WFA TS Reb. at III.C-4.

²² See WFA TS Reb. Exh. III-C-1.

b. Train Dwell Times at Northport

The revised LRR would interchange with both UP and the residual BNSF at Northport. According to BNSF, WFA's arrangements for these interchange operations are inadequate. BNSF asserts that the operating plan ignores tasks that must be performed to interchange traffic where three railroads cross each other's track. Therefore, BNSF would include additional time for the LRR to interchange trains with either BNSF or UP. More specifically, BNSF would increase the LRR's interchange times as follows: Southbound loaded trains to BNSF from 45 minutes to 90 minutes; northbound loaded trains to BNSF from 30 minutes to 60 minutes; JEC loaded trains to UP from 30 minutes to 60 minutes; and JEC empty trains to UP from 30 minutes to 60 minutes.²³ (BNSF would not change the interchange time for empty trains received from BNSF.)

BNSF asserts that the 30-minute interchange times are unreasonably short given that BNSF's real-world average dwell time at Sterling for these crew changes is 85 minutes.²⁴ In support of its assertion that a 90-minute dwell time is the reasonable time needed for trains that are headed south from Northport to Sterling, BNSF makes the following four points: (1) it would take time for a BNSF crew to arrive after the LRR brought a train to the interchange point—as Northport is not a crew change point for BNSF—and BNSF would have to taxi crews from Sterling to pick up loaded trains from the LRR; (2) the interchange time must provide for holding trains on the LRR's tracks until BNSF could accommodate them on its main line heading south; (3) the operating plan must allow sufficient time for interchanged trains to wait at Northport until the UP main line—which is 500 feet south of the LRR interchange point—were clear and; (4) BNSF crews would need additional time to add a fourth locomotive to the rear of the train before leaving the LRR trackage at Northport.²⁵

WFA, on rebuttal, states that the 30 minutes of dwell time at Northport would be consistent with the train dwell times at the Guernsey interchange point allotted in WFA's original operating plan and accepted by the Board in the Sept. 2007 Decision.²⁶ WFA argues that BNSF's real-world crew-change times at other locations are irrelevant to crew-change and train dwell times involving a SARR. In response to BNSF's arguments, WFA first claims that Northport is in fact an established BNSF crew-change point for southbound and JEC trains, and thus, BNSF's assertion that crews would have to be taxied to Northport from Sterling is incorrect.²⁷ Second, WFA states that BNSF would not need to accommodate LRR trains heading south because the LRR would not have to

²³ See BNSF TS Reply at III.C-4-10.

²⁴ See BNSF TS Reply WP. "BNSF Historic Dwell Times.xls" sheet "Dwell Times" Cell K28.

²⁵ See id. at III. C-5-7.

²⁶ Sept. 2007 Decision at 17.

²⁷ WFA TS Reb. at III-C-6.

account for real-world BNSF trains moving through Northport on the Angora Subdivision.²⁸ Rather, the LRR would replace BNSF on the lines it replicates and it would not have to account for the residual incumbent's remaining trains that use the replicated lines.²⁹ Third, WFA argues that BNSF only speculates on the amount of time interchanged trains would have to wait at Northport, and BNSF's assertion is not supported by any empirical data concerning the actual delays that southbound BNSF coal trains incurred during the relevant (peak) period of the base year waiting for UP trains to clear the crossing.³⁰ Finally, according to WFA, under the LRR operating plan, the inbound LRR crew would place a fourth locomotive unit on the rear of the train, not the outbound BNSF crew.³¹ WFA also states that no additional time would be needed to establish another distributed power (DP) communications link. WFA's operating plan (and the rebuttal RTC simulation) allots an extra 15 minutes to add the fourth locomotive unit to southbound trains at Northport, for a total of 45 minutes of dwell time for those trains.

We accept WFA's dwell times as the best evidence of record. It is reasonable to assume that BNSF would have an established crew change at Northport due to the UP interchange, and the volume of residual BNSF traffic there would further warrant BNSF crews for the LRR interchange. Moreover, we are satisfied that the LRR's plan provides for its own trackage, eliminating any need to cross the Angora subdivision, which in turn eliminates a need to hold trains on a shared track on that basis. We find BNSF's other arguments as to why trains would be held up at the UP crossing unsupported. We agree that a DP locomotive on the rear of the train would mean that the communication link with the head-end power would already be established. The actual attachment of the additional locomotive would be sufficiently covered by the 15-minute allotment for adding a locomotive to trains moving southward beyond Sterling. Finally, we agree that the dwell time at Sterling is not necessarily relevant to the SARR, much less dispositive of the appropriate dwell time at Northport.

D. Road Property Investment

There is not a substantial difference between the parties' estimates of the level of investment that would be required to construct the revised LRR. Our resolution of the disputes concerning various component parts of road property investment is discussed in **Appendix C**. As shown in **Table C-1**, we find that total road property investment costs for the revised LRR would be \$881,180,459.

²⁸ WFA TS Reb. at III-C-7.

²⁹ Id.

³⁰ Id. at III-C-7-8.

³¹ Id. at III-C-9.

E. DCF Analysis

A discounted cash flow (DCF) analysis is used to distribute the total capital costs (in current year dollars) of the revised LRR over the SAC analysis period. Operating expenses are calculated for a base year and forecast into other years by indexing for inflation and forecasted changes in tonnage. The revised LRR's total revenue requirements (capital and operating expenses) are then compared against the stream of revenues BNSF is expected to earn from the revised traffic group, discounted to the starting year (2004).

In this supplemental round, the only dispute between the parties over how to perform the DCF analysis is over how to estimate the cost of equity, a key input in the model. Our analysis of that debate is set forth below, followed by a summary of the revised DCF results.

1. Cost of Equity

To estimate what it would cost a SARR to raise equity capital, the longstanding practice in SAC cases is to use the cost of equity for the rail industry as published annually by the Board. Because we had recently revised our procedures for calculating the rail industry's cost of equity,³² replacing the single-stage DCF model with a Capital Asset Pricing Model (CAPM), WFA sought reconsideration of the Sept. 2007 Decision on the ground that the newly adopted CAPM procedure should be used to develop the cost-of-capital figure in the SAC analysis in this case for the years 2002 through 2005.

We reserved judgment on the issue of whether to restate the rail industry's cost-of-capital figures in this case for those years until the parties had the opportunity to fully brief and argue the merits of WFA's request. We directed the parties to submit two separate SAC calculations, one showing their cost-of-capital figures developed under the already published cost-of-equity figures for those years, and a second showing the cost of equity calculated under CAPM for those years. In addition, each party was asked to address the propriety of using restated figures in this case, and whether, if we do not use restated figures, the forecast of the cost of equity in succeeding years should be calculated by taking an average of past cost-of-equity figures, consistent with past practice, or to use only the most recent cost-of-equity figures based on CAPM.

In the next sections, we will discuss the evolution of the Board's cost-of equity methodology and address the most appropriate methodology to apply to calculate the cost of equity in this rate case. For the reasons discussed below, we will not restate the cost of equity for past years in this case. We will also apply our existing methodology for forecasting the cost of equity in future years.

³² See Methodology to be Employed in Determining the Railroad Industry's Cost of Capital, STB Ex Parte No. 664 (STB served Jan. 17, 2008).

a. The History of the Board's Cost of Equity Determination

Each year, the Board measures and publishes the average cost of capital that the railroad industry experienced in the previous year. The Board then uses this cost-of-capital figure for a variety of regulatory purposes.³³ The Board calculates the cost of capital as the weighted average of the cost of debt and the cost of equity, with the weights determined by the overall capital structure of the railroad industry (i.e., the proportion of capital from debt or equity on a market-value basis). While the cost of debt is observable and readily available, the cost of equity (the expected return that equity investors require) can only be estimated. Because the cost of equity cannot be directly observed, estimating the cost of equity requires adopting a finance model and making a variety of simplifying assumptions.

In the proceeding to determine the railroad industry cost-of-capital for 2005, the Western Coal Traffic League (WCTL) challenged the cost-of-equity calculation submitted by the Association of American Railroads (AAR) using the DCF approach routinely applied by the Board in previous annual cost-of-capital proceedings. WCTL advocated replacing the DCF methodology with a CAPM method. We concluded that there was insufficient evidence in that annual cost-of-capital determination proceeding to justify a departure from long-established methodology used to calculate the cost-of-equity component.³⁴

In so doing, we observed that there was no clear consensus as to how best to compute the cost of common equity and, in fact, there are many different ways in which it is computed by both investors and regulators. We expressed concern that “CAPM requires the use of many assumptions ... [and each] can have a significant effect on the result obtained and each necessitates judgments on how best to define and measure it.”³⁵ We noted that WCTL’s position in that proceeding was contrary to the prior position of the shipper community that the “CAPM technique was conceptually and technically flawed.”³⁶ Due to the norm of regularity in government conduct that presumes an agency’s duties are best carried out by adhering to the settled rule, we continued to use the DCF model in determining the 2005 railroad industry cost of capital. We concluded

³³ It is used to evaluate the adequacy of individual railroads’ revenues for that year. See 49 U.S.C. 10704(a)(2),(3); Standards for Railroad Revenue Adequacy, 364 I.C.C. 803 (1981), modified, 3 I.C.C.2d 261 (1986), aff’d sub nom. Consolidated Rail Corp. v. United States, 855 F.2d 78 (3d Cir. 1988). It is also employed in cases involving rail rate review, feeder line applications, rail line abandonment proposals, trackage rights compensation cases, and rail merger review, as well as in our Uniform Rail Costing System (URCS).

³⁴ Railroad Cost of Capital – 2005, STB Ex Parte No. 558 (Sub-No. 10) (STB served Sept. 20, 2006), aff’d sub nom., Western Coal Traffic League v. STB, No. 07-1064 (D.C. Cir. Feb. 1, 2008).

³⁵ Id., citing Railroad Cost of Capital – 1981, 365 I.C.C. 734, 741 (1982).

³⁶ Id., citing Railroad Cost of Capital – 1982, 367 I.C.C. 662, 670 (1983).

that we could not delay our decision while we explored this issue in depth because the cost-of-capital calculation is an integral component of many other decisions the Board must make, including the revenue adequacy determination that we are statutorily required to make annually.³⁷

At the same time, we recognized that WCTL had identified a potential concern with the DCF model that should be explored in more depth. We explained that, before considering whether to make such a significant change, we would seek broader public input from other interested shippers, as well as from transportation experts, Wall Street analysts, financial experts and academics on the relative merits of this longstanding approach. And we would seek comments not only on the DCF and CAPM models, but on any other available recognized methods for determining the cost of capital. Accordingly we issued an advance notice of proposed rulemaking, in STB Ex Parte No. 664, to explore the most suitable methodology to calculate the cost of capital.³⁸

After holding public hearings, reviewing the evidence gathered, and consulting with other federal agencies, the Board changed the methodology that it uses to calculate the railroad industry's cost of equity.³⁹ We concluded that the time had come to modernize our regulatory process and replace the aging single-stage DCF model that had been employed since 1981, and we decided to calculate the cost of equity using CAPM.

In that proceeding, several parties had suggested that the Board use a multi-stage DCF in conjunction with CAPM. We elected to adopt a stand-alone CAPM approach because the record in that proceeding did not support adopting any particular DCF model at that time. But we did not want to foreclose the possibility of augmenting CAPM with a DCF approach. Ultimately, both CAPM and DCF are economic models that seek to measure the same thing. CAPM seeks to do so by estimating the level of expected returns that investors would demand given the perceived risks associated with the company. By contrast, DCF models estimate the expected rate of return based on the present value of the cash flows that the company is expected to generate. Both approaches are plausible and intuitive, but are merely models. There is considerable economic literature that suggests that using multiple models will improve estimation techniques when each model provides new information.

Although the record before us in STB Ex Parte No. 664 was insufficient for us to adopt a particular DCF model, it illuminated a number of criteria to guide us in that effort. Therefore, we soon issued an advance notice of proposed rulemaking, in STB Ex Parte No. 664 (Sub-No. 1), requesting comments on using of a multi-stage DCF model to complement the use of CAPM in determining the railroad industry's cost-of-

³⁷ See 49 U.S.C. 10704(a)(3).

³⁸ Methodology to be Employed in Determining the Railroad Industry's Cost of Capital, STB Ex Parte No. 664 (STB served Sept. 20, 2006).

³⁹ Methodology to be Employed in Determining the Railroad Industry's Cost of Capital, STB Ex Parte No. 664 (STB served Jan. 17, 2008).

capital.⁴⁰ After reviewing the public comments, we proposed to use the Morningstar/Ibbotson three-stage DCF, together with CAPM, to calculate the cost of equity. We proposed to use the average of the two values to establish the railroad industry's cost of equity in a given year. By a decision served on January 28, 2009, we adopted the proposed methodology to calculate the cost of equity in future years.⁴¹

Thus, we have made great efforts to modernize and reform our regulatory processes and economic estimates over the past 2 years. As we explained in STB Ex Parte No. 664 (Sub-No. 1), the average of CAPM and the multistage DCF produces the best estimate of the rail industry's cost of equity for our purposes by providing a more stable, less volatile estimate from year to year. But the exact cost of equity in a given year remains an essentially unknowable number and any method we adopt will produce only an estimate. Our goal has been to establish the methodology that produces the best estimate practicable for our regulatory purposes.

b. Historical Figures: 2002-2007

In deciding whether a change in methodology (such as the move to CAPM) can be given retroactive effect, we would generally balance various considerations. For example, the United States Court of Appeals for the District of Columbia has offered five factors to be considered, such as: (1) whether the case is one of first impression; (2) whether the new approach reflects an abrupt departure from well established precedent or merely fills a void in an unsettled area; (3) the degree of reasonable reliance on the former rule; (4) the degree of burden imposed on a party; and (5) the statutory interest in applying a new rule despite the reliance of a party. See, e.g., Williams Natural Gas Co. v. FERC, 3 F.3d 1544 (D.C. Cir. 1993).

But BNSF argues we have no discretion and must use the previously published cost-of-equity figures. It argues that the annual cost-of-capital determinations must be viewed as "quasi-legislative" determinations that are used in rate reasonableness proceedings and that we must, under Arizona Grocery, give full effect to those prior quasi-legislative findings. BNSF acknowledges that Arizona Grocery dealt only with retroactive ratemaking, but argues that the principle announced in that case applies broadly to all quasi-legislative determinations of an agency. Yet it offers no example of any court or agency applying the Arizona Grocery principle outside the context of rate prescriptions. And WFA cites modern cases that declare that Arizona Grocery applies

⁴⁰ Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital, STB Ex Parte No. 664 (Sub-No. 1) (STB served Feb. 11, 2008).

⁴¹ Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital, STB Ex Parte No. 664 (Sub-No. 1) (STB served Jan. 28, 2009).

only where the agency has declared what is the maximum lawful rate to be charged by a carrier.⁴²

Based on the legal arguments presented here, we conclude that we have the discretion to use a different cost-of-equity figure than previously published. These circumstances appear closely analogous to those presented in Williston Basin Interstate Pipeline Co. v. FERC, 165 F.3d 54 (D.C. Cir. 1998), where the court remanded a rate case to FERC so the agency could decide whether to give retroactive effect to a change in the method FERC used to estimate the cost of equity.

In deciding whether to use different cost-of-equity figures than previously published, we conduct the kind of balancing test described above. In so doing, we conclude that it would be poor public policy to depart from our previously published figures. Two considerations are paramount in our analysis: the degree of reliance by the railroad industry on our prior findings, and whether the prior findings appear to be within the bounds of reasonable predictions for the industry's cost of equity.

Reliance. We believe there has been significant investment-back reliance by the railroad industry on our prior cost-of-capital findings. Generally, we use our annual cost-of-capital findings for the railroad industry for the years at issue to determine the cost of equity that a SARR would experience.⁴³ Though Guidelines suggested that a party could show that a particular SARR might have a cost of equity different from the railroad industry as a whole by presenting particularized evidence,⁴⁴ no party has done so. Instead, parties rely on our served and published cost-of-capital findings, updated by the Board to include the most recent figures, as we do not generally consider collateral attacks on the cost-of-capital methodology in the context of an individual rate case due to the settled expectations our findings create.⁴⁵

In short, the published cost-of-capital figure lets the railroads and their investors know the target rate of return this agency will consider a reasonable return on the railroad's capital investments in that year. Railroads and investors then make investment decisions based in part on those published figures. Indeed, between 2004 and 2007, BNSF alone made over \$9 billion in capital investments.⁴⁶ Other factors may be equally, if not more, important in these capital investment decisions, such as prevailing market forces and future forecasts of demand trends. But the attention paid to our recent rulemaking on the cost of capital by the railroads and their investors demonstrates the

⁴² See WFA TS Reb. at I-45 (citing BP West Coast Prod., LLC v. FERC, 374 F.3d 1263, 1304 (D.C. Cir. 2004)).

⁴³ See, e.g., September 2007 Decision at 135; AEP Texas at 112.

⁴⁴ See Guidelines at 544 n.63.

⁴⁵ See FMC Wyoming Corp. & FMC Corp. v. Union Pacific RR Co., 4 S.T.B. 699, 846 (2000).

⁴⁶ This figure is drawn from Schedule 330 of the publicly available annual (R-1) reports filed by BNSF at the Board.

importance of this figure and our annual findings. If we change that figure retroactively here, we not only undermine settled expectations but we erode investor confidence in *future* cost-of-capital findings. A lack of confidence can severely affect the incentive of investors to make the necessary private investment in the railroad industry to meet the forecast demand for railroad service.⁴⁷

Accordingly, we set a high bar on the evidence needed to justify departing from these prior published findings. Here, WFA contends that we should use CAPM to establish the cost of equity for the years 2002 through 2005 because CAPM “produces the most accurate results.”⁴⁸ But the bare fact that a new method results in different cost-of-capital estimates is insufficient. There may often be some new financial model that would generate a different and arguably more precise cost-of-capital estimate. Yet we believe that, while investors and railroads have made important capital investments in reliance on these published figures, they do so with the knowledge that the Board has the authority and responsibility to depart from prior published findings in an individual rate case if those figures are shown to be widely inaccurate.

Accordingly, balancing the reliance interests of carriers and their investors against the public interest in using a reasonable rate of return target, we will set aside our cost-of-capital findings only if the prior published findings are shown to clearly fall outside a reasonable range. This is an admittedly subjective criterion, but necessary to protect the reliance interests and assure future investors that they can generally rely on our annual cost of capital findings. Our analysis of our prior cost-of-equity findings under this approach is set forth below.

Reasonableness. CAPM is a more modern and better accepted method for estimating the cost of equity than the single-stage DCF model used to derive the 2002-2005 cost-of-equity figures at issue here. We have, however, repeatedly made clear that there are many ways to estimate the cost of equity. Indeed, at the time WFA filed its petition for reconsideration, the STB Ex Parte No. 664 (Sub-No. 1) proceeding to consider use of a multi-stage DCF was already underway. The adoption of CAPM did not invalidate the past estimates of the cost of equity measured by the single stage DCF. Nor did the recent adoption of the average of CAPM and a multistage DCF to measure the cost of equity invalidate the 2006 and 2007 estimates established by CAPM. The evolution of our approach for estimating the cost of equity demonstrates why it is unwise to retroactively change our findings simply because a new model is now used.

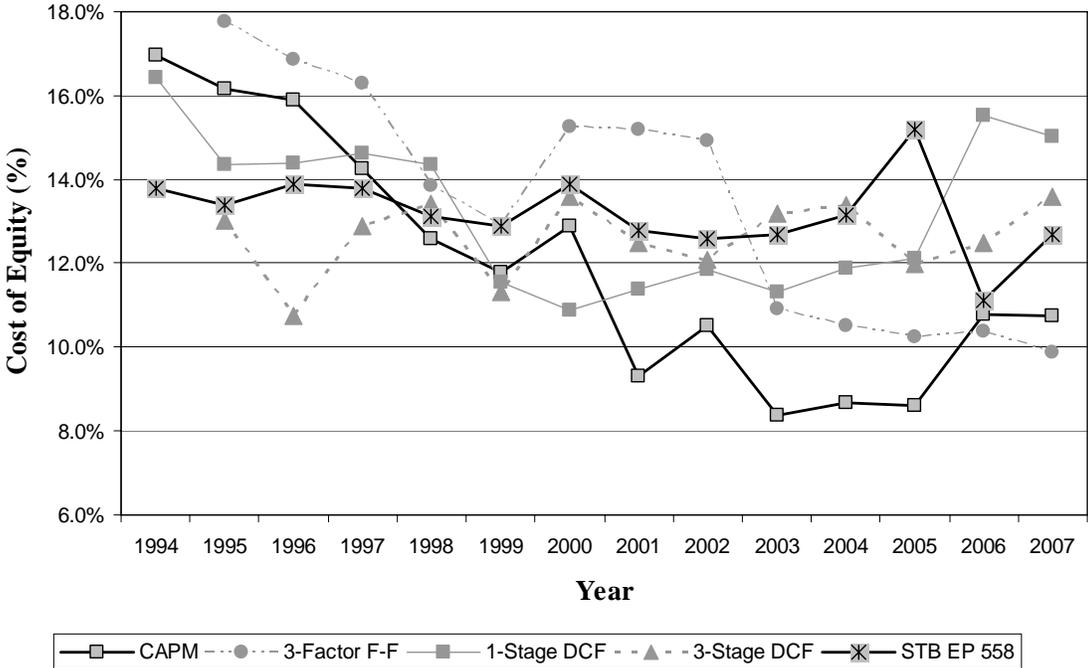
WFA has not shown that the use of the previously published findings produces a wholly unreliable estimate of the cost of capital for the SARR. Moreover, our comparison of the Board’s annual determinations reveals that they are not out of line with other, commercially available estimates of the cost of equity. Below, we compare the

⁴⁷ See BNSF TS Reply, V.S. Hamada & Gokhale at 3-6 (observing that *ex post* adjustments to the cost of capital will decrease predictability and investors’ willingness to undertake future capital investments).

⁴⁸ WFA TS Reb. at I-47.

Board’s previously published determinations of the rail industry’s cost of capital (denoted below by the “STB EP 558” line) with other commercially accepted methods of determining the same estimates.⁴⁹

**Chart 1: Cost of Equity Estimates
Comparison of Ibbotson/Morningstar and STB Methodologies**



This chart illustrates that various reasonable finance models produce a range of values for the cost of equity. Which model will produce the highest or lowest estimate will vary depending on the inputs and assumptions used. For example, in 1994, CAPM produces the highest estimate and for the period 2001-2005, it produces the lowest. Simply because one estimate is the highest or lowest in a given year does not mean that it is invalid, or even the least accurate. It is for this reason that we have decided that the best estimate we can establish for future years will be the average of two different models with different assumptions.

⁴⁹ As the Morningstar cost-of-equity estimates were not submitted by either party in this proceeding, we are taking official notice of these publicly available cost-of-equity estimates for the railroad industry. The figures supporting this chart will be made available to the parties upon request. “3-Factor F-F” denotes the estimate published by Ibbotson/Morningstar using a 3-Factor Fama-French approach. “1-Stage DCF” and “3-Stage DCF” refer to the Ibbotson/Morningstar cost-of-equity estimates for the railroad industry using a single-stage and multi-stage DCF model.

The chart also reveals that the Board's prior determinations provide a reasonable estimate of the cost of equity for the hypothetical SARR posited in this case. For every year except 2005, the Board's estimate falls easily within the reasonable range of estimates produced by the other finance models.

The year 2005 is the only year where the Board's cost-of-equity estimate is above the norm for other finance models. Yet even then, the figure does not vary significantly more than other models that produce the highest or lowest estimate in a given year. Thus, we do not regard the increase as sufficiently large to justify setting aside the industry's expectation that we would use that finding as the target rate of return for that year. In our judgment the 2005 estimate remains within a reasonable range of the cost-of-equity estimates produced by other models. Accordingly, we will not disturb it.

c. Forecasts: 2008-2024

Our decision to use the published cost-of-equity figures in the SAC analysis for all prior years does not end the inquiry, as we must also project the cost of equity into the future years of the DCF analysis in this case. Our long-established practice has been to use the average of the historical cost-of-capital figures starting with the construction start date of the SARR. We do so to minimize the risk that any particular year is aberrant in one way or another. Under that practice, here we would forecast the cost of equity for the years 2008 through 2024 as the average of the historical cost of equity from the years 2002 through 2007.

WFA advocates that we depart from that practice and use just the CAPM estimate for 2006 and 2007 to forecast the cost of equity for the years 2008 – 2024. It maintains that this will provide a superior cost-of-equity estimate because those are the only estimates based on CAPM and we should not carry forward figures derived from the single-stage DCF model.

We conclude that it remains sound policy to adhere to our established practice. We recently concluded that using an average of the cost-of-equity estimates produced by CAPM and a multi-stage DCF would produce a less volatile and more reliable estimate. Taking the average of all historical years in the DCF to project the cost of equity will similarly reduce the risk that any one year's aberrant estimate would have on the overall forecast for the DCF period. Indeed, given our decision to use an average of CAPM and a multi-stage DCF to estimate the cost of equity in 2008 and future years, it would seem clearly erroneous to forecast the cost of equity in this case by using just the published CAPM figures for 2006 and 2007. Accordingly, we will use our established approach for forecasting the cost of equity.

2. DCF Results

The first step of the DCF analysis is to calculate the revised LRR's total revenue requirements over the 20-year analysis period. We find that the initial road property investment of the revised SARR in the last quarter of 2004 would be \$843,733,703; interest during construction would be \$99,048,840; the present value of roadway property replacement would be \$66,058,308; and the resulting total road property investment

would be \$1,008,840,851. **Table 1** shows that the flow of capital recovery would provide the revised LRR a reasonable return on its capital investment, and it would therefore be sufficient to attract entry to serve the selected traffic group.

Table 1
LRR Capital Recovery

Year	RPI Capital Recovery	Taxes	Cash Flow	Present Value
	(1)	(2)	(3) = (1) - (2)	(4)
2004	\$20,506,286	\$ 0	\$20,506,286	\$20,260,790
2005	82,940,254	0	82,940,254	76,836,688
2006	87,124,894	0	87,124,894	73,578,930
2007	89,194,629	0	89,194,629	69,131,694
2008	90,815,381	0	90,815,381	64,290,439
2009	92,421,892	0	92,421,892	59,723,893
2010	94,011,631	0	94,011,631	55,451,673
2011	95,638,418	0	95,638,418	51,489,558
2012	97,824,824	0	97,824,824	48,069,187
2013	100,577,341	4,320,485	96,256,856	43,159,882
2014	103,460,839	27,155,050	76,305,789	30,783,139
2015	106,410,846	28,501,671	77,909,175	28,675,966
2016	109,428,883	29,888,442	79,540,441	26,711,339
2017	112,521,593	31,318,502	81,203,091	24,880,309
2018	115,717,292	32,802,512	82,914,780	23,178,826
2019	119,019,603	34,505,425	84,514,178	21,554,342
2020	122,432,278	37,401,718	85,030,560	19,773,449
2021	125,959,208	40,198,235	85,760,972	18,175,528
2022	129,604,420	41,920,856	87,683,564	16,955,125
2023	133,372,093	43,709,328	89,662,765	15,819,031
2024	102,577,707	33,996,809	68,580,898	11,166,022
Terminal Value			***	\$209,175,042
			TOTAL	\$1,008,840,851

The total revenue requirements of the revised LRR over the 20-year analysis period, shown in **Table 2**, are the sum of the capital return and the projected operating expenses.

Table 2
LRR Total Revenue Requirements

Year	RPI Capital Recovery	Operating Expenses	Revenue Requirements
2004	\$20,506,286	29,482,962	49,989,248
2005	\$82,940,254	122,253,931	205,194,185
2006	\$87,124,894	122,329,508	209,454,402
2007	\$89,194,629	124,146,250	213,340,879
2008	\$90,815,381	125,837,475	216,652,855
2009	\$92,421,892	131,554,250	223,976,142
2010	\$94,011,631	133,366,400	227,378,030
2011	\$95,638,418	135,226,499	230,864,917
2012	\$97,824,824	137,513,144	235,337,968
2013	\$100,577,341	140,113,048	240,690,389
2014	\$103,460,839	142,395,655	245,856,493
2015	\$106,410,846	142,893,082	249,303,928
2016	\$109,428,883	146,122,818	255,551,700
2017	\$112,521,593	150,417,225	262,938,818
2018	\$115,717,292	153,947,620	269,664,912
2019	\$119,019,603	156,874,468	275,894,071
2020	\$122,432,278	160,072,726	282,505,005
2021	\$125,959,208	163,271,382	289,230,590
2022	\$129,604,420	166,328,195	295,932,616
2023	\$133,372,093	169,386,768	302,758,861
2024	\$102,577,707	129,095,724	231,673,431

The second part of the DCF analysis compares the revenues the defendant is expected to earn from the traffic group against what the SARR would need to serve the same traffic. In general, if the present value of the revenue stream is less than the SARR's revenue requirements, then the analysis has not demonstrated that the challenged rate is unreasonable. If the opposite is true, then the Board must decide what relief to provide to the complainant by allocating the revenue requirements of the SARR among the traffic group and over time. Here, **Table 3** reveals that BNSF is earning more from the traffic group than the LRR would require to serve the same traffic.

Table 3
Discounted Cash Flow Analysis

Year	LRR Revenue Requirements	BNSF Forecast Revenues	Difference	Present Value	Cumulative Present Value
2004	49,989,248	57,533,780	7,544,532	7,544,532	7,544,532
2005	205,194,185	233,035,512	27,841,326	25,769,402	33,313,934
2006	209,454,402	246,651,966	37,197,564	32,229,276	65,543,209
2007	213,340,879	255,730,515	42,389,636	33,087,863	98,631,073
2008	216,652,855	258,395,100	41,742,244	29,642,300	128,273,372
2009	223,976,142	270,036,467	46,060,325	29,855,159	158,128,531
2010	227,378,030	272,841,989	45,463,958	26,897,748	185,026,280
2011	230,864,917	277,661,576	46,796,659	25,270,848	210,297,128
2012	235,337,968	283,567,489	48,229,521	23,772,465	234,069,592
2013	240,690,389	290,209,222	49,518,834	22,278,603	256,348,196
2014	245,856,493	295,281,897	49,425,404	20,296,637	276,644,832
2015	249,303,928	294,620,322	45,316,394	16,985,780	293,630,612
2016	255,551,700	302,725,728	47,174,027	16,139,474	309,770,086
2017	262,938,818	314,256,717	51,317,899	16,025,500	325,795,586
2018	269,664,912	325,451,413	55,786,501	15,901,136	341,696,722
2019	275,894,071	334,288,079	58,394,008	15,192,302	356,889,024
2020	282,505,005	343,591,073	61,086,069	14,506,204	371,395,228
2021	289,230,590	354,048,325	64,817,735	14,049,528	385,444,756
2022	295,932,616	362,657,622	66,725,007	13,201,182	398,645,938
2023	302,758,861	372,688,189	69,929,328	12,628,153	411,274,091
2024	231,673,431	287,477,780	55,804,348	9,410,566	420,684,657

F. Rate Prescription

In Major Issues the Board adopted a new rate prescription approach, called MMM. BNSF objects to the use of MMM for two reasons, discussed above. Despite BNSF's objections, we will use MMM to set the rate in this proceeding.

This is one of the first rate disputes to apply MMM. In implementing the new approach, we have uncovered an inconsistency between how we said we would forecast the base-year URCS variable costs and the basic objective of the MMM. We describe the issue and our solution below.

MMM seeks to determine how much differential pricing the defendant carrier must be permitted in order to recover the total SAC costs and therefore earn what we find to be a reasonable return on its capital investments. If the defendant has a significant amount of low-rated traffic (traffic with low R/VC ratios), more differential pricing is needed. If the opposite is true and the railroad moves a greater amount of high-rated

traffic, less differential pricing is needed. The MMM analysis is based on the actual distribution of R/VC ratios of the traffic group, thus reflecting the ability (or inability) of the railroad to recover a pro-rata share of SAC costs from all its traffic due to the presence of competitive alternatives and real market forces.

Because we use a multi-year analysis, we need to forecast market conditions to see how much differential pricing the defendant would need over the entire DCF analysis period (here, 20 years). In this effort, we use the best forecast of record for the defendant's future traffic volume and rates. In Major Issues, we proposed to use a hybrid of the RCAF-A and RCAF-U indexes to forecast the base-year variable costs of the defendant carrier into the future.⁵⁰ Though the primary purpose of the hybrid approach was to forecast the operating expenses of the SARR, we proposed to also apply that figure to the defendant's other variable costs in MMM. No one commented on its use in MMM during the rulemaking and it was adopted.

As we apply MMM for the first time, we now believe that use of the hybrid approach would distort the actual distribution of R/VC ratios and the degree of differential pricing the carrier will need in future years. Moreover, the base-year variable costs used in MMM are the defendant's variable costs estimated by URCS, not the variable costs of the SARR. As such, forecasting those variable costs to increase at the same rate as the total operating expenses of the SARR is improper, as we have previously concluded that the productivity of the hypothetical SARR will differ from that of the actual railroad industry. See Major Issues at 43.

In sum, for MMM to correctly calculate the degree of differential pricing needed by the defendant railroad to recover the total SAC costs over the DCF analysis period, we need to properly forecast the defendant carrier's variable costs. To do so accurately, we must use the RCAF-A index, not a combination of the RCAF-A and the RCAF-U index as was proposed in Major Issues. We conclude that this technical change is not sufficiently significant to warrant a new rulemaking, as illustrated by the failure of any party to comment on that aspect of MMM. We will therefore implement this modification to MMM here.

⁵⁰ See Major Issues at 14 n.19. One of the key changes in Major Issues was to resolve a long-standing dispute between carriers and shippers over the productivity of the SARR and the increase of SARR operating expenses over time. Carriers asserted that the SARR would be unable to generate the same productivity gains over the DCF period as predicted for the railroad industry, while shippers asserted that the SARR would. In Major Issues, we adopted a position between these two perspectives. In our view, the SARR would become more productive over time (thanks to the introduction of new technologies and techniques), but because it is designed to be optimally efficient from the moment it begins operation, the ability to generate additional productivity gains would be constrained. We chose to use a hybrid approach which transitioned over a 20-year period from zero productivity growth (using the RCAF-U index) to the full predicted productivity growth of the railroad industry (using the RCAF-A index).

Under MMM, the maximum lawful rate is expressed as an R/VC ratio. Our calculation of the maximum R/VC ratios BNSF may charge the issue movements pursuant to MMM is set forth in **Table 4** below.

Table 4
Maximum R/VC Ratio

Year	Maximum MMM R/VC
4Q 2004	241%
2005	244%
2006	229%
2007	236%
2008	243%
2009	240%
2010	244%
2011	245%
2012	247%
2013	249%
2014	253%
2015	266%
2016	267%
2017	263%
2018	260%
2019	260%
2020	259%
2021	258%
2022	259%
2023	259%
2024	257%

BNSF is ordered to reimburse WFA for amounts previously collected above these prescribed levels, together with interest to be calculated in accordance with 49 CFR 1141. BNSF is also ordered to establish and maintain rates for movements of the issue traffic that do not exceed the maximum reasonable R/VC ratios prescribed in this decision. For purposes of calculating reparations and setting the maximum rate for future movements, the variable cost of the issue movements must be calculated pursuant to unadjusted URCS, with indexing as appropriate. If the parties cannot agree on the amount of reparations due, or if there is a dispute over how to calculate the variable cost of the movements at issue, WFA should bring those disputes to our attention.

This decision will not significantly affect the quality of the human environment or the conservation of energy resources.

It is ordered:

1. BNSF's motion to strike is denied.
2. BNSF's motion to dismiss is denied.
3. BNSF is ordered to pay reparations to WFA in accordance with this decision and to establish and maintain rates for movements of the issue traffic that do not exceed the maximum reasonable revenue-to-variable cost levels prescribed in this decision.
4. This decision is effective on March 20, 2009.

By the Board, Chairman Nottingham, Vice Chairman Mulvey, and Commissioner Buttrey.

Anne K. Quinlan
Acting Secretary

APPENDIX A—TRAFFIC VOLUMES AND REVENUES

This appendix addresses the amount of total traffic (both coal and non-coal) that the revised LRR would transport, and the total revenues that traffic is expected to generate over the 20-year SAC analysis period, i.e., from the 4th quarter of 2004 through the 3rd quarter of 2023.

A. Tonnage

The parties agree on the tonnage that the revised LRR would transport.⁵¹ **Table A-1** sets forth the total-agreed upon tonnage figures of the parties, for both coal and non-coal traffic.

Table A-1
Tonnage Forecasts

Period	Tonnes
2004 (4Q)	15,404,839
2005	63,135,509
2006	64,313,724
2007	64,477,513
2008	64,697,981
2009	67,265,189
2010	67,258,445
2011	67,389,385
2012	67,511,747
2013	67,553,956
2014	67,376,761
2015	66,185,541
2016	66,484,568
2017	67,306,791
2018	67,681,420
2019	67,720,704
2020	67,906,967
2021	68,092,834
2022	68,206,899
2023	68,326,225
2024 (1Q-3Q)	51,350,789

⁵¹ BNSF TS Reply at III.A-14; WFA TS Reb. at III-A-23.

B. Revenue

As discussed in the body of this decision, we use the ATC approach to allocate cross-over revenues. The differences between our findings and those presented by WFA are attributable to the way we calculated densities. Our findings are set forth in **Table A-2**.

Table A-2
Revenue Forecasts
(\$ in millions)

Period	WFA	BNSF	STB
2004 (4Q)	\$58.30	\$42.00	\$57.53
2005	\$236.80	\$175.30	\$233.04
2006	\$250.60	\$185.10	\$246.65
2007	\$259.70	\$194.30	\$255.73
2008	\$262.30	\$196.70	\$258.40
2009	\$274.20	\$205.90	\$270.04
2010	\$277.00	\$208.20	\$272.84
2011	\$281.90	\$211.70	\$277.66
2012	\$287.90	\$216.40	\$283.57
2013	\$294.70	\$221.60	\$290.21
2014	\$299.80	\$225.50	\$295.28
2015	\$299.10	\$225.90	\$294.62
2016	\$307.40	\$231.60	\$302.73
2017	\$319.10	\$240.10	\$314.26
2018	\$330.40	\$248.40	\$325.45
2019	\$339.40	\$254.70	\$334.29
2020	\$348.80	\$261.60	\$343.59
2021	\$359.50	\$269.00	\$354.05
2022	\$368.20	\$275.50	\$362.66
2023	\$378.40	\$282.70	\$372.69
2024 (1Q-3Q)	\$291.90	\$217.50	\$287.48

APPENDIX B—OPERATING EXPENSES

This appendix addresses the annual operating expenses that would be incurred by the revised LRR. The manner in which a railroad operates and the amount of traffic it handles are the major determinants of the expenses a railroad incurs in its day-to-day operations. As discussed in the body of the decision, we use WFA’s proposed operating plan for the revised LRR. Accordingly, except as specifically discussed, we use WFA’s operating assumptions to determine the level of operational resources the revised LRR would need for a given level of traffic. **Table B-1** summarizes the operating cost estimates reflected in the parties’ evidence and the figures used by the Board.

Table B-1
LRR Operating Costs
(\$ millions)

	WFA	BNSF	STB
Train & Engine Personnel	18.6	18.6	18.6
Locomotive Lease	8.1	8.7	8.1
Locomotive Maintenance	7.9	8.4	7.9
Locomotive Operations	29.9	30.3	29.9
Railcar Lease	3.8	4.1	3.8
Materials & Supply Operating	1.1	1.1	1.1
Ad Valorem Tax	2.0	2.0	2.0
Operating Managers	8.8	8.9	8.9
General & Administrative	11.0	11.0	11.0
Loss & Damage	0.03	0.03	0.03
Maintenance-of-Way	15.5	15.9	15.3
Insurance	3.4	3.5	3.4
Startup and Training	7.1	7.1	7.2
TOTAL*	117.2	119.7	117.2

* Totals may differ slightly from the sum of the individual items due to rounding.

A. Locomotives

1. Locomotive Requirements

Locomotive requirements are primarily determined by how the LRR would operate. The parties agree that all coal trains would be operated on the revised LRR system with three SD70MAC locomotive units in a 2/1 distributed power configuration.⁵²

⁵² WFA TS Open. at III-C-6-11; BNSF TS Reply at III.C-11-12.

Both parties also agree on the unit cost of leasing the locomotives, along with the required number of SD40-2 locomotives.⁵³ The parties disagree on the number of road locomotives. The difference in the number of road locomotives stems from the difference in the parties' assessment of transit times.

BNSF asserts that the transit times that WFA assumed for the LRR would be too short because WFA does not account for the additional time and track that BNSF argues would be needed at the interchange point at Northport.⁵⁴ But as discussed in the body of this decision, we use WFA's interchange times at Northport.

Because of the revisions WFA made to its RTC simulation on rebuttal, the LRR's cycle times increased.⁵⁵ Thus, WFA adjusted its locomotive requirements. Because we accept WFA's operating plan, we use WFA's number of locomotives, as adjusted on rebuttal.

Using the modified peak-week operating statistics along with the factors from the Sept. 2007 Decision for spare margin percentage and peaking factor, we compute the following peak-year locomotive requirements:

Table B-2
Total Locomotive Requirements

	WFA	BNSF	STB
Road – SD70MAC	76	81	76
Helper/Switch/Work-SD40-2	8	8	8
TOTAL	84	89	84

2. Locomotive Operating Expense

The parties agree that the locomotive operating expenses for the revised LRR would remain as determined in the Sept. 2007 Decision except for the fuel expense. In WFA's revised SAC presentation, most loaded LRR trains would undergo refueling at Orin Yard - 41.6 miles from the Guernsey Yard where it previously had specified the LRR refueling would be performed. BNSF argues that WFA did not include the added

⁵³ WFA TS Open. at III-C-6-11; WFA TS Reb. at III-C-14-16 and III-D-3; BNSF TS Reply at III.C-11-12.

⁵⁴ BNSF TS Reply at III.C-12, III.C-1-10.

⁵⁵ WFA TS Reb. at III-C-15.

costs that would be associated with transporting the fuel from Guernsey to Orin.⁵⁶ BNSF proposes a transportation additive to account for the change in refueling location.⁵⁷

BNSF's argument for a transportation additive appears to be based on the erroneous assumption that in the Sept. 2007 Decision the Board had used the actual cost of fuel at Guernsey Yard.⁵⁸ Although we referred to it as a "site specific" cost, what we actually used was the weighted average of the fuel costs at seven BNSF fueling locations, including Guernsey, that BNSF had submitted in its June 15, 2006 Reply to the First Compliance Order.⁵⁹ Thus, the adjustment BNSF now proposes would add a transportation additive to a weighted average expense. BNSF has failed to show that the cost of transporting the fuel from Guernsey to Orin is so expensive as to warrant such a modification to an average figure. Therefore, we will continue to use the fuel cost in the Sept. 2007 Decision.

BNSF also asserts that WFA has understated the cost of fueling by truck at Orin Yard because WFA failed to include costs for Direct to Locomotive (DTL) fueling (fueling locomotives by tanker trucks) for certain loaded trains traveling between Orin Yard and Northport. BNSF argues that WFA assumed that the locomotive servicing cost derived from the R-1 Annual Report data included the cost for DTL fueling.⁶⁰ On rebuttal, WFA stated that it accepts additives to fueling costs where trucks would be used but that all loaded trains that would require fueling at Orin would be directed to one of the two tracks that would have fixed fueling facilities.⁶¹ To correct this error in the RTC model, the RTC model was modified so that all loaded trains moving to Northport for interchange with BNSF would be serviced in Orin Yard on tracks with fixed fueling equipment.⁶² WFA's modifications eliminate the need to include DTL fueling costs to the movements at issue.

B. Railcars

1. Railcar Requirements

Both BNSF and WFA acknowledge that the number of railcars that would be needed by the LRR to handle its peak-year traffic is largely a function of the cycle times produced by the RTC simulation.⁶³ WFA's revised RTC simulation produced slightly

⁵⁶ BNSF TS Reply at III.D-2.

⁵⁷ Id.

⁵⁸ Sept. 2007 Decision at 38.

⁵⁹ BNSF Reply Supp. e-WP. "III D Operating Expenses.xls."

⁶⁰ BNSF TS Reply at III.D-2.

⁶¹ WFA TS Reb. at III-D-5.

⁶² WFA TS Reb. at III-D-6.

⁶³ WFA TS Reb. at III-C-15; BNSF TS Reply at III.D-3.

different transit times than BNSF's, and thus, a smaller increase in the LRR's railcar requirements.⁶⁴ WFA's peak-year railcar requirements increased from 557 on opening⁶⁵ to 572 on rebuttal.⁶⁶ Because we use WFA's operating plan, and the number of railcars is a determinant of the operating plan, we use WFA's railcar requirements.

2. Railcar Lease Expense, Maintenance Expense, Private Car Allowance

The LRR would utilize a mixture of LRR-provided cars, foreign cars and private cars. BNSF accepts WFA's methodology for calculating freight car maintenance.⁶⁷ The difference between the parties with respect to railcar lease and maintenance expenses is due to the difference in the number of railcars they assert that the revised LRR would need. Because we use WFA's railcar requirements, we use its railcar lease and maintenance expense figures.

C. Train Crew Personnel

The operating plan is the prime determinant for what would be an adequate number of train and engine (T&E) personnel. Because WFA's operating plan is used here, our SAC analysis is generally based on the number of crew personnel specified by WFA. Both parties use the Sept. 2007 Decision methodology to determine the number of crew, re-crewing, and rescue crews that would be required.

There is no difference in the parties' final estimation of the number of T&E personnel that would be required for normal operations by the revised LRR.⁶⁸ BNSF argued for 14 additional T&E personnel, primarily due to crewing and re-crewing needs at Orin Yard for the Campbell Subdivision traffic.⁶⁹ In its Rebuttal, WFA accepted that number of extra T&E personnel, along with some revisions to its Third Supplemental Opening RTC model simulation.⁷⁰ We use the agreed-upon figures.

D. Non-Train Crew Personnel

WFA reduced the number of non-train crew personnel from what was in the Sept. 2007 Decision because of the smaller traffic group and the reduced volume of traffic that the revised LRR would handle.⁷¹ BNSF accepted WFA's calculations

⁶⁴ WFA TS Reb. at III-C-15-16.

⁶⁵ WFA TS Reb. at III-C-15.

⁶⁶ Id.

⁶⁷ BNSF TS Reply at III.D-3.

⁶⁸ BNSF TS Reply at III.C-15-17, III.D-3; WFA TS Reb. at III-D-7-8.

⁶⁹ BNSF TS Reply at III.C-15-17, III.D-3.

⁷⁰ WFA TS Reb. at III-D-7-8.

⁷¹ WFA TS Open. at III-D-8-9.

concerning non-train operating personnel, except with respect to equipment inspectors and crew callers.⁷²

1. Equipment Inspectors

WFA's opening evidence included 40 positions for equipment inspectors. On rebuttal, WFA agreed with BNSF that it had not provided sufficient employees for the intended continuous round-the-clock (24/7) coverage by the two-person roving inspection crew, thus increasing the total Equipment Inspector employee count from 40 to 42.⁷³

2. Crew Callers

WFA states that it reduced the number of non-train operating personnel to 4 from the 6 used in the Sept. 2007 Decision because of the revised LRR's smaller traffic group and reduced volume of traffic.⁷⁴ BNSF states that standard industry practices for positions that must be staffed 24/7 dictate at least 4.2 persons per position, and that that figure does not allow for missed time due to vacations, illness, training, or other factors. BNSF argues that WFA's operating plan provides for an insufficient number of crew callers to fill these positions 24/7, and BNSF therefore would add 2 crew callers to the operating plan, for a total of 6 crew callers.⁷⁵ On rebuttal, WFA added 1 additional crew caller for a total of 5 crew callers.⁷⁶ Even though we used WFA's Operating Plan, BNSF's number of Crew Callers is more reflective of actual railroad operations. Because the Crew Caller position is required on a 24/7 basis, we agree with BNSF that WFA has not allowed for missed time due to vacations, illness, training or other factors. Thus, we use 6 crew callers, consistent with the Sept. 2007 Decision.

E. General & Administrative Personnel

The parties agree on the number of general & administrative personnel that would be needed for the revised LRR.⁷⁷

F. Wages & Salaries

The parties agree on WFA's proposed compensation rates for operating personnel.⁷⁸

⁷² BNSF TS Reply at III.D-4

⁷³ WFA TS Reb. Narr at III-D-8.

⁷⁴ WFA TS Open. at III-D-8, 10.

⁷⁵ BNSF TS Reply at III-D-4.

⁷⁶ WFA TS Reb. at III-D-8-10.

⁷⁷ WFA TS Open. at III-D-14-15; BNSF Reply at III.D-4.

G. Materials, Supplies, and Equipment

Using the methodology established in the Sept. 2007 Decision, the parties agree that the cost for material, supplies, and equipment for the revised LRR would be \$1,093,355.⁷⁹

H. Start-Up Costs

The parties agree that the LRR would incur costs to recruit and to train other employees. Consistent with Board precedent, we include recruitment and training costs here as an operating expense. BNSF accepts WFA's training and recruiting costs, except for the number of personnel.⁸⁰ BNSF would include an additional crew caller and additional maintenance-of-way personnel.⁸¹ We will apply the methodology and salary figures agreed to by the parties to the number of employees determined by the Board. This includes the start-up costs for two track lubricators not accounted for by either BNSF or WFA.

I. Ad Valorem Tax

The parties agree on the methodology and the estimated ad valorem taxes for the revised LRR.⁸²

J. Loss and Damage

BNSF accepts WFA's methodology for calculating loss and damage expenses but argues that WFA's calculations use incorrect net ton figures.⁸³ WFA contends that BNSF's calculations used the number of net tons the LRR would handle in calendar year 2006, not the number of net tons that it would handle in the base year. WFA further notes that BNSF did not actually use the number shown in its text of its narrative to calculate loss and damage expenses. Rather, it uses a number that was determined by multiplying the 2005 net tons by a hard-coded number that is not sourced or explained.⁸⁴

We use WFA's calculation of loss and damage, including its net tons figure. BNSF has not adequately explained its departure from the procedure used by the Board in the Sept. 2007 Decision.

⁷⁸ WFA TS Open. at III-D-11; BNSF TS Reply at III.D-4.

⁷⁹ WFA TS Open. at III-C-15-16; BNSF TS Reply at III.D-4;

⁸⁰ BNSF TS Reply at III.D-3-4.

⁸¹ Id.

⁸² WFA TS Open. at III-D-27; BNSF TS Reply at III.D-31.

⁸³ BNSF TS Reply at III.D-31.

⁸⁴ WFA TS Reb. at III-D-27-28.

K. Maintenance-of-Way

The parties generally agree on maintenance-of-way (MOW) expenses consistent with the Sept. 2007 Decision, with the exception of certain changes to personnel and equipment costs. We discuss the staffing and equipment issues below.

1. Staffing

The parties agree on MOW staffing with the exception of field personnel. On opening, WFA reduced the number of field MOW personnel from the 97 used in the Sept. 2007 Decision to 92. BNSF, in its reply, argued that 108 field personnel would be necessary.⁸⁵ On rebuttal, WFA increased the number of field workers to 102.⁸⁶ The 6 additional positions that BNSF would include that WFA has not agreed to consist of 3 additional positions in the track department, 2 positions in the communications department, and 1 additional position in the field purchasing department.

a. Track Maintenance

Although BNSF argues for the inclusion of 3 additional track maintenance personnel (a track inspector, a welding crew member, and a machine operator/truck driver), nowhere in its narrative has BNSF provided a reason that not having these additional field personnel would hinder or jeopardize the operation of the revised LRR. Thus, BNSF has failed to support its inclusion of these 3 additional employees.

b. Signals and Communications Maintenance

BNSF would include an additional communications foreman, but it has not explained the need for both a communication supervisor in the signals department and a foreman in the communications department. WFA has shown that there would be adequate supervision of the communications maintainers and that there would be no reason to add the foreman position. WFA also explained that only one radio shop technician would be needed, due to the revised LRR's reduced traffic volume and the corresponding reduced total number of locomotives that would be required for the peak traffic period. We agree with WFA that one radio shop technician would be sufficient.

c. Purchasing and Materials Management

BNSF argues that WFA reduced the purchasing/materials management department by 2 positions. However, WFA combined the crane operator/truck driver positions and, on rebuttal, moved the purchasing manager to the field office. There is no evidence that 2 positions in the purchasing department are not adequate to handle the purchasing function and materials management.

⁸⁵ BNSF TS Reply at III.D-18.

⁸⁶ WFA TS Reb. at III-D-24.

For these reasons, we use WFA's field personnel count of 102 and its overall MOW personnel count of 116.

2. Equipment

Because we do not use BNSF's proposed MOW field personnel count, there is no need for the additional equipment BNSF identified in its reply statement. The equipment identified in the WFA spreadsheet is the same as the quantities used in the Sept. 2007 Decision.⁸⁷ Although WFA's revised presentation includes five more field personnel than the Sept. 2007 Decision, we agree with WFA that the additional equipment identified by BNSF is not needed. That is because the Sept. 2007 Decision included equipment for seven sets of track crew, which would be sufficient to provide for the six sets of track crew in WFA's presentation.

3. Contract Maintenance

The parties agree that some maintenance would be handled by contractors, rather than by the LRR's MOW staff. On reply, BNSF made some changes and recalculations to WFA's proposed costs. WFA accepted BNSF's MOW contract costs.⁸⁸ These revisions are discussed below.

a. Track Geometry Testing

In its reply, BNSF increased the track geometry testing cost by \$857.53 due to the increase in track miles. On rebuttal WFA accepted the increase in cost. We use the revised cost.

b. Brush Cutting/Mowing

WFA agrees that the cost of brush cutting and mowing would increase above the level in the Sept. 2007 Decision due to the increased route miles of the revised LRR. However, WFA slightly understated the cost for this item, because it did not update the miles in its opening workpaper.⁸⁹

c. Communications Inspections/Spot Maintenance

BNSF pointed out in its reply that WFA did not update this item to incorporate the increased communications cost on the reconfigured LRR. BNSF corrected this by calculating 2% of the total communications cost as calculated in WFA's TS Opening

⁸⁷ Compare WFA TSO e-WP. "Spot Maint wfa3rdsup.xls," tab "Equipment" with "STB Spot Maint Rebuttal.xls" sheet "Annual Spot Equip."

⁸⁸ See WFA TS Reb. at III-D-26.

⁸⁹ See WFA TSO, Section III-F-3, e-WP. "WFA THIRD SUPP Track Quantities.xls."

spreadsheet, which would increase the MOW cost for this item by \$57,729.⁹⁰ On rebuttal WFA accepted this cost. We will use the recalculated maintenance cost.

d. Equipment Maintenance

In the technical corrections listed in the Feb. 2008 Decision,⁹¹ we noted that, although we had used BNSF's MOW equipment costs, which included maintenance of equipment, in our summary of MOW costs, we also added WFA's separate maintenance component, resulting in a double count of the equipment maintenance cost. In its TSO spreadsheet, WFA did not make the correction. BNSF therefore removed the \$258,119 for equipment maintenance.⁹² WFA does not dispute this change, and therefore we remove the equipment maintenance cost from the contract costs.

e. Bridge and Culvert Inspection

Although not discussed in their narratives, the parties disagree on the bridge and culvert inspection costs. In its opening, WFA used a 16-day inspection period while BNSF, on reply, used a 43-day inspection period.⁹³ On rebuttal, WFA agreed to accept BNSF's contract work costs, but failed to update this item in its rebuttal spreadsheet. We regard this omission as an oversight, and in view of WFA's stated agreement, we use BNSF's 43-day inspection period.

f. Building Maintenance

In its opening spreadsheet, WFA subtracted the cost of the fueling facilities before applying the 0.5% additive.⁹⁴ In its reply, BNSF recalculated the cost of building maintenance to apply the 0.5% additive without exception.⁹⁵ We apply this figure to our restated building maintenance costs.

The resulting MOW costs we will use are set forth in **Table B-3**.

⁹⁰ See WFA TSO, Section III-F-6, e-WP. "Third Supp Open Laramie River CS Spreadsheet Final.xls."

⁹¹ Feb. 2008 decision at 13.

⁹² See BNSF TS Reply at III.D-28.

⁹³ See WFA TS Reb. e-WP. "Spot Maint WFA Third Supp Rebuttal.xls" sheet "Unit Costs," and BNSF TS Reply "Spot Maint bnsf3rdrep.xls" tab "Unit Costs."

⁹⁴ See WFA TSO e-WP. "Spot Maint wfa3rdsp.xls" sheet "Unit Cost" cell B14.

⁹⁵ See BNSF TS Reply III.D-29.

**Table B-3
MOW Costs**

	WFA	BNSF	STB
Staffing	\$9,825,886	\$10,356,204	\$9,825,886
Equipment	2,521,512	\$2,661,723	2,521,512
Track Geometry Testing	73,903	73,903	73,903
Ultrasonic Rail Testing	160,623	160,623	160,623
Yard Cleaning	27,863	27,863	27,863
Weed Spray - 24'	21,988	21,988	21,988
Weed Spray - 16'	1,883	1,883	1,883
Brush Cutting/Mowing	47,217	47,217	47,217
Equipment Maintenance	258,119	0	0
Comm'n & Maintenance	247,776	247,114	247,776
Bridge & Culvert Inspection	26,359	71,957	71,957
General Building Maintenance	182,777	182,057	182,891
Snow Removal	87,630	87,630	87,630
Misc. Engineering	225,000	225,000	225,000
Storm Debris Removal	25,000	25,000	25,000
Derailments	750,000	750,000	750,000
Washouts	40,000	40,000	40,000
Environmental Mitigation	148,422	148,422	148,422
Noxious Weed Spray	31,067	31,067	31,067
Rail Grinding (crossings)	282,896	282,896	282,896
Rail Grinding (switches)	153,733	153,733	153,733
Coal Clean Up	180,000	180,000	180,000
Stabilization (tunnels)	167,750	167,750	167,750
TOTAL	\$15,478,402	\$15,944,031	\$15,274,998

L. Insurance

The parties agree that the insurance expense would be equal to 3.2 % of the total operating expenses.⁹⁶

⁹⁶ WFA TS Open. at III-D-26; WFA TS Reb. at III-D-28; BNSF TS Reply at III.D-31.

APPENDIX C—LRR ROAD PROPERTY INVESTMENT

This appendix addresses the evidence and arguments of the parties concerning what it would cost to build the LRR. **Table C-1** summarizes the parties' cost estimates associated with that construction, as well as the numbers used in our analysis.

Table C-1
LRR Construction Costs

	WFA	BNSF	STB
Land	\$10,991,147	\$10,993,072	\$10,991,704
Roadbed Preparation	190,490,477	190,854,943	190,490,477
Track	311,458,674	311,458,686	311,458,674
Tunnels	28,661,337	28,661,337	28,661,337
Bridges	46,144,560	60,059,245	46,144,560
Signals & Communications	61,736,005	61,737,413	61,736,005
Buildings & Facilities	36,555,414	36,411,479	36,578,239
Public Improvements	25,002,285	27,131,923	25,002,285
Mobilization	21,001,153	21,570,473	21,001,952
Engineering	70,004,875	71,631,503	70,007,158
Contingencies	79,105,478	80,951,700	79,108,069
TOTAL	\$881,151,405	\$901,461,775	\$881,180,459

A. Land

The only dispute between the parties regarding acreage is the amount of land that would be needed for the LRR's yard. BNSF would increase the Orin Yard acreage by 5.75 acres to account for the land needed to accommodate the buildings, including the site land quantity (a 50-foot buffer from the outermost track to the yard buildings), the building footprint quantity and an access road for vehicular traffic adjacent to the car shops.⁹⁷ The site land quantity is outside the building footprint and used in conjunction with the building; it would be comprised of parking lots, areas for electric and mechanical machinery used by the building, drainage ditches, trash bins, etc.

WFA included a 50-foot buffer around its outermost track within its original acreage to account for site land. When WFA initially determined the land to accommodate the buildings, it counted all of the site land but failed to count the land under the buildings themselves, i.e. their footprints. On rebuttal, WFA agreed that its opening evidence had not accounted for the land needed to accommodate the buildings, and included an additional 4.15 acres to accommodate buildings.⁹⁸ Because WFA included a 50-foot buffer to account for site land, we find no reason to add another buffer.

⁹⁷ BNSF TS Reply at III.F-3-4.

⁹⁸ WFA TS Reb. at III-F-6.

Using WFA's evidence, the footprint and the site land equal 4.61 additional acres, the same amount of acreage that BNSF would include to accommodate building sites. Therefore, we will add 4.61 acres to the Orin Yard site.

WFA included a gravel road from the locomotive shop to the car shop around the outside of the yard, which is included in WFA's land determinations.⁹⁹ Therefore, the inclusion of additional land around the car shop to accommodate vehicle traffic is not needed.

Table C-2
LRR Real Estate Acreage

	WFA	BNSF	STB
ROW	3,527	3,527	3,654
Easements	0	0	0
Yards	97	98	97
Microwave Tower Sites	99	99	99
TOTAL	3,723	3,724	3,850

Table C-3
LRR Real Estate Costs

	WFA	BNSF	STB
ROW (Non-Orin Line)	\$6,001,409	\$6,001,409	\$6,001,409
Orin Line	4,460,927	4,460,927	4,460,927
Easements	-	-	-
Yards and Other Facilities	116,401	118,326	116,958
Microwave Tower Sites	412,410	412,410	412,410
TOTAL	\$10,991,147	\$10,993,072	\$10,991,704

B. Roadbed Preparation

The parties agree on all aspects of the LRR's roadbed preparation costs except with respect to the use of culverts. BNSF objects to WFA's use of culverts at certain locations at the LRR's Orin Yard. BNSF itself does not have a yard at Orin, but it does have a single-track line in the area encompassed by the LRR's Orin Yard with three

⁹⁹ WFA TS Open. at III-F-5.

existing three-span bridges on the line.¹⁰⁰ WFA would have the LRR install 96-inch corrugate metal pipe culverts (CMPs) rather than erect bridges.¹⁰¹

BNSF states that it is not uncommon to convert one-span bridges of less than 20 feet to culverts, but objects to WFA's substituting culverts for bridge spans of 102 feet (BNSF's bridge at MP 125.39), 53 feet (BNSF's bridge at MP 124.75), and 82 feet (BNSF's bridge at MP 124.43).¹⁰² BNSF argues that its bridges cross "drainage," and not "ditches" as WFA asserts,¹⁰³ although, BNSF acknowledges that its discovery documents stated the bridges crossed "ditches."¹⁰⁴ BNSF argues that a complete hydrologic and hydraulic analysis would need to be performed to determine if a conversion to CMP was feasible.¹⁰⁵ As to the bridge at MP 124.43, BNSF argues in its motion to strike that the width of the flow at that point is too wide for a culvert. As for the other two locations, BNSF states that it is currently double tracking the main line through the area of the proposed LRR's Orin Yard and did not replace the bridges with 96-inch CMPs, but constructed the same overall length bridges and span lengths that exist on the main line¹⁰⁶

WFA acknowledges that there might be drainage in the ditches, but it claims that BNSF's engineer incorrectly assumed that the drainage required exceeds what a 96-inch culvert could accommodate.¹⁰⁷ WFA states that BNSF incorrectly marked two drainage areas as those leading to two replaced bridges at issue here – at MP 125.39 and MP 124.75 – when actually the drainage areas lead to an 84-inch culvert at MP 125.39 and a double 72-inch culvert at MP 124.75.¹⁰⁸ These two drainage areas cover 254 acres and 196 acres, respectively.¹⁰⁹ WFA states that drainage areas for the bridges at MP 125.39 and MP 124.75 are 158 acres and 136 acres, respectively.¹¹⁰ Thus, WFA argues, the drainage areas leading to BNSF's bridges at issue here are smaller than those leading to BNSF's existing culverts, and WFA is proposing to have the LRR use culverts that would be larger than BNSF's existing culverts to handle drainage.¹¹¹ As to the culvert that

¹⁰⁰ Id.

¹⁰¹ WFA TS Reb. at III-F-7.

¹⁰² BNSF TS Reply at III.F-8.

¹⁰³ BNSF TS Reply at III.F-9.

¹⁰⁴ Id.

¹⁰⁵ BNSF TS Reply at III.F-10.

¹⁰⁶ Id.

¹⁰⁷ WFA TS Reb. at III-F-7.

¹⁰⁸ WFA TS Reb. at III-F-8.

¹⁰⁹ Id.

¹¹⁰ Id.

¹¹¹ Id.

would be substituted for the third BNSF bridge, WFA notes that its proposed culvert at MP 124.43 would handle a drainage area of 288 acres.¹¹²

We agree with WFA's position that it would be reasonable to use culverts instead of bridges at these three locations. WFA has sufficiently explained that the drainage under those bridges would not exceed the maximum capacity of a 96-inch culvert and that the culverts currently under these bridges are smaller in diameter than those proposed by WFA. We also accept WFA's explanation that the culvert that would substitute for the bridge at MP 124.43 has similar drainage characteristics to an existing nearby box culvert, thus there would be no reason not to use a 96-inch culvert here. Moreover, WFA's culvert locations would be designed to channel and control the water through the use of rip-rap at the out-fall.

BNSF would also add vehicular access to the east end of the Orin Yard by means of a 508-linear foot 14'x14' box culvert at MP 124.66, traversing under 14 yard tracks and replacing a private at-grade crossing.¹¹³ WFA accepts these modifications.¹¹⁴ WFA argues that a series of bridges would not be necessary for yard vehicles, such as inspection vehicles and DTL fueling trucks because WFA included additional space between the tracks for these types of vehicles in the total required culvert length.¹¹⁵ We find that culverts are a reasonable choice to use for the yard vehicles to cross the new yard, and we use WFA's evidence.

BNSF would add a two-track railroad bridge and a two-lane road under the bridge at MP 126.29 to provide access to the locomotive shop area.¹¹⁶

Roadbed preparation costs are summarized in **Table C-4** below.

¹¹² Id.

¹¹³ BNSF TS Reply at III.F-12.

¹¹⁴ WFA TS Reb. at III-F-11.

¹¹⁵ WFA TS Reb. at III-F-10.

¹¹⁶ BNSF TS Reply at III.F-12.

**Table C-4
LRR Roadbed Preparation Cost**

	WFA	BNSF	STB
Clearing & Grubbing	\$308,754	\$308,754	\$308,754
Earthwork	146,815,136	146,815,136	146,815,136
Lateral Drainage	69,735	69,735	69,735
Culverts	15,727,825	16,092,291	15,727,825
Retaining Walls	222,586	222,586	222,586
ROW Retaining Walls	0	0	0
Rip Rap	1,043,869	1,043,869	1,043,869
Relocation and Protecting Utilities	1,814,889	1,814,889	1,814,889
Seeding/Topsoil Placement	2,999,734	2,999,734	2,999,734
Water for Compaction	3,864,385	3,864,385	3,864,385
Road Surfacing	478,799	478,799	478,799
Land for Waste Quantities	160,117	160,117	160,117
Environmental Compliance	2,187,194	2,187,194	2,187,194
Tunnel Daylighting	14,797,452	14,797,452	14,797,452
Waste Excavation	0	0	0
TOTAL	\$190,490,477	\$190,854,943	\$190,490,477

C. Track Construction

The parties agree on the track construction and the track construction costs.¹¹⁷ Those costs are summarized in **Table C-5** below.

¹¹⁷ BNSF TS Reply at III.F-13-19; WFA TS Reb. at III-F-13.

**Table C-5
Track Construction**

	WFA	BNSF	STB
Sub-ballast & Ballast	\$61,301,257	\$61,301,257	\$61,301,257
Geotextile Fabric	222,618	222,618	222,618
Ties	51,982,512	51,982,512	51,982,512
Rail	54,863,119	54,863,119	54,863,119
Other Track Materials	30,446,652	30,446,664	30,446,652
Turnouts	15,286,057	15,286,057	15,286,057
Labor	97,356,460	97,356,460	97,356,460
TOTAL	\$311,458,674	\$311,458,686	\$311,458,674

D. Tunnels

The parties continue to agree on the use of the Board-approved costs for the two tunnels located on the LRR.¹¹⁸

E. Bridges

The parties agree on the unit costs for bridges but, as discussed above, do not agree on the number of bridges. Because we accept WFA's use of culverts at the Orin Yard, we use WFA's bridge count.

F. Signals & Communication

The parties agree on the unit costs applicable to all of the various signals and communication items, with the exception of handheld radios required by the LRR MOW employees.¹¹⁹ BNSF would increase the number of handheld radios by 4.¹²⁰ We use WFA's radio count because we use WFA's staffing levels for MOW staff. WFA's radio count reflects the LRR's staffing levels that were approved in the Sept. 2007 Decision.

¹¹⁸ WFA TS Open. at III-F-22; BSNF TS Reply at III-F-20.

¹¹⁹ WFA TS Reb. at III-F-15.

¹²⁰ BNSF TS Reply at III.F-26.

**Table C-6
Communications and Signal System**

	WFA	BNSF	STB
Centralized Traffic Control	\$49,347,187	\$49,347,187	\$49,347,187
Communications	12,388,818	12,390,226	12,388,818
TOTAL	\$61,736,005	\$61,737,413	\$61,736,005

G. Buildings & Facilities

Due to the LRR's configuration change, WFA modified the quantities of certain facilities, while relying on the unit costs used by the Board in the Sept. 2007 Decision. The major system facilities were moved from Guernsey to Orin. These facilities include: the LRR's headquarters building, the primary crew facilities, a locomotive repair shop, fueling facilities, and a track maintenance base and MOW equipment storage track.

**Table C-7
Buildings & Facilities**

	WFA	BNSF	STB
Fueling Facilities	\$12,842,819	\$12,842,819	\$12,842,819
Waste Water Treatment Plant	1,561,556	1,561,556	1,561,556
Locomotive Repair	8,204,288	8,204,288	8,204,288
Yard Site Cost	7,317,914	7,173,979	7,340,739
Headquarters Building	2,659,352	2,659,352	2,659,352
MOW/Roadway Buildings	3,969,485	3,969,485	3,969,485
TOTAL	36,555,414	36,411,479	36,578,239

1. Headquarters Building

WFA moved the LRR headquarters from Guernsey Yard to Orin Yard. Other than changing its location, WFA did not alter the headquarters building in any way because the general and administrative staffing of the LRR has not been modified. Thus, WFA continued to use the approved cost of \$2,659,352 for the LRR's headquarters building.¹²¹ Accordingly, we continue to use this cost for the headquarters building.

2. Fueling Facilities

In accordance with the LRR's changed configuration, WFA relocated the fueling facilities (including storage tanks and other appurtenances) from the Guernsey Yard to

¹²¹ See Sept. 2007 Decision at 117.

Orin Yard. WFA proposes the same two fueling facilities as those approved in the Sept. 2007 Decision. WFA's main line fueling facility would act as an "express fueling station for eastbound (loaded) coal trains, intended to top off only fuel, lube oil, and radiator water."¹²² The fueling facility inside Orin Yard would perform a greater variety of locomotive maintenance services (the LRR would also utilize some direct-to-locomotive (DTL) fueling). WFA continued to use the approved facility cost of \$12,842,819 for the revised LRR.¹²³ BNSF does not challenge the design of the fueling facilities, nor the cost. Therefore, we will continue to use the fueling facilities cost approved in the Sept. 2007 Decision.

3. Yard Site Costs

a. Access to Orin Yard

In its reply, BNSF proposes to add two public access roads to Orin Yard.¹²⁴ On the west end, BNSF designed a roadway to access the locomotive shop, fueling tracks, and fueling platform. To provide access from Highway 18, BNSF upgraded Route 319 to an 860-foot two-lane roadway and provided a grade separation with a bridge under the two mainline tracks. On the east end, BNSF proposes construction of a 3,250-foot access road just west of the car shop at MP 124.66, with a 102-foot bridge over Shawnee Creek and a 508-foot box culvert at MP 124.66 that would go under 14 track and replace a private crossing. On rebuttal, WFA asserts that there would be no need for two separate access roads to Orin Yard.¹²⁵ WFA accepts the proposal of a grade-access road on the west end, but argues that construction of the second road would be unnecessary.

Upon reviewing the map of Orin Yard, we conclude that WFA's proposed placement of an additional access road at the west end of the Yard would provide sufficient access to the buildings located along the north portion of the yard. Therefore, we do not accept the access road located at the east portion of the yard proposed by BNSF.

b. Access between the Locomotive Shop and Car Shop

WFA provided for a gravel roadway for vehicular access between the area of the locomotive shop and the car shop.¹²⁶ This road would enable vehicles to access the car shop area from the access road at the west end of the yard. Its construction would not require any additional land to be acquired, because WFA included a buffer around the

¹²² See Sept. 2007 Decision at 118.

¹²³ See WFA TS Open. at III-F-32.

¹²⁴ See BNSF TS Reply at III.B-5-7.

¹²⁵ See WFA TS Reb. at III-F-4.

¹²⁶ See WFA TS Reb. at III-C-30.

outside of the yard that allows room to place a gravel road. We accept WFA's proposal and the associated yard site costs.

c. Yard Lighting

WFA applied the methodology and unit costs approved by the Board in the Sept. 2007 Decision for yard lights in Orin Yard.

4. Locomotive Repair Facility

WFA proposed the same basic design and costs for the LRR's revised locomotive shop that was accepted in the Sept. 2007 Decision.¹²⁷ In addition to the change in location, WFA made several modifications to account for the reduction in the LRR's peak-period locomotive count. WFA determined that the revised LRR would require 38 fewer road locomotives than the original LRR. Accordingly, WFA reduced the capacity of the locomotive shop by one track to reflect the reduced locomotive maintenance that would be needed. BNSF does not challenge the modifications to the locomotive shop at Orin Yard. Therefore, we use WFA's design and cost for the locomotive shop.

5. Car Repair Shop

In the Sept. 2007 Decision the Board approved of the parties' agreement that the LRR does not need a car maintenance facility.¹²⁸ Therefore, WFA did not provide one for the revised LRR. However, WFA, as in its earlier evidentiary submissions, provided the necessary space and tracks for such a facility in the Orin Yard.

6. Crew Change Facilities, Roadway Buildings, and Yard Offices

WFA proposed two crew change facilities (a large facility at Orin and a smaller facility at Northport), six roadway maintenance buildings, and one yard office. WFA used the costs approved in the Sept. 2007 Decision and adjusted the quantities to reflect the changes in the revised LRR.

7. Wastewater Treatment

WFA states that the revised LRR would use the same 30,000 gallon-per-day wastewater treatment plant that the Board accepted for the Guernsey Yard in the Sept. 2007 Decision. Due to the configuration change, the wastewater treatment facility would be located at Orin Yard. WFA continues to use the Board-approved costs for this facility.

The parties also agree that a 400 gallon-per-day wastewater treatment plant should be placed at each MOW facility. The revised LRR would have six roadway

¹²⁷ See WFA TS Open. at III-F-32.

¹²⁸ See Sept. 2007 Decision at 126.

maintenance buildings, including one at Orin that would be served by the 30,000 gallon-per-day facility located at Orin Yard. WFA included five 400 gallon-per-day wastewater treatment plants, using the Sept. 2007 Decision costs for these facilities.

H. Public Improvements

The parties agree on public improvement costs, with the exception of at-grade crossings costs for crossings that would require inspection vehicle access. In its opening, WFA omitted crossing materials at the ends of the Orin Yard tracks, which would be needed for inspection vehicle access to the different inspection roads running parallel to and between the yard tracks.¹²⁹ BNSF added these materials¹³⁰ but, according to WFA, understated the required number of crossings as eight because it assumed there would be four access roads. According to WFA, there would be six access roads, so 12 crossings would be required - one at each end of the yard.¹³¹ WFA also added five crossings to accommodate the gravel road running from the locomotive shop to the car shop.¹³² Because we use WFA's configuration, we use its investment costs for the at-grade crossings that would require inspection vehicle access.

Table C-8
Public Improvements

	WFA	BNSF	STB
Fencing	\$7,552,157	\$7,552,157	\$7,552,157
Roadway Signs	138,150	136,947	138,150
At-Grade Crossings	3,802,933	3,697,944	3,802,933
Crossings Protection	20,202	20,202	20,202
Grade Separation	13,488,842	15,724,672	13,488,842
TOTAL	\$25,002,285	\$27,131,923	\$25,002,285

I. Mobilization

Mobilization involves the marshalling and movement of people, equipment, and supplies to the various construction sites and other pre-construction coordination and activities. The parties agree upon a 3.5% mobilization cost, covering initial mobilization,

¹²⁹ WFA TS Reb. at III-F-11.

¹³⁰ BNSF TS Reply at III.F-28.

¹³¹ WFA TS Reb. at III-F-11.

¹³² WFA TS Reb. at III-F-11; TS Reb. e-WP. "WFA THIRD SUPP REB Building Site Development Costs.xls."

demobilization, and performance bonds, and they agree that this factor should not be applied where mobilization costs are already accounted for in the contractors' bid.¹³³

J. Engineering

The parties agree on the Board-approved 10% additive for engineering, excluding land acquisition and mobilization costs.¹³⁴

K. Contingencies

The parties agree to use the Board-approved 10% additive for contingencies, excluding land costs.¹³⁵

¹³³ BNSF TS Reply at III.F-30; WFA TS Reb. at III-F-17.

¹³⁴ BNSF TS Reply at III.F-31; WFA TS Reb. at III-F- 18.

¹³⁵ Id.