PUBLIC VERSION

BEFORE THE
SURFACE TRANSPORTATION BOARD

SUNBELT CHLOR ALKALI PARTNERSHIP Complainant, v. NORFOLK SOUTHERN RAILWAY COMPANY Defendant.	)	Docket No. NOR 42130

REPLY EVIDENCE OF NORFOLK SOUTHERN RAILWAY COMPANY

NARRATIVE SECTIONS I THROUGH III-D

(Volume 1 of 3)

John M. Scheib
David L. Coleman
Christine I. Friedman
Norfolk Southern Corporation
Three Commercial Place
Norfolk, VA 23510

G. Paul Moates
Paul A. Hemmersbaugh
Terence M. Hynes
Matthew J. Warren
Hanna M. Chouest
Marc A. Korman
Sidley Austin LLP
1501 K Street, N.W.
Washington, D.C. 20005
(202) 736-8000
(202) 736-8711 (fax)

Counsel to Norfolk Southern Railway Company

Dated: January 7, 2013

Filing Contains Color Images

SHORT FORMS FOR FREQUENTLY CITED CASES

The following short form case citations are used herein:

AEPCO 2001	*Arizona Electric Power Cooperative, Inc. v. Burlington Northern & Santa Fe Railroad Co. & Union Pacific Railroad Co.*, STB Docket No. 42058 (served Dec. 31, 2001)
AEPCO 2002	*Arizona Electric Power Cooperative, Inc. v. Burlington Northern & Santa Fe Railroad Co. & Union Pacific Railroad Co.*, 6 S.T.B. 322 (2002).
AEPCO 2005	*Arizona Electric Power Cooperative, Inc. v. Burlington Northern & Santa Fe Railroad Co. & Union Pacific Railroad Co.*, STB Docket No. 42058, (served Mar. 15, 2005)
AEPCO 2011	*Arizona Electric Power Cooperative, Inc. v. Burlington Northern & Santa Fe Railroad Co. & Union Pacific Railroad Co.*, STB Docket No. 42113, (served Nov. 16, 2011)
AEP Texas	*AEP Texas North Co. v. BNSF Railway Co.*, STB Docket No. 41191, (Sub-No. 1) (served Sept. 10, 2007)
CP&L	*Carolina Power & Light Co. v. Norfolk Southern Railway Co.*, 7 S.T.B. 235 (2003)
Duke/CSXT	*Duke Energy Corp. v. CSX Transportation, Inc.*, 7 S.T.B. 402 (2004)
Duke/NS	*Duke Energy Corp. v. Norfolk Southern Railway Co.*, 7 S.T.B. 89 (2003)
Duke/NS Reconsideration	*Duke Energy Corp. v. Norfolk Southern Railway Co.*, 7 S.T.B. 862 (2004)
FMC	*FMC Wyoming Corp. v. Union Pacific Railroad Co.*, 4 S.T.B. 699 (2000)
IPA	*Intermountain Power Agency v. Union Pac. R.R. Co.*, STB Docket No. 42127 (served April 2, 2012).
M&G	*M&G Polymers USA, LLC v. CSX Transportation, Inc.*, STB Docket No. 42123 (served Sept. 27, 2012)
Major Issues	*Major Issues in Rail Rate Cases*, STB Ex Parte No. 657 (Sub-No. 1) (served Oct. 30, 2006), *aff'd sub nom. BNSF v. STB*, 526 F.3d 770 (D.C. Cir. 2008)

McCarty Farms	*McCarty Farms, Inc. v. Burlington Northern, Inc.*, 2 S.T.B. 460 (1997)
Otter Tail	*Otter Tail Power Co. v. BNSF Railway Co.*, STB Docket No. 42071 (served Jan. 27, 2006)
PPL Montana	*PPL Montana v. BNSF Railway Co.*, 6 S.T.B. 286 (2002)
Rate Regulation Reforms	*Rate Regulation Reforms*, STB Ex Parte No. 715 (served July 25, 2012)
SAC Procedures	*General Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases*, 5 S.T.B. 441 (2001)
TMPA I	*Texas Municipal Power Agency v. Burlington Northern & Santa Fe Railway Co.*, 6 S.T.B. 573 (2003)
TMPA II	*Texas Municipal Power Agency v. Burlington Northern & Santa Fe Railway Co.*, 7 S.T.B. 803 (2004)
West Texas	*West Texas Util. Co. v. Burlington Northern Railroad Co.*, 1 S.T.B. 638 (1996).
WFA I	*Western Fuels Ass'n & Basin Elec. Power Cooperative v. BNSF Railway Co.*, STB Docket No. 42088 (served Sept. 10, 2007)
WFA II	*Western Fuels Ass'n, Inc. v. BNSF Railway*, STB Docket No. 42088 (served Feb. 17, 2009)
WP&L	*Wisconsin Power & Light v. Union Pac. R.R. Co.*, 5 S.T.B. 955 (2001)
Xcel	*Public Service Co. of Colorado d/b/a Xcel Energy v. Burlington Northern & Santa Fe Railway Co.*, 7 S.T.B. 589 (2004)

ACRONYMS

AAR	Association of American Railroads
ABC	Algorithmic Blocking and Classification
AEI	Automatic Equipment Identification
AEO	Annual Energy Outlook
AFE	Authorizations for Expenditure
APA	Administrative Procedure Act
AREMA	American Railway Engineering and Maintenance-of-Way Association
ARIL	Arrival at Intransit Location
ATC	Average Total Cost
B&B	Bridge & Building
BCFD	Billion Cubic Feet per Day
BCY	Bank Cubic Yard
BMP	Best Management Practices
BNSF	Burlington Northern Santa Fe Railway Company
BRC	Belt Railway of Chicago
C&S	Communications and Signals
CAGR	Compound Annual Growth Rate
CAPP	Central Appalachian
CBG	Coal Business Group
CDL	Commercial Driver's License
CFS	Commodity Flow Survey
CMA	Chemical Manufacturers Association
CMP	Aluminized Corrugated Metal Pipe

CRE	Counselors of Real Estate
CSAPR	Cross-State Air Pollution Rule
CSXT	CSX Transportation, Inc.
CTC	Centralized Traffic Control
CWA	Clean Water Act
CWR	Continuous Welded Rail
DCF	Discounted Cash Flow
DFLC	Departed From Location
DME	Dimethyl Ether
DMF	Dimethyl Formamide
DMI	Digital Mapping Index
DOT	Department of Transportation
DP	Distributed Power
EAP	Employee Assistance Program
ECY	Embankment Cubic Yard
EIA	Energy Information Administration
EJ&E	Elgin Joliet & Eastern Railway
EMT	Elizabeth Marine Terminal
ENS	Emergency Notification Signs
EOS	End of Siding
EPA	Environmental Protection Agency
ERP	Enterprise Resource Planning
EVA	Energy Ventures Analysis, Inc.
FAS	Financial Accounting Standards
FASB	Federal Accounting Standards Board

FED	Failed Equipment Detector
FELA	Federal Employers Liability Act
FMLA	Family and Medical Leave Act
FRA	Federal Railroad Administration
FRICS	Fellow of the Royal Institute of Chartered Surveyors
FSC	Fuel Surcharges
G&A	General & Administrative
GAO	Government Accountability Office
GDP	Gross Domestic Product
GVW	Gross Vehicle Weight
G&W	Genesee and Wyoming Railroad
HM-1	United States Hazardous Materials Instructions for Rail
HTUA	High Threat Urban Area
ICC	Interstate Commerce Commission
ICHD	Interchange Delivery
IHB	Indiana Harbor Belt Railway
IPO	Initial Public Offering
ISA	Intercarrier Service Agreement
ITMS	Integrated Transportation Management System
KCS	Kansas City Southern Railway
LARS	Locomotive Assignment and Routing System
LCY	Loose Cubic Yard
LNW	Louisiana and North West Railroad
LUM	Locomotive Unit Mile
MACRS	Modified Accelerated Cost Recovery System

MAI	Member of the Appraiser Institute
MATS	Mercury and Air Toxics Standards
MGT	Million Gross Ton
MM&A	Montreal, Maine, and Atlantic Railroad
MMBtu	million British Thermal Units
MMM	Maximum Markup Methodology
MOW	Maintenance-of-Way
MRE	Market Research and Economics Group
MRL	Montana Rail Link
MSE	Mississippi Export Railroad
MSP	Modified Straight-Mileage Prorate
N&W	Norfolk and Western
NAPP	Northern Appalachian
NARS	Non-accident Releases
NERC	North American Electric Reliability Corporation
NMC	Natural Moisture Content
NPRM	Notice of Proposed Rule Making
NRCS	Natural Resource Conservation Service
NROI	Net Railway Operating Income
NS	Norfolk Southern Railway Company
NYMEX	New York Mercantile Exchange
O/D	Origin/Destination
OMC	Optimum Moisture Content
PACT	Placed at Customer Facility
PFPS	Pulled from Patron Siding

PHMSA	Pipeline and Hazardous Safety Administration
PIH	Poisonous-by-Inhalation
PRB	Powder River Basin
PTC	Positive Train Control
PTRA	Port Terminal Railroad Association
P&W	Providence and Worcester Railroad
R/VC	Revenue to Variable Cost
RBMN	Reading Blue Mountain and Northern Railroad Company
RCAF	Rail Coal Adjustment Factor
RCP	Reinforced Concrete Pipe
RCRA	Resource Conservation and Recovery Act
RMS	Risk Management Solutions, Inc.
ROW	Right-of-Way
RPMS	Real Property Management System
RSAM	Revenue Shortfall Allocation Method
RSC	Rail Security Coordinator
RTA	Railroad Tie Association
RTC	Rail Traffic Controller
SAC	Stand-Alone Cost
SARR	Stand-Alone Railroad
SBRR	SunBelt Railroad
SCAN	Soil Climate Analyst Network
SCTG	Standard Classification of Transportation Goods
SFAS	Statement of Financial Accounting Standards
SIP	State Implementation Plans

SPLC	Standard Point Location Code
SSA	Shared Asset Area
SSI	Sensitive Security Information
STB	Surface Transportation Board
STCC	Standard Transportation Commodity Code
SWPPP	Stormwater Pollution Prevention Plan
T&E	Train & Engine
TBT	Thoroughbred Bulk Terminal
TCS	Triple Crown Services
TDIS	Thoroughbred Direct Intermodal Services
TIH	Toxic-by-Inhalation
TKMV	Track Move/Inventory Move
TMS	Transportation Management Services
TRANSCAER	Transportation Community Awareness and Emergency Response
TRRA	Terminal Railroad Association of St. Louis
TSA	Transportation Security Administration
TYES	Thoroughbred Yard Enterprise System
USDOT	U.S. Department of Transportation
USPAP	Uniform Standards of Professional Appraisal Practice
W&LE	Wheeling and Lake Erie Railway
WQMP	Water Quality Management Plan
WSS	Web Soil Survey
WTI	West Texas Intermediate

Table of Contents

Page

I. COUNSEL'S ARGUMENT AND SUMMARY OF EVIDENCE I-1

A. The Board Should Dismiss This Case For Several Independent Reasons. I-3

1. NS's Reply Evidence Demonstrates that the Properly Calculated and Attributable Costs to Construct, Operate and Maintain the SBRR Exceed Its Properly Calculated and Attributable Revenues. I-4

2. The SunBelt Railroad Relies on an Impermissible Cross-Subsidy Between the New Orleans-Birmingham Line and the Burstall-McIntosh Line. I-6

3. SunBelt's Failure to Provide Complete Train Service for 91% of the Issue Traffic Is A Failure of Proof That Requires Dismissal I-9

4. SunBelt Relied on Overhead Cross-Over Traffic That Would Be Disallowed By the Board's Proposals in Ex Parte 715 ..... I-12

B. The Board Should Recognize the Unique Costs and Risks of Transporting Chlorine, and Take Them Into Account Fully in its Rate Reasonableness Analyses. I-15

1. Chlorine Is Inherently Dangerous. I-16

2. All Railroads, Including the SBRR, Face Risks Inherent in the Transportation of Chlorine I-19

3. Public Policy Demands that the Board Account for the Inherent Risk of Transporting Chlorine in This Rate Case. I-22

4. NS Incurs the Externalities of Regulatory Policy, and Therefore the SAC Analysis Outcome and the Maximum Regulatory Rate Must Also Reflect that the Railroad Bears the Externalities. I-25

C. SUMMARY OF NS'S REPLY EVIDENCE I-29

II. MARKET DOMINANCE I-29

A. Quantitative Market Dominance I-29
B. Qualitative Market Dominance I-29

III. STAND ALONE COST I-30

A. Traffic Group I-30
B. Stand Alone Railroad System I-40

C. Operating Plan I-44
D. Operating Expenses I-50
E. Non-Road Property Investment I-55
F. Road Property Investment I-55
G. Discounted Cash Flow Analysis I-61
H. Results of SAC Analysis I-62
H.1 The Costs Of TIH Traffic Must Be Properly Allocated To That Traffic In The Event That The Board Performs An MMM Analysis. I-62

D. CONCLUSION I-69

II. MARKET DOMINANCE II-1

A. QUANTITATIVE EVIDENCE II-1
B. QUALITATIVE EVIDENCE II-3

III. STAND ALONE COST III-A-1

A. TRAFFIC GROUP III-A-1

1. Stand-Alone Railroad Traffic. III-A-1

2. Volumes (Historical and Projected). III-A-3

a. Historical III-A-3
b. Projected Volumes III-A-4

i. 2012 Through 2016 ..... III-A-4
ii. 2017-2021 SBRR volumes III-A-6

(a) Non-Coal Traffic Volumes 2017-2021 ..... III-A-8
(b) Coal Traffic Volumes 2017-2021 ..... III-A-8

3. Revenues (Historical and Projected) III-A-9

a. Single-Line III-A-9

i. Historical Revenues for Intermodal Traffic III-A-9

(a) Because Sunbelt Did Not Account For The Costs Of Services Provided By TDIS Other Than NS Rail Linehaul, It May Not Claim Revenues Generated By Those Other Services. III-A-10

ii. Projected Revenues III-A-12

(a) Sunbelt Mis-Calculated Intermodal Revenue Growth From 2011 To 2012. ..... III-A-12

(b) SunBelt Overstated Projected Net Fuel Surcharge Revenues. III-A-14

b. Divisions—Existing Interchanges. III-A-19

i. Handling Carrier Payments. III-A-19
ii. Switching Carrier Payments. III-A-21

c. Divisions—Cross-Over Traffic. III-A-23

i. The Board Should Apply The ATC Rule Because At All Times Relevant To This Case, ATC Has Been The Only Legally Valid Rule And Methodology Governing Cross-Over Traffic Revenue Allocation. III-A-27

(a) Original ATC Was Adopted In Notice-And-Comment Rulemaking And Affirmed On Appeal And Is The Only Cross-Over Traffic Rule Applicable To This Case. III-A-28

(b) As A Matter Of Administrative Law, The Board Must Apply The ATC Rule In All SAC Cases Unless And Until It Has Completed A Full Notice-And-Comment Rulemaking That Adopts A Different Rule. III-A-31

(c) Application of ATC To Low R/VC Movements Is Not "Illogical," And The Concern That Led The Board To Modify The ATC Rule Is Not Present Here. III-A-32

ii. The Board Must Address In This Case The Complainant's Excessive Use Of Distorting Cross-Over Traffic. III-A-35

(a) The SBRR Includes Extensive Amounts Of The Very Carload And Multi-Carload Cross-Over Traffic That Concerns The Board. III-A-36

(b) Placing Limits on Cross-Over Traffic In This Case Would Substantially Reduce SBRR Traffic Volumes and Revenues. III-A-40

(c) Sunbelt Would Not Be Prejudiced By A Limitation On SBRR Cross-Over Traffic. III-A-41

iii. Application Of New Rules Adopted In Ex Parte 715 To This Case Would Be Appropriate, And Would Not Constitute "Retroactive Rulemaking." III-A-43

(a) Application Of New Cross-Over Revenue Allocation Rule To This Case. III-A-45

(b) New Cross-Over Traffic Limits Should Be Applied In This Case. III-A-48

iv. Other Corrections To Cross-Over Revenue Allocation Calculations Are Necessary. III-A-55

B. STAND-ALONE RAILROAD SYSTEM III-B-1

1. Routes and Mileage III-B-1

a. Main Line III-B-1
b. Branch Lines III-B-2
c. Interchange Points III-B-2
d. Total Route Mileage III-B-3

2. Track Miles and Weight of Track III-B-3

a. Main Lines III-B-5
b. Branch Lines. III-B-6
c. Sidings III-B-6
d. Other Tracks III-B-6

3. Yards III-B-7

a. Miles and Weight of Yard Track III-B-8

4. Other III-B-9

a. Joint Facilities III-B-9
b. Intermodal Facilities III-B-9
c. Automotive Facilities III-B-9
d. Signal/Communications System III-B-10
e. Turnouts, FEDs and AEI Scanners III-B-11
f. RTC Model Simulation of SBRR Configuration III-B-12

C. OPERATING PLAN III-C-1

INTRODUCTION III-C-1

A. SunBelt Did Not Present A Feasible Operating Plan For Its SARR III-C-12

1. SunBelt's "Automated" Operating Plan Methodologies Are Fatally Flawed And Should Be Rejected. III-C-12

a. SunBelt's "Automated" Train Service Plan Failed To Capture Hundreds Of Trains That Are Necessary To Provide Complete On-SARR Service. III-C-13

b. SunBelt Had All The Data Necessary To Develop The Detailed Operating Plan Required By The Board's Regulations. III-C-19

c. SunBelt's Yard Service Plan Is Based Upon Unsupported Mathematical Calculations That Produce Absurd Results III-C-30

d. SunBelt's Operating Plan Is Woefully Short of Yard Crews And Locomotives III-C-37

2. SunBelt Has Failed To Present A Feasible Operating Plan For General Freight Traffic III-C-41

3. SunBelt Has Not Presented A Feasible Operating Plan For the Issue Traffic III-C-52

4. SunBelt's Operating Plan Fails To Account For The SBRR's Reciprocal Obligations To Connecting Carriers. III-C-60

a. SunBelt's Operating Plan Makes No Provision For Pre-Blocking Cars Interchanged By The SBRR To Connecting Carriers III-C-64

b. SunBelt Improperly Assumes That Locomotives Will Run Through On All Trains Interchanged By SBRR With Other Railroads. III-C-67

c. SunBelt's Allocation Of Responsibility For Fueling Locomotives Is Inconsistent With Both NS's Intercarrier Agreements And Real World Operating Practices..... III-C-69

d. SunBelt Makes No Provision For Running Repairs To Foreign Railcars On The SBRR Network..... III-C-73

5. SunBelt's Operating Plan Does Not Comply With Regulations And Best Practices Relating To The Transportation Of TIH Shipments. III-C-77

a. SunBelt's Operating Plan Does Not Track TIH Traffic..... III-C-79

b. SunBelt's Assumed Train Speeds Exceed Those Allowed For Trains Carrying TIH Traffic. III-C-81

c. SunBelt's Operating Plan Fails To Provide The Personnel That The SBRR Would Need To Handle TIH Commodities Safely. III-C-83

B. SunBelt's RTC Model Simulation Is Meaningless..... III-C-89

1. SunBelt's RTC Simulation Is Based Upon A Fatally Deficient Train Service Plan..... III-C-90

2. SunBelt's RTC Model Contains Incorrect Grade Information. III-C-104

3. SunBelt's RTC Model Does Not Properly Account For Random Outages And Train Delays..... III-C-106

4. SunBelt Failed To Input Foreign Railroad Crossings And Road Crossings Into Its RTC Model..... III-C-112

5. SunBelt's RTC Simulation Fails To Give Effect To The Impact Of Hi-Rail Vehicles..... III-C-114

1. General Parameters and Methodology..... III-C-118

a. SBRR Car Blocking and Train Service Plan III-C-121

i. Carload Traffic III-C-121
ii. Intermodal Traffic III-C-131
iii. Unit Train Traffic III-C-132

b. Development of SBRR Yard Facilities III-C-133

i. Birmingham Hump Yard III-C-139
ii. Flat Switching Yards III-C-143
iii. Track Allocation For Ancillary Functions III-C-145

c. Traffic Flow and Interchange Points III-C-146
d. Joint Use and Interchange Agreements III-C-148
e. Track and Yard Facilities III-C-149

i. Main Line Track III-C-149
ii. Side Tracks and Spurs III-C-149
iii. Yards III-C-150
iv. Intermodal Facilities III-C-154
v. Automotive Facilities III-C-155

f. Crew-Change Location/Times III-C-156

i. Road Crews III-C-156

g. Switching and Yard Activity III-C-157

i. Locomotive inspections and fueling III-C-157
ii. Railcar inspections III-C-158

(a) Inspection procedures III-C-158

(b) Trains requiring inspection III-C-161

h. Trains and Equipment III-C-163

i. Train Sizes III-C-163
ii. Locomotives III-C-163

(a) Road Locomotives III-C-164

(b) Helper Locomotives III-C-169

(c) Switch/Work Train Locomotives III-C-169

iii. Railcars III-C-172

i. Crew Districts and Crew Requirements III-C-173

i. Road Crews III-C-173
ii. Yard Crews III-C-175

2. Other III-C-178

a. Car Repair Facilities III-C-178
b. Train Control and Communication III-C-179

3. NS's RTC Model Simulation III-C-180

a. Train Size and Weight III-C-181
b. Maximum Train Speeds III-C-182
c. Road Locomotive Consists III-C-182
d. Dwell Times at Origins and Destinations III-C-183

i. General Freight Traffic III-C-183
ii. Unit Train Coal Traffic III-C-186

e. Dwell Times at Yards III-C-187
f. Time Required to Interchange Trains With Other Railroads. III-C-188
g. Crew Change Locations/Times III-C-188
h. Track Inspections/Maintenance Windows III-C-188
i. Time for Random Failures/Line Outages III-C-189

D. OPERATING EXPENSES III-D-1

1. Locomotives III-D-6

a. Locomotive Acquisition III-D-7

i. SunBelt Understates the Number of Locomotives III-D-7
ii. SunBelt Understates the Locomotive Lease Cost III-D-15

b. Locomotive Maintenance III-D-19
c. Locomotive Servicing (Fuel, Sand, and Lubrication) III-D-20

i. Fuel Cost III-D-20
ii. Fuel Consumption III-D-20
iii. Locomotive Servicing III-D-23

2. Railcars III-D-23

a. Acquisition III-D-23

b. Maintenance III-D-28
c. Private Car Allowances III-D-29

3. Operating Personnel III-D-29

a. Train/Switch Crew Personnel III-D-29

i. Compensation III-D-36
ii. Fringe Benefits III-D-38
iii. Taxi and Hotel Expense III-D-41

b. Non-Train Operating Personnel III-D-42
c. General and Administrative III-D-42

i. SunBelt's Justifications For Its Extraordinarily Low G&A Staffing and Spending Levels Are Meritless. III-D-48

(a) SunBelt's Evidence is Not "Consistent With" G&A Levels Approved in Previous SAC Cases. III-D-48

(b) SunBelt's Other Claimed Reasons For the SBRR's Low G&A Spending and Staffing Are Not Credible. III-D-50

(i) The SBRR's IT Systems Are Unexceptional and Do Not Offer Substantial Savings. III-D-51

(ii) The SBRR's Reliance on Outsourcing. III-D-55

(iii) The SBRR's Reliance on Cross-Over Traffic Does Not Justify Inadequate G&A Spending III-D-57

(iv) SBRR's Use of Non-Union Personnel Has a Minimal Impact on G&A Spending. III-D-58

(v) Being a Privately Held Company Has A Minor Impact on G&A Needs III-D-59

ii. Staffing Requirements III-D-60

(a) Executive Department III-D-64
(b) Board of Directors III-D-66

(c) Marketing & Sales Department III-D-68
(d) Finance and Accounting Department..... III-D-72

(i) Vice President and Chief Financial Officer. III-D-74
(ii) Treasury. III-D-75
(iii) Audit. III-D-77
(iv) Revenue Accounting. III-D-79
(v) Disbursements. III-D-83
(vi) Tax. III-D-85
(vii) Financial Reporting. III-D-86
(viii) Purchasing. III-D-88

(e) Administration Department III-D-90

(i) Law. III-D-90
(ii) Casualty Claims. III-D-92
(iii) Human Resources. III-D-93
(iv) IT III-D-98
(v) Asset Protection. III-D-100

(1) Environmental Staffing III-D-100
(2) Police III-D-108

(vi) Real Estate. III-D-113

iii. Compensation III-D-114

(a) Salaries for Non-Executives III-D-114
(b) Executive Compensation III-D-114
(c) Outside Director Compensation III-D-118
(d) Fringe Benefits III-D-118

iv. Materials, Supplies and Equipment III-D-118
v. Other III-D-119

(a) IT III-D-119
(b) Other Outsourced Functions III-D-121

(i) Tax Preparation. III-D-122
(ii) Payroll Processing. III-D-122
(iii) Audit and Internal Review. III-D-122
(iv) Claims Handling. III-D-123
(v) Outside Counsel. III-D-123

(c) Start-up and Training Costs III-D-124

(i) Training III-D-124
(ii) Recruitment III-D-125

(d) Travel III-D-127
(e) Bad Debt III-D-129

vi. Benchmarking to Other Railroads Shows that NS's Proposed G&A Staffing Would Make the SBRR A Best-in-Class Efficient Railroad III-D-130

4. Maintenance-of-Way III-D-135

a. SBRR Operating Staff III-D-140
b. General Office Organization III-D-142
c. Track Department III-D-146

i. General Office Staff III-D-148
ii. Field Staff III-D-148

(a) Roadmasters and Assistant Roadmasters III-D-148
(b) Track Crews III-D-150
(c) Roadway Machine Operators III-D-154
(d) Welder/Helper/Grinders III-D-156
(e) Rail Lubricator Repairmen III-D-157
(f) Roadway Equipment Mechanics III-D-158
(g) Ditching Crews III-D-158
(h) Smoothing Crews III-D-161

d. Signals and Communications III-D-162

i. General Office Staff III-D-165
ii. Field Staff III-D-167
iii. Signal Maintainers, Inspectors and Technicians III-D-167
iv. Norris Hump Yard III-D-171
v. Dispatch Center III-D-172
vi. Communications Technicians III-D-173

e. Bridge & Building Department III-D-173

i. General Office Staff III-D-175
ii. Field Staff III-D-175

(a) B&B Supervisors III-D-175
(b) Bridge Inspectors and Other Field B&B Employees III-D-175

f. Misc. Administrative/Support Personnel III-D-177

i. Engineer of Programs and Contracts III-D-178
ii. Public Project Engineers III-D-179
iii. Manager of Administration & Budgets III-D-180
iv. Managers Environmental/Safety/Training III-D-180
v. Manager Mechanical Operations III-D-181
vi. Water Plant and Fuel Technicians III-D-181
vii. Allocation of MOW Personnel to Operations and Maintenance Expense III-D-182

g. Non-Program MOW Work Performed by Contractors III-D-183
h. Planned Contract Maintenance III-D-184

i. Track Geometry Testing III-D-184
ii. Ultrasonic Rail Testing III-D-185
iii. Rail Grinding III-D-186
iv. Yard Cleaning III-D-187
v. Vegetation Control III-D-189
vi. Crossing Repaving III-D-190
vii. Shoulder Ballast Cleaning III-D-190
viii. Equipment Maintenance III-D-192
ix. Communications System Inspection and Repair III-D-193
x. Bridge Inspections III-D-193
xi. Building Maintenance III-D-193

i. Unplanned Contracted Maintenance III-D-193

i. Snow Removal III-D-193
ii. Storm Debris Removal III-D-193
iii. Building Repairs III-D-194

j. Large Magnitude Unplanned Maintenance III-D-194

i. Derailments III-D-194
ii. Washouts III-D-196
iii. Environmental Cleanups III-D-197

k. Program Maintenance III-D-197

i. Rail Grinding III-D-198
ii. Bridge Substructure and Superstructure Repair III-D-198

l. Vehicles and Equipment III-D-198

i. Vehicle Inventory III-D-198
ii. Equipment and Vehicle Monthly Rental Rates III-D-201

5. Leased Facilities III-D-204

6. Loss and Damage III-D-204

7. Insurance III-D-204

8. Ad Valorem Tax III-D-210

a. Unit Valuation Is the Basis for Ad Valorem Taxation In Each of the SBRR States III-D-212
b. Railroad Income Value Is the Primary Factor Considered By the SBRR Unit Value States III-D-215
c. A NROI Adjustment Should Be Made to Account for the SBRR's Relative Income Value III-D-217

9. Other III-D-219

a. Intermodal Lift and Ramp Cost III-D-219
b. Automotive Handling Cost III-D-220
c. Costs Incurred By Residual NS For New SBRR-NS Interchanges III-D-221
d. Calculation of Annual Operating Expenses III-D-223
e. Excess Risk III-D-224

i. The Risk of A Catastrophic TIH Release That Exceeds The Limits of Reasonably Obtainable Insurance Cannot Be Eliminated Entirely 225
ii. Quantification of Cost of Excess Risk III-D-233

E. NON-ROAD PROPERTY INVESTMENT III-E-1

F. ROAD PROPERTY INVESTMENT III-F-1

1. Land III-F-2

a. The SBRR's Land Must Be Valued As of the Date the SBRR Would Need to Acquire It III-F-4
b. NS's Approach to its Appraisal of the ROW Produced More Accurate Results III-F-9

i. Identification of Land Valuation Units along the ROW. III-F-13

(a) Land Physically Inspected. III-F-13

(b) Land Not Physically Inspected III-F-17

ii. Collection and Analysis of Comparable Sales Data.....III-F-17

(a) Comparable Sales for the SBRR Should Include Only Unimproved Land. III-F-18

(b) Comparable Sales Should Be Aggregated Using A Stratified Mean Methodology to Preserve the Accuracy of the Valuation.....III-F-20

iii. Calculation of Total Value of Land To Be Acquired By the SBRR.....III-F-23

(a) Concluded Values Must Be Logically Connected To The Comparable Sales Relied Upon. III-F-24

(b) Assessed Values are an Improper Basis of Comparison for Concluding Market Value III-F-26

(c) The SunBelt Appraiser Provided No Justification for Its Valuation of Rural Towns.....III-F-27

(d) The SunBelt Appraiser's Valuation of Easements Is Contrary to Board Precedent.....III-F-27

c. Appraisal of Land for Yards and Communications Facilities.....III-F-29

d. Conclusion III-F-30

2. Roadbed Preparation.....III-F-31

a. SunBelt's Fabricated Rationale.....III-F-40

b. Clearing and Grubbing.....III-F-48

i. Clearing and Grubbing Quantities III-F-48

ii. Acres Requiring Both Clearing and Grubbing III-F-51

c. Acres Requiring Only Clearing III-F-51

d. Earthwork.....III-F-53

i. Earthwork Quantities from ICC Engineering Reports III-F-53
ii. Other SBRR Earthwork Quantities and Earthwork Costs III-F-55

(a) SBRR Yards III-F-55
(b) Total Earthwork Quantities III-F-55
(c) Earthwork Unit Costs III-F-56

(i) Haul Distance Assumptions III-F-56
(ii) Common Excavation III-F-57
(iii) Loose Rock Excavation III-F-59
(iv) Solid Rock Excavation III-F-62
(v) Embankment/Borrow III-F-64

(d) Other Earthwork Quantities & Unit Costs III-F-65

(i) Land for Waste Excavation III-F-65
(ii) Stripping III-F-68
(i) Undercutting III-F-70
(ii) Over-Excavation III-F-80
(iii) Fine Grading III-F-81
(iv) Swell III-F-83

(e) Subgrade Preparation III-F-86
(f) Total Earthwork Cost III-F-95

e. Drainage III-F-95

i. Lateral Drainage III-F-95
ii. Yard Drainage III-F-95

f. Culverts III-F-96

i. Culvert Unit Costs III-F-97
ii. Culvert Installation Plans III-F-99
iii. Culvert Quantities III-F-102
iv. Total Culvert Costs III-F-108

g. Other III-F-108

i. Sideslopes III-F-108
ii. Ditches III-F-108
iii. Retaining Walls III-F-108

(a) Retaining Walls Replaced With Gabions III-F-109

(i) Conversion of Masonry and Timber Retaining Wall Quantities to Gabions III-F-109

(ii) Additional Retaining Wall Quantities to Accommodate Modern Roadbed Standards III-F-113

(b) Piling Retaining Walls III-F-116

iv. Rip-rap III-F-116
v. Relocating and Protecting Utilities III-F-117
vi. Seeding/Topsoil Placement III-F-117
vii. Water for Compaction III-F-117
viii. Surfacing for Detour Roads III-F-118
ix. Environmental Compliance III-F-118
x. Lighting for Night Work III-F-118
xi. Dust Control Work III-F-119

3. Track Construction III-F-120

a. Geotextile Fabric III-F-121
b. Ballast III-F-122

i. Ballast Quantities III-F-123
ii. Ballast Pricing III-F-126
iii. Ballast Material Transportation to the SBRR Railheads III-F-127
iv. Ballast Material Distribution Along the SBRR Right-of-Way III-F-129
v. Material Transportation Cost for Ballast III-F-131
vi. Subballast III-F-133

(a) Subballast Quantities III-F-133

(b) Subballast Material Costs III-F-134

(c) Subballast Material Placement Costs III-F-136

c. Ties III-F-137
d. Rail III-F-140

i. Main Line and Yards and Siding III-F-140
ii. Rail Pricing III-F-140
iii. Rail Unloading Costs III-F-142
iv. Field Welds III-F-145
v. Insulated Joints III-F-146

e. Switches III-F-146
f. Other III-F-149

i. Rail Lubricators III-F-149
ii. Plates Spikes and Anchors III-F-151
iii. Derails and Wheel Stops III-F-152

(a) Derails III-F-152
(b) Wheel Stops III-F-154

iv. Crossing Diamonds III-F-154

(a) Materials Transportation III-F-157
(b) Track Construction Labor III-F-158

4. Tunnels III-F-158

5. Bridges III-F-158

a. Bridge Inventory III-F-160
b. Bridge Design and Cost Overview III-F-167

i. Cost Overview III-F-167
ii. Bridge Design III-F-170

(a) Superstructure Design (Spans) III-F-171

(b) Substructure Design (Piers and Abutments) III-F-174

iii. Type I Bridges III-F-177
iv. Type II Bridges III-F-179
v. Type III Bridges III-F-180
vi. Type IV Bridges III-F-184
vii. Bridges with Multiple Span Types III-F-184
viii. Special Bridges III-F-186

(a) Movable Bridges III-F-186
(b) Non-Movable Bridges over Navigable Waters III-F-196

c. Highway Overpasses III-F-198

6. Signals and Communications III-F-199

a. Centralized Traffic Control III-F-200

i. The SBRR Could Not Install PTC In 2011 ..... III-F-200

ii. SunBelt's Inventory of Signals Components Is Unreliable....III-F-206
iii. SunBelt's Unit Costs For Signals Components Are Incorrect. III-F-213

b. PTC III-F-217

i. PTC Wayside System III-F-217
ii. PTC IT Costs....III-F-219
iii. PTC Locomotive Costs....III-F-221
iv. PTC Development Costs....III-F-221
v. PTC Expenditure Schedule....III-F-227

c. Detectors III-F-227
d. Crossing Signal Equipment....III-F-229
e. Communication System....III-F-235
f. Hump Yard Equipment....III-F-235

7. Buildings and Facilities....III-F-235

a. Headquarters Building III-F-236
b. Fueling Facilities....III-F-239

i. Fueling Platforms....III-F-239

c. Locomotive Repair Facilities....III-F-240
d. Car Repair III-F-244

i. Major Car Repair Facility III-F-244
ii. Freight Car Repair Tracks....III-F-245

e. Crew Change Facilities....III-F-246
f. Yard Offices....III-F-248
g. MOW Buildings....III-F-249
h. Wastewater Treatment III-F-252

i. Other Facilities/Site Costs....III-F-253

i.a. Guard Booths III-F-258
i.b. Mechanic Repair Shops III-F-259
i.c. Observation/Yard Master Tower III-F-260
i.d. Storage & Warehouse Buildings....III-F-261
i.e Two-Person Signal Maintainers Building....III-F-262

8. Public Improvements III-F-263

a. Fences III-F-263

b. Signs and Road Crossing Devices III-F-263

i. Advance Warning Signs and Crossbucks III-F-263
ii. ENS III-F-264

c. Grade-Separated and At-Grade Crossings III-F-265

i. Grade Separations III-F-265
ii. At-grade Crossings III-F-265
iii. At-grade Crossing Detours III-F-266
iv. At-grade Crossing Vegetation Removal III-F-266

9. Mobilization III-F-268

10. Engineering III-F-272

11. Contingencies III-F-272

12. Construction Schedule III-F-272

a. Additive to Compensate for Days Lost to Rain Events III-F-274

G. DISCOUNTED CASH FLOW ANALYSIS III-G-1

1. Cost of Capital III-G-1
2. Inflation Indices III-G-4
3. Tax Liability III-G-5
4. Capital Cost Recovery III-G-5

H. RESULTS OF SAC ANALYSIS III-H-1

1. Results of SAC Analysis III-H-1

a. Cost of Capital III-H-1
b. Road Property Investment Values III-H-2
c. Interest During Construction III-H-2
d. Amortization Schedule of Assets Purchased With Debt Capital III-H-2
e. Present Value of Replacement Cost III-H-4
f. Tax Depreciation Schedules III-H-5
g. Average Annual Inflation in Asset Prices III-H-8
h. Discounted Cash Flow III-H-8
i. Computation of Tax Liability – Taxable Income III-H-11
j. Operating Expenses III-H-11
k. Summary of SAC Analysis III-H-12

2. If The Board Were to Find That The SBRR Revenues Exceed SAC Costs Over The 10-Year DCF Period, It Must Administer Its Internal Cross-Subsidy Test to Ensure Traffic on the Birmingham to New Orleans Segment Would Not Subsidize Traffic on the McIntosh to Burstall Segment. III-H-13

a. Background III-H-15
b. The Board's Internal Cross-Subsidy Test is Essential to Prevent Subsidization of the Issue Traffic by Other Shippers Who Do Not Benefit from Facilities Used By the Issue Traffic. III-H-16
c. Application of the Threshold Cross-Subsidy Test Would Demonstrate That This Case Must Be Dismissed Because the Evidence Fails to Demonstrate That SunBelt's Traffic Is Cross-Subsidizing Other Traffic on the NS System. III-H-19

3. Maximum Rate Calculations III-H-20

a. Any MMM Analysis Conducted in this Case Should Properly Allocate Unique Costs of TIH Traffic Solely to that Traffic III-H-21
b. The Board Should Apply the Trainload Adjustment Advocated in AEPCO 2011 to Shipments Moving In Single Trainload Service Over the SBRR III-H-28
c. If It Applied MMM, the Board Would Also Need to Correct SunBelt's Two Other Clear Implementation Errors. III-H-29

IV. WITNESS QUALIFICATIONS AND VERIFICATION IV-1
James D. Bagley IV-1
Michael R. Baranowski IV-12
Willie Benton III IV-23
F. Douglas Bess IV-26
Paul E. Bobby IV-31
Richard Brown IV-43
Patrick J. Bryant IV-48
Kaustuv Chakrabarti IV-59
Xingang Clark Cheng IV-62
Benton V. Fisher IV-66
Rob Fisher IV-77
Randall G. Frederick IV-80
Roberto J. Guardia IV-85
Michael P. Hedden IV-94
David Hughes IV-102
Kenneth LeCroy IV-108
Ronnie D. Johnson IV-111

David A. Magistro IV-113
Michael Matelis IV-121
Mark D. Mathewson IV-124
Joseph C. Osborne, Jr IV-128
Mark A. Peterson IV-133
Robert C. Phillips IV-145
A. Mitchell Polinsky IV-152
Michael K. Quinn IV-165
Richard Ray IV-167
Dale A. Schaub IV-171
Dewey D. Smith IV-173
Kathleen C. Smith IV-175
Richard L. Smith IV-177
Gerhard Thelen IV-181
David R. Wheeler IV-184
Michael K. Williams IV-188
George T. Zimmerman IV-191

PUBLIC VERSION

Table of Contents

Page

I. COUNSEL'S ARGUMENT AND SUMMARY OF EVIDENCE I-1

A. The Board Should Dismiss This Case For Several Independent Reasons. I-3

1. NS's Reply Evidence Demonstrates that the Properly Calculated and Attributable Costs to Construct, Operate and Maintain the SBRR Exceed Its Properly Calculated and Attributable Revenues. I-4

2. The SunBelt Railroad Relies on an Impermissible Cross-Subsidy Between the New Orleans-Birmingham Line and the Burstall-McIntosh Line. I-6

3. SunBelt's Failure to Provide Complete Train Service for 91% of the Issue Traffic Is A Failure of Proof That Requires Dismissal. I-9

4. SunBelt Relied on Overhead Cross-Over Traffic That Would Be Disallowed By the Board's Proposals in Ex Parte 715. ..... I-12

B. The Board Should Recognize the Unique Costs and Risks of Transporting Chlorine, and Take Them Into Account Fully in its Rate Reasonableness Analyses. I-15

1. Chlorine Is Inherently Dangerous. I-16

2. All Railroads, Including the SBRR, Face Risks Inherent in the Transportation of Chlorine. I-19

3. Public Policy Demands that the Board Account for the Inherent Risk of Transporting Chlorine in This Rate Case. I-22

4. NS Incurs the Externalities of Regulatory Policy, and Therefore the SAC Analysis Outcome and the Maximum Regulatory Rate Must Also Reflect that the Railroad Bears the Externalities. I-25

C. SUMMARY OF NS'S REPLY EVIDENCE I-29

II. MARKET DOMINANCE I-29

A. Quantitative Market Dominance I-29
B. Qualitative Market Dominance I-29

III. STAND ALONE COST I-30

A. Traffic Group I-30
B. Stand Alone Railroad System I-40
C. Operating Plan I-44

D. Operating Expenses I-50
E. Non-Road Property Investment I-55
F. Road Property Investment I-55
G. Discounted Cash Flow Analysis I-61
H. Results of SAC Analysis I-62
H.1 The Costs Of TIH Traffic Must Be Properly Allocated To That Traffic In The Event That The Board Performs An MMM Analysis. I-62

D. CONCLUSION I-69

I. COUNSEL'S ARGUMENT AND SUMMARY OF EVIDENCE

This is first and foremost a case about chlorine, and specifically about how a rate reasonableness analysis should account for the risks and costs of transporting this dangerous commodity. Complainant SunBelt Chlor Alkali Partnership—a wholly owned subsidiary of chemical giant Olin Corporation[1]—("SunBelt") has challenged the reasonableness of NS's rates to transport "the largest volume chlorine movement in North America," consisting of more than 2,000 carloads (approximately 250,000 tons) of chlorine annually. SunBelt Opening at I-13. While SunBelt seeks to convince the Board that this is a run-of-the-mill Stand Alone Cost ("SAC") case that can be determined by relying on a "well-defined set of rules and precedent,"[2] it is anything but that. Rather, this case presents serious and significant questions about how to appropriately allocate the unique costs of toxic-by-inhalation ("TIH") traffic—questions with which the Board has yet to grapple. For example, should a SAC analysis for the transportation of chlorine volumes far larger than those seen in any prior SAC case account for the full costs and risks of that transportation? Or should it disregard those very real and substantial costs, or perhaps assume that non-TIH shippers could subsidize the costs of serving TIH traffic? How should the Maximum Markup Methodology ("MMM") analysis account for unique TIH-related costs that are fairly attributable only to TIH traffic?

SunBelt's answer to these questions is that unique TIH costs like operating restrictions and increased insurance needs should be entirely ignored in the SAC analysis, and that even the unique TIH costs SunBelt does recognize (like the cost of installing Positive Train Control ("PTC")) should be shared by non-TIH shippers. The result of SunBelt's rigged assumptions is a

---

[1] Olin describes itself as the "No. 1 Chlorine merchant supplier in North America." *See* http://www.olinchloralkali.com.

[2] SunBelt Opening at I-40.

SAC analysis that purports to show that that the maximum reasonable rate for the largest-volume chlorine shipment in North America would barely exceed variable costs for the first eight years of the SARR's operations and would be lower than variable costs for the last two years. *See* SunBelt Opening at III-H-22. This patently ridiculous result is the product of systematic distortions and manipulations of the SAC test and the core policies and economic principles it implements.

While this case presents a novel set of facts, basic SAC principles show that SunBelt cannot prevail. A proper SAC analysis must account for all the costs and risks inherent in the traffic selected by the complainant for its SARR. *See, e.g., Major Issues*, STB Ex Parte No. 657 (Sub-No. 1) at 7 ("Under the SAC constraint, the rate at issue cannot be higher than what the SARR would need to charge to serve the complaining shipper *while fully covering all of its costs*, including a reasonable rate of return." (emphasis added)). In this case, that includes the unique costs and risks of handling large volumes of TIH traffic (chlorine). Moreover, a complainant TIH shipper cannot prevail by presenting a SAC analysis that relies on other shippers to cross-subsidize its traffic. *See PPL Montana,* 6 S.T.B. at 293-300; *Otter Tail*, STB Docket No. 42071 at 24-30. Here, SunBelt's deeply deficient SAC analysis fails to account for the full stand-alone costs of its traffic, and its claim for relief is dependent on impermissible cross-subsidies. Accordingly, the Board should dismiss SunBelt's complaint.

Chlorine is a highly toxic chemical voluntarily manufactured and sold for a substantial profit by SunBelt. Although chlorine has legitimate uses, its historic use as a weapon in war and its toxicological effects on the human body are well known.[3] Because of its extraordinary lethality, a tank car of chlorine is very different from a carload of coal or of plastic pellets. A

[3] *See infra* at I-16 to I-29 for a detailed explanation of chlorine's lethality.

carload of chlorine has directly attributable risks and costs because of the nature of the commodity, including:

- The costs to install PTC, which must be installed on the SARR solely because of the presence of chlorine and other TIH shipments in the SARR's traffic group;
- A substantial portion of the SARR's insurance costs, which arise only because of the presence of chlorine and other TIH shipments on the SARR;
- Costs related to complying with government safety and security regulations applicable to the transportation of chlorine and other TIH shipments; and
- The excess risks of liability for a catastrophic TIH release on the SARR.

As demonstrated below, in the regulatory analysis these risks and costs must be borne by the SARR traffic that creates them: namely, TIH traffic.

Section A of this Argument details four of the most critical issues for the Board to decide in this case—each of which is an independently sufficient reason to find that SunBelt is entitled to no relief whatsoever. Section B of this Argument discusses the unique costs and risks of chlorine transportation and some of the important policy issues that should inform the Board's approach to this case. Section C presents a synopsis of NS's Reply Evidence.

A. THE BOARD SHOULD DISMISS THIS CASE FOR SEVERAL INDEPENDENT REASONS.

This case involves all the usual issues related to constructing and operating a SARR—known here as the SunBelt Railroad ("SBRR"). SunBelt made numerous fundamental errors in its case-in-chief and presented evidence that is inconsistent with Board precedent in several major essential components of its case. Much of the following Reply Evidence explains and corrects these errors. But the result of this case ultimately is decided by four critical and irremediable failings in SunBelt's presentation, each of which independently demonstrates that

SunBelt is entitled to no relief whatsoever: (1) NS' Reply Evidence demonstrates that the properly calculated and attributable costs to construct, operate and maintain the SBRR would exceed its properly calculated and attributable revenues—that is, the SBRR fails the SAC test. (2) SunBelt relies upon an impermissible cross-subsidy between the higher-density New Orleans-Birmingham line of the SBRR and the lower-density line from Burstall, AL, to SunBelt's McIntosh facility; (3) SunBelt has failed to provide the required operating plan for its traffic; and (4) SunBelt has relied on revenue contributions from a significant amount of overhead carload and multi-carload cross-over traffic that should be disallowed. In addition, in the unlikely event that the Board should find it necessary to conduct an MMM analysis, SunBelt's evidence does not properly allocate the costs of TIH traffic for purposes of that analysis. Each of these issues is independently sufficient grounds for the Board to find that SunBelt has failed to satisfy its burden to prove that the challenged rates are unreasonably high.

1. NS's Reply Evidence Demonstrates that the Properly Calculated and Attributable Costs to Construct, Operate and Maintain the SBRR Exceed Its Properly Calculated and Attributable Revenues.

Even putting to one side the fundamental, fatal flaws and failures of proof in SunBelt's case-in-chief, a proper SAC analysis based upon SunBelt's selected traffic and SARR design and configuration and governed by Board precedent demonstrates that SAC costs exceed revenues and the challenged rate is reasonable. NS's Reply Evidence corrects myriad errors in SunBelt's SAC presentation, including its traffic and revenue evidence, its operating plan and costs, road property investment evidence, and other important components of the analysis. Correcting those errors and conforming SunBelt's evidence to Board precedent and realistic assumptions demonstrates that the challenged rate does not exceed a reasonable maximum level. A proper and sound SAC analysis, based on the well-supported corrections in NS's Reply Evidence,

compels the conclusion that the challenged rate is reasonable and no rate prescription is appropriate. Thus, even if the Board were to excuse SunBelt's multiple fatal failures of proof—and it most certainly should not—a correct and accurate application of the SAC test requires that this case be dismissed.

The stand-alone costs and revenues for the SBRR, as corrected by NS in this Reply evidence, are presented in Table I-1 below.

Table I-1
NS Reply SBRR SAC Results
($ millions)

Year	SARR Revenue Requirement	SARR Revenues	Overpayments (Shortfalls)	Present Value
2009	$250.7	$150.1	($100.6)	($100.6)
2010	$606.1	$384.6	($221.5)	($199.5)
2011	$623.5	$419.5	($204.1)	($165.7)
2012	$647.6	$455.0	($192.6)	($140.9)
2013	$683.4	$495.3	($188.1)	($124.0)
2014	$712.3	$549.6	($162.7)	($96.6)
2015	$743.8	$596.9	($146.9)	($78.6)
2016	$777.1	$650.9	($126.2)	($60.8)
2017	$811.1	$708.2	($102.9)	($44.7)
2018	$843.5	$762.2	($81.3)	($31.8)
2019	$504.9	$473.7	($31.2)	($11.3)
Cumulative Net Present Value				**($1,054.6)**

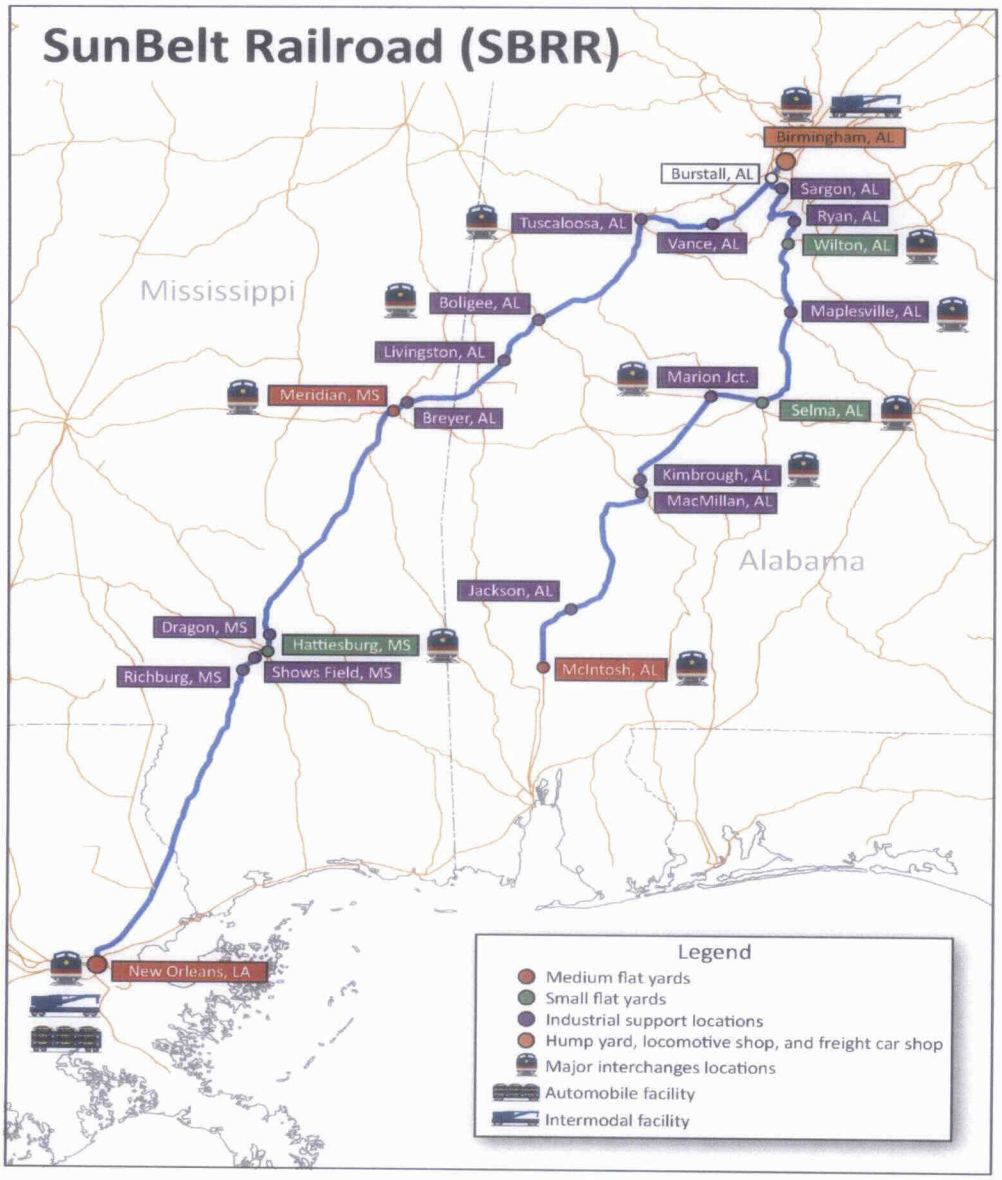
The results in Table I-1 show that the revenues available to the SARR are not sufficient to cover the full SAC costs of the SARR over the 10-year analysis period. In each year, the SARR's costs would exceed its revenues and the SBRR would experience a cumulative revenue shortfall of over $1.05 billion. Thus, SunBelt has failed to demonstrate that the challenged rates are unreasonably high.

2. The SunBelt Railroad Relies on an Impermissible Cross-Subsidy Between the New Orleans-Birmingham Line and the Burstall-McIntosh Line.

SunBelt admits in its Opening Evidence that "the Board has taken a consistent approach" in establishing procedures for judging "whether traffic on one part of a SARR was cross-subsidizing traffic on another part of a SARR." SunBelt Opening at I-40 (citing *PPL Montana* and *Otter Tail*). Even if the Board were to find that the SBRR's revenues would exceed its revenue requirement, an application of the Board's settled cross-subsidy analysis to the Board's SAC conclusions likely would show that traffic on a high-density portion of the SBRR was cross-subsidizing the low-density segment serving SunBelt's McIntosh facility. The SBRR is comprised of two distinct lines: one runs from New Orleans to Birmingham (the "New Orleans-Birmingham Line"), and the other runs from SunBelt's McIntosh, AL plant to an interchange point with the New Orleans-Birmingham Line at Burstall, AL (the "McIntosh-Burstall Line"). The McIntosh-Burstall Line likely fails the Board's internal cross-subsidy test, because that line impermissibly relies on revenue from traffic that would use only the New Orleans-Birmingham Line to pay for the costs of the McIntosh-Burstall Line, SunBelt has failed to meet its burden of proof and the Board should dismiss this case. *PPL Montana*, 6 S.T.B. at 295-96; *Otter Tail*, STB Docket No. 42071, at 23.

Figure I-1 below is a map of the SBRR's lines and facilities:

Figure I-1
SBRR Map



The SBRR's two lines have little in common with each other. The New Orleans-Birmingham Line is a heavily-traveled trunk line with a high frequency of trains traveling to and from the New Orleans gateway for interchange with western carriers. This line also carries substantial traffic traveling to and from NS's Meridian interchange with KCS for freight moving over the Meridian Speedway to and from Shreveport, Dallas and points beyond. As the

southwestern leg of the Crescent Corridor, the real-world New Orleans-Birmingham Line carries high volumes of intermodal and general freight traffic that SunBelt has selected for the SARR traffic group. Average density on that line is 35 million gross tons. In contrast, the McIntosh-Burstall Line is a low-density line that is not on a major traffic corridor and carries little intermodal traffic. Average density on the McIntosh-Burstall Line is just 14 million gross tons. In addition to its low density, the McIntosh-Burstall Line has significant costs. For example, PTC must be installed on the line—largely because of the issue traffic.

In the event that the Board were to find—contrary to NS's Reply evidence—that SBRR revenues would exceed SBRR costs over the SAC analysis period, the Board would be required to conduct a cross-subsidy analysis. Such an analysis would show that the McIntosh-Burstall Line fails the internal cross-subsidy test set forth in *Otter Tail* and *PPL Montana*.[4]

Because SunBelt's SAC presentation relies on an impermissible internal cross-subsidy, its case must be dismissed. *See e.g., Otter Tail*, STB Docket No. 42071, at 30; *PPL Montana*, STB Docket No. 42054, at 13 (served March 24, 2003) (denying complainant the opportunity to

[4] Until the Board has made its findings and conclusions regarding the overall SAC analysis and component costs and revenues, it would not be productive or meaningful to conduct a cross-subsidy analysis. NS's Reply Evidence shows that, properly calculated, SBRR costs would substantially exceed its revenues and therefore SunBelt could not show the challenged rate exceeds a maximum reasonable level. Thus under NS's evidence any internal cross-subsidy analysis would be moot. If the Board were to determine that SBRR revenues would exceed its costs, however, NS contends that the McIntosh-Burstall Line would fail the internal cross-subsidy analysis. In order to assist the Board in conducting that analysis should it be necessary, NS has provided in its work papers a template for conducting the cross-subsidy analysis. Specifically, cross-subsidy templates for traffic and revenues calculations have been provided within NS III-A Reply workpapers "Gen Freight Traffic and Revenue Forecast Reply.xlsx" and "IM-Coal Traffic and Revenue Forecast Reply.xlsx." Templates for cross-subsidy calculations of operating expenses, road property investment, and the consolidated cross-subsidy analysis are provided within the "Cross Subsidy" subfolders in folders III-D, III-F, and III-H of NS's Reply Workpapers.

present a new case after the complainant tendered a case with an impermissible internal cross-subsidy).

3. SunBelt's Failure to Provide Complete Train Service for 91% of the Issue Traffic Is A Failure of Proof That Requires Dismissal.

The third independent reason that SunBelt cannot prevail in this case is truly fundamental—it failed to present a *prima facie* case, and thereby failed to meet its burden of proof. The most glaring and fatal error—in a case-in-chief that is riddled with errors—is the fact that SunBelt's operating plan for the SBRR does not provide service from origin to destination for 91% of the issue traffic. Even though this case involves only one relatively simple movement between McIntosh, AL, and New Orleans, SunBelt proffered an operating plan that did not provide complete origin-to-destination service for nearly all of its own "issue" traffic. This failing is so critical that it constitutes a failure to present a prima facie case, warranting dismissal of the complaint.

The burden to present a feasible operating plan that would serve the needs of the selected traffic falls squarely on the shoulders of the complainant. *See, e.g., CP&L v. NS,* 7 S.T.B. 235, 259 (2003). The Board has repeatedly warned complainants not to present operating plans that are "patently incapable of meeting the shipper's needs." *See McCarty Farms,* ICC Docket No. 37809, at 8 (ICC served Feb. 13, 1995). In *McCarty*, "BN contended that McCarty had failed to include all of the issue traffic in its stand-alone model and otherwise to show that the model would be feasible." Because of the perceived complexity of the case, the ICC "declined to dismiss the case at that early stage, but required McCarty to affirmatively show that all issue traffic was included in its stand-alone model and directed BN to present any challenge to the feasibility of the model in the railroad's case-in-chief." *Id.*

Since *McCarty*, the Board has repeatedly warned complainants about the necessity of meeting their burden of presenting a full and sufficient case-in-chief in opening evidence. In *Xcel*, for example, the Board warned complainants that:

> [w]e are increasingly troubled by the submission of incomplete or erroneous evidence on opening in a SAC case and a complainant's reliance upon an opportunity to address deficiencies through later evidentiary submissions, to which the defendant has no opportunity to respond. The interests of fairness and orderly handling of a case dictate that parties submit their best evidence on opening, so that each party has a fair opportunity to reply to the other's evidence. Moreover, later changes to the complainant's case-in-chief complicate our review of the evidence and impede our efforts to handle these cases in an orderly and timely manner. Thus, it is important that parties make their case-in-chief in their opening evidence.

Xcel, STB Docket No. 42057, at 2 (served April 4, 2003). SunBelt's operating plan may be the most egregious failure in a rate case to date. NS's reply evidence shows that SunBelt's operating plan fails to provide complete service for 91% of the issue traffic in the Base Year. Most commonly, the service failures occur because SunBelt omits local train service for its traffic, and instead assumes that its traffic would magically materialize at a serving yard ready to be transported on a road train.[5] The Board cannot accept "operating plans" based on this kind of willful disregard for the realities of real-world railroading.

Of 487 NS A32, A33, and A34 local trains that served the McIntosh facility during the Base Year, SunBelt's operating plan included only 40 trains. In other words, SunBelt's "automated" Operating Plan fails to include 447 trains—or 92% of all the trains that served its own facility in the Base Year. This glaring error in SunBelt's train service plan results in an abject failure of the SBRR to serve its own issue traffic originating at McIntosh. Table I-2

[5] And in a road train that SunBelt then proceeds to operate at speeds above FRA speed limits. *See infra* at III-C-85 to III-C-86.

illustrates the number of issue traffic carloads that were identified in the NS car event data, in SunBelt's Car/Train Database, and in SunBelt's final train list. In total, SunBelt failed to provide complete train service for 91% of those carloads.

Table I-2[6]
SunBelt Failed to Include All Trains for 91% of the Issue Traffic

	Carloads	% of Total
Issue Traffic	1,656	100%
Carloads for which SunBelt Accounted for All Trains	156	9%
Carloads on Trains not in SunBelt's SBRR Train List	1,500	91%

Source: NS Reply WP "Sunbelt_Issue_Traffic_Missing_Trains.xlsx"

The failure to include service for the overwhelming majority of issue traffic alone constitutes a fatal, irremediable failure of proof. But SunBelt's error is compounded when it flows into its RTC Model. The failure of SunBelt's RTC Model to account for a significant number of the SBRR's trains renders SunBelt's RTC simulation invalid and eviscerates SunBelt's reliance upon that simulation to demonstrate that the SBRR's configuration and facilities are adequate.

Significantly SunBelt's gargantuan omission was a result of its own methodological choices, not any problem with the data it possessed. Rather than building an operating plan from the ground up that would serve the needs of the traffic in the traffic group, SunBelt chose to use an automated process that selected NS trains that would be replicated by the SBRR. In this automated process, SunBelt programmed a computer to "find" the trains that handled traffic in the traffic group. However, one of the commands that SunBelt gave the computer excluded all trains that had only one station code—thereby effectively eliminating nearly all local train

[6] SunBelt failed to include all the trains that were actually used for 91% of the issue-traffic carload shipments and failed to include 92% of the McIntosh local trains that were used to operate SBRR selected revenue shipments. *See* III-C-23, Figure III-C-3 (seeing forth the number and percentage of trains excluded by SunBelt's methodology).

service. As a result, SunBelt failed to select the NS trains that serve SunBelt's McIntosh facility. As explained below at III-C-12 to III-C-9, SunBelt had the necessary data to identify local trains, and it used that data for its ATC calculations. But when selecting trains to carry SBRR traffic, SunBelt simply told the computer to ignore the local trains. Because SunBelt's chosen methodology alone generated this critical operating plan and configuration flaw, SunBelt is precluded from attempting to fix it on rebuttal. *See IPA*, STB Docket No. 42127, at 3.

Presentation of an operating plan that does not serve the issue traffic constitutes a failure by SunBelt to present a prima facie case, which is a separate reason that the Board must dismiss this case without further consideration.

4. SunBelt Relied on Overhead Cross-Over Traffic That Would Be Disallowed By the Board's Proposals in Ex Parte 715.

SunBelt's presentation also suffers from the distorting effects of excessive cross-over traffic—the same distorting effects of overuse of the cross-over traffic device that caused the Board to initiate a rulemaking to address the problem. *See Rate Regulation Reforms*, STB Ex Parte No. 715; *SunBelt Chlor Alkali P'ship v. Norfolk Southern Ry. Co.,* and *E.I. DuPont de Nemours & Co. v. Norfolk Southern Ry. Co.,* STB Docket Nos. 42125 & 42130, at 9 (served Nov. 29, 2012) (Begeman, C., dissenting) (noting that Ex Parte 715 addresses the "flawed methodologies that the Board has essentially disavowed," including unrestrained use of cross-over traffic).

Approximately 93% of the SBRR's traffic group is cross-over traffic. *Rate Regulation Reforms* explains the Board's concerns about the distorting effect of the cross-over traffic that now has become the centerpiece of complainants' SAC presentations. *See Rate Regulation Reforms*, STB Ex Parte No. 715, at 16-17. As the Board expressly summarized in EP 715, "in recent cases, complainants have relied extensively on the use of cross-over traffic to simplify

SAC presentations" and "[t]he inclusion of large amounts of carload and multi-carload cross-over traffic has revealed a significant and growing concern." *Id.* at 6, 16. That concern is that, due in large part to cost-and-revenue mismatches created by complaints' creative (mis)use of the cross-over traffic device, the SAC analysis over-allocates revenues to the SARR, thereby distorting the SAC analysis and undermining its results.

This case exemplifies the Board's concerns about expanded use of cross-over traffic, and either of the Board's *Rate Regulation Reforms* proposals would substantially curtail SunBelt's use of such traffic. According to SunBelt, approximately { } percent of its SARR traffic by volume and { } percent of its SARR traffic by revenue (generating more than { } of all SARR revenue) is cross-over traffic. *See* SunBelt Opening at III-A-15, Table III-A-8; SunBelt Reply to Motion to Hold In Abeyance, Verified Statement of Thomas Crowley at 8. This is an extraordinarily high percentage of cross-over traffic. Indeed, SunBelt's expert Mr. Crowley confirms that this case has the second highest amount of cross-over traffic ever. SunBelt Reply to Motion to Hold In Abeyance, Verified Statement of Thomas Crowley at Exhibit 1 (listing *SunBelt* as having the second largest percentage of cross-over traffic in rate case history). And the single case presenting a higher percentage of cross-over traffic was dismissed because of impermissible cross-subsidization of the issue traffic. *See Otter Tail*, STB Docket No. 42071, at 30. According to Mr. Crowley, *SunBelt* has an even larger percentage of cross-over traffic than in *AEPCO 2011*.[7] Given that the Board was appropriately concerned about the distorting effect of cross-over traffic in recent prior cases with lower proportions of cross-over traffic (including *AEPCO 2011*), SunBelt's reliance on much higher percentages of such traffic should be at least as troubling.

[7] *See* SunBelt Reply to NS Abeyance Motion, V.S. Crowley Ex. 1

Accordingly, the Board must address the evidence presented in this case and address the distorting effect of the cross-over traffic here. As the Board advised in a recent decision in this very case:

> The parties should have been, and continue to be, on notice that use and application of cross-over traffic, as well as ATC revenue allocation methodologies, are potential issues in these individual cases, and that parties are entitled to raise and respond to substantive arguments regarding those methodologies within those proceedings. *See, e.g., Ariz. Elec. Power Coop. v. BNSF Ry.*, NOR 42113 (STB served June 27, 2011) (stating that the Board has concerns with the way cross-over traffic has been costed, and directing the parties to submit new evidence and arguments for how to rectify the identified issue). *The Board will address any arguments related to cross-over traffic and cost allocation raised in the pending adjudications*, even as it completes its consideration of those issues more broadly in Rate Regulation Reforms.

SunBelt Chlor Alkali P'ship v. Norfolk Southern Ry. Co., and *E.I. DuPont de Nemours & Co. v. Norfolk Southern Ry. Co.,* STB Docket Nos. 42125 & 42130, at 5 (served Nov. 29, 2012) (emphasis added). Thus, the Board has indicated clearly that it will address cross-over traffic limits in this and other pending cases. The Board allowed cross-over traffic—and subsequently established the permissible parameters, requirements, and limitations on the use of such traffic—in individual rate case adjudications. Accordingly, it may apply additional limits on permissible cross-over traffic in an individual adjudication, such as this case.[8] NS fully presents the issue for resolution in this case regardless of what the Board does in *Rate Regulation Reforms* and contends that the Board should apply either of the two proposals it has suggested in that proceeding to this case. *See, e.g., SEC* v. *Chenery Corp.*, 332 U.S. 194, 202-203 (1947)

[8] Adjudicatory precedent is contrasted to rules, which are established by notice-and-comment rulemaking and can only be amended through subsequent rulemaking. *See General American Transp. Corp.* v. *ICC*, 872 F.2d 1048, 1060 (D.C. Cir. 1989) (distinguishing rules, "which cannot be altered or reversed except by rulemaking," from longstanding adjudicatory precedent, which can be altered or amended in a subsequent adjudication).

("[P]roblems may arise in a case which the administrative agency could not reasonably foresee, problems which must be solved *despite the absence of a relevant general rule*" (emphasis added)); *General American Transp. Corp.*, 872 F.2d at 1060 (adjudicatory precedent does "not harden into 'rules'").

Application of either of the proposals in *Rate Regulation Reforms* would have a significant impact when applied to this case:

- If the Board limited cross-over traffic to movements for which the SARR would either originate or terminate the rail portion of the movement, 63% (sixty-three) —or nearly two-thirds—of the SBRR's traffic by volume, accounting for approximately 14% of SBRR's revenues, would be eliminated. *Rate Regulation Reforms*, STB Ex Parte No. 715, at 16-17; *see* NS Reply Ex. III-A-2 (testimony of witness Robert Fisher explaining crossover traffic analysis).

- If alternatively the Board were to adopt its second proposal to restrict the use of cross-over traffic to movements where the entire service by the defendant railroad is trainload or unit train, 43% of the SBRR's traffic group—accounting for *75% of all SBRR revenues*—would be eliminated. *See id.*

Although the final effect of excluding this revenue (or any amount of revenue from cross-over traffic) could not be known until the Board ruled on all other issues in the case, it is likely that SunBelt could not prove the challenged rate exceeds a reasonable maximum if the Board's proposed rules are applied to this case. And, of course, having found its existing cross-over traffic rules and precedents to be "fundamentally-flawed" and having "disavowed" them in *Rate Regulation Reforms*, it would be arbitrary and capricious not to restrict use of such cross-over traffic in this case.

B. THE BOARD SHOULD RECOGNIZE THE UNIQUE COSTS AND RISKS OF TRANSPORTING CHLORINE, AND TAKE THEM INTO ACCOUNT FULLY IN ITS RATE REASONABLENESS ANALYSES.

NS does not manufacture, purchase, or sell chlorine. It does not use, consume, or process chlorine in its business activities. And, it does not earn anywhere near the return on chlorine transportation that would be required to compensate it for the costs inherent in transporting

chlorine, prominently including the potentially bankrupting liability that could result from a release of chlorine during transportation or storage. Nonetheless, NS is required by law to transport chlorine and other TIH commodities upon demand by a shipper. If rail carriers are compelled to carry TIH commodities, sound economics, policy, and fundamental fairness require that the Board's rate reasonableness analysis ensure that rate limits established by the analysis fully account for the unique costs of transporting those commodities that arise from the commodity's inherently dangerous chemical composition.

If the Board does not allocate costs that SBRR would incur solely because it transports TIH, all other traffic would be cross-subsidizing TIH traffic. The Board has been asked in other proceedings to address how the regulatory system will account for the inherent and difficult-to-quantify risks associated with transporting TIH and with the costs incurred in the rail system that are directly attributable to TIH. *See, e.g., Reporting Requirements for Positive Train Control Expenses and Investments*, STB Ex Parte No. 706 (Oct. 13, 2011); *Class I Railroad Accounting and Financial Reporting—Transportation of Hazardous Materials*, STB Ex Parte No. 681 (served Jan. 5, 2009). The Board has yet to promulgate regulations addressing these important issues. Nevertheless, the Board must address these key questions in this case.

1. Chlorine Is Inherently Dangerous.

The single rate at issue in this case is for the transportation of chlorine produced by SunBelt. Chlorine is a greenish-yellow gas at standard temperature and pressure that is usually transported as a pressurized liquid. SunBelt chooses to be in businesses that involve chlorine. Norfolk Southern does not. Nevertheless, Norfolk Southern must assume the risk of a product that is inherently dangerous.

Although chlorine may have legitimate uses in industry, there can be no dispute that chlorine is inherently dangerous. Indeed, in World War I, chlorine was manufactured specifically to be used as a weapon itself.

- On April 22, 1915, German forces used chlorine gas at Ypres, Belgium against French and Algerian troops.[9]
- On April 24, 1915, German forces used chlorine gas against Canadian forces.[10]
- On September 25, 1915, British forces used chlorine gas at Loos.[11]

As a result, the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, usually called the Geneva Protocol, was adopted in 1925.[12] A report prepared for the United States Air Force documents that Bosnian Muslims used chlorine in shells against Bosnian Serb forces on at least three occasions in 1993.[13]

The effects on the body from chlorine are documented and well known. In 1917, Dr. Arthur Hurst published "Medical Diseases of the War," which discussed the observed effects of chlorine gas on soldiers.[14] Today, the Occupational Safety and Health Administration describes the toxicological effects of chlorine as follows:

> Severe acute effects of chlorine exposure in humans have been well documented since World War I when chlorine gas was used as a chemical warfare agent. Other severe exposures have resulted

---

[9] World War I: A Student Encyclopedia, Spencer Tucker, editor, at 474 and 1074 (2006). *See also* Simon Jones, World War I Gas Warfare Tactics and Equipment (2007) (discussing extensively the use of chlorine as weapon in World War I).

[10] *Id.* at 474

[11] *Id.* at 232 and 475.

[12] The Geneva Protocol prohibits the use of chemical weapons and biological weapons, but has nothing to say about production, storage or transfer. Later treaties did cover these aspects—the 1972 Biological Weapons Convention and the 1993 Chemical Weapons Convention.

[13] Theodore Karasik, Toxic Weapons at 21 (attached as Exhibit I-1).

[14] Excerpt available at http://www.vlib.us/medical/gaswar/chlorine.htm (attached as Exhibit I-2).

> from the accidental rupture of chlorine tanks. These exposures have caused death, lung congestion, and pulmonary edema, pneumonia, pleurisy, and bronchitis [Hathaway et al. 1991]. The lowest lethal concentration reported is 430 ppm for 30 minutes[Clayton and Clayton 1982]. Exposure to 15 ppm causes throat irritation, exposures to 50 ppm are dangerous, and exposures to 1000 ppm can be fatal, even if exposure is brief [Sax and Lewis 1989; Clayton and Clayton 1982]. Earlier literature reported that exposure to a concentration of about 5 ppm caused respiratory complaints, corrosion of the teeth, inflammation of the mucous membranes of the nose and susceptibility to tuberculosis among chronically-exposed workers. However, many of these effects are not confirmed in recent studies and are of very dubious significance [ACGIH 1991]. A study of workers exposed to chlorine for an average of 10.9 years was published in 1970. All but six workers had exposures below 1 ppm; 21 had TWAs above 0.52 ppm. No evidence of permanent lung damage was found, but 9.4 percent had abnormal EKGs compared to 8.2 percent in the control group. The incidence of fatigue was greater among those exposed above 0.5 ppm [ACGIH 1991]. In 1981, a study was published involving 29 subjects exposed to chlorine concentrations up to 2.0 ppm for 4- and 8-hour periods. Exposures of 1.0 ppm for 8 hours produced statistically significant changes in pulmonary function that were not observed at a 0.5 ppm exposure concentration. Six of 14 subjects exposed to 1.0 ppm for 8 hours showed increased mucous secretions from the nose and in the hypopharynx. Responses for sensations of itching or burning of the nose and eyes, and general discomfort were not severe, but were perceptible, especially at the 1.0 ppm exposure level [ACGIH 1991]. A 1983 study of pulmonary function at low concentrations of chlorine exposure also found transient decreases in pulmonary function at the 1.0 ppm exposure level, but not at the 0.5 ppm level [ACGIH 1991]. Acne (chloracne) is not unusual among persons exposed to low concentrations of chlorine for long periods of time. Tooth enamel damage may also occur [Parmeggiani 1983]. There has been one confirmed case of myasthenia gravis associated with chlorine exposure [NLM 1995].[15]

Chlorine is chemically unstable and is very dangerous to human life and health when released into the air.

---

[15] http://www.osha.gov/SLTC/healthguidelines/chlorine/recognition.html (attached as Exhibit I-3). For a further discussion of the toxicology of chlorine *see* Sylvia S. Talmage "Chlorine" in Handbook of Toxicology of Chemical Warfare Agents, (Ramesh Chandra Gupta, editor 2009).

> Small doses irritate the eyes, skin, and respiratory tract; large concentrations of chlorine gas can kill people within minutes. If inhaled at very high concentrations, chlorine breaks down in the lungs to hydrochloric acid that burns lung tissue, causing pulmonary edema and essentially causing drowning as liquid fills the lungs. . . . . The lowest lethal exposure is reported as 430 ppm for 30 minutes. Over shorter periods of time, exposure even to 15 ppm of chlorine causes throat irritation, while exposure to 50 ppm is dangerous and exposure to 1000 ppm can be fatal after a few deep breaths.[16]

Clearly it is the product itself that poses a risk to railroad employees and the public at large. It is the product itself that makes it attractive to terrorists.[17] The Board must address the appropriate treatment of these risks, and the costs associated with them, in this case.

2. All Railroads, Including the SBRR, Face Risks Inherent in the Transportation of Chlorine.

A railroad has no choice but to accept chlorine and other TIH commodities upon a reasonable request. Having found that the common carrier obligation encompasses TIH commodities, the Board has prominently exposed the question that must now be resolved in this case—how will the Board rate regulatory regime acknowledge and incorporate the risks associated with these shipments?

It is beyond dispute that any railroad, including the SBRR, is exposed to substantial risk every time a customer tenders a carload of chlorine to it. Even with an impressive safety record, a railroad cannot eliminate entirely the risk of such releases, whether through terrorist attacks, acts of God, third-party activity, or other causes. SunBelt might wish to hypothesize a perfect

---

[16] L. Branscomb, M. Fagan, P. Auerswald, R. Ellis, R. Barcham, "Rail Transportation of Toxic Inhalation Hazards: Policy Responses to the Safety and Security Externality," at 9-10, Discussion Paper #2010-01, Harvard University Kennedy School Belfer Center (February 2010) (hereinafter "*Rail Transportation of Toxic Inhalation Hazards*") (referred to hereinafter as the "Harvard Report").

[17] Tucker, *The Future of Chemical Weapons*, at 26-28.

safety record for its SBRR activities, but it cannot assume away the risks of real world events that NS faces regularly.

The SBRR's network, like NS's own, is an open network.[18] The rail network is open because it interfaces with other aspects of society, such as road crossings, transload facilities for multi-modal transportation, and the facilities of customers who ship commodities other than the specified hazardous materials. These interrelationships mean the rail system must remain an open network. Because rail systems must be open, the dangers associated with transporting chlorine and other TIH commodities cannot be eliminated. The rail system will always be vulnerable to an incident or an attack.

In addition to terrorism,[19] there are many other potential causes of calamity that expose the SBRR to substantial risks. Consider the following examples of accidents that occurred on NS in recent years:

- In Greensboro, North Carolina, the driver of a gasoline truck stopped his truck across NS tracks after allegedly not seeing the warning signals. NS's train struck the truck, causing a fiery crash.
- In Augusta, Georgia, a tractor-trailer driver drove through a crossing gate and flashing signal lights and rammed into the side of one of NS's passing trains, which resulted in the derailment of 24 rail cars.
- In Oakwood, Georgia, a drunk driver ran through a stop sign, continued through a field, and broadsided an NS train. Twelve cars derailed, including five with hazardous chemicals, which forced the evacuation of 250 people. Fortunately, the only spill was a load of plastic pellets.

In each of these instances an ordinary citizen caused an incident that could have been disastrous if the accident had involved the release of any of the specified hazardous materials. The SBRR, and the Board, cannot simply assume these risks do not exist.

---

[18] *See* 76 Fed Reg. 76854 (recognizing that the rail system is an "open network").

[19] *See, e.g.,* 71 Fed. Reg. 76873 ("The primary focus of the enhanced inspection would be to recognize an IED.").

Moreover, the magnitude of the risk is extraordinary. Because of the extremely dangerous nature of TIH commodities when released into the air, rail carriers transporting such commodities face catastrophic liability risks every time they move a rail car carrying TIH. For example, a study by an economic consulting firm found that a rush hour rail accident in Chicago involving a chlorine release from a *single rail car* could result in 10,000 fatalities, 32,600 other casualties and inflict more than $7 billion in damages (excluding property damage, business loss, and environmental remediation). *See* Risk Management Solutions, "*Catastrophe, Injury, and Insurance: The Impact of Catastrophes on Workers Compensation, Life and Health Insurance*" at 54-59 (2004), copy available at www.rms.com/Publications/Catastrophe_Injury_Insurance. An accident involving the release of chlorine from multiple cars has the potential for far greater losses and damages.

The potential for catastrophic damage from a release of TIH chemicals from a rail car into the environment is not limited to accidental releases. Terrorism experts have identified an attack on a TIH shipment being transported through urban areas as one of the most severe terrorist threats to civilians. As a former Deputy Homeland Security Adviser explained:

> Of all the various remaining civilian vulnerabilities, one stands alone as uniquely deadly, pervasive, and susceptible to terrorist attack: industrial chemicals that are toxic when inhaled, such as chlorine, ammonia, phosgene, . . . These chemicals, several of which are identical to those used as weapons on the Western Front during World War I, are routinely shipped through and stored near population centers in vast quantities . . . A cleverly designed terrorist attach against such a chemical target would be no more difficult to perpetrate than the September 1 attacks. The loss of life could easily equal that which occurred on September 11 – and might even exceed it. I am aware of no other category of potential

terrorist targets that presents as great a danger as toxic industrial chemicals.[20]

At the same time that TIH shipments present potentially ruinous, unavoidable risks to rail carriers, they constitute only 2.5% of the SBRR's traffic volume and revenues. *See* NS Reply WP "TIH Mileage Summary." Thus, absent either compensation commensurate with carriers' risk exposure, or an overriding legal obligation, a rational economic actor in the position of a rail carrier like NS would refuse to transport inherently risky TIH traffic. As discussed below, although rail carriers do not receive compensation sufficient to offset the risk of carrying TIH commodities, they are nonetheless required to accept and transport such commodities when tendered by shippers.

3. Public Policy Demands that the Board Account for the Inherent Risk of Transporting Chlorine in This Rate Case.

A recent Harvard report observed that "[t]he current regulatory scheme [at the Board] means that the risks of carrying a product that could cause billions of dollars in damage and impose potentially huge liability on a railway in the event of a release are rarely reflected adequately in rail transportation rates."[21] In large part, the regulatory regime does not account for the risks of transporting inherently dangerous products such as chlorine because the Board has not yet addressed how a SARR will account for that risk. That question is now squarely before the Board. NS agrees with the conclusion of the Harvard Report that "[p]olicy solutions should recognize the risk of TIH carriage as an externality, and should aim to incorporate external costs into the cost of TIH products and their transportation."[22]

---

[20] Richard Falkenrath, former Deputy Homeland Security Adviser and NYC Deputy Commissioner of Police, "We Could Breathe Easier: the Government Must Increase the Security of Toxic Chemicals in Transit," *Washington Post* at A15 (March 29, 2005) (emphasis added).

[21] *See* NS Reply WP "Harvard Report" at 14-15.

[22] *Id.* at 63.

Railroads have attempted to obtain protection in other ways from the risks of transporting chlorine and other TIH commodities. Union Pacific sought an order declaring that the common carrier obligation did not encompass those commodities. But the Board rejected that alternative and held that the common carrier obligation requires railroads to transport TIH freight essentially at the demand of a shipper, without regard to the availability of lower risk (and lower cost) transportation alternatives. *See, e.g., Union Pacific R.R. – Petition for Declaratory Order,* STB Docket No. 35219 (served June 11, 2009) (applying common carrier obligation to require rail carrier to accede to shipper demand for particular TIH transportation service, despite availability of lower risk alternatives).

Next, Union Pacific sought an order from the Board that would reduce the risk of long-distance shipments of TIH commodities. The location of TIH production facilities and geographically dispersed receivers and users of TIH commodities (particularly chlorine) results in demand for long distance carriage of those commodities through and near large population centers. Further exacerbating the risks and costs of transportation of chlorine and other TIH commodities is the fact that shippers often demand that rail carriers transport them unnecessarily long distances from a production facility to a destination, despite the availability of closer sources of production or safer alternative products. But again, the Board rejected Union Pacific's plea and held that the common carrier obligation prohibits railroads from declining a shipper's request for transportation of a TIH commodity on the basis that the shipper could obtain the same commodity from an origin that is closer to the destination, or that otherwise presents lower risk of accidental exposure to people and the environment. *See, e.g., UP – Petition for Declaratory Order,* STB Docket No. 35219 (June 11, 2009).

Because under current law a carrier must move TIH commodities between any points on its network on demand, and because shippers' liability risk does not increase with hauling distance or other risk factors, shippers have little incentive to source TIH commodities from the closest production facility or otherwise take exposure risk into account in their TIH commodity procurement and transportation decisions.[23] As a result, shippers' TIH sourcing and transportation decisions are generally driven by factors (e.g. commodity price) other than transportation risk factors and those decisions do not adequately take into account the very real and substantial risks of damage and liability inherent in transportation of TIH commodities.

All that is left is to account for the risks of TIH commodities in rate regulation, including in this case. *See, e.g., Class I Railroad Accounting and Financial Reporting – Transportation of Hazardous Materials,* STB Ex Parte No. 681, Comments of Norfolk Southern Railway Company at 3 (Feb. 4. 2009) (urging the Board to ensure that its rate reasonableness determinations fully account for the unique costs and risks of transporting TIH and other highly hazardous materials). As the Harvard study found, the Board's rate regulatory regime must account for these risks and the external costs that arise from these risks when determining the maximum reasonable rate for SunBelt's chlorine shipments.

[23] Both producers and receivers/users of TIH commodities lack incentive to take exposure risk into account when buying, selling, or arranging for transportation of those commodities. Receivers generally bear no more liability risk whether a chlorine shipment travels 10 miles or 1,000 miles, even though release and exposure risks vary directly with transportation distance. Similarly, producers' primary incentive is to sell their product, without regard to the distance it must be transported to they buyer. Like users—but in contrast to carriers—producers' liability risk generally does not increase with the length of the transportation haul of a TIH commodity.

4. NS Incurs the Externalities of Regulatory Policy, and Therefore the SAC Analysis Outcome and the Maximum Regulatory Rate Must Also Reflect that the Railroad Bears the Externalities.

Manufacturers and users of chlorine and other TIH products are well aware of the toxicological risks associated with those products. Unlike railroads that are required by federal law to accept shipments of the chlorine that they do not make, however, there are no federal laws requiring a company to manufacture, sell, purchase, or use chlorine and other TIH commodities. Companies such as SunBelt voluntarily choose to engage in the production, use, and sale of TIH commodities because they are profitable—the revenues they earn from those activities substantially outweigh the costs they bear for engaging in them. So long as such firms bear the full cost of the products they produce, use, or sell, their net revenues from such activity are entirely appropriate. But SunBelt—like other TIH producers—does not bear the full cost of its decision to manufacture, sell, and distribute TIH commodities. Instead, some of those costs are borne by others, including rail carriers.

The single rate case of which NS is aware in which the Board addressed a carrier's request that rate reasonableness analysis take into account the extraordinary costs and risks of transporting TIH commodities was *E.I. du Pont de Nemours and Company v. CSX Transportation, Inc.*, STB Docket No. 42100 (served June 30, 2008). In that Three Benchmark case, the Board rejected the defendant carrier's arguments for cost and revenue adjustments to more accurately reflect the actual costs and risk of rail transportation of TIH commodities, and to reflect pricing responses to those costs and risks. *See id.*, at 8-9, 15-17, n.48. As a prominent study concluded in evaluating the *DuPont* decision and the Board's failure to adjust rate reasonableness analysis to account for the risks and extra costs of transporting TIH commodities:

> the current regulatory scheme means that the risks of carrying a product that could cause billions of dollars in damage and impose

> potentially huge liability on a railway in the event of a release are rarely reflected adequately in rail transportation rates. In other words, they remain externalities.

L Branscomb, M. Fagan, P. Auerswald, R. Ellis, R. Barcham, "Rail Transportation of Toxic Inhalation Hazards: Policy Responses to the Safety and Security Externality," Discussion Paper#2010-01, Harvard University Kennedy School Belfer Center (February 2010) ("*Rail Transportation of Toxic Inhalation Hazards*") at 15.

The SBRR already must bear the direct costs of TIH transportation, including increased handling, security measures that affect transit times and increase personnel and other costs and positive train control. These costs are accounted for in the SBRR's engineering and operating costs. The SBRR would also have substantial insurance costs that it would not otherwise incur but for its carriage of TIH commodities (mostly chlorine)—those costs must be included in its operating costs.

But the risks of liability for an accidental release on rail carriers and on society are not already included in the SBRR's costs.[24] This is a classic example of a negative externality—a market failure consisting of a negative effect of a use decision by one party on other parties who do not have a choice in the matter and whose interests are not adequately taken into account. The imposition of the risks of transporting TIH on rail carriers and individuals who do not have a choice whether to undertake and bear those risks and costs is an externality.[25]

---

[24] Companies that manufacture, sell, or use chlorine should bear those unique costs in the first instance. They may choose to pass those costs on to customers and consumers who benefit from the use of chlorine by incorporating those costs in their prices. Indeed, including these costs in the price of affected goods and services is an effective market-based solution to distributing concentrated costs to a large and dispersed population of beneficiaries.

[25] These externalities also distort shippers' transportation decisions. Because shippers do not bear the additional costs and risks of shipping TIH commodities over longer distances or through high population areas, they have no incentive to consider those risks and costs in their sourcing and shipping decisions. As experience has shown time and again, economic actors who are not

The appropriate market-based solution to a negative externality is to shift the externalities back to the entities whose use and activity cause those costs, and thereby to ensure that the market price of the commodity reflects the full costs of the product. Requiring shippers of TIH commodities to "internalize" the costs and risks of transporting TIH commodities would correct this market failure. *See, e.g., Rail Transportation of Toxic Inhalation Hazards* at 28, 29 ("The full societal cost of TIH transportation—including the risks of potential damage from accident or attack—is not reflected in the market prices for TIH products. . . . .If the TIH risk could be quantified and incorporated into the price of TIH products and their transportation, this would allow stakeholders to make economically rational decisions concerning production, use, and shipping of TIH chemicals."). In the context of the present case, the Board should mitigate the effect of these externalities on its rate reasonableness analysis by including those externalities in its rate regulatory regime.[26]

Clearly, SunBelt and its parent company Olin presently are not internalizing the externalities associated with the transportation of chlorine. As one illustration, Olin Corporation has a Chlor Alkali division. In 2011, Olin, through that division, bought out the 50% share in

---

required to bear the costs and risks of their decisions will make riskier and more costly decisions, to the detriment of other market participants and society.

The ongoing home mortgage crisis and related financial institution failures and the resulting deep economic recession, as well as federal government expenditure of hundreds of billions of dollars to attempt to address that crisis and stabilize the economy, are only the latest and most prominent examples of the negative effects of businesses discounting or disregarding risks (in that case based partly on a belief that the government would be the ultimate actual bearer of those risks). To the extent that the government, and hence society, bore the costs of risky activity of private financial institutions, those costs were negative externalities of that risky activity. As the Harvard study concluded, "[p]olicy solutions should recognize the risk of TIH carriage as an externality, and should aim to incorporate external costs into the cost of TIH products and their transportation." *Rail Transportation of Toxic Inhalation Hazards* at 63.

[26] As discussed below, those costs include the costs of special handling and security measures; positive train control system development, installation, and operation; liability insurance costs, and the risk of catastrophic liability in the event of an accidental release.

SunBelt—a chlorine manufacturer—that its partner, PolyOne, held for $132.3 million in cash plus the assumption of a PolyOne guarantee related to the SunBelt Partnership debt.[27] Olin now owns 100% of the chlorine manufacturer. Why did Olin spend so much money to acquire the portion of SunBelt it did not already own? According to its Chief Financial Officer, "Olin expects the acquisition to be accretive to both EBITDA [earnings before interest, taxes, depreciation, and amortization] and earnings in 2011."[28] In layman's terms, Olin expected the acquisition to produce profits immediately. In part that is because "SunBelt currently has the lowest cash manufacturing costs in the Olin system."[29] Even when later in the year it appeared the volume of chlorine shipments might be lower than expected, Olin was not worried. Entering the fourth quarter of 2011, Joseph D. Rupp, Chairman, President, and CEO of Olin Corporation, reassured investors that "[c]hlorine and caustic soda shipments are forecast to be lower than the fourth quarter of 2010 levels but will be more than offset by higher selling prices."[30] In short, SunBelt produces more and more chlorine because it can sell at higher and higher prices without having to internalize the risk of the transportation of the commodity. Instead, it shifts the risks related to its products to the railroad as soon as it hands the railcar off to the railroad.

* * *

The Board's rate reasonableness analysis must take into account the extraordinary costs and liability risks that chlorine transportation imposes on both real-world railroads like NS and hypothetical SARRs like the SBRR. The Board should do so by both ensuring that its SAC

---

[27] NS Reply WP "Comments of Olin Executives, Wells Fargo Securities Conference (May 10, 2011)."

[28] *Id.*

[29] *Id.*

[30] NS Reply WP "'Olin's CEO Discusses Q3 2011 Results,' Earnings Call Transcript (Oct. 28, 2011)" at 2.

analysis incorporates all costs imposed by TIH traffic and ensuring that those costs are properly allocated to TIH traffic if it performs an MMM analysis.

C. SUMMARY OF NS'S REPLY EVIDENCE

II. MARKET DOMINANCE

A. Quantitative Market Dominance

NS does not contest that, using the challenged rates and URCS system average variable costs, each of the issue movements generates revenue-to-variable-cost ("R/VC") ratios in excess of the 180% jurisdictional threshold specified by 49 U.S.C. § 10707(d)(1). *See infra* at II-A-1. While NS does not contest that use of the current unadjusted URCS Phase III movement costing program produces R/VC ratios above the jurisdictional threshold specified by 49 U.S.C. § 10707(d)(1), in Section II NS explains that the current version of URCS does not accurately reflect the full variable costs of transporting the issue movement and that the Board should account for those costs if it performs an MMM analysis.

B. Qualitative Market Dominance

For purposes of this case, NS does not dispute that the Board has jurisdiction to consider the reasonableness of the challenged rate under 49 U.S.C. §§ 10701(d)(1) and 10707. In doing so NS does not concede that any of SunBelt's evidence or arguments on qualitative market dominance are valid. In particular, SunBelt's legal arguments that the Board is forbidden from considering whole-route intermodal alternatives for challenged Rule 11 rates and that market dominance is conclusively established because NS does not subjectively consider chlorine to be "desirable" business are flatly incorrect, inconsistent with Board precedent, and should not be accepted in this or any other proceeding.

III. STAND ALONE COST

A. Traffic Group

Section III-A of NS's Reply Evidence responds to SunBelt's evidence of the SBRR's traffic group. SunBelt selected a complicated, carload-based traffic group with significant amounts of TIH traffic. With some limited exceptions, NS accepts SunBelt's traffic selection. The major arguments and evidence presented in Section III-A are described below.

Traffic Group Selection. NS generally accepts SunBelt's selected traffic group for purposes of determining SARR traffic volumes and revenues, with two major exceptions. First, as discussed above, SunBelt's traffic selection and SARR design would result in an impermissible internal cross-subsidy of the issue traffic by other traffic. This cross-subsidy precludes SunBelt from showing its traffic is paying more than its share of attributable costs and requires dismissal of this case. *See* infra III-H-12 to III-19. Second, in selecting SBRR traffic, SunBelt erroneously included a large number of waybills twice for the third quarter of 2011, which resulted in double counting of traffic volumes and revenues in that quarter. Because third quarter 2011 is part of both the SBRR "base year," and its first year of operations (*i.e.*, the first year of the SAC analysis period), SunBelt's overstatement affects SBRR traffic volumes in every year of the SAC analysis period. NS's Reply Evidence corrects this double-counting error by removing the duplicated waybills and traffic, and recalculating SBRR first year traffic volumes accordingly. *See* III-A-2 to III-A-3.

Volume Growth Projections. NS largely accepts SunBelt's traffic volumes and projections for the SBRR, with some minor adjustments.

For 2012 through 2016, SunBelt's approach aggregated NS's forecasts and applied an aggregate growth rate that resulted in significant misstatements of projected SBRR traffic volumes. SunBelt used NS's detailed lane-specific forecasts produced in discovery, but it

amalgamated them into projections of NS system-wide commodity group aggregate volumes. SunBelt used those aggregated projections to calculate an NS system growth rate for each commodity group and applied that gross aggregated average to generate its projections of future SBRR traffic volumes. SunBelt's gross NS system-wide commodity-aggregate approach is a blunt instrument that fails to account for the specific traffic experience of the SBRR, which has only a single issue movement and would traverse portions of only three states. In this Reply Evidence, NS makes adjustments to correct this distortion. *See infra* at III-A-4 to III-A-6.

SunBelt projected volumes of all SBRR traffic for the period from 2017 to mid-2021 using a compound annual growth rate ("CAGR") commencing in 2009 (two years before the SBRR would ever begin operations, the bottom of the recession and NS's lowest traffic volume year in the last several years). To correct SunBelt's distorting approach, NS's Reply Evidence uses the year-over-year 2015-2016 growth rate (from its forecast, produced in discovery) for each category of traffic other than coal handled by the SBRR, and applied that rate as the projected annual growth rate for each of those types of traffic for the subsequent years 2017 to mid-2021. NS has corrected SunBelt's erroneous projection of SBRR coal volumes by applying coal volume projections from the Energy Information Administration's ("EIA") Annual Energy Outlook 2012 ("AEO 2012"). *See infra* at III-A-8 to III-A-9; *Duke/NS*, 7 S.T.B. at 397-98 (served Feb. 3, 2012) (adopting EIA rather than demonstrably inaccurate forecasts); *TMPA II*, 7 S.T.B. at 821-22 (finding EIA to be more reliable forecast).

Revenues. NS's Reply Evidence largely accepts SunBelt's calculations of historical and projected rates (revenues) for the SBRR traffic group, with a few exceptions.

First, NS corrects an error in the historical revenue estimates presented in SunBelt's Opening Evidence, which resulted from SunBelt claiming for the SBRR revenues collected by

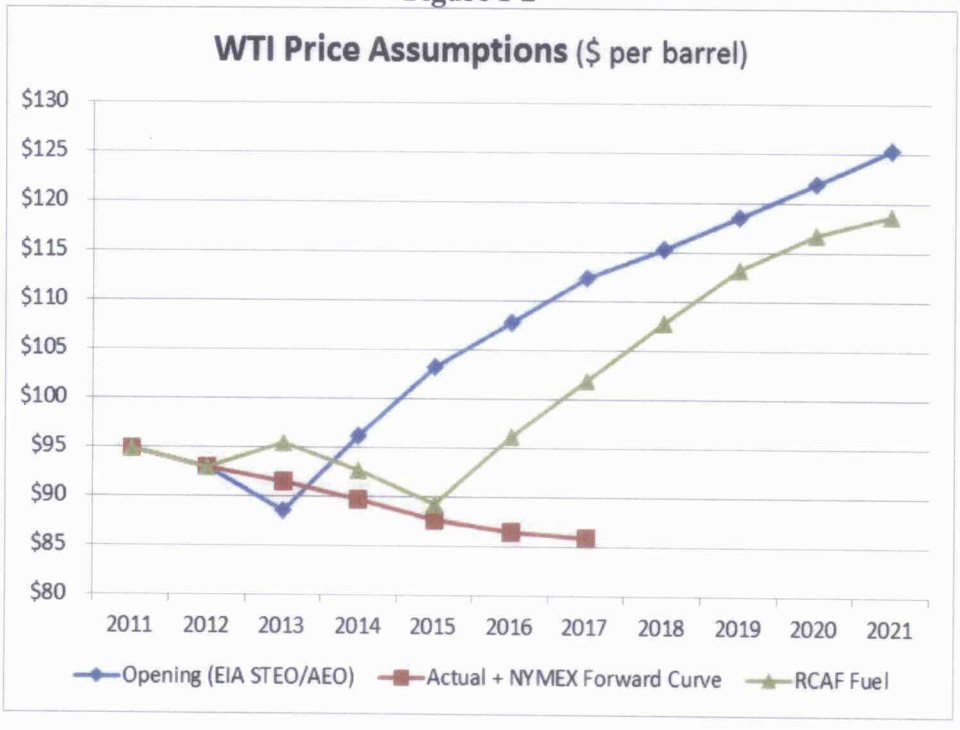
Thoroughbred Direct Intermodal Services ("TDIS") for services other than NS rail service. *See e.g. AEPCO 2002*, 6 S.T.B. at 328 (rejecting revenues for which services are not provided by SARR). Although TDIS technically is a subsidiary of NS, it functions as an NS customer that purchases rail transportation services from NS. The revenue the SBRR would obtain by "stepping into NS's shoes" would be the rail linehaul revenue NS collects from TDIS for NS's rail segment of intermodal movements. However, rather than treating TDIS as a customer of NS and accepting the revenue that TDIS pays to NS, SunBelt replaced the revenue NS collects from TDIS with the total revenue collected by TDIS for all of the various services it provides to its third party customers. But with one exception, SunBelt's SAC evidence does not include the costs of facilities, equipment, personnel, materials and other expenses necessary to provide the services required to earn the non-NS and non-rail revenues earned by TDIS. *See infra* at III-A-10 to III-A-12. To correct the resulting SBRR revenue overstatement, NS's Reply Evidence reverses SunBelt's substitution of TDIS revenues for NS's rail line haul revenues for affected movements in the 2011 traffic base. *See infra* at III-A-12.

Second, SunBelt made a significant error in calculating revenue growth rates for intermodal traffic in 2012. The error—using a different and incorrect data source for 2011 NS rail revenues—resulted in a substantial understatement of growth in intermodal in calendar year 2012. Instead of using NS's actual rail revenues reported in the NS waybill revenue files for intermodal traffic, SunBelt instead used gross intermodal revenue data reported in an *NS Quarterly Financial Review* for the fourth quarter of 2011. These publicly-reported gross revenue data include end-customer revenues for Triple Crown Services ("TCS") and TDIS, which provide intermodal and logistics services in addition to re-selling rail services. NS has corrected this error—a correction that favors SunBelt—by using the intermodal revenues

reported in the revenue waybill data for 2011 that it produced to SunBelt in discovery to determine the projected intermodal revenue per unit for 2012, and calculating a growth rate based on the difference between revenue per unit in the two years. This corrected growth calculation changes intermodal revenue per unit in 2011 from the 22 percent *decrease* presented in SunBelt's opening evidence to a 4% *increase,* thereby substantially increasing revenues for the intermodal traffic selected for the SBRR. *See infra* at III-A-13 to III-A-14.

Third, SunBelt significantly overinflates SBRR fuel surcharge revenues by using two different indices to project changes in the price of diesel fuel. *See infra* at III-A-17. To minimize SBRR fuel *costs*, SunBelt used an index that predicts that the price of diesel fuel will be flat or decreasing over the relevant time period. But to maximize SBRR fuel surcharge *revenues*, SunBelt uses an index that predicts that the price of that very same diesel fuel will increase significantly over the identical time period. *See id.* The below figure illustrates SunBelt's gamesmanship: SunBelt uses the blue line to project fuel surcharges and the red line to project fuel costs.

Figure I-2[31]



SunBelt thus seeks to have it both ways by assuming that rising fuel prices would allow the SBRR to generate additional SBRR fuel surcharge revenues, but that the prices the SBRR actually would pay for fuel essentially would remain flat through 2016. A proper SAC analysis must make consistent and realistic price escalation assumptions, including using the same assumptions as the basis for the SARR's fuel costs and for its fuel surcharge revenues. NS's Reply Evidence corrects the mismatch in SunBelt's projections by using the same fuel price index for both fuel surcharge revenue and fuel expenses. *See infra* at III-A-17.

Fourth, NS's Reply Evidence corrects a methodological error in SunBelt's opening evidence that caused it to understate substantially the payments that the SBRR would make to handling and switching carriers for the SBRR's selected traffic. *See infra* at III-A-19 to III-A-23.

[31] *See infra* at III-A-14 to III-A-19 for sources and further explanations.

Cross-Over Traffic And Revenue Divisions. SunBelt's SAC presentation relies excessively on cross-over traffic. As discussed above, SunBelt's overuse of cross-over traffic implicates precisely the concerns that animated the Board in proposing limits on permissible cross-over traffic in *Rate Regulation Reforms.* Because the same distortions and misallocation of revenues the Board seeks to eliminate are presented in this case, the Board must take appropriate measures to limit those distorting effects here, by applying the limits proposed in *Rate Regulation Reforms.*

SunBelt's evidence also contains a major error in its allocation of revenues for cross-over traffic: SunBelt erroneously applied the so-called "Modified ATC" revenue allocation approach that the Board created as an *ad hoc* method in a single individual case. *See infra* at III-A-24 to III-A-56. That amended method was rejected on appeal and remanded to the Board by the D.C. Circuit more than *14 months before* SunBelt filed this case. From the time SunBelt filed this case through the date NS files this Reply Evidence, the only properly adopted and judicially approved revenue allocation methodology was the original ATC method adopted in *Major Issues.*

Moreover, even if the modified cross-over revenue allocation rule the Board sought to apply in *Western Fuels* were substantively adequate and reasonable, the Board's independent failure to conduct notice-and-comment rulemaking to promulgate a substantive amendment to the ATC rule would render that amendment invalid under the Administrative Procedure Act.[32] *See infra* at III-A-24 to III-A-56.

---

[32] *See e.g., Am. Mining Congress v. Mine Safety & Health Admin.*, 995 F.2d 1106, 1109 (D.C. Cir. 1993); *Marseilles Land and Water Co. v. FERC,* 345 F.3d 916, 920 (D.C. Cir. 2003) (holding that "an administrative agency may not slip by the notice-and-comment rule-making requirements needed to amend a rule by merely adopting a *de facto* amendment to its regulation through adjudication"); *Shalala v. Guernsey Mem'l Hosp.,* 514 U.S. 87, 100 (1995) (an agency

In an extensive notice-and-comment rulemaking proceeding, the Board adopted a substantive rule providing a method for allocating cross-over traffic revenues that fully and adequately accounted both for a carrier's relative average costs of providing service over on-SARR and off-SARR segments and for economies of density. *See Major Issues*, STB Ex Parte No. 657 (Sub-No. 1), at 24-36. The Board's clear intention in proceeding by notice-and-comment rulemaking was to avoid continuing re-litigation of the issue of cross-over traffic revenue allocation in each individual rate case. *See Major Issues,* STB Ex Parte 657 (Sub-No. 1), at 3. The agency's attempt to apply a new rule in the individual *Western Fuels* case flouted the Board's own stated goal of resolving the revenue allocation methodology in a full rulemaking and not to continue to relitigate the issue in individual cases.

As a matter of law, once an agency like the Board adopts a substantive rule like ATC, the Administrative Procedure Act requires that any amendment or modification of that rule be considered and adopted only in a notice-and-comment rulemaking. *See, e.g.*, 5 U.S.C. § 551(5). In disregard of this statutory requirement, the Board attempted to amend the ATC revenue allocation rule in an individual rate case. *See WFA I*, STB Docket No. 42088, at 14.[33] Tellingly, the Board referred to the new methodology it created and applied in that individual adjudication as "Modified ATC." Courts reviewing the question of whether an agency rule requires notice-and-comment rulemaking frequently admonish that any agency action that *modifies* or amends an existing substantive rule may do so only through notice-and-comment rulemaking. *See, e.g., Air Transport Ass'n of America v. FAA,* 291 F.3d 49, 56 (D.C. Cir. 2002)

---

interpretation that "adopt[s] a new position inconsistent with . . . existing regulations" must follow APA notice-and-comment procedures).

[33] A more detailed legal argument demonstrating that Modified ATC may not be applied in this case and that the only presently valid cross-over revenue allocation method is ATC is set forth in Section III-A. *See infra* at III-A-24 to III-A-56.

("'*Rulemaking*,' as defined in the APA, *includes* not only the agency's formulation, but also its *modification of a rule*") (emphasis added); *Paralyzed Veterans of America v. D.C. Arena,* 117 F.3d 579, 586 (D.C. Cir. 1997).

Here, there is no real question that the Board's *ad hoc* modification of the ATC rule in *Western Fuels* effected an amendment and substantive change to that rule. ATC allocated all cross-over revenues based upon average total cost of the movements and the carrier's "relative average [total] costs of providing service over the two segments." *Major Issues,* STB Ex Parte No. 657 (Sub-No. 1), at 31. The ATC rule used average total cost to properly allocate all cross-over revenues in a manner that properly accounts for "the defining characteristic of the railroad industry—economies of scale, scope, and density." *Id.* at 25. As the Board explained, allocating revenues based upon variable costs fails to take into account the critical role of economies of density. *See id.* The ATC rule also implemented the Board's primary goal in allowing the use of cross-over traffic—to "make the analysis more manageable without introducing bias." *Id.* at 24.

The amended "modified ATC" sought to change materially each of the above-described parameters of the ATC rule and methodology. *First,* the Board created an entirely new substantive element for cross-over revenue allocation: the amount of revenue allocated to the SARR segment of the movement must be greater than or equal to *the incumbent carrier's URCS variable costs. See Western Fuels I,* STB Docket No. 42088, at 14. Moreover, that new substantive requirement was deemed so important that it must be satisfied *before*—and in some cases in lieu of—the ATC criteria. *See id.*[34] *Second,* instead of allocating *all* cross-over

[34] This substantive requirement was so novel and outside the existing ATC rule that no party to the case contemplated it. The parties raised several other issues concerning the proper application of the ATC rule, but none sought a threshold requirement that the revenue allocation must first cover the variable costs of the movement over the segment the complainant chose to

revenues in accordance with the relative average total costs of the on-SARR and off-SARR segments, the new method used ATC to allocate *only* those *revenues left over* after sufficient revenues had been allocated to the on-SARR segment to cover its variable costs. Under the new rule, the primary allocation of revenues had nothing to do with average total costs or with relative costs of the two segments, but instead allocated revenues based on URCS *variable costs* of the on-SARR segment only. *See id. Third,* the new rule's allocation of revenues to cover the URCS variable costs attributed to the on-SARR segment failed to take into account economies of density— "the defining characteristic of the railroad industry." *Compare Major Issues*, STB Ex Parte No. 657 (Sub-No. 1), at 25 *with WFA* I, STB Docket No. 42088, at 14. This was a major departure from the ATC rule, whose primary feature was that it allocated all cross-over revenues in a manner that accounted for economies of density. *See, e.g., BNSF et al v. STB,* 526 F.3d 770, 782-83 (2008). *Fourth,* the new rule "introduced bias" to the analysis by allocating to the SARR revenue sufficient to cover the variable costs of its segment regardless of the resulting under-allocation of revenue to the off-SARR segment and the fact that the complainant alone had chosen to include as cross-over traffic movements that generated revenue-to-URCS-variable-cost-ratios of 100 percent or less. The Board's new rule thus introduced bias to a method whose goal was to simplify the analysis without introducing bias.

Because the Board's new cross-over revenue allocation rule substantively modified the ATC rule adopted in the *Major Issues* rulemaking, that amendment could only be adopted in a notice-and-comment rulemaking. *See, e.g., American Mining Congress*, 995 F.2d 1106, 1112 (DC Cir. 1993) (reconciling cases and distilling four circumstances in which a rule is "legislative" or substantive, meaning that the APA requires notice-and-comment rulemaking for

---

include as part of its SARR network. *See Western Fuels I*, STB Docket No. 42088, at 12-13. The Board created this entirely new substantive requirement *sua sponte*. *Id.* at 14.

its adoption, including where "the rule effectively amends a prior legislative rule."). However, the Board created its new rule in an individual adjudication, *not* in a rulemaking. Courts have consistently held that an agency may not avoid notice-and-comment rulemaking requirements by adopting a *de facto* amendment to a substantive "legislative" rule in an individual adjudication. *See, e.g., Marseilles Land and Water Co. v. FERC,* 345 F.3d 916, 920 (D.C. Cir. 2003). Accordingly, the so-called "Modified ATC" rule is invalid because it violated the rulemaking requirement of the APA. Application of that invalid rule to this case would render any decision issued in this case invalid and subject to reversal.

The Board now recognizes that a substantive change to its cross-over revenue allocation rule should be undertaken in a rulemaking and not in the limited context of an individual rulemaking. In the *Western Fuels* remand decision, the Board stated that it planned to commence a rulemaking to consider alternative cross-over revenue allocation rules. *See Western Fuels v. BNSF*, STB Docket No. 42088, Decision at 12 (June 13, 2012). Then, in July, the Board initiated a notice-and-comment rulemaking to consider, *inter alia*, a new cross-over traffic revenue allocation rule. *See Rate Regulation Reforms*, STB Ex Parte 715, at 7-8, 17-18. Plainly, the Board has now recognized that a notice-and-comment rulemaking is the necessary and appropriate way to change its ATC revenue allocation rule.

In sum, the only cross-over revenue allocation rule that lawfully may be applied to this case at the present time is "original" ATC. Unless and until the Board adopts a new or amended rule in a rulemaking proceeding, it must apply the original ATC revenue allocation rule to this case. Application of any method or approach that is substantively different from the ATC rule (such as the "Modified ATC" the Board applied in *Western Fuels*), without first conducting a rulemaking proceeding and promulgating a new rule, would be unlawful.

B. Stand Alone Railroad System

The rail network that SunBelt posited for the SBRR totals 580.64 miles, including 578.24 miles of track constructed and owned by the SBRR and 2.4 miles of track owned by Canadian National Railway Company ("CN") (over which the SBRR would operate pursuant to NS's existing trackage rights agreement). SunBelt Opening III-B-2. The SBRR system includes two main line segments traversing three states—Alabama, Mississippi, and Louisiana. SunBelt Opening III-B-1 to III-B-2. NS accepts the general scope and configuration of the SBRR posited by SunBelt. NS Reply Exhibit III-B-1 contains a map depicting the SBRR rail lines, yards, interchange points, and intermodal and automotive facilities posited by NS.

But NS does correct some errors in the SARR's stand-alone rail system. First, SunBelt's proposed SBRR configuration does not account for the full costs of the intermodal terminals or automotive handling facilities that the SBRR would need to meet the requirements of general freight, automotive, and intermodal shippers. NS's Reply Evidence addresses those serious deficiencies in SunBelt's SARR by providing and accounting for the cost of those facilities. *See infra* at III-B-9 to III-B-10.

Second, SunBelt's track configuration for the SBRR does not include the tracks that would be required to interchange traffic with NS at branch line junctions. NS's Reply Evidence addresses this omission by incorporating an appropriate number of track feet of interchange trackage for use by the SBRR and NS in transferring cars at those new interchange locations. *See infra* at III-B-2.

Third, SunBelt's list of "major" interchange points does not account for the new interchange points necessitated by its decision not to include certain NS branch lines in the SBRR network, even though SunBelt's selected traffic group includes traffic originating and/or termination at customers located along those branch lines. NS's Reply Evidence rectifies this

omission by accounting for the time and resources required to interchange cars at all of the locations at which the SBRR would be required to interchange its selected traffic (*see* Part III-C), and by including in the SBRR's physical configuration all of the track facilities necessary to conduct those interchange operations (*see* Part III-F). *See infra* at III-B-2 to III-B-3.

The track capacity and configuration posited by SunBelt are based upon a fatally deficient operating plan and RTC simulation from which the outputs are meaningless. Among the most glaring deficiencies in SunBelt's RTC simulation are (1) its failure to include 1,622 necessary trains, which affected 91% of SunBelt's own issue traffic; (2) its failure to model the movement of SBRR road and local trains completely and accurately; (3) numerous operating assumptions that violate applicable laws and regulations, industry "best practices" and the laws of physics; and (4) its failure to account properly for train delays due to random outages and foreign train crossings. *See, e.g., AEPCO 2011*, STB Docket No. 42113, at 30 (rejecting complainant's operating plan in part for failure to account properly for random outages).

NS's Reply Evidence provides the additional main line, secondary track, interchange tracks, and yard tracks that the SBRR would need to serve SunBelt's selected traffic group. NS's RTC simulation demonstrates that the physical plant posited by NS is required to accommodate the SBRR's train operations under real-world conditions. *See infra* at III-B-4.

With the additions and modifications posited by NS, the SBRR would have a total of 881.5 miles of track, consisting of 578.2 miles of 100% owned main line track, 135.6 miles of second main line track, 23.5 miles of interchange track, 15.8 miles of set out track, 117.7 miles of yard track, and 10.6 miles of customer access track. Table I-3 compares the track miles to be constructed and owned by the SBRR, based upon SunBelt's Opening Evidence, and the revised

number of track miles resulting from NS's correction of the errors and omissions in SunBelt's Opening Evidence. *See* III-B-5 to III-B-7.

Table I-3
Reply SBRR Constructed Track Miles

Type of Track	Open Constructed Miles	Reply Constructed Miles	Difference
(1)	(2)	(3)	(4)
1. Main line track			
a. Single first main track	578.2	578.2	0.0
b. Other main track	124.1	135.6	11.5
c. Total main line track	702.4	713.9	11.5
2. Helper pocket and setout tracks			
a. Setouts and Helper Pockets	4.5	15.8	11.3
b. Customer Access Sidings	0.0	10.6	10.6
c. Total Helper pocket and setout tracks	4.5	26.4	21.9
3. Yard and Interchange Tracks			
a. Yard Tracks (Incl. IM/Auto)	63.6	117.7	54.1
b. Interchange Tracks	0.0	23.5	23.5
c. Total Yard and Interchange Tracks	63.6	141.2	77.6
5. Total track miles	**770.5**	**881.5**	**111.1**

Source: NS Reply WP "SUNBELT RR Route Miles Opening Grading NS Reply.xlsx," tab "IIIB Tables"

NS accepts SunBelt's proposed specifications for main line tracks. The SBRR's track network includes no branch lines. The SBRR track configuration posited by NS would include 135.6 miles of 100% owned second line main track and passing sidings. The SBRR will require a total of 26.4 miles of setout tracks. SunBelt's track configuration does not include the railroad-owned industrial and/or spur tracks at any of the customer locations that the SBRR must serve. The SBRR would need such facilities to pick up and set off cars at customer facilities. NS's Reply Evidence addresses this deficiency in SunBelt's track configuration and Operating Plan by

including in the SBRR's physical plant the industry and/or spur tracks necessary to provide local service. *See* III-B-7.

As NS demonstrates (at III-C-88 to III-C-89), the location, sizing, and configuration of the SBRR yards posited by SunBelt were based entirely upon a series of unsupported mathematical calculations that are untethered to the workload that the SBRR actually would have to perform at each facility. NS's Operating Plan addresses this fatal deficiency in SunBelt's Opening Evidence by positing a group of yards that are optimally sized and configured to support the SBRR's train operations.[35] Sufficient capacity is provided where the SBRR would need it to classify and block its "carload" traffic. Overall, NS's proposed SBRR configuration includes a total of seven yards, including one "hump" yard at Birmingham, AL, three medium "flat switching" yards,[36] and three small "flat switching" yards.[37] NS's proposed configuration removes six yards posited by SunBelt. Instead, NS's Operating Plan includes "industrial support" tracks at 15 locations where limited classification activities occur.

SunBelt's SARR configuration did not include any SBRR-owned intermodal terminals. The SBRR would need two intermodal facilities—at Birmingham, AL, and New Orleans, LA—to handle the 596,544 units of intermodal traffic selected by SunBelt. SunBelt's SBRR stick diagrams indicate an automotive facility at the New Orleans, LA yard—though SunBelt failed to include any operating expenses to account for this facility. NS's Reply Evidence posits an

---

[35] *See infra* at III-C-138 to III-C-139.

[36] A "flat switching yard" consists of tracks on flat ground, and is not equipped with a hump track or power switches. Cars are classified manually by moving them between parallel tracks that are connected by "ladder" tracks at one or both ends. Flat switching is more time consuming and far less efficient than switching at a hump yard. At larger flat switching yards, specific tracks are designated for receiving, classifying or forwarding cuts of cars, while at smaller flat switching yards, tracks are used interchangeably for any of those tasks.

[37] *See* NS Reply WP "SBRR Reply Yard Operations.xlsx."

automotive facility at New Orleans, LA. NS's Operating Plan accounts for the costs that this facility generates and equips the facility with all of the infrastructure that is necessary to handle automotive traffic in a manner consistent with customer requirements, including rail spur track, paved loading and unloading areas, guard rails and security fencing, storage areas for the haulage vehicles that load and unload new cars, and facilities for terminal personnel to perform the tasks associated with the transportation of automobiles. *See* III-B-10.

NS's configuration of the SBRR includes a Centralized Traffic Control ("CTC") system, reflecting the technology available for the beginning of SBRR operations in 2011. *See infra* at III-B-10 to III-B-11. The CTC system must be overlaid by a Positive Train Control ("PTC") system in 2015. Unlike SunBelt's Failed Equipment Detectors ("FEDs"), which are placed at 35-mile increments, NS's configuration spaces FEDs according to the configuration of the current NS—approximately every 15 miles—reflecting the safety standards expected of a Class I railroad in the real world. *See infra* at III-B-11 to III-B-12.

NS conducted a simulation of the SBRR's peak year operations utilizing the Rail Traffic Controller ("RTC") Model, based upon the physical infrastructure provided for in this Part III-B. The specific inputs to the RTC Model used by NS, and the results of that simulation, are discussed at III-C-180 to III-C-190. NS's RTC simulation demonstrates that the track capacity and configuration posited by NS are both necessary and adequate to provide the services required to meet the needs of the SBRR's customers, and that the track configuration posited by SunBelt are not. *See infra* at III-B-12 to III-B-13.

C. Operating Plan

The burden of presenting a "feasible" operating plan is the complainant's. *See CP&L*, 7 S.T.B. at 259 ("[complainant] carries the burden of demonstrating that its operating plan would meet the needs of the traffic group selected"). The Board's SAC decisions articulate several

well-established requirements that a complainant must meet to provide a "feasible" operating plan. *See, e.g., CP&L*, 7 S.T.B. at 259. A complainant must "design[] a SARR specifically tailored to serve an identified traffic group" selected for its SARR. *AEPCO 2011*, STB Docket No. 42113, at 4. "Based on the traffic group to be served, the level of services to be provided, and the terrain to be traversed, a detailed operating plan must be developed for the SARR." *Id.* (emphasis added). A complainant need not replicate precisely the operations of the incumbent railroad, but it must demonstrate that the operating plan it proposes is "capable of providing the service required by the SARR's customers." *Duke/NS*, 7 S.T.B. at 99. Moreover, "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 I*, STB Docket No. 42088, at 15. While a SARR may choose to "step into the shoes" of the incumbent carrier under existing trackage rights, joint facility, interchange, run-through power, and other intercarrier agreements, a complainant may not assume that the SARR would enjoy more favorable terms than the incumbent carrier under those agreements. *See AEPCO 2002*, 6 S.T.B. at 328. Nor may a complainant "hypothesize" that the SARR could secure rights or agreements that are not available to the defendant carrier. *Id.* Finally, the Board has made clear that "[t]he parties must provide appropriate documentation to support their [operating plan and expense] estimates." *See Rate Regulation Reforms*, STB Ex Parte 715, at 6; *AEPCO 2011*, STB Docket No. 42113, at 4-5. The Operating Plan set forth in SunBelt's Opening Evidence fails to satisfy these fundamental requirements and should be rejected in its entirety. It also represents a failure by SunBelt to tender a *prima facie* case on opening.

The SARRs presented in prior SAC cases have generally handled a limited mix of traffic, primarily in unit train service. By contrast, unit train shipments of coal account for barely 1% of

the SBRR peak year traffic posited by SunBelt.[38] Virtually all of the SBRR's peak year traffic group consists of general freight (471,597 carloads, or 44%) and intermodal (596,544 units, or 55%) traffic.

Rather than presenting a "detailed" operating plan "tailored" to the specific requirements the SBRR's traffic group, SunBelt proffered a skeletal plan based upon a series of "automated" data analyses and undocumented spreadsheet calculations. The most glaring deficiencies in SunBelt's Operating Plan include the following:

First, the methodology that SunBelt used to develop its train service plan for the SBRR failed to capture more than 1,600 NS trains in which SunBelt's selected traffic moved during the Base Year. As a result, the SBRR's Operating Plan fails to provide complete on-SARR train service for thousands of cars of selected traffic—including 91% of SunBelt's own "issue" traffic! *See infra* at III-C-17 to III-C-18; *FMC*, 4 S.T.B. at 736-37 (rejecting complainants' operating plan in part for understating the number of trains). SunBelt's operating plan is one of the most egregious failures in a rate case to date and constitutes a failure to meet the complainant's burden to tender a *prima facie* case. SunBelt's decision to use an automated, "mathematical" process to develop an operating plan—rather than having an expert build an operating plan from the ground up that would serve the needs of the traffic in the traffic group—created this critical shortcoming. One of the commands that SunBelt gave the computer was to exclude all trains that had only one station code—thus eliminating nearly all local train service. As a result, SunBelt failed to include in its SARR traffic the NS local trains needed to actually serve SunBelt's McIntosh facility. Because SunBelt's chosen methodology produced this fundamental flaw, SunBelt is precluded from attempting to fix it on rebuttal. *See IPA*, STB Docket No. 42127, at 3.

---

[38] *See* SunBelt Opening, III-C-3, Table III-C-1.

Second, the traffic group selected by SunBelt includes 471,597 peak year carloads of general freight traffic. SunBelt Opening III-C-3, Table III-C-1. SunBelt's Opening Evidence presents no classification or "blocking" plan for handling that "carload" traffic across the SBRR network. Instead, SunBelt's Operating Plan and RTC simulation assume (contrary to reality) that the SBRR's merchandise traffic moves entirely in "trainload service" similar to unit train coal and intermodal shipments. SunBelt's failure to account for all of the necessary elements of carload service renders its Operating Plan for general freight traffic infeasible and its operating expense estimates invalid. *See infra* at III-C-41 to III-C-52.

Third, the SBRR's peak year traffic group includes thousands of carloads of general freight traffic that are local to, or interline forwarded or received by, the SBRR. *See* SunBelt Opening III-C-3, Table III-C-1. However, the SBRR track configuration posited by SunBelt does not include the spur and industrial tracks required to perform pick-ups or set-offs at 366 customer facilities at 53 stations that the SBRR would be required to serve. *See* SunBelt Opening WP "SBRR Opening Stick.pdf"; NS Reply WP "SBRR Local Stations and Customers.xlsx." In other words, it is physically impossible for the SBRR (as constructed by SunBelt) to pick up or set off cars at customer facilities. *See infra* at III-C-149 to III-C-150; *see, e.g., CP&L*, 7 S.T.B. at 256 (rejecting complainants operating plan in part for failure to account for all facilities such as staging and gathering yards needed to serve origins).

Fourth, the SBRR's selected traffic group contains nearly 600,000 units of intermodal traffic. *See* SunBelt Opening III-C- 3, Table III-C-1. SunBelt's Operating Plan asserts that "[t]he SBRR serves . . . . intermodal facilities." SunBelt Opening III-C-3. Yet, the SBRR posited by SunBelt does not have a single intermodal facility anywhere along its 580-mile rail network. *See* SunBelt Opening WP "SBRR Yard Matrix.xlsx." As NS demonstrates (*infra* III-

C-149 to III-C-155), the SBRR would need intermodal terminal capacity at both Birmingham, AL, and New Orleans, LA. *See, e..g., CP&L*, 7 S.T.B. at 256 (rejecting complainant's operating plan in part for failure to account for all facilities such as staging and gathering yards needed to serve origins).

Fifth, the SBRR yard configurations, yard locomotive fleet and yard crew staffing posited by SunBelt are based upon mathematical calculations that are utterly divorced from the requirements of the specific traffic group that SunBelt selected for the SBRR. Nowhere in its Opening Evidence or workpapers does SunBelt identify—much less account for—the number of general freight cars that the SBRR would have to classify, switch, or otherwise handle at intermediate yards every day. The result is an Operating Plan that undersizes most SBRR yards, and posits the need for yards at several locations at which a least cost, most efficient railroad would not construct a yard facility. *See infra* at III-C-41 to III-C-52; *see, e.g., FMC*, 4 S.T.B. at 737, nn.88 & 89 (discussing same problems with mathematical attempts to develop an operating plan and rejecting complainant's operating plan).

Sixth, the SBRR does not have any car repair personnel or facilities. SunBelt assumes that, because the SBRR would acquire cars under full-service leases, its car fleet would be maintained by the lessor, making proprietary facilities and personnel unnecessary (SunBelt Opening III-D-8). This assumption makes it physically impossible for the SBRR to perform running repairs to foreign line cars, as required by both the AAR Car Interchange Rules and the terms of NS's intercarrier agreements (which the SBRR purports to adopt). *See infra* at III-C-178.

Seventh, the traffic group selected by SunBelt includes 7,300 carloads of Toxic-by-Inhalation ("TIH") commodities in the base year—including 100% of the issue traffic, which

consists entirely of chlorine. Yet, nowhere in its Opening Evidence or workpapers does SunBelt mention—much less account for—compliance with the myriad safety laws, regulations, and best practices that apply to the transportation of hazardous commodities. *See infra* at III-C-77 to III-C-87.

Eighth, SunBelt asserts that the SBRR's interline relationships with connecting carriers "are based on NS's joint use and interchange agreements with such carriers; the SBRR steps into NS's shoes under these agreements." SunBelt Opening III-C-5. Yet, SunBelt's Operating Plan is replete with assumptions that violate the terms of NS's intercarrier agreements (which were produced to SunBelt in discovery). More importantly, SunBelt assumes that the SBRR would enjoy the benefit of those agreements (including pre-blocking of cars prior to interchange, and fueling and inspection of locomotives) without any obligation to provide "reciprocal" services to connecting carriers. *See infra* at III-C-60 to III-C-77.

Ninth, SunBelt's RTC simulation—upon which SunBelt explicitly relies to "confirm that the SBRR's configuration, facilities and operating plan are feasible" (SunBelt Opening III-C-15-16) is based upon SunBelt's fatally flawed Operating Plan. In addition, the RTC Model constructed by SunBelt contains numerous modeling errors, including incorrect grade information; failure to account for delays caused by random failures and maintenance windows; failure to account for the time required for foreign trains to cross the SBRR's lines; and failure to model train movements completely and accurately (thereby understating the time and resources required to perform pick-ups and set-offs at customer facilities). *See, e.g. AEPCO 2011*, STB Docket No. 42113, at 30 (rejecting complainant's operating plan in part for failure to properly account for random outages); *id.* at 28 (rejecting complainant's operating plan in part for failure to account for program maintenance); *Xcel*, 7 S.T.B. at 613 (rejecting complainant's operating

plan in part for flawed grades and curves). Those glaring errors, and SunBelt's reliance upon an infeasible Operating Plan in developing its RTC simulation, render the outputs of SunBelt's RTC simulation meaningless. *See infra* at III-C-89 to III-C-118.

Tenth, SunBelt's failure to account for the activities, facilities, equipment, and time required to serve the SBRR's general freight traffic cannot be attributed—as SunBelt seeks to do—to any deficiency in the data produced by NS in response to SunBelt's discovery requests. Rather, as NS demonstrates, the fatal deficiencies in SunBelt's Operating Plan are the direct result of methodological choices that SunBelt made in utilizing various "shortcuts" to develop its operating evidence. *See infra* at III-C-11.

In sum, SunBelt's operating evidence is based on flawed methodologies, fails to address essential elements of an operating plan for carload traffic, and contains other glaring errors. Any one of these deficiencies renders SunBelt's Operating Plan "infeasible"—collectively, they constitute a failure to present a *prima facie* case and warrant dismissal of SunBelt's complaint.

D. Operating Expenses

SunBelt's posited locomotive, railcar, and operating personnel expenses are derived from an operating plan and RTC simulation that are fatally flawed. As explained in Section III-C, SunBelt's Operating Plan and RTC simulation failed to capture 1,400 trains necessary to transport SunBelt's selected traffic group and had many other flaws such as incorrect grades. As such, its operating plan and the outputs of the RTC simulation upon which it relies for some of its operating expenses are wholly inadequate and understated, with the result that the locomotive, railcars, and operating personnel proposed by SunBelt are entirely insufficient. In addition to failing to craft a feasible operating plan, SunBelt did not adequately account for the complexities of operating a carload network in proposing staffing of its operating personnel. NS's Reply

Evidence corrects those errors in Sections III-D-1, III-D-2, and III-D-3, matching operating expenses to a feasible operating plan.

In addition, SunBelt substantially understates the general and administrative ("G&A") costs that the SBRR actually would incur to serve SunBelt's selected traffic group. *See infra* at III-D-42 to III-D-135. SunBelt claims that the SBRR would spend less than 1.5% of its revenue on G&A—despite the fact that the average Class I railroad spends over 8% of revenues on G&A and no Class I railroad spends less than 4.5% of revenues on G&A. *See infra* at III-D-44. SunBelt thus assumes that the SBRR would be massively more efficient than the average Class I railroad.

SunBelt makes this assumption without providing any coherent explanation of how the SBRR would achieve such massive efficiency gains—let alone factual support for such a theory. SunBelt's evidence is devoid of references to neutral third-party benchmarks, detailed explanations of job functions, or any concrete evidence showing that the SBRR could realize vast G&A efficiency improvements over NS (and all other real-world railroads). *See infra* at III-D-45 to III-D-46. SunBelt's disregard of the Board's clear instruction that parties must explain why their proposed G&A staffing would be sufficient to carry out all necessary G&A functions requires rejection of its evidence.[39] In addition, SunBelt assumes it can largely outsource its marketing for overhead traffic despite the fact that the Board has rejected that notion. *See AEPCO 2011*, STB Docket No. 42113, at 56-57.

---

[39] *See, e.g., AEPCO 2011*, STB Docket No. 42113, at 58 (criticizing parties for not providing benchmark analyses or any other sufficient explanation for staffing levels chosen); *FMC*, 4 S.T.B. at 835-36 (rejecting complainant's G&A evidence because it "made no attempt to show that [its proposed G&A] staff could feasibly perform the required work, by either explaining the amount and type of G&A work that the [SARR] staff would need to perform or relating the size of the staff to operations of existing firms").

NS's G&A evidence is firmly grounded on real-world experience and industry standards, which demonstrate that a least-cost estimate of G&A expenses for the SBRR would be $18.5 million annually for 100 G&A employees, or approximately 5.1% of the SBRR's gross revenue. *See infra* at III-D-46. These figures assume that the SBRR is optimally efficient and capable of achieving high levels of economic efficiency in every area. But these figures also assume that the SBRR will comply with the minimum legal, regulatory, commercial, and administrative requirements that would apply to it. Just like NS or any other railroad, the SBRR must comply with applicable federal and state laws and regulations in the various jurisdictions in which it operates, and it must perform standard G&A functions like billing, collecting, and responding to customer requests. Ensuring that the SBRR has the resources necessary to satisfy these requirements is an essential element of demonstrating its feasibility. SunBelt's evidence fails this test because its inadequate G&A staff is not capable of performing the functions that the SBRR would have to perform in the real world. NS's evidence corrects those deficiencies by assigning the minimum G&A expenses that would be necessary for the SBRR to operate given its network's significant size, scale and complexity.

SunBelt's evidence on maintenance-of-way operating costs suffers from similar flaws and unrealistic assumptions. *See infra* at III-D-135 to III-D-203. For instance, SunBelt adopts a "one-size-fits-all" approach to track maintenance, assuming that each Roadmaster territory will consist of approximately 200 route miles regardless of any of the real-world factors that affect maintenance needs such as the track and route miles to be maintained, the traffic density and train frequency over the route, the extent and severity of curvature, and other relevant items affecting workload. *See infra* at III-D-137 to III-D-138. The result of this one-size-fits-all approach is a wholly unrealistic maintenance-of-way plan in which many Roadmasters and track

maintenance crews would have maintenance responsibilities far greater than they could manage in the real world. On a MOW-employee-to-track-mile basis, SunBelt provides far lower MOW staffing than the levels that Board has found to be sufficient in recent SAC decisions. *See infra* at III-D-139.

Table I-4
MOW Staffing in Recent SAC Cases[40]

	AEPCO 2011	*WFA*	*AEP Texas*	*Otter Tail*	*Xcel*	**SunBelt Proposal For SBRR**	**NS Proposal For SBRR**
MOW Staff	559	97	452	437	166	97	194
Track Miles	3,326	391	1,664.1	1,485	552.77	702	702
MOW Staff-to-Track Miles	**5.9**	**4.0**	**3.7**	**3.4**	**3.3**	**7.2[41]**	**3.9**

SunBelt fails to provide any explanation for why the SBRR's MOW staff would be vastly more productive than the MOW staffs in those cases—let alone MOW workers in the real world. SunBelt's staffing for other areas is similarly unrealistic. For example, SunBelt proposes that the SBRR's Communications and Signals field employees would each be responsible for maintaining an amount of equipment far above common experience and nearly double the amount per maintainer found in past Board decisions. *See infra* at III-D-167 to III-D-169.

NS's Reply Evidence both demonstrates the flaws in SunBelt's approach and presents a MOW plan that is based on a methodical and detailed assessment of the SBRR's MOW needs, including a line-segment-by-line-segment analysis that accounts for the specific factors affecting

[40] *See* sources cited at III-D-139 n. 281.

[41] The "MOW Staff" Tab of SunBelt Opening WP "Exhibit III-D-3 SBRR MOW.xlsx" calculates SunBelt's proposal as 5.96 miles per MOW field employee. But SunBelt arrives at this figure by counting route miles per employee rather than track miles. Track miles are a superior measure of MOW workload over route miles, because track miles account for the greater efforts associated with maintaining multiple-track lines.

each route such as traffic density, train frequency, extent and severity of curvature, terrain, and weather. *See infra* at III-D-139 to III-D-140 NS then assigned the appropriate number of track maintenance crews and signal maintenance employees to each segment, grouping them under an appropriate number of Roadmasters, Signal Supervisors, and Bridge Supervisors and giving them appropriate management, commercial, and technical organizations at the Divisional and Headquarters level. *See id.*

SunBelt's estimate of the SBRR's insurance costs is based on a Class II railroad without significant hazmat or TIH traffic, a major driver of insurance costs. *See infra* at III-D-204 to III-D-210. But while such a railroad may be a reasonable proxy for estimating the costs of the ordinary property and casualty insurance and claims that any railroad incurs, it is completely inadequate for estimating the unique and extraordinary insurance costs of a TIH-heavy railroad like the SBRR. A railroad with the unusually dangerous traffic profile of the SBRR would need to purchase additional insurance to account for that TIH-heavy traffic mix. NS's Reply Evidence provides a conservative measure of the insurance against catastrophic losses that the SBRR would be required to purchase as a result of its TIH traffic.

SunBelt also misstates the amount of ad valorem taxes that the SBRR would be required to pay by using a methodology that completely ignores how the three states through which the SBRR operates actually calculate ad valorem taxes for railroads. *See infra* at III-D-210 to III-D-219. Most states tax railroad property as a function of a railroad's overall profitability as an enterprise—its "unit value"—and a SARR that is more profitable than the incumbent railroad will pay more taxes as a result. NS's Reply Evidence adjusts SunBelt's ad valorem tax calculations to account for the higher ad valorem taxes that the SBRR would incur in "unit value" states by virtue of being a least-cost, most-efficient SARR.

NS's Reply Evidence also includes an operating expense approximating the cost of the excess risk that the SBRR would incur from the possibility of an accident involving a chlorine release. *See infra* at III-D-224 to III-D-242. While the SBRR would need to purchase reasonably available insurance to protect against the risk of a TIH release, it could not possibly purchase sufficient insurance coverage to protect against the catastrophic losses that could result from a large-scale TIH release. SBRR, like NS, would effectively assume the risk of that potentially gargantuan liability as an added cost of the TIH traffic it would transport. This excess risk cost cannot be ignored in the SAC analysis, for it is a real and acknowledged cost inherent in transporting TIH commodities. If the SAC analysis is to incorporate all costs of the issue traffic, a quantified assessment of the excess risk of a catastrophic TIH release must be included as a cost of transporting the issue traffic.

E. Non-Road Property Investment

Non-road property investment costs, including costs for locomotives, railcars, and other equipment, are addressed in other sections of NS's Reply Evidence, in particular Section III-D.

F. Road Property Investment

SunBelt's road property investment evidence is plagued by numerous significant errors that cause SunBelt to understate the SBRR's road property investment costs by over $1.5 billion. The flaws in SunBelt's approach and the corrections made by NS's real estate and engineering experts are described in detail in Section III-F and accompanying exhibits and workpapers. Some of SunBelt's most significant errors are detailed below.

Land. The clearest error in the SunBelt appraiser's approach is the decision to value the SBRR's real estate as of July 31, 2011—over two years after the SBRR would need to begin acquiring property. *Cf. McCarty Farms,* 2 S.T.B. at n.132 (requiring land valuation at start of construction period); *Arizona Pub. Serv. Co. v. ATSF,* 2 S.T.B. 367, 387 & n.55 (1997) (valuing

land to provide for a one-year construction period prior to start of service). SBRR's own construction schedule proposes that the SBRR would acquire land between June 2009 and December 2009 and that it would begin construction in October 2009. NS selected a valuation date of July 1, 2009—a date in the middle of the land acquisition period specified by SunBelt—which accords with the SBRR construction schedule and accounts for the time necessary to acquire the land and construct the infrastructure for the SBRR in order to provide rail service beginning July 30, 2011.

The erroneous real estate valuation date, however, is not the only flaw in SunBelt's real estate evidence. Section III-F-1 explains that the SunBelt appraiser used flawed methodologies. These flaws are detailed by NS expert witness Michael Hedden. Mr. Hedden also performed an independent valuation analysis of the cost of land needed to acquire the ROW for the SBRR. *See* III-F-3. Mr. Hedden conducted a retrospective appraisal using the widely accepted sales comparison approach, in which fair market value is determined by comparing a subject property to similar recent sales, an approach approved by the Board. In contrast, the SunBelt appraiser failed to apply well-accepted methodologies; made determinations of appraised value for high-value urban areas based upon a desktop review of property, only using minimal physical inspection to "confirm" the conclusions of its desktop review; and failed to aggregate appropriately market values to derive an accurate conclusion of overall market value.

The Board should reject SunBelt's flawed and slanted real estate evidence, and it should accept Mr. Hedden's detailed and well-supported valuation. *See infra* at III-F-9 to III-F-23.

Roadbed Preparation. Much of the difference in the parties' earthwork costs is driven by the fact that, contrary to well-established Board precedent favoring the use of R.S. Means costs for common earthwork excavation, clearing and grubbing, seeding, and subballast, SunBelt

instead proposes to extrapolate all of these costs from a single 1.3 mile railroad line relocation project for a short line in rural Tennessee and apply them to the entire SBRR. *See infra* at III-F-34 to III-F-40. The small line relocation project on which SunBelt relies, the "Trestle Hollow Project" conducted for the South Central Tennessee Railroad near Centerville, Tennessee, is not even located on any portion of the NS lines replicated by the SBRR.[42]

The Board has long accepted R.S. Means as the appropriate, authoritative source for earthwork costs.[43] SunBelt erroneously cites the Board's 2007 decision in *WFA I* and the 2011 decision in *AEPCO* as supporting its unprecedented approach of using a small, short-line project that is untethered to any track owned by NS as the basis for earthwork unit costs for construction of a far larger SARR.[44] But *WFA I* and *AEPCO 2011* both involved projects conducted by the defendant itself on a Class I railroad system that were near the route being replicated by the SARR, and for those reasons the defendant railroads in those cases accepted the use of their own experience and costs for common excavation for estimating SARR common excavation costs. Neither *WFA I* nor *AEPCO 2011* provides precedent for using the costs of a small project on a

---

[42] SunBelt relies upon two cases to support its unprecedented approach of using a small short-line project that is not on the SARR and not constructed or used by the defendant as the basis for earthwork unit costs for a large SARR. For a number of reasons, neither of those cases provides any support for SunBelt's proposal. First, both cases involved the defendant railroad's own actual real-world costs on recently completed railroad line construction projects. Second, the line segments in question were substantially larger (and comprised a far larger portion of the total length of the SARR), and were part of the lines and route replicated by the SARR. Finally, in both cases, the defendant railroad had produced the earthwork cost data in discovery and agreed to its use because it was representative of earthwork costs for the SARR. *See WFA I*, STB Doc. No. 42088 at 25-26, 81-82; *AEPCO 2011*. None of those factors is present in this case. NS explains in more detail the infirmities of SunBelt's proffered approach—one that has never been accepted by the Board in any case—in NS's Reply narrative evidence. *See* NS Reply at § III-F-2.

[43] *See, e.g.*, *FMC*, 4 S.T.B. at 800; *WP&L*, 5 S.T.B. at 1020, n.147; *Duke/NS*, 7 S.T.B. at 171; *CP&L*, 7 S.T.B. at 310; *Xcel*, 7 S.T.B. at 616; *Otter Tail*, STB Docket No. 42071 at D-11.

[44] *See WFA I*, STB Docket No. 42088, at 86; *AEPCO 2011*, STB Docket No. 42113, at 83-84.

foreign short-line as the basis for the costs of constructing a SARR that purports to replicate a significant portion of a Class I carrier, and NS emphatically does not accept SBRR's "Trestle Hollow" derived costs. *Id.*

Moreover, the minor line relocation project on which SunBelt relies is an inadequate substitute for well-established R.S. Means costs. NS's Reply Evidence demonstrates that this "Trestle Hollow" project was small and atypical, and that its unit costs cannot be reliably extrapolated to a large project, let alone to a significant SARR whose lines and facilities bear no geographical or real-world railroading nexus to it. *Id.*

Among the other errors in SunBelt's roadbed preparation evidence is its failure to take into account the costs of creating a sound and stable roadbed foundation in the wetlands and unsuitable soils that characterize much of the area that would be traversed by the SBRR. Unsuitable soils—such as those found in the myriad swamps and wetlands along the SBRR alignment—require significant mediation measures to allow the construction of a stable foundation for a rail roadbed. NS's experts have examined a variety of available mediation approaches and determined that a reasonable standard approach for the hundreds of wetland areas traversed by the SBRR would require undercutting and removal of at least two feet of unsuitable material, and replacing that material with rip rap. In addition, NS has adjusted the construction costs presented by SunBelt to account for the challenges of accessing and working in wetland areas using heavy construction equipment. NS's Reply Evidence makes multiple other corrections to SunBelt's roadbed preparation costs; these corrections are justified and explained at NS Reply III-F-31 to III-F-119 and the workpapers cited therein.

Track Construction. SunBelt's opening submission on track construction included a number of conceptual and implementation flaws that understated the SBRR's track construction

costs. The NS Track Engineering Experts corrected these errors in this Reply Evidence. In addition, as described in Section III-B-1, the SBRR as configured by SunBelt did not have sufficient running, siding and yard tracks to serve the SBRR customers. NS's Reply Evidence therefore adjusts track construction quantities to account for all the necessary additional track mileage set forth in Section III-B. *See* III-F-119 to III-F-156.

Bridges. The bridges on the SBRR proposed by SunBelt bear little resemblance to the real-world NS bridges that they purport to replicate. Some of this is to be expected, because SunBelt is proposing to construct the SBRR bridges using its own "standard" bridge types, which differ from the bridges' original design and construction. However, there are many corrections to be made other than typical span type in order for SunBelt's evidence to represent feasibly and accurately the relevant attributes of the bridges in the real world that currently carry NS traffic. *See Xcel*, 7 S.T.B. at 689 (holding that complainants cannot meet their burden of proof if bridge plans that are not "feasible and capable of supporting the needs of the [SARR]" and rejecting complainants bridge plans). The corrections are made so the proposed SBRR bridges geometrically would fit into the real world topography, have the same functionality as the existing real world bridges, and have adequate structural capacity. *See* III-F-156 to III-F-196.

There are dozens of bridge locations where SunBelt's artificial and ill-fitting bridge criteria produced bridge heights that are lower than the actual bridge heights furnished by NS. Several of the height understatements involve actual bridge heights ranging from 20 feet to up to 60 feet that are purportedly "replicated" by SunBelt's assumed SBRR bridge heights between 11 feet and 16.5 feet. Clearly, these hypothetical bridges are not tall enough to connect the track they purport to connect. In this Reply Evidence, NS's bridge experts have accounted for actual

bridge heights by using the data furnished by NS in response to SunBelt's discovery requests. *Id.*

SunBelt's errors do not end there. It has many design problems, improperly calculates the length of many bridges, and overlooks the need to construct two critical movable bridges. SunBelt also erroneously assumes the federal government would pay for the original construction of a significant movable bridge, under a government program that applies only to bridge re-construction needed to accommodate waterborne navigation. NS corrects these and other errors below.

Signals and Communications. SunBelt's evidence of the cost of SBRR signals and communications systems is fraught with conceptual problems and implementation errors. SunBelt's most fundamental error is its assumption that the SBRR could begin operations with a Positive Train Control ("PTC") system in July 2011—even though the components to operate a PTC system have not yet been developed today, 1 ½ years after the SBRR would begin operations. This impossible assumption is just the beginning of SunBelt's errors. *See* III-F-197.

SunBelt's inventory of signals equipment for the SBRR is also irreconcilable with its proposed SBRR track configuration and undercounts the total amount of signals that the SBRR would require. Its calculations of signal unit costs flatly misstate the unit cost quotes included in its own workpapers and omit many necessary signal components, such as foundations, battery/charger sets, and grounding equipment. And its estimates of PTC and crossing signal costs substantially understate the total costs that the SBRR would incur. *See* III-F-215 to III-F-232. NS's engineering experts explain the errors in SunBelt's signals and communications evidence and detail their estimate of the SBRR's signals and communications costs at NS Reply Section III-F-197 to III-F-233.

Buildings and Facilities. NS also makes a number of corrections to SunBelt's estimates of the costs of SBRR buildings and facilities and public improvements. *See infra* at III-F-233to III-F-260. NS's Engineering Experts have found that the cost and size of the buildings and facilities that SunBelt proposes often are difficult or impossible to determine or verify because of numerous ambiguities, discrepancies, obvious errors, incorrect spreadsheet formulas, or missing pertinent information. NS's Engineering Experts reviewed SunBelt's Opening Evidence and determined that the buildings' and facilities' designs and costs are inadequate and erroneous for a number of reasons. NS's Engineering Experts developed costs for those same buildings and facilities to correct SunBelt's errors. *Id.*

G. Discounted Cash Flow Analysis

SunBelt's discounted cash flow model excludes equity flotation costs, the cost for fees charged by investment banks when a company raises external equity capital. The Board has previously found it necessary for parties to include equity flotation costs, particularly when they are not included in the cost-of-capital computation. Because railroads have not recently incurred costs to raise new equity, there have been no equity flotation costs in the Board's cost of capital determinations since 2006. Therefore, equity flotation costs are not included in the cost-of-capital applied in the DCF model and applying a separate cost is necessary. Capital raising efforts the size of what is necessary here, approximately $1.4 billion in equity, do not occur frequently. NS applies the 2.1% of capital raise cost incurred by Facebook in its May 2012 $3.8 billion Initial Public Offering, the best comparison available. *See infra* at III-G-4.

NS makes other necessary changes to the DCF model such as updating inflation indices where new index and forecast values have become available. For the inflation index for land, NS also corrects SunBelt's proposal which is overstated at 7.0 percent annual inflation from the third quarter of 2011 through the end of the 10-year SBRR DCF period. NS Real Estate expert

Michael Hedden corrects this number to 2.39% annual inflation. *See infra* at III-G-5; NS Reply WP "NS SUNBELT Inflation Indices.docx." NS further explains and makes these and other changes in SunBelt's DCF model in Section III-G.

H. Results of SAC Analysis

In Section III-H, NS identifies errors in SunBelt's SAC analysis, and makes appropriate modifications. These modifications include corrections to SunBelt's erroneous assumption that the SBRR could use bonus depreciation to write off a whopping $880 million of its road property investment in the first year of SBRR's operations and to SunBelt's use of incorrect tax depreciation lives for certain specified SBRR road property assets. NS's properly developed and supported SAC analysis shows that SAC exceeds revenues by a cumulative amount of approximately $1.05 billion.

Even in the event that the Board were to excuse SunBelt's multiple gross failures of proof, and then determine that SAC revenues would exceed SAC costs, there would be no basis to prescribe a rate for the issue movement. First, an internal cross-subsidy analysis would show that the McIntosh to Burstall segment of the SBRR is impermissibly cross-subsidized by other traffic that does not use that segment and hence the case must be dismissed. Second, as summarized below and demonstrated in more detail in NS Reply Section III-H, a proper MMM analysis that appropriately allocated TIH-specific costs to TIH traffic would show that the issue rate does not exceed a reasonable maximum and no rate reduction or reparations are warranted.

H.1 The Costs Of TIH Traffic Must Be Properly Allocated To That Traffic In The Event That The Board Performs An MMM Analysis.

If accepted, SunBelt's evidence would force other traffic in the traffic group to subsidize insurance costs, Positive Train Control system costs, TIH-related operating costs, and excess risk exposure solely attributable to SARR TIH traffic, including the issue movement. But "a basic

principle of the SAC test is that traffic not be subsidized by other traffic. Indeed, the purpose of the SAC test is to remove such cross-subsidies, while allowing traffic to enjoy the benefits of cost-sharing for those railroad services and facilities that they have in common." *PPL Montana*, STB Docket No. 42054, at 9 (served Aug. 20, 2002) (quoting *AEPCO 2001* at 6). A SAC presentation may not rest on the assumption that some non-issue traffic "would be required to pay a portion of costs that are attributed to other traffic." *Id.* That is precisely what occurs in SunBelt's SAC presentation by virtue of its failure to allocate the unique costs created by TIH traffic to that traffic.

The SBRR carries a disproportionately high amount of TIH traffic. While the SBRR is only 4% the size of NS on a route-mile basis, it would carry 7,300 carloads of TIH traffic annually—approximately 46% of all the carloads of TIH on the NS system. Measured on a car-mile basis, the SBRR would have 2.91 million car-miles of TIH traffic in 2011—one-third of NS's system-wide 2011 TIH car-miles.

Table I-5
2011 SBRR TIH Traffic Compared to NS[45]

	SBRR	NS	SBRR Percentage of NS
TIH Carloads	7,300	15,884	46%
TIH Car-Miles	2.91 million	8.55 million	34%
TIH % of Total Freight Carloads	2.5%	0.4%	625%

Table I-5 shows that SunBelt's selection of such a high percentage of TIH traffic has created a SARR in which 2.5% of all freight carloads—about one out of every 40 cars—carries a TIH commodity. This percentage is more than six times higher than the percentage of TIH

[45] *See* NS Reply WP "TIH Mileage Summary.xlsx."

carloads on NS. No real world railroad carries such a high percentage of TIH traffic—and certainly no SARR has ever done so.

In this case, any MMM analysis the Board may perform would be required to address the failure of URCS to account for unique costs and risks incurred by railroads solely due to transportation of TIH commodities. The issue movement is "the largest volume chlorine movement in North America." SunBelt Opening at I-13. Chlorine is an extraordinarily dangerous TIH commodity, and transporting chlorine creates unique and significant costs. These costs include, but are not limited to, the cost of designing, installing, operating, and maintaining Positive Train Control systems and equipment; enhanced security procedures and operational limitations for trains with TIH traffic; increased insurance costs to cover for potentially catastrophic damages from a TIH release; and the risk of a cataclysmic TIH accident that would exceed insurance liability limits. None of these TIH-specific costs is attributed directly or specifically to TIH traffic by the Board's current URCS model. Therefore the model severely understates the true costs of TIH movements.

The failures of the current URCS system to allocate the costs of TIH traffic are well-recognized. The U.S. Department of Transportation has observed that the costs of hazmat and TIH traffic "are indeed unique," and it has argued that "URCS should attribute these costs to hazmat traffic alone rather than to the entirety of a carrier's business."[46] Former Commissioner Nottingham explained the shortcomings of the current URCS system aptly in *U.S. Magnesium*:

> Unfortunately, URCS allocates costs on a system-average basis, and does not attribute any unique cost characteristics to the transportation of TIH, including especially dangerous TIH such as chlorine. Risk management, special handling, and insurance costs,

[46] *See* Comments of United States Department of Transportation at 2, *Class I Railroad Accounting and Financial Reporting—Transportation of Hazardous Materials*, Ex Parte No. 681 (filed Feb. 4, 2008).

> for example, would seem to me to be integral and necessary components of the overall cost of transporting chlorine, but those costs are not specifically attributed to those movements.

U.S. Magnesium, LLC v. Union Pacific R.R. Co., STB Docket No. 42114, at 21 (Comm'r Nottingham, dissenting). The Board has a long-pending proceeding regarding the need to incorporate the full costs of TIH traffic into the URCS costing system,[47] and several Board members have commented on the need to complete that proceeding expeditiously.[48] But in the event that this case proceeds to the MMM phase, the Board must address in this case the unique costs and risks that are associated with the largest-volume chlorine movement in North America. The Board's rate reasonableness process must "account for both the special costs and special risks of transporting highly hazardous materials."[49]

In Section III-H, NS sets forth a rigorous approach that allocates some of the most significant TIH-related costs to TIH traffic for purposes of the Board's MMM analysis. This allocation of TIH-specific costs to the TIH traffic responsible for those costs is essential for the Board to fairly determine reasonable rates in a way that does not force non-TIH SBRR traffic to cross-subsidize the SBRR's TIH traffic by contributing to TIH-specific costs. Those costs include the following:

---

[47] *See Class I Railroad Accounting and Financial Reporting—Transportation of Hazardous Materials*, Ex Parte No. 681 (served Jan. 5, 2009).

[48] *See, e.g., Reporting Requirements for Positive Train Control Expenses and Investments*, Ex Parte No. 706, at 7-8 (Oct. 13, 2011) (Comm'r Mulvey dissenting) ("The questions under consideration in EP 681 are important ones," and "we must decide the issues raised in EP 681 soon."); *U.S. Magnesium, LLC v. Union Pacific R.R. Co.*, STB Docket No. 42114, at 22 (Comm'r Nottingham, dissenting) ("I believe that we need to quickly address the specific weakness in URCS, first highlighted in Ex Parte 681, that may be shaping the outcome of pending and anticipated cases involving TIH.").

[49] *See* Comments of Norfolk Southern Railway Co. at 3, *Class I Railroad Accounting and Financial Reporting—Transportation of Hazardous Materials*, Ex Parte No. 681 (filed Feb. 4, 2008).

The costs of development, implementation, and use of Positive Train Control ("PTC"). Sunbelt provided for a PTC system on the SBRR, and NS accepts that assumption. The SBRR must have a PTC system for only one reason: it will carry TIH traffic. Federal law requires PTC on lines carrying more than 5 MGT if (1) there is passenger traffic; or (2) there is TIH traffic.[50] The SBRR has no passenger traffic. Thus, the only reason it must install PTC is because of the presence of TIH traffic. Accordingly, all costs of PTC should be borne by the TIH traffic in the SBRR's traffic group in order to avoid impermissible cross-subsidization of TIH traffic by coal, intermodal, and other traffic.

The costs of insurance to cover the risks solely created because of TIH traffic. The SBRR would carry an extraordinary amount of TIH—the majority of its general freight trains would include TIH cars, and on a ton-mile basis the SBRR would carry one-third of all of NS's system-wide TIH traffic. *See* NS Reply WP "TIH Mileage Summary.xlsx." As a result, SunBelt's attempt to use the Providence and Worcester Railroad's insurance costs as a proxy for SBRR insurance costs significantly understated the SBRR's true insurance costs, for the P&W's costs cannot possibly account for the SBRR's catastrophic coverage on top of all the standard casualty coverage for which SBRR would be accountable. In Section III-D-8, NS explains the additional insurance that the SBRR would be required to purchase and presents a conservative methodology for estimating the cost of purchasing insurance for potential SBRR liability up to $1 billion. As NS shows, premiums for insurance tiers between $200 million and $1 billion are reasonably attributable to TIH traffic.

Excess risk exposure that arises from the potential of an accident that would exceed all levels of insurance obtainable by SBRR in the market. Even for Class I railroads, the

[50] *See* Rail Safety Improvement Act of 2008, 49 U.S.C. § 20157.

available insurance market will provide insurance for only the first $1 billion of potential damages. As a smaller entity, the SBRR cannot count on even that level being available—although in this case NS gives the SBRR the benefit of the doubt. But there is still a significant risk that liability due to an accident involving chlorine could far exceed the insurance levels available to the SBRR. NS provides a conservative approximation of some of those estimated costs, all of which must be borne entirely by SBRR TIH traffic in the traffic group in order to avoid an impermissible cross-subsidy. NS's calculations are highly conservative and almost certainly understate the excess risk exposure due to carrying TIH traffic (including all of the issue traffic) because it does not include liability for property damage, business loss damages, or environmental remediation costs that could result from a TIH release.

Operating costs incurred to comply with the myriad federal regulations governing the transportation of TIH commodities. TIH traffic creates multiple operating restrictions and regulatory requirements that significantly affect rail operations. A few examples of these restrictions and requirements are:

- All trains transporting loaded cars of TIH may travel no faster than 50 miles per hour.[51]
- Railroads must designate an individual with overall responsibility for hazardous materials transportation security planning, conduct audits to verify that security plans are being effectively implemented, restrict access to information about hazardous materials shipments and security measures, and establish procedures for performing background checks on contractor employees.[52]
- Railroads must develop site-specific security plans to address the risk posed by transportation of bulk TIH materials in High Threat Urban Areas

[51] *See* 49 C.F.R. § 174.9.

[52] *See* Transportation Security Administration, TSA Recommended Security Action Items for the Rail Transportation of Toxic Inhalation Hazard Materials (June 23, 2006).

("HTUAs"), including the New Orleans metropolitan area through which the SBRR travels.[53]

- Railroads handling TIH materials must establish procedures for performing background checks on railroad employees.[54]
- Railroads must develop systems that allow them to provide location and shipping information for TIH rail cars under their physical custody to TSA within five minutes of a request.[55]
- Railroads must follow strict "chain of custody and control" procedures when transferring TIH cars to or from shippers or other carriers.[56]
- Railroads also must compile data concerning hazardous materials they transport and use those data to select the safest and most secure practicable routes for those materials,[57] work with shippers to minimize the time a rail car containing hazardous materials is placed on a track awaiting pick-up, delivery, or transfer,[58] and conduct enhanced security inspections of rail cars carrying hazardous materials.

NS has incurred, and continues to incur, substantial costs to comply with of the foregoing and other government regulations, including both the costs of complying with new safety and security procedures (*e.g.*, positive hand-off; shipment monitoring and tracking rules), costs associated with special handling procedures (*e.g.*, extra car and track inspections, speed restrictions), and the costs of training railroad personnel about special operating and safety procedures. Because the SBRR would not have to comply with most of these legal requirements but for the fact that it carries TIH traffic, the costs of these extraordinary efforts are properly attributable to such traffic. The difficulty of disaggregating TIH-related operational costs from

---

[53] *See* Transportation Security Administration, Recommended Security Action Items for the Rail Transportation of Toxic Inhalation Hazard Materials, Supplement No. I (Nov. 21, 2006).

[54] *See* Transportation Security Administration, Recommended Security Action Items for the Rail Transportation of Toxic Inhalation Hazard Materials, Supplement No. 2 (Feb. 12, 2007).

[55] 49 C.F.R. § 1580.103(d)(1).

[56] *See* 49 CF.R. §1580.107.

[57] *See* 49 C.F.R. § 172.820(b)-(f).

[58] *See* 49 C.F.R.§ 172.820(g).

non TIH-related costs caused NS to conservatively exclude such costs from the TIH cost adjustment that it made for other more clearly segregable TIH-costs. However, the Board's analysis should acknowledge the fact that TIH traffic is responsible for significant operational costs and complications on the SBRR and on real-world railroads.

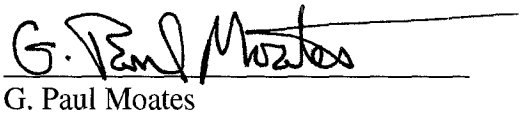
Attributing the specific costs of the TIH traffic to that traffic is essential to avoid a cross-subsidy as impermissible as the one for the McIntosh-Burstall segment. In *Otter Tail v. BNSF*, the Board observed that "it would turn the CMP principle against cross-subsidization on its head to protect a captive shipper from subsidizing other traffic, while at the same time allowing that shipper's rates to be subsidized by other traffic." *Otter Tail*, STB Docket No. 42071, at 25. Accordingly, in the event that the Board applies MMM, it may should not grant relief "under the SAC constraint where the challenged rate does not provide a reasonable return on the facilities needed to serve that captive shipper." *Otter Tail*, slip op. at 25. In order to avoid other rail traffic cross-subsidizing the movement of TIH traffic as a result of the MMM rate prescription process, the Board must properly allocate that unique costs attributable to TIH traffic. When the MMM analysis is appropriately adjusted to account for identifiable TIH traffic, the challenged rates could not be found to exceed a maximum reasonable level.

D. CONCLUSION

For the reasons summarized below and detailed in the following Reply Narrative, Exhibits, and Workpapers, the Board should find that SunBelt's SAC presentation is so fundamentally deficient that it constitutes a failure of proof, and the Board should dismiss SunBelt's complaint on that basis alone. Even if the Board chooses not to summarily dismiss the complaint, NS's Reply Evidence convincingly demonstrates that SunBelt's SARR has costs that exceed revenues. Even if the Board were to conclude that they did not, a cross-subsidy analysis of the SBRR would likely show an impermissible cross-subsidy of the McIntosh-Burstall

segment. And even if the Board were to determine that the SBRR's revenues exceeded costs and that there was no impermissible cross-subsidy, a properly conducted MMM analysis that accounts for the unique costs and risks attributable solely to the TIH traffic on the SBRR would show that the challenged rate is reasonable and that SunBelt is entitled to no relief whatsoever.

Respectfully submitted,



John M. Scheib
David L. Coleman
Christine I. Friedman
Norfolk Southern Corporation
Three Commercial Place
Norfolk, VA 23510

G. Paul Moates
Paul A. Hemmersbaugh
Terence M. Hynes
Matthew J. Warren
Hanna M. Chouest
Marc A. Korman
Sidley Austin LLP
1501 K Street, N.W.
Washington, D.C. 20005
(202) 736-8000
(202) 736-8711 (fax)

Counsel to Norfolk Southern Railway Company

Dated: January 7, 2013

Table of Contents

Page

II. MARKET DOMINANCE II-1

A. QUANTITATIVE EVIDENCE II-1

B. QUALITATIVE EVIDENCE II-3

II. MARKET DOMINANCE

A. QUANTITATIVE EVIDENCE

NS does not contest that, using the challenged rate and URCS system-average variable costs, the issue movement generates revenue-to-variable-cost ("R/VC") ratios in excess of the 180% jurisdictional threshold specified by 49 U.S.C. § 10707(d)(1). NS and SunBelt have agreed on the operating characteristics for the issue traffic. *See* Joint Submission of Operating Characteristics (filed April 9, 2012). NS further agrees that using those operating characteristics in the current unadjusted URCS Phase III movement costing program produces the variable cost and R/VC ratio calculations set forth at SunBelt Opening Exhibit II-A-1.

While NS does not contest that use of the current unadjusted URCS Phase III movement costing program produces R/VC ratios above the jurisdictional threshold specified by 49 U.S.C. § 10707(d)(1), the current version of URCS does not accurately reflect the full variable costs of transporting the issue movement. The issue movement is "the largest volume chlorine movement in North America." SunBelt Opening at I-13. Chlorine is an extraordinarily dangerous Toxic-By-Inhalation ("TIH") commodity, and transporting chlorine creates unique and significant costs. These costs include, but are not limited to, the cost of designing, installing, and maintaining Positive Train Control; enhanced security procedures and operational limitations for trains with TIH traffic; increased insurance costs for the potentially catastrophic damages from a TIH release; and the risk of a cataclysmic TIH accident that would exceed insurance liability limits. None of these TIH-specific costs are currently attributed to TIH traffic by the Board's current URCS model, and therefore the model severely understates the true variable costs of TIH movements.

The failures of the current URCS system to properly allocate the costs of TIH traffic are well-recognized. The U.S. Department of Transportation has observed that the costs of hazmat

and TIH traffic "are indeed unique," and it has argued that "URCS should attribute these costs to hazmat traffic alone rather than to the entirety of a carrier's business."[1] Former Commissioner Nottingham explained the shortcomings of the current URCS system aptly in *U.S. Magnesium*:

> Unfortunately, URCS allocates costs on a system-average basis, and does not attribute any unique cost characteristics to the transportation of TIH, including especially dangerous TIH such as chlorine. Risk management, special handling, and insurance costs, for example, would seem to me to be integral and necessary components of the overall cost of transporting chlorine, but those costs are not specifically attributed to those movements.

U.S. Magnesium, LLC v. Union Pacific R.R. Co., STB Docket No. 42114, at 21 (Comm'r Nottingham, dissenting). The Board has a long-pending proceeding regarding the need to incorporate the full costs of TIH traffic into the URCS costing system,[2] and several Board members have commented on the need to complete that proceeding expeditiously.[3] But the fact that Ex Parte 681 remains pending is no reason for the Board not to acknowledge the unique costs imposed by TIH traffic in this proceeding and fully account for those costs in its analysis of the reasonableness of rates for the largest-volume chlorine movement in North America. The

---

[1] *See* Comments of United States Department of Transportation at 2, *Class I Railroad Accounting and Financial Reporting—Transportation of Hazardous Materials*, Ex Parte No. 681 (filed Feb. 4, 2008).

[2] *See Class I Railroad Accounting and Financial Reporting—Transportation of Hazardous Materials*, Ex Parte No. 681 (served Jan. 5, 2009).

[3] *See, e.g., Reporting Requirements for Positive Train Control Expenses and Investments*, Ex Parte No. 706, at 7-8 (Oct. 13, 2011) (Comm'r Mulvey dissenting) ("The questions under consideration in EP 681 are important ones," and "we must decide the issues raised in EP 681 soon."); *U.S. Magnesium, LLC v. Union Pacific R.R. Co.*, STB Docket No. 42114, at 22 (Comm'r Nottingham, dissenting) ("I believe that we need to quickly address the specific weakness in URCS, first highlighted in Ex Parte 681, that may be shaping the outcome of pending and anticipated cases involving TIH.").

Board's rate reasonableness process must "account for both the special costs and special risks of transporting highly hazardous materials."[4]

While NS does not propose a TIH adjustment to URCS costs for purposes of the Board's threshold jurisdictional determination,[5] Section III-H sets forth a rigorous approach that allocates some of the most significant TIH-related costs to TIH traffic for purposes of the Board's MMM analysis. This allocation of TIH-specific costs to the TIH traffic responsible for those costs is essential for the Board to fairly determine reasonable rates in a way that does not assume that non-TIH SBRR traffic would be cross-subsidizing the SBRR's TIH traffic by contributing to TIH-specific costs.

B. QUALITATIVE EVIDENCE

For purposes of this case, NS does not dispute that the Board has jurisdiction to consider the reasonableness of the challenged rate under 49 U.S.C. §§ 10701(d)(1) and 10707. In doing so NS does not concede that any of SunBelt's evidence or arguments on qualitative market dominance are valid. In particular, SunBelt's legal arguments that the Board is forbidden from considering whole-route intermodal alternatives for challenged Rule 11 rates and that market dominance is conclusively established because NS does not subjectively consider chlorine to be "desirable" business are inconsistent with Board precedent and should not be accepted in this or any other proceeding.

---

[4] *See* Comments of Norfolk Southern Railway Co. at 3, *Class I Railroad Accounting and Financial Reporting—Transportation of Hazardous Materials*, Ex Parte No. 681 (filed Feb. 4, 2008).

[5] *See Major Issues*, STB Ex Parte No. 657 (Sub-No. 1), at 48 (disallowing movement-specific adjustments to URCS for quantitative market dominance determination in part because "the 180% R/VC limitation on Board rate review" should be "administratively quick and easy-to-determine").

First, SunBelt argues that *Minnesota Power, Inc. v. Duluth, Missabe & Iron Range Ry. Co.*, 4 S.T.B. 64 (1999) (*"DMIR I"*), *petitions for reconsideration denied*, 4 S.T.B. 288 (1999) (*"DMIR II"*) (collectively, "*DMIR*"), limits the Board from considering whole-route alternatives to joint-line rail movements. Specifically, SunBelt alleges that even though the issue traffic moves from an ultimate origin in McIntosh, AL to its ultimate destination in La Porte, TX, the Board may only consider alternatives that move the issue traffic between McIntosh, AL to New Orleans, LA, the NS segment of the joint-line movement. SunBelt Opening I-6 to I-8. According to SunBelt, other movements would constitute geographic competition and be prohibited by *Market Dominance Determinations – Product & Geographic Competition*, 3 S.T.B. 937 (1998).

SunBelt's *DMIR* argument is meritless. Indeed, the Board correctly viewed a similar argument with skepticism in its recent decision in *M&G*. *See M&G*, STB Docket No. 42123, at 10 n.27. ("M&G's argument . . . misapprehends both the boundaries of the Board's jurisdiction and the nature of the tools available to the Board when conducting its market dominance analysis."). And in its Reply submission in the *DuPont* case, NS explained in detail why an identical *DMIR* argument made by the complainant in that case is incorrect. *See* Reply Evidence of Norfolk Southern Railway Co. at II-B-58 to II-B-91 & Ex. II-B-6, *E.I. du Pont de Nemours and Co. v. Norfolk Southern Ry. Co.*, STB Docket No. 42125 (filed Nov. 30, 2012) (included in NS Reply workpapers). As NS explained in its *DuPont* Reply, complainants' recent attempts to redefine "geographic competition" to include movements between the actual origin and actual destinations of issue movements is irreconcilable with the Interstate Commerce Act, *see id.* at II-B-67 to II-B-75; ignores longstanding STB and ICC precedent holding that transportation alternatives that replicate the entire route of a movement are intermodal competition (not

geographic competition), *see id.* at II-B-75 to II-B-80; and has no relationship to how competition works in the real world, *see id.* at II-B-62 to II-B-67.

Second, SunBelt alleges that "[b]ecause NS does not consider the issue movement to be *desirable* business, no transportation alternative can provide 'effective competition,'" SunBelt at I-9 to I-10 (emphasis in original). But a railroad's subjective desires to transport or not transport a product is irrelevant to the market dominance calculus. This was aptly demonstrated in *DuPont (Chlorine)*, where the Board found that a railroad lacked market dominance over a chlorine movement in spite of the shipper's argument that "CSXT prices in a manner to avoid chlorine carriage altogether and would not adjust that policy regardless of the presence of a competitive alternative." *E.I. du Pont de Nemours and Co. v. CSX Transportation, Inc.*, STB Docket No. 42100, at 5 (June 27, 2008). The presence or absence of an effective alternative to rail transportation is an objective question that does not turn on how the railroad feels about the product that it has a common carrier obligation to transport.

Table of Contents

Page

III. STAND ALONE COST III-A-1

A. TRAFFIC GROUP III-A-1

1. Stand-Alone Railroad Traffic. III-A-1
2. Volumes (Historical and Projected). III-A-3

a. Historical III-A-3
b. Projected Volumes III-A-4

i. 2012 Through 2016 ..... III-A-4
ii. 2017-2021 SBRR volumes III-A-6

(a) Non-Coal Traffic Volumes 2017-2021 ..... III-A-8
(b) Coal Traffic Volumes 2017-2021 ..... III-A-8

3. Revenues (Historical and Projected) III-A-9

a. Single-Line III-A-9

i. Historical Revenues for Intermodal Traffic III-A-9

(a) Because Sunbelt Did Not Account For The Costs Of Services Provided By TDIS Other Than NS Rail Linehaul, It May Not Claim Revenues Generated By Those Other Services. III-A-10

ii. Projected Revenues III-A-12

(a) Sunbelt Mis-Calculated Intermodal Revenue Growth From 2011 To 2012. ..... III-A-12
(b) SunBelt Overstated Projected Net Fuel Surcharge Revenues. III-A-14

b. Divisions—Existing Interchanges. III-A-19

i. Handling Carrier Payments. III-A-19
ii. Switching Carrier Payments. III-A-21

c. Divisions—Cross-Over Traffic III-A-23

i. The Board Should Apply The ATC Rule Because At All Times Relevant To This Case, ATC Has Been The Only Legally Valid Rule And Methodology Governing Cross-Over Traffic Revenue Allocation III-A-27

(a) Original ATC Was Adopted In Notice-And-Comment Rulemaking And Affirmed On Appeal And Is The Only Cross-Over Traffic Rule Applicable To This Case..... III-A-28
(b) As A Matter Of Administrative Law, The Board Must Apply The ATC Rule In All SAC Cases Unless And Until It Has Completed A Full Notice-And-Comment Rulemaking That Adopts A Different Rule. III-A-31
(c) Application of ATC To Low R/VC Movements Is Not "Illogical," And The Concern That Led The Board To Modify The ATC Rule Is Not Present Here..... III-A-32

ii. The Board Must Address In This Case The Complainant's Excessive Use Of Distorting Cross-Over Traffic. ... III-A-35

(a) The SBRR Includes Extensive Amounts Of The Very Carload And Multi-Carload Cross-Over Traffic That Concerns The Board..... III-A-36
(b) Placing Limits on Cross-Over Traffic In This Case Would Substantially Reduce SBRR Traffic Volumes and Revenues..... III-A-40
(c) Sunbelt Would Not Be Prejudiced By A Limitation On SBRR Cross-Over Traffic..... III-A-41

iii. Application Of New Rules Adopted In Ex Parte 715 To This Case Would Be Appropriate, And Would Not Constitute "Retroactive Rulemaking."..... III-A-43

(a) Application Of New Cross-Over Revenue Allocation Rule To This Case..... III-A-45
(b) New Cross-Over Traffic Limits Should Be Applied In This Case. III-A-48

iv. Other Corrections To Cross-Over Revenue Allocation Calculations Are Necessary. III-A-55

III. STAND ALONE COST

A. TRAFFIC GROUP[1]

1. Stand-Alone Railroad Traffic.

NS generally accepts SunBelt's selected traffic group for purposes of determining SARR traffic volumes and revenues, with two exceptions. *First,* SunBelt erroneously double-counted certain selected traffic. NS corrects that error by eliminating the double-counted traffic and adjusting SBRR traffic volumes and revenues accordingly. *Second,* NS requests that the Board apply in this case necessary and appropriate limits on cross-over traffic in order to eliminate the distorting effect of excessive use of that device, an issue about which the Board has expressed concern for more than eighteen months, dating to before SunBelt filed this case. Before SunBelt filed its opening evidence, the Board commenced a rulemaking proposing new limits on cross-over traffic. *See Rate Regulation Reforms,* STB Ex Parte 715 (served July 25, 2012). Because this case relies extensively on cross-over traffic that presents the very issues the Board seeks to address in that rulemaking, NS requests that the Board apply the cross-over traffic limits proposed in Ex Parte 715, or other appropriate limits, to this case. *See* III-A-3-c-24 to III-A-3-C-55, *infra.*

In selecting SBRR traffic, SunBelt erroneously included a large number of waybills twice for the third quarter of 2011, which resulted in double counting of traffic volumes and revenues in that quarter. Because third quarter 2011 is both part of the SBRR "Base Year" and in the first year of its operations (i.e., the first year of the SAC analysis period), SunBelt's overstatement

[1] This traffic and revenue evidence section III-A of NS's Reply Evidence is sponsored by Robert O. Fisher of FTI Consulting, Inc. Mr. Fisher has participated in multiple Stand-Alone Cost rate cases. *See* Section IV.

affects SBRR traffic volumes in every year of the SAC analysis period. *See* SunBelt Opening WP SQL table "zzWAYBILLS."

Table III-A-1 below shows the number of NS waybills that SunBelt uploaded to its SQL server database. These waybills represent the entire NS system, from which SunBelt selected a fairly small, localized group of movements for inclusion on its SARR. Although each of NS's waybill files contains a very small number of actual duplicate records (0.1%), as a result of erroneous double-loading of individual waybills, over 25% of the waybills that SunBelt used for the third quarter of 2011 were second copies of the same waybill. SunBelt's SARR traffic selection process failed to filter out these twice-pulled waybills. As a result, the volumes and revenues SunBelt attributed to the selected SBRR traffic group are substantially inflated.

Table III-A-1

Month	Unique Waybills	SunBelt Total	Duplicates	% of Total
1	1,129,313	1,130,476	**1,163**	0.1%
2	1,061,959	1,063,018	**1,059**	0.1%
3	1,258,081	1,259,104	**1,023**	0.1%
4	1,189,394	1,190,167	**773**	0.1%
5	1,198,794	1,199,760	**966**	0.1%
6	1,205,293	1,206,667	**1,374**	0.1%
7	1,144,990	1,446,473	**301,483**	26.3%
8	1,270,098	1,604,261	**334,163**	26.3%
9	1,207,504	1,525,078	**317,574**	26.3%
3Q	**3,622,592**	**4,575,812**	**953,220**	**26.3%**

NS produced the waybill data in discovery in quarterly files, and SunBelt appears to have erroneously loaded the third quarter file (see NS Reply WP "REV_Q32011.zipx," produced in discovery). The actual number of unique waybills in this file is 3,622,592, nearly a million less than those in SunBelt's workpapers. SunBelt's erroneous double-counting affected all commodity groups it selected, and resulted in an overstatement of SBRR traffic volumes of

approximately 8 percent in each year of the SAC analysis period. Table III-A-2 sets forth SunBelt's first year SBRR volume overstatements by commodity group.

Table III-A-2

	Commodity Group	Shipments
10	Agriculture	-8%
20	Metals	-8%
25	Construction	-9%
30	Paper	-8%
40	Chemicals	-8%
60	Automotive	-7%
80	Coal	-11%
99	Intermodal	-8%
Total		**-8%**

NS corrected this double-counting error by removing the duplicated waybills and traffic, and recalculating SBRR first year traffic volumes accordingly. *See* NS Reply WP "Waybill Summary Reply."[2]

2. Volumes (Historical and Projected).

a. Historical

With the exception of the revenue and volume overstatement described in the preceding section (due to use of duplicate waybills for the same movements), NS accepts SunBelt's actual historical traffic volume calculations.

[2] Because of the extent of the error, NS replaced SunBelt's summarized waybill records in the traffic and revenue workpapers, while retaining SunBelt's calculations. See NS Reply WPs "Gen Freight Traffic and Revenue Forecast Reply.xlsx" and "IM-Coal Traffic and Revenue Forecast Reply.xlsx."

b. Projected Volumes

i. 2012 Through 2016

For 2012 through 2016, SunBelt's approach aggregated NS's forecasts and applied an aggregate growth rate that resulted in significant mis-statements of projected SBRR traffic volumes. SunBelt used NS's detailed lane-specific forecasts produced in discovery, but it amalgamated them into projections of NS system-wide commodity group aggregate volumes. SunBelt used those aggregated projections to calculate an NS system growth rate for each commodity group. *See* SunBelt Opening at III-A-5 to III-A-7. SunBelt's gross NS system-wide commodity-aggregate approach is a blunt instrument that fails to account for the specific traffic experience of the SBRR, which has only a single issue movement and would traverse portions of only three states. *See* SunBelt Opening at I-43 (describing the SBRR as "a simple system operating over just 580.64 route miles traversing only three states (Alabama, Louisiana, and Mississippi) . . . which is one of the shortest SARRs ever considered by the Board, ha[ving] only two line segments"). The NS system, in contrast, comprises more than 20,000 route miles over 22 states, covering most of the eastern United States. Applying NS-system-wide commodity group aggregate growth rates to a SARR only covering approximately 2.9% of the NS system inevitably distorts projections of future SARR traffic volumes.

For example, North Dakota-originated traffic (from the Bakken shale oil-and-gas fields) drives a large part of the NS system-wide projected growth in all Chemical group traffic volumes in 2012 and 2013 of the NS forecast. However virtually none of that traffic is forecast to touch the SBRR. Indeed, 98% of 2013 chemical traffic from North Dakota terminates in either Illinois or New Jersey and would not remotely approach the lines of the SBRR. But applying SunBelt's aggregated commodity group approach, the SBRR would derive substantial volume growth benefit from the growth of that traffic on a distant part of the NS system. This is

but one example of how applying aggregated system-wide commodity group growth projections to a small piece of the NS system replicated by the SBRR would substantially distort reasonable projections of SBRR traffic volumes.

In this Reply evidence, NS has made adjustments to correct this distortion. NS has refined SunBelt's approach by including only traffic from the NS forecast that potentially might move on the SBRR. Specifically, NS identified the Origin State/Destination State combinations for each commodity group that SunBelt selected for the SBRR. NS then calculated growth rates from its forecast for each commodity group for this subset of forecasted traffic. *See* NS Reply WP "SBRR States Forecast.xlsx." NS used the actual NS traffic and revenue data produced in discovery to determine the 2011 base to calculate 2012 growth rates. Like SunBelt, NS used a single growth rate each year for each commodity group. Unlike SunBelt, these growth rates reflect the actual traffic traversing the SBRR. *See* NS Reply WP "SBRR States Forecast.xlsx." The resulting corrected SBRR projected growth rates for each commodity group are summarized in Table III-A-3 below.[3]

Table III-A-3: SBRR Volume Growth Rates

Commodity Group		2012	2013	2014	2015	2016
10	Ag	6.1%	4.6%	3.5%	3.6%	3.8%
20	Metals	16.6%	10.6%	4.8%	3.3%	3.5%
25	Construction	7.1%	-0.2%	6.4%	5.8%	4.7%
30	Paper	1.3%	4.8%	5.0%	3.9%	6.4%
40	Chemicals	4.6%	4.5%	3.4%	3.9%	3.9%
60	Auto	18.9%	-1.0%	6.6%	2.0%	0.4%
IM	Intermodal	19.0%	14.1%	6.6%	8.0%	6.3%

[3] NS used the same approach to forecast revenue per shipment growth for each commodity group, except for Auto. NS accepts SunBelt's RCAF-U approach for Auto because fuel surcharge is not broken out in the forecast.

NS applied a slightly different approach for coal, in order to eliminate potential disputes about "origin shifting." All coal shipments (except one carload) moved by the SBRR terminate in Alabama or Mississippi, and 96% of base year tons terminate at either Richburg, MS, or Jackson, AL. However, SunBelt applied the same NS-system-wide commodity aggregation approach to project SBRR coal volumes that it used to project other SBRR traffic volumes. *See* SunBelt Opening at III-A-6 to III-A-7. Again, such a system-wide aggregate approach distorts projected SBRR volumes, particularly because the SBRR serves so few coal receivers and no coal origins. To correct this erroneous approach, NS applied the growth rate from its forecast for each applicable Destination State, rather than also considering each Origin State. *See* NS Reply WP "SBRR States Forecast.xlsx." This approach ensures that, even if SBRR destinations were to change the origins from which they source coal during the SAC analysis period, projected volumes terminating at those destinations would not be affected. Given the low volumes of coal on the SBRR network, NS has opted to eliminate any potential disputes with SunBelt on the issue of mine origin shifting. The volume adjustments effected by NS's correction of SunBelt's approach to coal traffic are set forth in Table III-A-4 below.

Table III-A-4: SBRR Coal Volume Growth Rates

Commodity Group		2012	2013	2014	2015	2016
80	Coal	-8.5%	7.9%	4.2%	2.3%	-4.2%

ii. 2017-2021 SBRR volumes

NS rejects SunBelt's "CAGR" approach to projecting SBRR traffic volumes for the period 2017-2021.[4] In its case-in-chief, SunBelt projected volumes of all SBRR traffic using a

[4] NS is aware of one pending case in which a complainant submitted evidence seeking to apply the distorting CAGR approach, but it is not aware of any case in which the Board or the ICC adopted that novel approach. *See DuPont v. NS,* NS Reply Evid. III-A-38 to 40 (opposing the

compound annual growth rate ("CAGR") commencing in 2009, the bottom of the recession and NS's lowest traffic volume year in the last several years. *See* SunBelt Opening at III-A-7 to III-A-10. Based upon public NS traffic data for 2009, and aggregated NS forecast data for 2012-2016, SunBelt generated an average aggregate volume growth rate. *See id.* It then applied that rate each year after 2016 to generate its estimated SBRR volumes for 2017 to 2021. *See id.* Using the 2009 low traffic watermark as the baseline for developing a mean growth rate for NS rail traffic overstates the likely growth rate in future years because it assumes that the rate of growth of NS traffic during the rebound from the bottom of the recession will continue at the same rate from 2017 to 2021. There is no reason to anticipate that traffic growth would continue at the pace it followed coming out of the recession, and SunBelt proffers none in its evidence. To NS's knowledge, the Board has never followed or endorsed the CAGR escalation approach SunBelt proposes in this case, and the sole authority SunBelt cites does not support its contrary claim.[5]

SunBelt's use of *2009* as the baseline year for its CAGR gambit is particularly egregious because the SBRR would not even commence operations until *mid-2011*. Thus, in order to further exaggerate its overstatement of SBRR traffic volumes, SunBelt reached back *two-and-one-half years before* the SBRR would move its first carload of traffic for volumes that form the

---

same gambit proposed by complainant DuPont); *cf.* SunBelt Opening at III-A-7 (claiming that the Board applied a CAGR approach "most recently in *AEPCO 2011*.").

[5] SunBelt claims that the *AEPCO 2011* decision adopted the CAGR approach it advocates here. *See* SunBelt Opening III-A-7. Review of the *AEPCO* decision shows the cited page contains no mention, let alone discussion, of a CAGR approach to longer term carload traffic projections. *See AEPCO 2011,* STB Docket No. 42113, at 22-23. Instead, the Board states that it applied the most recent EIA forecasts for coal volumes; that defendants accepted AEPCO's (unexplained) forecast approach for consumer, industrial, and some intermodal traffic; and used a government (USDA) forecast for agricultural traffic. *See id.* This provides no support for SunBelt's unprecedented "CAGR" gambit in this case.

basis of its traffic projections for a period 8-12 years later (2017-2021). Using traffic volumes from a period that pre-dates the existence of the SARR as the baseline for projecting future SARR traffic is illogical. This irrationality further demonstrates that SunBelt's result-driven CAGR contrivance is absurd and should be summarily rejected.

(a) Non-Coal Traffic Volumes 2017-2021

To correct SunBelt's distorting approach, NS used the year-over-year 2015-2016 growth rate (from its forecast, produced in discovery) for each category of traffic other than coal handled by the SBRR, and applied that rate as the projected annual growth rate for each of those types of traffic for the subsequent years 2017 to mid-2021. *See* NS Reply WP "Gen Freight Traffic and Revenue Forecast Reply.xlsx" and "IM-Coal Traffic and Revenue Forecast Reply.xlsx" In calculating this growth rate, NS applied the Origin State/Destination State/Commodity Group approach described above. *See* III-A-2-b-i, *supra.* The Board has accepted, for non-coal commodities, this approach of using the final year growth rate in the forecast for the remaining years of the SAC analysis period. For example, complainants in *AEPCO* used that approach for BNSF consumer and industrial traffic, defendants accepted the approach, and the Board applied the approach in its SAC analysis. *See AEPCO 2011*, STB Docket No. 42113, at 22.

Applying these growth rates to calculate volumes for each non-coal traffic commodity in 2017 through mid-2021, NS developed a more reasonable and accurate projection of SBRR non-coal traffic volumes. *See* NS Reply WPs "Gen Freight Traffic and Revenue Forecast Reply.xlsx" and "IM-Coal Traffic and Revenue Forecast Reply.xlsx."

(b) Coal Traffic Volumes 2017-2021

As demonstrated, SunBelt's proffered CAGR approach distorts projected traffic volumes, and is not an accurate or appropriate approach for any traffic, including coal traffic. In

accordance with Board precedent, NS has corrected SBRR coal volumes using a different approach than it used for non-coal traffic.

NS has corrected SunBelt's erroneous projection of SBRR coal volumes by applying coal volume projections from the Energy Information Administration's ("EIA") Annual Energy Outlook 2012 ("AEO 2012"). For periods for which internal carrier coal forecasts are not available or demonstrated to be unreliable, over the last decade the Board has uniformly used the EIA AEO to project SARR coal volumes. *See, e.g., AEPCO 2011,* STB Docket No. 42113, at 21-22; *WFA,* STB Docket No. 42088, at 6 (served Feb. 29, 2008) ("To project the amount of coal traffic that would move on a SARR over the entire analysis period, we use forecasts published by the Department of Energy's Energy Information Agency."); *Duke/NS,* 7 S.T.B. at 144-45. In accordance with settled Board precedent, NS has projected SBRR coal volumes for 2017-2021 using the most recent EIA annual forecast, the 2012 AEO. Consistent with the approach NS used for projecting SBRR coal volumes for 2012-2016, it used total coal volumes for the Alabama and Mississippi demand region for projections for 2017-2021. *See* NS Reply WP "IM-Coal Traffic and Revenue Forecast Reply.xlsx."

3. Revenues (Historical and Projected).

a. Single-Line.

NS largely accepts SunBelt's calculations of historical and projected rates (revenues) for the SBRR traffic group, with a few exceptions. As detailed below, this Reply Evidence corrects errors in SunBelt's calculation of historical SBRR revenues from certain intermodal traffic, and projected SBRR fuel surcharge revenues.

i. Historical Revenues for Intermodal Traffic

NS corrects an error in the historical revenue estimates presented in SunBelt's Opening Evidence, which resulted from SunBelt claiming for the SBRR revenues collected by

Thoroughbred Direct Intermodal Services ("TDIS") for services other than NS rail service. TDIS is a provider of intermodal transportation and logistics services. Although TDIS technically is a subsidiary of NS, it functions as an NS customer that purchases rail transportation services from NS. The revenue the SBRR would obtain by "stepping into NS's shoes" would be the rail line haul revenue NS collects from TDIS for NS's rail segment of intermodal movements. However, rather than treating TDIS as a customer of NS and accepting the revenue that TDIS pays to NS, SunBelt replaced the revenue NS collects from TDIS (*i.e.*, the NS rail line haul revenue) with the total revenue collected by TDIS for all of the various services it provides to its third party customers (including, for example, trucking services from origin to the intermodal facility, revenues for rail line-haul services provided by NS as well as rail carriers other than NS, intermodal lifts, trucking services from the intermodal facility to the final destination, etc.). *See* SunBelt Opening Ex. III-A-2 at 13-14.

(a) Because Sunbelt Did Not Account For The Costs Of Services Provided By TDIS Other Than NS Rail Linehaul, It May Not Claim Revenues Generated By Those Other Services.

With the exception of drayage costs, SunBelt's SAC evidence does not take into account the costs of facilities, equipment, personnel, materials and other expenses necessary to provide the services required to earn the non-NS and non-rail revenues earned by TDIS. SunBelt failed to include large operating costs that TDIS incurs each year in order to provide non-rail line haul services. The accounts payable files NS produced in discovery show that TDIS paid expenses of {{ }} million in the first 9 months of 2011. *See* NS Reply WP "AP TDIS ytd 2011.xlsx." SunBelt also ignored the following data produced in discovery:

- TDIS has {{ }} employees, costing approximately {{ }} million in salary and benefits (see NS Reply WP "TDIS Personnel Sept 2011.xlsx");

- TDIS leases office space for its employees (see NS Reply "TDIS Leases 2011.xlsx");
- TDIS paid Transworks over {{ }} through 3Q11 for IT system expenses (See NS Reply WP "AP TDIS ytd 2011.xlsx.") and
- TDIS spent nearly {{ }} in 2011 to lease trailers and containers. (see NS Reply WP "TDIS Leases 2011.xlsx").

Ignoring these costs while taking credit for TDIS's total revenues violates fundamental SAC principles, Board precedent, and basic economic principles, and must be rejected. It is axiomatic that a SAC presentation must account for the costs of constructing, operating, and maintaining the facilities necessary to generate the revenues claimed by its SARR. *See, e.g. Coal Rate Guidelines,* 1 I.C.C.2d 520, 542-43 (1985); *AEPCO 2011,* STB. Docket No. 42113, at 4-5 (SAC analysis must develop and present "investment requirements and operating expense requirements (including such expenses as . . . personnel, material and supplies, and administrative and overhead costs) in order to generate the revenue requirements of the SARR).[6] SunBelt's failure to account for the costs of providing TCS non-rail linehaul services compels the exclusion of revenues for those services.

SunBelt's evidence makes no attempt whatsoever to explain or justify its fallacious assumption that the SBRR could collect the revenues earned by TDIS without incurring all of the costs necessary to generate them. Instead, SunBelt simply states that, for its selected traffic, it summed all TDIS revenues to produce SBRR revenue. *See* SunBelt Opening III-A-12.

[6] The SBRR "operating plan" also does not provide for the operation of over-the-road trucking and other non-rail services provided by TDIS. Here again, if the SBRR is to obtain revenues from TDIS non-rail services, its operating plan must either account for the SBRR's performance of those non-rail services or assume that TCS and TDIS would perform those services and charge the SBRR for them. SunBelt's evidence does neither, effectively assuming for both operational and cost purposes that those services would be performed by a third party that effectively would donate the resulting revenues to SBRR.

SunBelt's case-in-chief thus utterly failed to meet its burden of proof—indeed it has not even met the threshold requirement of producing *any* evidence or argument—regarding the costs associated with attributing to the SBRR all of TDIS's revenues for selected traffic.

SunBelt included $875,000 of these TDIS revenues in the "Base Year" traffic group. *See* NS Reply WP "IM-Coal Traffic and Revenue Forecast Reply.xlsx." To correct the SBRR revenue overstatement, NS reversed SunBelt's substitution of TDIS revenues for NS's rail line haul revenues for affected movements in the 2011 traffic base. *See* NS Reply "IM-Coal Traffic and Revenue Forecast Reply.xlsx.".

ii. Projected Revenues

(a) Sunbelt Mis-Calculated Intermodal Revenue Growth From 2011 To 2012.

SunBelt made a significant error in calculating revenue growth rates for intermodal traffic in 2012. The error—using a different and incorrect data source for 2011 NS rail revenues—resulted in a substantial understatement of growth in intermodal in calendar year 2012. Instead of using NS's actual rail revenues reported in the NS waybill revenue files for intermodal traffic, SunBelt instead used gross intermodal revenue data reported in an *NS Quarterly Financial Review* for the fourth quarter of 2011. These publicly-reported gross revenue data include end-customer revenues for Triple Crown Services ("TCS") and TDIS subsidiaries, which provide intermodal and logistics services in addition to re-selling rail services. NS's gross revenue as reported in the NS *Quarterly Financial Review* includes the revenue NS collects from TCS and TDIS customers (i.e., the line haul revenue), but also the total revenue collected by TCS and TDIS for the various services they provide to third parties (including, for example, trucking services from origin to the intermodal facility, revenues for rail line-haul services provided by NS as well as rail carriers other than NS, intermodal lifts, trucking services from the intermodal

facility to the final destination). Using that gross intermodal data, SunBelt derived an estimated average revenue per ton for intermodal traffic for 2011. *See* SunBelt Opening WP "SBRR Traffic and Revenue Indices – OPEN.xlsx." SunBelt then used NS's internal revenue forecast to calculate intermodal revenue per ton for intermodal traffic. *See id.* Because NS's internal forecast projects only the revenue that NS itself receives (in the case of TCS and TDIS, the NS rail line haul revenue) and does not include the revenues generated and collected by TCS for non-line-haul services, SunBelt compared apples and oranges. The result of SunBelt's comparison of gross intermodal revenue for 2010 with rail line-haul intermodal revenue for 2011 was an apparent negative growth rate of 22 percent for intermodal revenues in 2011. This, in turn, resulted in a significant understatement of 2012 revenues for the Intermodal traffic selected for the SBRR traffic group.

NS has corrected this error by using the intermodal revenues reported in the revenue waybill data for 2011 that it produced to SunBelt in discovery, rather than the document SunBelt relied upon, which was prepared for different purposes and reports different data. NS used the same Origin State/Destination State/Commodity Group approach that it used for forecast volumes in order to calculate revenue per shipment growth. NS determined the revenue per unit for intermodal traffic in 2011, used its forecast to determine the projected intermodal revenue per unit for 2012, and calculated a growth rate based on the difference between revenue per unit in the two years. *See* NS Reply WP "SBRR Traffic and Revenue Indices – REPLY.xlsx."[7] This corrected growth calculation changes intermodal revenue per unit in 2011 from the 22 percent *decrease* presented in SunBelt's opening evidence to a 4% *increase,* thereby substantially

[7] For growth rates forecast years after 2012, SunBelt did not repeat this error because it relied only on data in the NS forecast.

increasing revenues for the intermodal traffic selected for the SBRR. Correction of SunBelt's error increases SBRR revenues by $ 6-14 million per year throughout the SAC analysis period. Table III-A-5 reflects this NS correction of SunBelt's calculation of 2012 SBRR revenues.

Table III-A-5
Intermodal Revenue per Shipment

	2011	2012	Increase/ Decrease
Opening	$595	$466	-22%
Reply	482	503	4%

(b) SunBelt Overstated Projected Net Fuel Surcharge Revenues.

SunBelt introduced a significant distortion into its SAC evidence by using two different indices to project changes in the price of fuel. To *minimize* SBRR fuel *costs*, SunBelt used an index that predicts that the price of fuel will increase slightly or decrease over the relevant time period. But to *maximize* SBRR fuel surcharge *revenues*, SunBelt used an index that predicts that the price of that fuel will increase significantly over the identical time period. A proper SAC analysis must make consistent fuel price escalation assumptions for the SARR's own fuel costs and for its fuel surcharge revenues. NS's Reply Evidence corrects SunBelt's self-serving attempt to have it both ways.

Consistent with Board precedent, SunBelt uses a hybrid RCAF-A/RCAF-U index for projecting fuel costs as a component of SARR operating expenses. *See Major Issues*, Ex Parte 657 (Sub-No. 1), at 39-47. That index predicts fuel prices will decline through 2015 before increasing in later years. However, rather than applying the same fuel price assumptions for purposes of forecasting the SBRR's fuel surcharge revenues, SunBelt instead elected to use EIA data that forecasts the very same fuel costs to *increase* throughout the SAC period, resulting in

significantly higher fuel surcharge revenues than would be derived from the hybrid RCAF-A/RCAF-U index. *See* SunBelt Open WP "WTI & FSC Calc.xls."

Specifically, in calculating fuel surcharge revenues, SunBelt used EIA's Short Term Energy Outlook to project fuel prices for the 2012-2013 period and EIA's Annual Energy Outlook for 2014 through 2021. *See* SunBelt Opening III-A-15; SunBelt Opening WP "WTI & FSC Calc.xls." The EIA forecasts used by SunBelt project a substantial increase in fuel prices between 2012 and 2021—amounting to a cumulative increase of 32% by the end of the SAC analysis period. This substantial increase in fuel prices contrasts starkly with other reputable independent sources, which forecast fuel prices to increase at a much lower rate and even to decline over the next decade. By way of example, Table III-A-16 shows the divergence between EIA's projection and the projections of Global Insight and of the New York Mercantile Exchange ("NYMEX").

Table III-A-6
EIA, Global Insight, and NYMEX Fuel Price Projections[8]

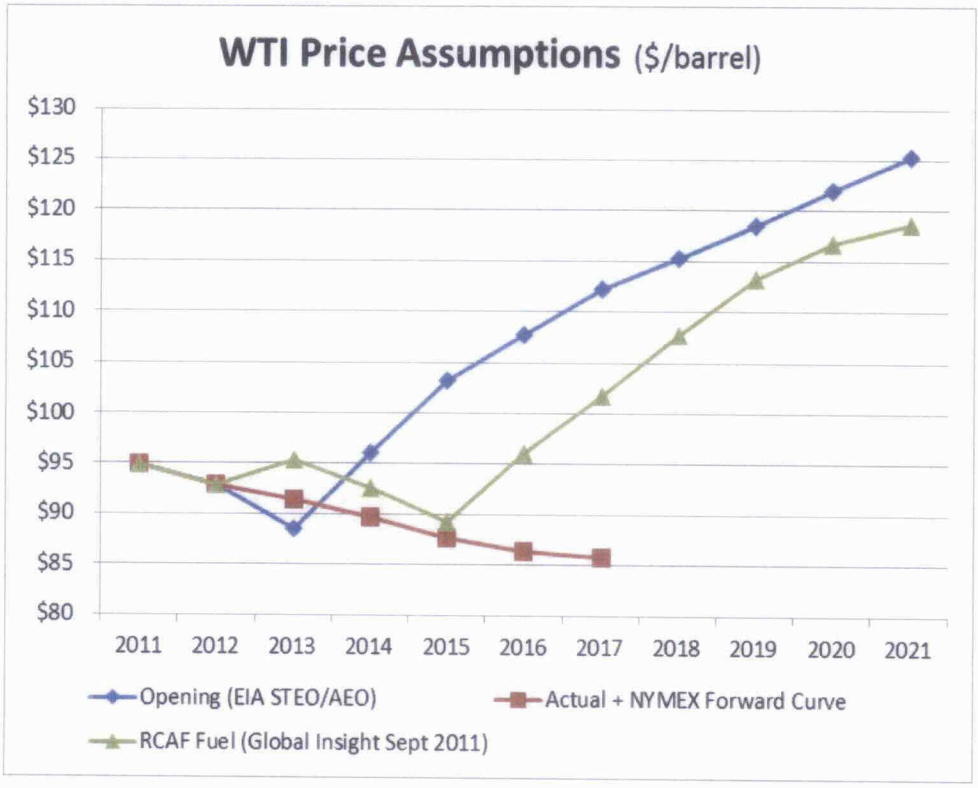


Table III-A-6 shows that, while the index SunBelt chose to use projects a substantial, steady increase in fuel prices to unprecedented levels, two other respected indices alternatively predict that fuel prices will be largely flat or in decline modestly over the next 5 years. The Global Insight forecast is of particular significance because it is used as the fuel component in the RCAF-A and RCAF-U fuel cost projections that SunBelt used for its fuel costs.

The primary problem with SunBelt's approach is not simply that it chose an outlier forecast for fuel price escalation. The fundamental problem is that it uses the EIA forecast to escalate SBRR fuel surcharge *revenues* while using a different forecast-predicating lower fuel prices–to escalate SBRR fuel *expenses*. Specifically, SunBelt's discounted cash flow model for

[8] Source: NS Reply WP "Fuel Price Indices.xlsx." The Global Insight forecast is the fuel component in adjusted and unadjusted RCAF indices.

the SBRR "applies Global Insight's June 2012 RCAF-U and RCAF-A forecasted indexes" to escalate SBRR operating expenses from the third quarter of 2011 until 2021. SunBelt Opening III-G-7. As demonstrated above, Global Insight projects that fuel prices will not significantly increase between 2012 and 2016, and uses that assumption to develop its RCAF projections. SunBelt is therefore relying on one set of fuel price assumptions for fuel surcharge revenue projections and another substantially different set of assumptions for fuel expense projections. SunBelt seeks to have it both ways by making the nonsensical assumption that rapidly rising fuel prices would allow the SBRR to generate additional SBRR fuel surcharge revenues, but that the prices the SBRR actually would pay for fuel would be flat or increase slightly. The Board must not tolerate this transparent attempt to game the SAC analysis.

NS's Reply Evidence corrects the mismatch in SunBelt's projections by using the same fuel price index for both fuel surcharge revenue and fuel expenses. Specifically, NS used the actual WTI prices available from the EIA through 2012 and used Global Insight's RCAF Fuel component forecast to index SBRR fuel surcharge revenues for remaining years.[9] *See* NS Reply WP "WTI & FSC Calc Reply.xls. Global Insight's RCAF Fuel forecast is based on its Diesel PPI forecast. *See* NS Reply WP "GI Email.pdf." And while NS's fuel surcharge is based on WTI prices rather than diesel, WTI prices and diesel prices are closely correlated. *See* NS Reply WP "Fuel Price Indices.xlsx" (demonstrating a correlation coefficient of 95% for WTI prices and the Diesel PPI since 2008).

Use of the Global Insights forecast for both fuel costs and fuel surcharges is the only way to correct the mismatching issue consistent with the Board's rules and regulations. As noted

[9] NS also updated SunBelt's flawed FSC calculation by using the most recent EIA Short-Term Energy Outlook from December, 2012.

above, the *Major Issues* rulemaking mandated the use of a hybrid RCAF-A/RCAF-U index for projecting SARR operating expenses. *See Major Issues*, Ex Parte 657 (Sub-No. 1), at 39-47. Using a different index to escalate operating expenses (or creating an altered RCAF index with higher fuel cost assumptions) would be an impermissible collateral attack on *Major Issues*. In order to calculate SBRR fuel surcharge revenues and fuel expenses in a consistent manner, it is therefore necessary to use the fuel component of the RCAF to index SBRR fuel surcharge revenues. Accordingly, NS uses this consistent approach in this Reply Evidence.

SunBelt may attempt to counter that EIA data was used to estimate future fuel surcharge revenues in a prior case. *See AEPCO 2011*, STB Docket No. 42113, at 26-28. But because all parties in *AEPCO 2011* accepted the use of EIA data for this purpose (although they differed on how to properly weight the EIA's STEO and AEO), the Board's decision in *AEPCO 2011* had no occasion to address the mismatch between the use of EIA forecast data for SARR fuel surcharges and the use of RCAF projections to calculate SARR fuel costs. And *AEPCO 2011*'s admonition that parties use "reasonably accurate estimates" of fuel costs does not allow SunBelt to use EIA data projecting dramatic fuel price increases in order to inflate fuel surcharge *revenues,* while using a separate different data source that assumes that fuel prices will stay the same or decline to minimize SBRR fuel *costs*. *See id.* at 28.

Forecasts are inherently uncertain, and there is no way to determine with any accuracy today whether EIA is correct that future fuel prices will spike upward, whether NYMEX is right that future fuel prices will steadily decline, or whether Global Insights is right that future fuel prices will not increase significantly in coming years.[10] But what is essential to a coherent

[10] EIA recently issued its "Early Release 2013 Annual Energy Outlook." In that report, EIA revised downward its projected WTI costs by a substantial amount for the relevant years. As a

analysis is that the same fuel price projections be used for forecasting both SBRR revenues and SBRR operating expenses. SAC complainants may not take flatly inconsistent positions by using high projections for fuel surcharge revenues and low projections for fuel expenses. The Board should reject SunBelt's attempt to game the SAC result, and adopt the consistent and coherent approach NS uses in this Reply Evidence.

b. Divisions—Existing Interchanges.

SunBelt's Opening Evidence substantially understated the payments NS made to handling and switching carriers for the traffic selected for the SBRR, thereby substantially overstating SBRR revenues in the first year of its operation and every year thereafter. These overstatements resulted from SunBelt's technical implementation errors despite NS's clear instructions for calculating the payments. NS's Reply corrects those errors, resulting in an initial year reduction in SBRR revenues of approximately $ 4.6 million.

i. Handling Carrier Payments.

The source of SunBelt's error is its method of matching NS car and waybill records for purposes of identifying NS payments to handling and switching carriers. More specifically, SunBelt's fundamental error was its failure to use a date *range* to match car, equipment, and waybill records with interchange dates in the NS handling records. SunBelt's insufficient

---

result, EIA's most recent fuel cost projections are much closer to those issued by Global Insights and incorporated by the RCAF. *See* NS Reply Ex. III-A-3. Application of the 2013 fuel cost projections would dramatically reduce SBRR net fuel surcharge revenues from those posited by SunBelt in its opening evidence. If for some reason the Board were to decide to apply the EIA fuel cost projections to estimate future SBRR fuel surcharge revenues, it should use the more recent 2013 AEO figure. Again, however, the only logical and coherent way to estimate future net fuel surcharge revenues is to use the same fuel cost assumption (including application of the same index to project future fuel costs) as the basis for both SARR fuel costs and SARR fuel surcharge revenues. Because the Board has mandated the use of RCAF-based indices to project SARR costs (including fuel costs), it must use the same indices as the basis for calculation of projected fuel surcharge revenues.

matching process used the Equipment Initial, Equipment Number, and *Waybill Date* in the NS LEAD_UNIT waybill file to match to the Car Initial, Car Number, and *Interchange Date* in the NS handling records. The problem with this approach is that for any given car, block of cars, or even full train, the waybill date, and the interchange date usually are not the same. This makes sense, because most rail car shipments from origin to destination take place over more than one day. SunBelt's truncated approach identified only a small percentage of all handling records—those for which the handling interchange occurred on the same date as the waybill issuance date.

SunBelt acknowledged in its Opening Evidence that NS's instructions that accompanied its production of the relevant records and data expressly advised that a date *range* must be used in the matching process.[11] Despite this acknowledgement, SunBelt made no effort to actually use a date range. SunBelt's incomplete approach fails to take into account the fact that the waybill date should not be expected to match the interchange date, especially when—as is often the case—the handling event occurs on the termination. The waybill date is the date the movement (car, cars, or train) originates. The Interchange Date, in contrast, is the date when a car is interchanged with the handling carrier. Assuming the car takes several days to reach its destination, the Interchange Date will be several days after the waybill date. If a car dwells in a yard or elsewhere during a move, the difference between the waybill date and the interchange date could be several weeks. Similarly, even when the handling by another carrier takes place at the origination of the movement, the interchange date is sometimes recorded a few days before or after the waybill date.[12]

---

[11] SunBelt Opening Ex. III-A-2 at 9-10.

[12] The date differences may occur for a variety of reasons, including for example delayed data entry by the handling carrier, cars dwelling on the handling carrier system, and difficulties in data transmission or exchange between carriers.

As a result of SunBelt's unduly narrow and incomplete matching approach, it matched records accounting for only $585,000 in handling payments NS incurred on SunBelt traffic in the first 3 quarters of 2011.

NS has corrected SunBelt's deficient approach by using a date range surrounding the waybill date to match to the corresponding interchange date and handling records. In this Reply Evidence, NS has used a date range for the waybill date/interchange date to improve the match rate.[13] The date range NS used was from one day before the waybill date (-1) through 30 days after the waybill date (+30). *See* NS Reply WP "NS ATC SQL Scripts.xlsx." Using a wider range of dates would have captured additional records, but NS conservatively used a 31 day period. NS's matching process resulted in $10 million in handling payments for the SBRR records. *See id.* The corrected handling carrier payment amount derived by NS on Reply represents over $10 million more than SunBelt identified for the selected waybill data (representing the first three quarters of 2011). NS has appropriately applied those handling carrier payments to reduce SunBelt's overstatement of SBRR revenues. *See* NS Reply WPs "Gen Freight Traffic and Revenue Forecast Reply.xlsx" and "IM-Coal Traffic and Revenue Forecast Reply.xlsx."

ii. Switching Carrier Payments.

SunBelt's switching carrier record matching approach also resulted in an overstatement of SBRR revenues. Moreover, although SunBelt purported to follow the method NS provided for purposes of illustration in its attack on NS's data, it did not even *attempt* to follow that approach in the calculations it actually used to determine SBRR revenue. *Compare* SunBelt

[13] NS used a slightly different matching process whereby it first matched the handling records to the full NS waybill file and then joined those results using SunBelt's Lead_Unit waybill approach.

Opening Ex. III-A-2 *with* SunBelt Opening WP "Filing - SBRR Traffic Selection Methodology scripts and tables_vF.xlsx, Traffic Selection Methodology tab, Step 10."[14] As SunBelt's Opening Exhibit III-A-2 notes, NS provided a 3-step process for matching switching data to waybill data.

> Matching Criteria:
>
> 1. Match WB SERIAL, CAR INITIAL and CAR NUMBER from switching file to WBSN, EQINIT and EQNUM on large revenue file.
>
> 2. Match WB SERIAL, CAR INITIAL and CAR NUMBER from switching file to MCXREFSN, EQINIT and EQNUM on large revenue file.
>
> 3. Match CAR INITIAL, CAR NUMBER and WB DATE from switching file to EQINIT, EQNUM and WBDT on large revenue file. (Note: Need to use a date range for waybill date on step 3).[15]

For purposes of its actual SAC analysis, however, SunBelt only used a version of the first step, matching records based on waybill serial numbers. SunBelt failed to make any effort whatsoever to follow steps 2 and 3. Because it did not follow Step 3, SunBelt also failed to include a date range for that essential step. As a result, SunBelt only matched approximately $5.7 million in switching payments associated with SBRR movements. *See* SunBelt Open. WP SBRR 2011 Traffic Selection Methodology Scripts and Tables_vF.xlsx" (Step 10).

---

[14] NS explains the flaws in the approach SunBelt used to attempt to illustrate—using a single month's data—the purported difficulties in matching waybill and switching records in its refutation of SunBelt's complaints about alleged deficiencies in NS data. *See* NS Reply. WP "switching_jan2010_NOT Linked to waybill_errors.xlsx." It is important to emphasize, however, that the approach SunBelt used for its actual SARR revenue calculations and SAC analysis did not even apply the approach SunBelt used in its illustration. The approach SunBelt used in its Exhibit, while still flawed, was more accurate than the approach it used in its actual case-in-chief. But, SunBelt declined to use that approach because it found the appropriate date range "surprisingly long" and "cumbersome." *See* SunBelt Opening Ex. III-A-2 at 9-11.

[15] SunBelt Opening Ex. III-A-2 at 8.

To correct SunBelt's understatement of switching carrier payments, NS's Reply Evidence follows all three steps set forth in the instructions it provided to SunBelt. First, NS matched records based on waybill serial number. Second, NS matched the waybill serial number and car initial and number in the switching data file to the multi-car serial number (MCXREFSN) on the revenue waybill file. Finally, NS used the Equipment Initial, Equipment Number, and Waybill Date in the revenue waybill file to match to the Car Initial, Car Number, and Waybill Date in the switching file. *See* NS Reply WP"NS ATC SQL Scripts.xlsx." The third and final step is similar to the proper matching of handling records, and NS used the same date range it used for handling records—one day before the waybill date (-1) through 30 days after the waybill date (+30).[16] NS's approach identified $7.1 million in net switching payments for the traffic SunBelt selected for the SBRR.[17] *See* NS Reply WP "Revenue Waybill Summary.xlsx." NS used the resulting switching payments to correct SunBelt's understatement of those payments and eliminate the resulting overstatement of SBRR revenues. *See id.*

c. Divisions—Cross-Over Traffic.

This Reply corrects one primary error in SunBelt's allocation of revenues from cross-over traffic, which accounts for approximately 86% of SBRR traffic by revenue. *See* SunBelt Opening III-A-15, Table III-A-8. Specifically, NS corrects SunBelt's erroneous application of the so-called "modified ATC" approach to allocate cross-over traffic revenues, replacing it with revenues based on the governing Original ATC method. The Board adopted original ATC in notice-and-comment rulemaking, establishing a substantive legislative rule. Accordingly, the

[16] As with handling, the process NS first matched the switching records to the full NS waybill file and then joined those results using SunBelt's Lead_Unit waybill approach. *See* NS Reply WP"NS ATC SQL Scripts.xlsx."

[17] NS used the same process to match switching receivable records.

Board may not change that rule in this individual adjudication. NS also corrects several less significant errors in SunBelt's cross-over revenue allocation approach. In addition, NS explains that the Board should restrict the use of cross-over traffic in this case because of its distorting effects on the SAC analysis and results.

Because the Board has used individual case adjudications to establish precedent regarding permissible cross-over traffic, it also may apply limits on permissible cross-over traffic in individual cases such as this case. The cross-over traffic SunBelt has employed in this case presents the same distorting effects described by the Board in other recent cases and addressed in *Rate Regulation Reforms,* STB Ex Parte No. 715. Accordingly, the Board should limit cross-over traffic in this case for the same reasons. And, if the Board adopts rules regarding cross-over traffic limits in *Rate Regulation Reforms,* limits applied in the decision in this case should be consistent with those rules. As further demonstrated below, the Board should apply limits to cross-over traffic in this case because SunBelt's extensive use of cross-over traffic in this case presents the very concerns and distortions that caused the Board to propose those limits before the filing of opening evidence in this case.

SunBelt used the so-called "Modified ATC" revenue allocation approach that the Board created as an *ad hoc* method in a single individual case. That amended method was rejected on appeal and remanded to the Board by the D.C. Circuit more than *14 months before* SunBelt filed this case. During the entire discovery phase of this case, and when SunBelt filed its Opening Evidence on August 1, 2012, "Modified ATC" was not in force and the only lawful, judicially sanctioned cross-over revenue allocation rule was original ATC. Indeed, from the time SunBelt filed this case through the date NS files this Reply Evidence, the only properly adopted and judicially approved revenue allocation methodology was the original ATC method adopted in

Major Issues. Moreover, even if the amended cross-over revenue allocation rule the Board sought to apply in *Western Fuels* were *substantively* adequate and reasonable (an issue that may be determined in the pending second appeal of that decision), the Board's separate failure to conduct notice-and-comment rulemaking to promulgate a substantive amendment to the ATC rule adopted in such a rulemaking would render that amendment invalid under the Administrative Procedure Act. In this Reply Evidence, NS corrects SunBelt's erroneous application of an invalid and unlawful revenue allocation approach by applying original ATC to allocate cross-over traffic revenues. *See* NS Reply WP "SBRR_2010_TRAFFIC_ATC_OPENING_v2_062612 Reply.xlsx ."[18]

The Board reiterated in Ex Parte 715 that it had significant concerns about the use of cross-over traffic in SAC cases, stating *inter alia,* that "[t]he inclusion of large amounts of carload and multi-carload cross-over traffic [in complainants' selected SARR traffic group] has revealed a significant and growing concern. . . . The SAC analysis appears to allocate more

[18] Perhaps recognizing the infirmity of the Modified ATC rule, SunBelt also provided cross-over revenue allocation calculations using the alternative methodology that the defendant carrier BNSF had proposed as an alternative to "Modified ATC" in *Western Fuels*. *See* SunBelt Opening Evidence at III-A-19. Thus, SunBelt has conceded that allocation using a methodology that is superior to "Modified ATC," may be appropriate in this case. What SunBelt fails to acknowledge is that, before SunBelt filed its opening evidence, the Board had commenced a rulemaking to consider, *inter alia,* superior alternatives for allocating cross-over traffic revenue. *See Rate Regulation Reforms*, STB Ex Parte No. 715. In that rulemaking, the Board has proposed a new cross-over traffic revenue allocation methodology similar to the method BNSF proposed in *Western Fuels*. *See Rate Regulation Reforms*, STB Ex Parte No. 715, at 6-9. Opening and Reply Comments have been filed in that proceeding, and final rebuttal comments will be filed well before SunBelt files its rebuttal evidence in this case. Because the Board may determine it is appropriate to apply its proposed methodology in this case, NS has developed revenue allocations applying that method as well. *See* NS Reply WPs "SBRR_2010_TRAFFIC_ATC_OPENING_v2_062612 Reply.xlsx." And, NS has provided revenue allocation calculations using the so-called "Modified ATC" approach that could be applied in the unlikely event that the Board were to apply that invalid and discredited approach in this case. *See id.*

revenue to the facilities replicated by the SARR than is warranted." *Rate Regulation Reforms*, STB Ex Parte 715, at 16.

When the Board denied NS's motion to hold this case in abeyance pending the completion of the pending *Rate Regulation Reforms* rulemaking, it expressly authorized the parties to present evidence and argument addressing the questions of: (1) the "use and application of cross-over traffic"; and (2) "appropriate methods for costing and allocating [cross-over] revenues" in this and other individual cases. *See SunBelt Chlor Alkali et al v. NS,* STB Docket Nos. 42125, 42130 Decision at 8, 9 (served Nov. 29, 2012). The Board confirmed that the

> parties should have been, and continue to be, on notice that use and application of cross-over traffic, as well as ATC revenue allocation methodologies, are potential issues in these individual cases, and that parties are entitled to raise and respond to substantive arguments regarding those methodologies within those proceedings. *See, e.g., Ariz. Elect Power Coop. v. BNSF Ry.*, NOR 42113 (STB served June 27, 2011) (stating that the Board has concerns with the way cross-over traffic has been costed, and directing the parties to submit new evidence and arguments for how to rectify the identified issue).[19]

Id. at 5. The Board further stated that "[t]he question of which revenue allocation methodology should be applied within a particular rate case . . . is more appropriately addressed within the individual proceedings." *Id.* at 8. In this Reply evidence, NS accepts the Board's invitation and

[19] If the Board adopts the limits on cross-over traffic proposed in the pending *Rate Regulation Reforms* rulemaking (STB Ex Parte 715, in which final comments were filed on January 7, 2013), it should apply those limits to SunBelt's selected traffic and reject SBRR traffic that does not satisfy those limits. It also may apply the proposed new alternative ATC the Board proposed in Ex Parte 715. *See* III-A-2-c-iii-b-(i), *infra.* NS's position is that ATC should be applied to allocate cross-over traffic revenue in this case, but if the Board adopts a new revenue allocation rule in *Rate Regulation Reforms* before it issues a final decision in this case, it may apply that new rule. As demonstrated below, application of such a new rule would not constitute proscribed retroactive rulemaking." *See infra* III-A-2-c-iii-b. In all events, the Board may not apply Modified ATC in this case.

demonstrates that as a matter of law and policy, it should apply original ATC in this case. And, NS further demonstrates that if the Board decides to limit the use of cross-over traffic it should apply such limits in this case to avoid producing the inaccurate, distorted results that led it to initiate the Ex Parte 715 rulemaking.

i. The Board Should Apply The ATC Rule Because At All Times Relevant To This Case, ATC Has Been The Only Legally Valid Rule And Methodology Governing Cross-Over Traffic Revenue Allocation.

At all times relevant to this case, the only legally valid rule that could be applied to allocate cross-over traffic revenues was the ATC rule adopted in *Major Issues,* Ex Parte No. 657 (Sub-No. 1). Conversely, as demonstrated below, the "Modified ATC" approach the Board applied in the individual *Western Fuels* case was *not* a lawful or valid revenue allocation method at any relevant time, and may not be applied in this case. Disregarding the state of the law, SunBelt applied the invalid "Modified ATC" approach in its case-in-chief, instead of the governing ATC rule. *See, e.g.,* SunBelt Opening III-A-17. Because it was clear that "Modified ATC" was not a valid, permissible methodology at any relevant time, the Complainant's use of that approach was without legal basis and erroneous. Accordingly, the Board should reject SunBelt's proffered revenue allocation approach and adopt the application of (original) ATC presented by NS in this Reply Evidence.[20]

---

[20] The state of the law when SunBelt filed its Opening Evidence was that Original ATC was the only judicially approved, valid allocation method—SunBelt was obliged to apply that method. Even if the Board were allowed to amend ATC without notice-and-comment rulemaking—which it is not—SunBelt would have the burden of proving any alternative method it proposed to use is superior to the ATC rule. SunBelt used Modified ATC in its case-in-chief, but failed to make any argument or present any evidence to support its use of a methodology rejected by the D.C. Circuit. Thus, even if the Board were allowed to amend the ATC rule in this individual adjudication, SunBelt failed to carry its burden of showing that the Board should apply a revenue allocation methodology other than the ATC rule adopted in *Major Issues* and affirmed by the D.C. Circuit.

(a) Original ATC Was Adopted In Notice-And-Comment Rulemaking And Affirmed On Appeal And Is The Only Cross-Over Traffic Rule Applicable To This Case.

The Board adopted ATC ("Original ATC") in the *Major Issues* rulemaking. The Board expressly noted that it chose to proceed by rulemaking in order to avoid parties relitigating rules and issues in individual SAC cases. *See Major Issues* STB Ex Parte 657, at 3. The ATC cross-over revenue allocation rule adopted in *Major Issues* was affirmed on appeal by the Court of Appeals for the D.C. Circuit. Despite the Board's experimentation with a different revenue allocation approach ("Modified ATC") in an individual adjudication, at all times relevant to this case, including today, ATC has been the only cross-over traffic revenue allocation rule that the Board lawfully may apply to this case.

On May 11, 2010, the D.C. Circuit issued its decision in BNSF's appeal of the Board's *WFA II* decision. *See BNSF v. Surface Transp. Bd.,* 604 F.3d 602 (D.C. Cir. 2010). That decision granted BNSF's petition for review with respect to the Board's application of the new revenue allocation approach it created on an *ad hoc* basis in that case, "Modified ATC." *See id.* at 613. The D.C. Circuit rejected "Modified ATC" as explained by the Board, and remanded the case to the Board for further consideration. *See id.* The result of the Court's rejection of Modified ATC was that original ATC remained the only valid cross-over traffic revenue allocation rule. *See, e.g., Action on Smoking and Health v. C.A.B.,* 713 F.2d 795, 797 (D.C. Cir. 1983) (Where a new agency rule (including a modified or amended rule) is rejected and remanded on judicial review, the effect is to "*reinstat[e] the rules previously in force.*") (emphasis added); *Georgetown Univ. Hosp. v. Bowen,* 821 F.2d 750, 757 (D.C. Cir. 1987) (same). From that point forward—unless and until the Board developed and presented a complete, sound, and non-arbitrary explanation and justification for creating and applying

"Modified ATC" and judicial challenges to that method had been exhausted— "Modified ATC" was not a valid method and could not be applied in a SAC case.

Approximately one year later, the Board issued a decision in the *AEPCO* case, citing concerns about the way cross-over traffic had been costed, and directing the parties to submit new cost evidence to address those concerns. *See AEPCO 2011,* STB Docket No. 42113, at 1-2 (served June 27, 2011). As the Board recently summarized, parties to rate cases have been on notice for some time that the use and application of cross-over traffic and cross-over traffic revenue allocation methods are at issue in rate cases, and parties "are entitled to raise and respond to" arguments concerning those issues. *See SunBelt Chlor Alkali et al v. NS,* STB Docket Nos. 42125, 42130 Decision at 5, 8-9 (served Nov. 29, 2012).

More than 14 months after the D.C. Circuit rejected Modified ATC and remanded the *Western Fuels* case to the Board – and a month after the Board ordered submission of new costing evidence to address cross-over traffic issues in *AEPCO* -- SunBelt filed the present rate case against Norfolk Southern. *See* Complaint, *SunBelt v. NS*, STB Docket No. 42130 (July 26, 2011). There can be no dispute that SunBelt knew, or should have known, of the D.C. Circuit decision and remand of *Western Fuels* at the time it filed this case. After extensive discovery, and after an extension of the procedural schedule to allow SunBelt more time to develop its evidence, SunBelt filed its Opening Evidence on August 1, 2012, a year after its original Complaint.

Thus, throughout summer and fall of 2010 and the first half of 2011, when SunBelt and NS were engaged in rate negotiations, and when SunBelt was conducting its pre-complaint investigation and evaluation, ATC—*not* Modified ATC—was the law. When SunBelt filed this case, ATC was the law. During the entire discovery period, ATC was the law. When SunBelt

developed its SAC evidence, including the selection of its SARR traffic and employing the cross-over device for 86% of that traffic, ATC was the law. When SunBelt filed its Opening Evidence, ATC was the law.[21] In sum, at all times relevant to SunBelt's development of its case, including discovery, its selection of traffic, its design of the SBRR to include large volumes of cross-over traffic, its selection of interchange points between the SBRR and the residual NS, and its preparation and filing of its opening evidence and case-in-chief, "Modified ATC" was *not* a valid method of allocating cross-over traffic revenue. Today, when NS files its Reply Evidence, ATC—and *not Modified ATC*—remains the law. Because ATC has been the governing revenue allocation rule at every relevant juncture—and remains governing law today—the Board must apply that rule to allocate cross-over traffic revenue in this case.

Application of the ATC rule in this case would be neither unfair nor unduly prejudicial to the complainant. SunBelt knew the status of "Modified ATC" when it filed its evidence, and applied that invalid approach nonetheless. SunBelt certainly could have applied ATC to allocate

---

[21] Before SunBelt filed its opening evidence on August 1, 2012, the Board's attempt to reapply Modified ATC in the *Western Fuels* case was again on appeal, in a petition for review asserting that Modified ATC remained unlawful. For a period of approximately one month, Modified ATC arguably might have been deemed to have been resurrected to apply to the individual *Western Fuels* adjudication in which the Board had created that amended rule. In June 2012, the Board issued a decision attempting to justify and reapply in the *Western Fuels* case the "Modified ATC" rule that had been rejected and remanded to the agency by the D.C. Circuit. *See Western Fuels v. BNSF Ry. Co.,* STB Docket No. 42088 (June 15, 2012). Shortly thereafter, however, the carrier appealed the Board's remand decision seeking to re-apply previously amended rule (Modified ATC), and that challenge is pending before the D.C. Circuit. *See BNSF Ry. Co. v. Surface Transp. Bd., et al.,* D.C. Circuit No. 12-1327 (July 23, 2012). Moreover, the question at issue in *Western Fuels* is whether the Board lawfully could apply the *ad hoc* Modified ATC rule in that specific individual case, *not* whether that attempted rule amendment may be applied in other cases. SunBelt and its counsel knew or should have known when it filed its opening evidence in August 2012 that original ATC was the only lawfully adopted, judicially approved cross-over traffic revenue allocation rule and method.

cross-over traffic revenue, but it declined to do so.[22] Rejection of SunBelt's proffered revenue allocation approach in favor of the only validly adopted and judicially approved revenue allocation rule available (the ATC approach adopted in the *Major Issues* rulemaking) is entirely appropriate and fair and would cause no undue prejudice.

(b) As A Matter Of Administrative Law, The Board Must Apply The ATC Rule In All SAC Cases Unless And Until It Has Completed A Full Notice-And-Comment Rulemaking That Adopts A Different Rule.

An independently sufficient legal reason that the Board may not apply the Modified ATC rule adopted in *Western Fuels* is that the Board adopted it in violation of the APA. NS addresses this argument in detail in Exhibit III-A-4.[23] Regardless of the Board's rationale for creating and applying a new revenue allocation methodology in *WFA II,* adoption of that new rule in an individual adjudication violated the APA and renders "Modified ATC" unlawful and void. Under the APA, a "legislative" (*i.e.* substantive) rule such as ATC may not be substantially revised or amended in an individual adjudication, as the Board attempted to do in *Western Fuels.* A federal administrative agency like the Board may make a substantial change or amendment to

---

[22] In its opposition to NS's Motion seeking to hold this matter in abeyance until the Board promulgated a new revenue allocation rule in *Rate Regulation Reforms,* SunBelt took the position that it did not matter to the outcome of this case whether the Board applied ATC, Modified ATC, or the alternative proposed in Ex Parte 715. *See* SunBelt Reply in Opposition to NS Motion to Hold Case in Abeyance, STB Docket No. 42125, at 30-31 (Aug. 27, 2012) ("SunBelt Reply to NS Abeyance Motion"). Although NS strongly disagrees, SunBelt's position means it has no basis to claim that application of ATC would cause it *any* prejudice, let alone undue or unfair prejudice. Having taken that position in this case before the Board, SunBelt is estopped from taking a contrary position now.

[23] NS addressed this issue in its Abeyance Motion, and the Board declined to address it fully in ruling on the Motion. *See SunBelt Chlor Alkali et al v. NS,* STB Docket Nos. 42125, 42130 Decision at 8 (served Nov. 29, 2012). Because the argument regarding the issue is extensive, NS has placed the argument in an exhibit rather than in this narrative summary. NS incorporates by reference to this discussion the more extensive evidence and argument set forth in Exhibit III-A-4.

a legislative rule adopted through a rulemaking proceeding *only* in another rulemaking proceeding, and not in an individual adjudication. *See, e.g.,* APA, 5 U.S.C. §§ 551(5), 553(b)(3)(A); *American Mining Congress v. Mine Safety & Health Administration et al,* 995 F.2d 1106, 1112 (D.C. Cir. 1993). Because the "Modified ATC" rule did not go through the required notice-and-comment rulemaking process, it is invalid and unenforceable and may not be applied to allocate cross-over traffic revenues in this case. *See* Exhibit III-A-4 (detailing government administrative law and other reasons Modified ATC may not be applied in this case).

(c) Application of ATC To Low R/VC Movements Is Not "Illogical," And The Concern That Led The Board To Modify The ATC Rule Is Not Present Here.

In *Western Fuels*, the Board was concerned that ATC revenue allocation would result in a consequence that it speculated the Complainant may not have intended: revenues for some movements that do not contribute to their fixed costs. The Board expressed concern that such a result was illogical. But such a result is an entirely logical result of application of the sound ATC rule to certain low-rated traffic that the Complainant may choose to include in its SARR traffic group.

In many instances, selection of some low-rated movements for inclusion in SARR traffic is in the complainant's best interest and entirely logical. Generally, because revenue generated by other movements on a SARR's high density lines are more than sufficient to cover SARR total costs on those lines, the SARR has every incentive to add as much revenue-generating traffic as possible. Under such circumstances, even traffic that does not cover its URCS variable costs still contributes additional SARR revenue. Moreover, SARR traffic group movements

whose revenues would not cover the incumbent's system average URCS variable costs nonetheless generally make contribution above the optimally efficient SARR's variable costs.

Perhaps even more fundamentally, a comparison of on-SARR segment revenues to the real-world incumbent carrier's URCS system average variable costs for that segment makes little sense and proves even less. *First,* SARR costs, including variable costs, are those costs that would be incurred by a hypothetical least cost, optimally efficient carrier. By definition, those costs will necessarily be lower than the actual variable costs incurred by a real world carrier that is not optimally efficient. Thus, comparing real world URCS costs for a segment to SARR revenues generated by that segment does not generate a meaningful SARR R/VC ratio. Such a comparison would invariably overstate SARR variable costs and thus understate the SARR R/VC ratio. The fact that such an apples-to-oranges exercise generates an R/VC ratio of less than 100% is meaningless.

Second, even if a defendant carrier's actual variable costs were a relevant or appropriate measure of the minimum revenue that should be allocated to the SARR for its portion of a cross-over movement, URCS system average variable costs do not measure the actual variable costs for any specific movement. Rather, they are system *average* costs, representing an average of the costs of movements across the carrier's network, which do not attempt to reflect numerous variations in individual movements that affect their actual variable costs. Thus, URCS system average variable costs do not accurately represent the real world carrier's actual costs of any specific movement, let alone the SARR's variable costs.

Third, as the Board has acknowledged, the fact that a movement generates an URCS-based R/VC ratio below 100% does not always mean that movement is losing money. *See, e.g., Rate Guidelines—Non-Coal Proceedings*, 1 S.T.B. 1004, 1028-29 (1996) ("an R/VC ratio below

100% does not necessarily reflect improper pricing or money-losing service."). There are multiple reasons for this, including the fact that "URCS costs may include a significant portion of what may actually be unattributable joint and common costs." *See id,* 1 S.T.B. at 1028.

Moreover, complainants' own self-interested actions further demonstrate that even movements whose total revenues do not cover their URCS variable costs may nonetheless make a positive contribution to SARR revenues as cross-over traffic. In *Western Fuels,* for example, the complainants were well aware of the original ATC rule when they included in their revised traffic group a small volume of cross-over traffic that would not contribute the SARR's fixed costs. In this case, SunBelt knowingly selected a large volume of cross-over traffic whose revenues would not contribute to fixed costs even under the Board's Modified ATC rule, because the entire movement (*i.e.*, both on-SARR and off-SARR segments) does not generate revenue greater than its variable costs. Indeed, fully *24 percent* of the movements SunBelt selected for inclusion in its SARR traffic group would not cover their URCS system average variable costs. *See* SunBelt Opening WP "SBRR_2010_TRAFFIC_ATC_OPENING_v2_062612.xlsx.". Given this fact, it is clear that including substantial volumes of traffic that do not cover NS's URCS variable costs was an *intended* consequence of SunBelt's traffic selection. Because the optimally efficient SARR benefits from revenue allocations that would not cover the incumbent's URCS variable costs, such allocations are entirely logical and provide no basis in law or policy to abandon the ATC rule and methodology.[24]

[24] Moreover, even assuming *arguendo* that revenue allocations for low-rated traffic selected by the incumbent should be adjusted to ensure that the revenue allocated to the on-SARR segment of a cross-over movement covers the incumbent's URCS variable cost of that movement, the Modified ATC approach the Board applied in *Western Fuels* is grossly over-inclusive because it applied to all cross-over movements and not just the small fraction of those movements that would not cover their URCS variable costs under an ATC allocation. The result was a

ii. The Board Must Address In This Case The Complainant's Excessive Use Of Distorting Cross-Over Traffic.

The Board should apply any cross-over traffic limits it adopts in the pending *Rate Regulation Reforms* rulemaking to the cross-over traffic proposed by SunBelt in this case. As the Board advised in a recent decision in this very case:

> The parties should have been, and continue to be, on notice that use and application of cross-over traffic, as well as ATC revenue allocation methodologies, are potential issues in these individual cases, and that parties are entitled to raise and respond to substantive arguments regarding those methodologies within those proceedings. *See, e.g., Ariz. Elec. Power Coop. v. BNSF Ry., NOR 42113* (STB served June 27, 2011) (stating that the Board has concerns with the way cross-over traffic has been costed, and directing the parties to submit new evidence and arguments for how to rectify the identified issue). *The Board will address any arguments related to cross-over traffic and cost allocation raised in the pending adjudications*, even as it completes its consideration of those issues more broadly in Rate Regulation Reforms.

SunBelt Chlor Alkali P'ship v. Norfolk Southern Ry. Co., and *E.I. DuPont de Nemours & Co. v. Norfolk Southern Ry. Co.,* STB Docket Nos. 42125 & 42130, Decision at 5 (served Nov. 29, 2012 (emphasis added). Thus, the Board has indicated clearly that it will address cross-over traffic limits in this and other pending cases. If the *Rate Regulation Reforms* rulemaking is completed and new rules are issued before the Board decides this case, the Board should apply those limits to the cross-over traffic SunBelt selected for the SBRR. But even if the *Rate Regulation Reforms* rulemaking is not completed before the Board issues its final decision in this case, the Board must address and apply cross-over traffic limits in this case.

---

significant over-allocation of revenues to the SARR, well beyond that necessary to achieve the Board's objective of ensuring that on-SARR segments of cross-over traffic cover the incumbent's URCS variable costs.

(a) The SBRR Includes Extensive Amounts Of The Very Carload And Multi-Carload Cross-Over Traffic That Concerns The Board.

Rate *Regulation Reforms* discussed the Board's growing concerns about the distorting effect of cross-over traffic as complainants increasingly expand its use and application. *See Rate Regulation Reforms*, STB Ex Parte No. 715, at 16-17. The Board stated that"[t]he inclusion of large amounts of carload and multi-carload cross-over traffic has revealed a significant and growing concern" about the potentially distorting effect of increasing use of such traffic in SAC cases. *Id.* at 16.

Concerned that the expanded and diversified use of cross-over traffic has in fact led to such distortion, the Board proposed rules to limit the use of cross-over traffic either by: (1) requiring the SARR to originate or terminate any cross-over traffic movements; or (2) limiting cross-over traffic to movements that are handled entirely in trainload service by the defendant railroad in the real world. *See id.* at 16-17. Either of those two proposed limits would disallow substantial volumes of SunBelt's selected traffic.

In this context, SunBelt essentially invites examination of its SARR assumptions by its admission "The SBRR was conceived as a railroad that would primarily handle trainload quantities of goods . . ." SunBelt Opening at I-53.[25] According to SunBelt, approximately { }% of its SARR traffic by volume and { }% of its SARR traffic by revenue is cross-over traffic. *See* SunBelt Open. at III-A-15, Table III-A-8; Reply of SunBelt Chlor Alkali Partnership to Norfolk Southern Railway Company's Motion to Hold Case in Abeyance Pending Completion of Rulemaking, Verified Statement of Thomas D. Crowley at 8. (Oct. 11, 2012) ("SunBelt

[25] *See*, also, "The SBRR has a traffic group that moves primarily in trainload quantities." SunBelt Opening at III-D-8.

Abeyance Reply"). In fact, SunBelt confirmed that this case employs the second highest proportion of cross-over traffic ever presented in a SAC case. SunBelt Abeyance Reply, V.S. Crowley at Exhibit 1 (listing 12 cases in which complainants used cross-over traffic, showing that this case has the second highest percentage of cross-over traffic among those cases).

Moreover, nearly half of all SBRR cross-over traffic volume is carload or multi-carload cross-over traffic, the primary source of the SARR cost and revenue mismatch that the Board's proposed limits seek to address. *See* NS Reply WP "EP 715 Impact SunBelt v NS Update.xlsx". And, much of the SBRR traffic is precisely the "hook and haul" type of traffic that is at the heart of the Board's concerns about the increasing use and expansion of the cross-over traffic device in recent cases. *See, e.g., AEPCO 2011,* slip op at 35; *Rate Regulation Reforms,* STB Ex Parte 715, at 16 (explaining the cost mismatch created by such traffic and the resulting revenue allocation distortion). As the Board described:

> [w]hen the proposed SARR includes cross-over traffic of carload and multi-carload traffic, it generally would handle the traffic for only a few hundred miles *after* the traffic would be combined into a single train. As such, the "cost" to the SARR of handling this traffic would be very low. In recent cases, litigants have proposed SARRs that would simply hook up locomotives to the train, would haul it a few hundred miles without breaking the train apart, and then would deliver the train back to the residual defendant. All of the costs of handling that kind of traffic . . . would be borne by the residual railroad.

Rate Regulation Reforms at 16.

The Board is correct that carload and multi-carload cross-over traffic is different and can distort the results of the economically-sound SAC test. In the real world, to move carload traffic a railroad must (1) pick up the cars at each specific origin; (2) sort the cars in a local serving yard into blocks and build a train; (3) move that train through the system to a classification yard where the cars are resorted and blocked; (4) perhaps move them through the system to other

yards for further classification; (5) move a block (including the car) to a local serving yard; and (6) finally deliver each car to its specific destination. [26]

When a SARR handles carload traffic in an overhead fashion, it performs little to none of that costly work. The portion of the movement that is on the SARR is nothing more than a trainload shipment. The simple credit for originating and terminating the traffic does not account for the work at each yard and all the classification and reclassification that must take place before or after the car moves over the SARR. As the Board has succinctly stated: "when it comes time to allocate revenue to the facilities replicated by the SARR, URCS treats those movements as single-car or multi-car movements, rather than the more efficient, lower cost trainload movements that they would be. As a result, the SAC analysis appears to allocate more revenue to the facilities replicated by the SARR than is warranted." *Rate Regulation Reforms*, STB Ex Parte No. 715, at 16.

In an apparent attempt to address these Board concerns, SunBelt offered two claims without citing any support whatsoever. First, SunBelt claims that "the SBRR performs inter- and intra-train switching on much of the overhead carload traffic (e.g., at Birmingham) that it does handle." SunBelt Abeyance Reply V. S. Crowley at 9-10. As explained below, SunBelt's SBRR operating plan does not provide for the services that SunBelt claims the SBRR performs.[27] *See infra* III-C-50. And even after these operating plan failures are corrected by the NS operating plan, the URCS costing mis-match identified by the Board, and the resulting over-allocation of revenues to the SARR would remain. *See Rate Regulation Reforms*, STB Ex Parte No. 715, at 16. The mere fact that the SBRR may do some work (such as the inter- and intra-train switching

---

[26] See NS Reply Ex. III-C-1, How a Carload Moves Through a Network (DVD).

[27] For example, as NS explains in Section III-C below, SunBelt assumed the SBRR would provide yard switching services for only one shift per day – and would perform that work every day at only one yard. *See* SunBelt Opening WP "SBRR Yard Assignments_Open.xlsx."

cited by SunBelt) does not mean the residual NS and the SBRR are now on the same footing and share equally the costs of all the activity required to move carload traffic from origin (or on junction) to destination (or off junction).

Second, SunBelt claims that "most of the SBRR cross-over traffic is not overhead traffic in the first place." SunBelt Abeyance Reply V. S. Crowley at 9-10. This claim is wholly unavailing because it discusses traffic that would not even be excluded by the Board's proposed limits. *See* SunBelt Abeyance Reply, V. S. Crowley at 10. Relying on a single example, SunBelt's witness asserted that, for some movements, "NS also acts as an overhead carrier, but over a larger geographic footprint" so the SBRR is simply replicating a portion of NS's overhead operations for such movements. *See id.* (citing a movement in which NS receives a shipment in interchange from a foreign carrier, moves it over the NS system, and then hands it off in interchange to another foreign carrier). For the purposes of estimating the impact of the Board's proposed limits on cross-over traffic in this case, NS would treat a movement like that described in SunBelt's example in the same manner as a movement originated and terminated by the SARR—NS has conservatively assumed that instances where the SARR is fully replacing NS to the point of interchange with another carrier are not subject to the proposed cross-over traffic limits. Indeed, in determining what traffic would be excluded under the Board's Ex Parte 715 limits, both parties assumed that traffic interchanged by the SBRR with a non-NS carrier at either end of the movement would be *allowed* by proposed limits. *See, e.g.,* NS Abeyance Motion WP "EP 715 Impact SunBelt v NS.xlsx"; SunBelt Reply to Abeyance Motion, V.S. T. Crowley at 12-13 and workpapers cited therein. Moreover, SunBelt offered no evidence that the single example it selected was representative of a substantial portion of SunBelt traffic. Thus, even if its example were relevant – which it is not – SunBelt has failed to demonstrate how such an

example undermines NS's showing that large portions of SBRR traffic would be excluded by the Board's proposed cross-over traffic limits.

The Board should in this case prevent the distorting effect of cross-over traffic by either (1) requiring the SARR to originate or terminate any cross-over traffic movements; or (2) limiting cross-over traffic to movements that are handled entirely in trainload service by the defendant railroad in the real world.

(b) Placing Limits on Cross-Over Traffic In This Case Would Substantially Reduce SBRR Traffic Volumes and Revenues.

NS's analysis has determined that application of the Board's proposed limits on cross-over traffic to the SBRR would eliminate substantial SBRR traffic volumes and revenues. Limiting cross-over traffic to movements where the entire service is provided in trainload service in the real world would eliminate approximately 38% of total SBRR volumes and 73% of SBRR revenues. *See* NS Reply Ex. III-A-2 V.S. R. Fisher); NS Reply WP "SBRR Traffic and Revenue Summary Reply.xlsx"; *Rate Regulation Reforms*, STB Ex Parte No. 715, at 17-18 (proposed cross-over traffic limit (2)). Notably, SunBelt witness Crowley has not disputed that substantial amounts of SBRR revenue would be excluded by application of the proposed limits. SunBelt Abeyance Reply, V.S. Crowley at 13. Certainly, eliminating nearly three-quarters of SBRR revenues would have a dramatic effect on the SAC analysis and outcome. Limiting permissible cross-over traffic to those movements that the SBRR would either originate or terminate would eliminate 39% of SBRR volume and 14% of SBRR revenues. *See* NS Reply Ex. III-A-2 (V.S. R. Fisher); NS Reply WP "SBRR Traffic and Revenue Summary Reply.xlsx"; *Rate Regulation*

Reforms, STB Ex Parte No. 715, at 17-18 (proposed cross-over traffic limit (1)).[28] Mr. Crowley concedes that a substantial amount of SBRR's revenues would be excluded under this approach as well. *See* SunBelt Abeyance Reply, V.S. Crowley at 13. Thus, depending on which of the two proposed cross-over traffic limits the Board adopts, it should apply that limit to eliminate up to 73% of total SBRR traffic revenues and 38-39% of SBRR traffic volume, before applying the governing cross-over traffic revenue allocation method.[29]

(c) Sunbelt Would Not Be Prejudiced By A Limitation On SBRR Cross-Over Traffic.

SunBelt had more than ample notice that the Board was considering changes to cross-over traffic limits and to allocation of revenues generated by such traffic in SAC cases. As the Board has suggested, by the time SunBelt filed this case and its opening evidence, the Complainant certainly should have been aware that rules governing such traffic were in flux and likely to change. *See, e.g., SunBelt et al v. NS,* Decision at 5 (served Nov. 29, 2012). Before SunBelt filed this case, the Board issued a decision in a SAC case expressing concerns about how the parties should assign costs in cases involving significant volumes of traffic that move in

---

[28] The cross-over traffic percentages that NS presents in this Reply evidence differ somewhat from those presented in support of its Abeyance Motion in September. First, in that Motion, NS's expert did not treat Meridian, MS as an NS interchange, due to NS's operating and ownership arrangements beyond Meridian on the Meridian Speedway. For this Reply, NS accepts SunBelt's use of the traffic records to identify the traffic interchanged at Meridian and, consistent with its conservative approach to applying the Board's proposed rules for this case, does not subject such traffic to the proposed limits on cross-over traffic. Second, the revenue figures in this Reply represent the proportions of SBRR revenues, while those in the Abeyance motion reflected the through revenues for the entire movement on NS, before allocation to the SBRR portion. *See* NS Reply Ex. III-A-2.

[29] If the Board rejects revenues attributable to such disallowed cross-over traffic, it would be necessary to adjust the SAC analysis to remove costs associated with those disallowed movements. This would be a significant undertaking, and the Board may wish to direct the parties to submit supplemental evidence accounting for the removal of costs and revenues attributable to the disallowed cross-over traffic.

the real world as carload and multi-car traffic, but are hypothesized to move on the SARR in trainload service. *See AEPCO 2011,* STB Docket No. 42113, at 2 (served June 27, 2011) (rejecting parties' proffered costing for such traffic as creating a "mismatch").

To address the mis-match in the parties' approach to costing such traffic in that case, the Board directed the submission of new evidence and argument addressing the issue. *Id.* In November 2011, more than eight months before SunBelt filed its opening evidence, the Board issued a rate reasonableness decision in *AEPCO* that included further discussion of the questions of costing such traffic and the implications for cross-over traffic and revenue allocation. *See AEPCO 2011,* STB Docket No. 42113, at 35-36. The Board highlighted the cross-over traffic issues and the Board's accompanying concerns, and warned of their "potentially broad ramifications across future proceedings." *Id.* at 36. Ultimately, the Board decided not to resolve those issues in *AEPCO* because the resolution would not affect the outcome of that particular case. *See id.* (regardless of how issues decided or whose evidence was used, result would be a SAC maximum rate below the 180% R/VC jurisdictional floor, so rate prescription would be unaffected). Thus, SunBelt and other shippers considering or developing rate cases were aware of the cost mis-match issue for cross-over traffic that – in the Board's view – necessarily used different costs to determine the costs of providing cross-over traffic service on one hand, and to allocate cross-over traffic revenues on the other hand.

At the same time, shippers and carriers were aware that the Board was in the process of revising its cross-over revenue allocation methodology. *See, e.g., WFA II,* STB Docket No. 42088, at 12-14 (applying amended revenue allocation method and rule, "Modified ATC"); *BNSF v. Surface Transp. Bd.,* 604 F.3d 602 (D.C. Cir. 2010) (rejecting Board's amended method and remanding to Board). As discussed above, in June 2012 the Board issued a remand decision

in *Western Fuels* that expressed its continuing concerns about cross-over traffic and revenue allocation rules, and stated the Board's intention to commence a rulemaking to consider revisions to those rules. *See Western Fuels v. BNSF Ry. Co.,* STB Docket No. 42088, Decision at 12 (June 15, 2012). Thus, when SunBelt was developing its SAC evidence in the summer of 2012, it was clear that the Board's cross-over traffic rules were in substantial flux, and that the Board was about to embark on a rulemaking to consider change to those rules.

Finally, in July 2012, *before* SunBelt filed its opening evidence in this case, the Board initiated the rulemaking it had promised. *See Rate Regulation Reforms,* STB Ex Parte No. 715. In that Decision, the Board proposed, among other changes, to address concerns about cross-over traffic (including the cross-over traffic cost and revenue mismatch) by applying one of two limits to permissible cross-over traffic. *See id.* at 16-17. SunBelt filed its opening evidence the following month. Thus, there can be no question that—as the Board recently confirmed—SunBelt and other parties to cases filed in the last several years were aware that cross-over traffic rules would be issues in those cases, that they would be addressed by the Board in those cases, and that the Board might apply rules limiting cross-over traffic in those cases. *See id.; SunBelt et al v. NS,* Decision at 5 (served Nov. 29, 2012).

iii. Application Of New Rules Adopted In Ex Parte 715 To This Case Would Be Appropriate, And Would Not Constitute "Retroactive Rulemaking."

Although the Board must address the issues in this case – including the limits on cross-over traffic and revenue allocation issues raised here by NS – the Board may in the meantime adopt new rules on these issues in *Rate Regulation Reforms*. If so, the new rules should be applied in this case. In all events, if there is a problem with cross-over traffic, the Board must treat the cross-over traffic in this case consistently with the way it addresses these problems in that *Rate Regulation Reforms*.

SunBelt cannot claim that when it filed its Complaint—let alone when it developed and filed its SAC evidence—that it would not have been aware of the significant possibility that the Board would develop and apply new limits to cross-over traffic during the course of the case. *First,* SunBelt should not be heard to claim that it reasonably relied upon Modified ATC as the applicable cross-over revenue allocation methodology. As demonstrated above, at every relevant time in this case, Modified ATC was *not* the governing rule – rather it was simply an *ad hoc* approach that was applied in a single individual case and was not likely to be applied in any other rate case. *Second,* in light of the history described above, SunBelt reasonably should have expected when it filed its opening evidence that the Board might apply additional limits on cross-over traffic, including those proposed in *Rate Regulation Reforms,* STB Ex Parte No. 715. Nor would application of cross-over traffic limits to this case constitute unfair "retroactive rulemaking." SunBelt filed this case after the Board made clear its concerns about cross-over traffic costing mismatches. And it filed its opening evidence after the Board had announced its intention to commence a rulemaking in June 2012, and after the Board actually commenced that rulemaking, Ex Parte 715, to develop rules limiting cross-over traffic. Therefore, it would *not* be unfair to apply such limits to this pending case.

Previously, the Board expressed concern about the fairness to complainants of applying the proposed rules to pending cases. Fairness is a two-way street. As noted above, the Board has acknowledged in a prior decision in this case that all parties to rate cases have been on notice for some time that cross-over traffic rules and limits are at issue and concluded that those issues may be raised and addressed in individual cases, including this one. *SunBelt Chlor Alkali P'ship v. Norfolk Southern Ry. Co.,* STB Docket No. 42130, Decision at 5 (served Nov. 29, 2012). Moreover, because the Board has "disavowed" its old "flawed methodologies" concerning cross-

over traffic rules and limits,[30] it would be arbitrary and capricious for the Board to apply those flawed methodologies to evaluate the reasonableness of the rate challenged in this case.

(a) Application Of New Cross-Over Revenue Allocation Rule To This Case.

SunBelt could not show that application of the ATC alternative the Board has proposed in *Rate Regulation Reforms* would be impermissibly retroactive.[31] The D.C. Circuit decision upholding the Board's application of the then-new ATC rule to pending cases in *Major Issues in Rail Rate Cases* is directly on point and controlling. *See BNSF Railway Co. et al v. STB et al,* 526 F.3d 770 (D.C. Cir. 2008). In *BNSF Railway,* the D.C. Circuit rejected a claim by shippers that application of ATC to cases pending when the Board issued its Notice of Proposed Rulemaking ("NPRM") was "impermissibly retroactive and arbitrary and capricious." *Id.* at *784.* The Court explained that a "new rule may be applied retroactively to parties in an ongoing adjudication, so long as the parties before the agency are given notice and an opportunity to offer evidence bearing on the new standard, and the affected parties have not detrimentally relied on the established legal regime." *Id.* (quoting *Consol. Edison Co. v. FERC,* 315 F.3d 316, 323 (D.C. Cir. 2003).[32] Here, the only *established,* judicially affirmed revenue allocation method was that adopted in *Major Issues,* ATC. But SunBelt cannot argue it detrimentally relied on that established rule, because it did not apply ATC, but instead consciously chose to apply "modified

---

[30] *See SunBelt,* Abeyance Decision at 9 (C. Begeman, dissenting).

[31] NS has shown that the most appropriate rule to apply to cross-over traffic revenue allocation in this case is original ATC, a rule adopted in notice-and-comment rulemaking completed six years ago and affirmed on appeal well over four years ago. This discussion shows that if the Board were to adopt a new, superior rule in the pending rulemaking before the conclusion of this case, it would be appropriate for the Board to apply such a rule to this case.

[32] As discussed below (*infra* at III-A-2-c-iii-(b)) this argument concerning cross-over revenue allocation rules also applies to the Board's proposed new limits on permissible cross-over traffic. *See Rate Regulation Reforms,* STB Ex Parte 715 (final comments filed today, January 7, 2013).

ATC," which was created and applied in the individual *Western Fuels* adjudication, and remanded to the Board by the D.C. Circuit on appeal.[33]

Whatever else might be said of the "modified ATC" approach the Board applied on an *ad hoc* basis in *Western Fuels,* it certainly has never been an "established legal regime."[34] In the appeal of *Major Issues,* the question was whether the parties reasonably relied on cross-over revenue allocation methods the Board had applied in prior cases. *See BNSF Railway,* 526 F.3d at 784. The D.C. Circuit noted that cross-over traffic revenue allocation was a "perennial issue in [SAC] proceedings," that parties were well aware that the issue was unsettled and that they could not have reasonably relied upon any method the Board had applied in individual cases before it adopted ATC in *Major Issues. See id.* Here, the D.C. Circuit rejected and remanded modified ATC on appeal *fourteen months* before SunBelt even filed this case. Further cementing the doubtful status of the *ad hoc* approach applied in *Western Fuels,* during the months before SunBelt filed its opening evidence, the Board: (i) announced its intention to commence a new rulemaking to develop a better revenue allocation methodology than modified ATC; *and* (ii) actually initiated that rulemaking. *See WFA*, STB Docket No. 42088, at 12 (served June 15, 2012); *Rate Regulation Reforms,* STB Ex Parte No. 715, at 17-18. SunBelt had plentiful advance notice that the fleeting modified ATC approach the Board tried in *Western Fuels* was both infirm and, at best "unsettled." *See BSNF Railway,* 526 F.3d at 784. Moreover, SunBelt

---

[33] As discussed above, nearly a year after SunBelt filed this case, the Board issued a remand decision in that case—*Western Fuels Ass'n*—and that individual decision is again on appeal before the D.C. Circuit. *See BNSF Railway Co. v. STB,* D.C. Cir. Dkt. No. 12-1327 (July 23, 2012). Petitioner BNSF filed its opening brief in that appeal on December 5, 2012.

[34] Had SunBelt applied original ATC, it would have a much stronger argument that in doing so it was relying on and established legal regime. Unlike modified ATC—an amended rule issued without notice and comment in an individual adjudication, rejected on appeal and now pending on a second appeal after remand—original ATC was adopted pursuant to full notice-and-comment rulemaking and was affirmed on appeal. *See BNSF Railway,* 526 F.3d 770.

can hardly claim that it was unaware of the Board's proposed new rules as its parent and alter ego, Olin Corporation, has actively participated in the *Rate Regulation Reforms* rulemaking.[35] As the D.C. Circuit concluded in an earlier chapter of this same cross-over traffic revenue allocation rule odyssey, SunBelt "had no basis for relying on the prior revenue allocation formula," here the modified ATC approach. *See id.*

Moreover, because SunBelt was on notice that cross-over revenue allocation rules were in flux, it had ample opportunity to present evidence bearing on the proposed new standard. *See BNSF Railway,* 526 F.3d at 784. SunBelt chose not to present evidence regarding either that proposed rule or the existing rule (ATC) in its opening evidence. Despite abundant notice regarding the infirmity and dubious applicability of modified ATC, SunBelt nonetheless chose to use that approach in its opening evidence. Because it is entitled to present rebuttal evidence, SunBelt still has another "notice and . . . opportunity to offer evidence bearing on the new [proposed] standard" or on the existing standard (original ATC). *See id.* If, having ample notice of the Board's proposed change in its rules – and even having participated in the rulemaking concerning that proposal – SunBelt still fails to present evidence concerning that proposal, it has no basis whatever to complain about the application of the proposed rule to this case. As the D.C. Circuit concluded in a statement equally applicable here, it is "reasonable for the Board to immediately discard the flawed procedure and apply its new rule to pending cases when the parties were on notice of the potential change." *BNSF Railway,* 526 F.3d at 784 (citing *Major Issues* rulemaking).

---

[35] Olin was part of a group of chemical shippers that submitted extensive comments in *Rate Regulation Reforms. See, e.g.,* Joint Opening Comments of The American Chemistry Council, Olin Corporation et al ("Joint Chemical Companies"), STB Ex Parte 715 (filed Oct. 23, 2012) (extensive comments accompanied by 60-page expert statement and multiple exhibits); Joint Chemical Companies' Reply Comments, STB Ex Parte 715 (Dec. 7, 2012).

(b) New Cross-Over Traffic Limits Should Be Applied In This Case.

For essentially the same reasons set forth above, application of new limits on cross-over traffic– such as those proposed in *Rate Regulation Reforms*—to this case would be entirely appropriate. SunBelt and other potential parties to rate cases have been on notice since before SunBelt filed this case that cross-over traffic rules were in flux and that the Board was considering changes to address its concerns about increasing mis-use of the cross-over traffic device. *See supra* at III-A-c-iii-(a) (summarizing history of Board's concern about cost allocation and distortions of cross-over revenue allocations due to complainants' use of certain types of cross-over traffic). Similarly, application of new limits on cross-over traffic proposed in *Rate Regulation Reforms* would be permissible and appropriate. *See BNSF Railway,* 526 F.3d at 784. The Board made clear its concerns about use of cross-over traffic in cases involving carload and multi-car movements long before SunBelt filed its evidence in this case. *See, e.g., AEPCO 2011*, STB Docket No. 42133, at 35-36. And, the Board initiated the pending *Rate Regulation Reforms* rulemaking—proposing two new limits on cross-over traffic—before SunBelt filed its opening evidence.[36]

---

[36] Because the Board has now made clear that it intends to consider such limits on cross-over traffic in this and other pending cases, the footnote statement in the NPRM indicating that the Board did not then intend to apply new limits to pending cases is immaterial. SunBelt opposed NS's motion to hold this case in abeyance while the Board completed the pending rulemaking, and the Board made clear in its denial of that motion that it would consider limits on cross-over traffic in the context of this individual case. *See SunBelt Chlor Alkali et al v. NS,* STB Docket Nos. 42125, 42130, Decision at 8, 9 (served Nov. 29, 2012). Regardless, as NS explained in its abeyance motion, the Board's footnote statement in the NPRM noting how it then "intended" and proposed to proceed with respect to pending cases by no means compels the Board to slavishly follow that preliminary statement when it issues final rules in *Rate Regulation Reforms.* Indeed, the primary purpose of notice-and-comment rulemaking is for the agency to obtain public input regarding its proposals and adjust or modify proposals as appropriate based upon that input. Whether as the result of a rule adopted in notice-and-comment rulemaking, or a prudential limit applied in a pending case, the Board has made clear that it may apply such limits

As in *BNSF Railway,* the "legal regime" in question – cross-over traffic limits – is in flux and SunBelt and other potential rate case complainants were well aware of that fact. *See BNSF Railway,* 526 F.3d at 784. And, limits on cross-over traffic have been a "perennial issue in [SAC] proceedings [that] the Board . . . has not resolved definitively." *Id.* Well before it initiated the pending *Rate Regulation Reforms* rulemaking, the Board made clear that it had serious concerns about the potentially distorting effects of increasing use of cross-over traffic, and that remedial action could be necessary in an appropriate case. *See, e.g., AEPCO 2011*, STB Docket No. 42113, at 35-36. There is no question that SunBelt was on notice of the potential change to cross-over traffic rules and limits. And, because the proposed cross-over traffic limits are designed "to improve the reliability of the [SAC] analysis," it would be "reasonable for the Board to immediately discard the flawed [cross-over traffic rules] and apply its new rule to pending cases when parties were on notice of the potential change." *See BNSF Railway,* 526 F.3d at 784.

It would be unfair and arbitrary for the Board to acknowledge flaws and distortions in the use of cross-over traffic and develop rules to eliminate those problems, while simultaneously permitting SunBelt to pursue a case founded on the very type of cross-over traffic that the Board's rulemaking has identified as problematic and distorting. *See Rate Regulation Reforms*, STB Ex Parte No. 715. In the Ex Parte 715 Notice of Proposed Rulemaking, the Board effectively acknowledged a significant and growing problem undermining the rigor and legitimacy of SAC analysis, announced a plan to limit the distortions and abuses it has identified,

---

in this and other cases. As SunBelt and others have pointed out, the Board first allowed cross-over traffic in an individual adjudication. Applying SunBelt's own argument, because the Board adopted the device in an adjudication, it may also impose limits on its use in an individual adjudication. *See* SunBelt Reply, *SunBelt Chlor Alkali et al v. NS,* STB Docket No. 42130, at 27 (filed Oct. 11, 2012).

and then suggested it may not apply those limitations and remedies to an egregious offender. *See Rate Regulation Reforms,* STB Ex Parte No. 715 at 16-17; *id.* at n.11. The Board has now clarified that it Board intends to consider application of appropriate limits to cross-over traffic in pending cases – including this case --even if it has not yet finalized rules proposed in Ex Parte 715 before it issues a rate reasonableness decision in this case and other pending cases. *See SunBelt et al v. NS,* Abeyance Decision at 5 (served Nov. 29, 2012). Such an approach is reasonable and appropriate. The alternative, allowing SunBelt to employ cross-over traffic in a way the Board believes is significantly flawed and distorts SAC analysis could yield an indefensible, arbitrary and capricious maximum reasonable rate decision.

If, as is likely, the Board completes the *Rate Regulation Reforms* rulemaking before it decides this case, it should apply the new cross-over rules and limits issued in that rulemaking to this case. Where an agency adopts a new substantive rule – such as new cross-over traffic limits and rules – the general presumption is that such substance-altering rules "will be given retroactive application" to *pending* cases. *See Consolidated Edison v. FERC,* 315 F.3d 316, 323 (D.C. Cir. 2003); *see also Maxcell Telecom Plus, Inc. et al v. FCC et al,* 815 F.2d 1551, 1554 (retroactive application of a rule is improper "only if 'the ill effect of the retroactive application' outweighs the 'mischief' of frustrating the interests the rule promotes."(quoting *SEC v. Chenery,* 332 U.S. 194 (1947)). [37] Thus, the presumption is that the Board will apply any new cross-over traffic rules to pending cases, including this case.[38]

---

[37] *Cf. Georgetown University Hospital v. Bowen,* 821 F.2d 750 (D.C. Cir., 1987) (rejecting retroactive application of new rule to matters concluded and decided several years earlier under a different rule, in part because retroactive application of a rule to conduct or adjudications completed before a new rule was proposed is impermissible, absent some contrary statutory command); *aff'd on other grounds,* 488 U.S. 204 (1988). It is important to distinguish between: (i) cases such as *Bowen,* which proscribe retroactive application of a new legislative or

In *Con. Edison*, the D.C. Circuit rejected petitioners' argument that new rules *must* be applied to pending cases, despite that Court's general presumption that substantive rules will be given "retroactive application" to pending cases. *Id.* However, neither of the two factors the Court relied upon to overcome the presumption is present in this case. *First*, the Court found the rule at issue was a policy statement that did "not purport to carry the force of law" and thus was not a substantive rule change. *Id.* at 324. In the Ex Parte 715 rulemaking, there is no doubt that the Board proposes to make substantive changes to, *inter alia,* cross-over traffic rules and revenue allocation, or that it intends such changes to have the force of law. Indeed, it is doubtful that the Board would conduct a notice-and-comment rulemaking to announce a "non-binding policy statement" like that at issue in *Consolidated Edison.*

Second, the *Con Edison* Court noted that the adjudication in question had been "fully litigated" and "completed"—including the submission of a full evidentiary record by all parties–before the agency even announced its new policy. *Id.* at 325. Reopening the case and requiring the parties to submit new evidence under a standard not even announced until after the

---

substantive rule to conduct, adjudications, or orders that have been completed before the new rule is proposed; and (ii) cases such as this case and *BNSF v. STB,* 526 F.3d 770, in which a new rule is proposed during the pendency of an adjudication, *i.e.* before the adjudication is completed or a final order or decision has been issued. The former generally is impermissible, the latter is allowed.

[38] The *Consolidated Edison* court mentioned two additional considerations that may be taken into account in determining whether to apply a new rule to pending cases. *First*, the parties to the case should be given adequate notice of the rule and an opportunity to present evidence under the new standard. *Consol Edison*, 315 F.3d 316, 323-24. Here, holding this case in abeyance while the Board develops its new substantive rules would give both parties fair notice, and afford each an opportunity to adjust its evidence in response to rules adopted in Ex Parte 715. *Second*, the agency should assess possible detrimental reliance considerations. *Id.* at 324. As NS has previously explained, there is no legitimate or appropriate interest in relying on unlimited and ever-expanding use of a device that – particularly for SARR traffic groups including substantial volumes of non-unit train traffic like the SBRR—undermines the core validity, logic and reliability of the SAC analysis itself.

underlying case had been completed would impose substantial unnecessary burdens on the parties. *Id.* Here, in contrast, both SunBelt and NS knew well before SunBelt filed its opening evidence that they Board had serious concerns about certain types of cross-over traffic, and that rules governing such traffic were in flux. Indeed, six weeks before SunBelt filed its opening evidence, the Board announced that it would commence a rulemaking to address cross-over traffic rules. *See WFA,* STB Docket No. 42088 (served June 15, 2012). Thus, in this *pending* case, SunBelt had ample notice and opportunity to take into account and address cross-over traffic limits in its traffic selection, and in two rounds of evidence and argument.[39]

More specifically, as demonstrated above, the D.C. Circuit addressed precisely this issue in rejecting a retroactive rule application challenge involving one of the cross-over traffic rules the Board proposes to revise. *See BNSF Railway Co. v. Surface Transportation Board et al,* 526 F.3d 770, 784 (D.C. Cir. 2008). The D.C. Circuit rejected an argument that the Board could not apply a new rule to a pending adjudication, quoting *Consolidated Edison* for the proposition that

> *[a] new rule may be applied retroactively to the parties in an ongoing adjudication*, so long as the parties before the agency are given notice and an opportunity to offer evidence bearing on the new standards, and the affected parties have not detrimentally relied on the established legal regime."

[39] Moreover, as the Board knows, NS sought to hold this case in abeyance until the Board established new rules, to allow both parties an opportunity to address those rules and their effect in their evidentiary submissions in this case. SunBelt strongly opposed this motion, and the Board denied the motion. In its decision, the Board advised that the parties could address cross-over traffic limits in their evidence in pending cases such as this, and the Board would decide questions of proper application of such limits and rules in this case. *See, e.g., SunBelt et al v. NS,* Abeyance Decision at 5.

Id[40]. Reviewing the history of cross-over traffic revenue allocation methods, the Court found that "there was no *established* legal regime on which the parties litigating before the Board could have reasonably relied," and further noted that the parties had notice that "[t]he appropriate allocation of revenue from cross-over traffic is a perennial issue in [SAC] proceedings and one the Board even now [in 2006] has not resolved definitively." *Id.* (emphasis in original, second quotation from *BNSF v. STB,* 453 F.3d 473 (D.C. Cir. 2006)). Thus, the Court concluded that the parties to the adjudication in question had ample notice that the question of an appropriate revenue allocation methodology was not settled, and that the Board might adopt a different methodology than those it had applied in previous cases. *Id.*

Moreover, even the Ex Parte 715 NPRM did not necessarily close the door on applying new cross-over traffic limitations to pending cases. *See Rate Regulation Reforms,* STB Ex Parte No. 715, at 17, n.11 (preliminarily noting in a footnote that Board did not, at that time, propose to apply new limits "retroactively" to existing rate prescriptions or to cases filed before

---

[40] Reviewing another Board decision in 2010, the D.C. Circuit held that the Board's refusal to apply a new cost of capital rule (adopted in notice-and-comment rulemaking) retroactively was appropriate for all but one year, because railroads and investors had reasonably relied on the prior rule in every year but one. *See AEP Texas North Co. v. Surface Transportation Board et al,* 609 F.3d 432 (D.C. Cir. 2010). Implicit in the decision's analysis is the principle that notice-and-comment rules may be applied retroactively to pending cases (in this case, a re-opened adjudication). For the single exceptional year, the Court found that the Board's application of a two-factor test for determining whether a rule should be applied retroactively had not properly applied those factors and was too general. Therefore, the Court vacated and remanded the Board's decision with respect to that year. *Id.*, 609 F.3d 432, 440-443 (questioning the Board's finding of reasonable reliance because the governing rule was in flux: the Board had announced a proceeding to consider a new rule and in a separate appeal of that rule, the Board had acknowledged it might be appropriate to reconsider its findings for the year in question). Here, similarly, the Board's rules governing, and limits on, cross-over traffic remain very much in flux and neither SunBelt nor any other party could reasonably rely on unlimited use of cross-over traffic, particularly traffic presenting the cost mismatch and resulting distortion about which the Board has expressed concern for some time.

rulemaking commenced); *but see SunBelt et al v. NS,* Abeyance Decision at 5.[41] As NS noted in its Abeyance Motion, during the course of Ex Parte 715, the Board may adjust and revise its thinking regarding its preliminary statement about application of new rules to pending cases. A primary purpose of notice-and-comment rulemaking is for the proposing agency to take into account comments and input of interested parties, and to revise its proposed actions or rules if comments persuade it that changes are appropriate.

As the D.C. Circuit has explained, "[a]gencies, are free - indeed, they are encouraged - to modify proposed rules as a result of the comments they receive." *Northeast Maryland Waste Disposal Auth. v. E.P.A.*, 358 F.3d 936, 951 (D.C. Cir. 2004). It is "an elementary principle of rulemaking that a final rule need not match the rule proposed, indeed must not if the record demands a change." *Kooritzky v. Reich,* 17 F.3d 1509, 1513 (D.C. Cir. 1994) (further advising that "agencies should be free to adjust or abandon their proposals in light of public comments or internal agency reconsideration . . ."); *see Arizona Pub. Serv. Co. v. EPA,* 211 F.3d 1280, 1300 (D.C. Cir. 2000); ("the Agency's change of heart ... only demonstrates the value of the comments it received"). *City of Waukesha v. E.P.A.*, 320 F.3d 228, 245 (D.C. Cir. 2003) (an agency "undoubtedly has authority to promulgate a final rule that differs in some particulars from its proposed rule"). Thus, for good reason adequately explained, it would be entirely appropriate for the Board to revise its initial, preliminary intention and apply new cross-over traffic limits and rules to this pending case.

---

[41] In the recent Abeyance Decision, the Board advised the parties that they "should have been, and continue to be, on notice that use and application of cross-over traffic, as well as ATC revenue allocation methodologies, are potential issues in these individual cases, and that parties are entitled to raise and respond to substantive arguments regarding those methodologies within those proceedings." *Id.*

iv. Other Corrections To Cross-Over Revenue Allocation Calculations Are Necessary.

In addition to the major cross-over traffic limits and revenue allocation methodology issues described above, NS has also identified some additional errors in SunBelt's cross-over revenue allocation corrections. This Reply evidence corrects those errors.[42] *First,* SunBelt incorrectly identified as issue traffic those NS movements that originate in McIntosh and travel south to Mobile to {{ }}. SunBelt identified these moves as Local and erroneously assigned to the SARR 100% of NS's through revenues for the shipments. *Second,* SunBelt incorrectly identified moves to and from Roberta, AL, North Birmingham, AL, Woodlawn, AL, and Avondale, AL as Local to the SARR and also assigned 100% of NS's revenues to the SBRR, even though these stations are not on the SARR. NS has applied an appropriate cross-over revenue allocation for each of those movements. *Finally, s*everal movements that originate or terminate on NS outside of the SARR States received 100% ATC allocations because SunBelt did not calculate off-SARR mileages for these moves. For example, several intermodal moves traveling on NS from Atlanta to Meridian received 100% ATC allocations, even though a substantial portion of these movements is off the SARR and on the residual NS system. To correct this error, NS used the approach that SunBelt used for other moves where the on-SARR mileages are zero, and applied the average SBRR ATC percentage allocation for the corresponding Commodity Group/Origin State/Destination State combination.

As demonstrated, to allocate cross-over traffic revenues in this case, the Board must apply either original ATC or a new revenue allocation approach it may adopt in *Rate Regulation*

[42] These corrections should be made regardless of whether the Board disallows certain cross-over traffic and regardless of which cost-based cross-over revenue allocation approach it applies.

Reforms, STB Ex Parte 715. NS's experts have conducted corrected cross-over traffic revenue allocation calculations using three different methods – (i) the ATC method; (ii) the alternative ATC method proposed by the Board in Ex Parte 715; and (iii) the *ad hoc* "modified" ATC approach applied *Western Fuels* and rejected on appeal. *See* NS Reply WPs "Gen Freight Traffic and Revenue Forecast Reply.xlsx" and "IM-Coal Traffic and Revenue Forecast Reply.xlsx."[43]

[43] NS opposes the application of so-called "modified ATC" for all the reasons discussed in this Section III-A, and it believes application of that approach would be arbitrary, capricious, and unlawful. However, NS provides a separate calculation using that discredited and unlawful method for the Board's reference should it consider applying that inappropriate approach.

Table of Contents

Page

III. STAND-ALONE COST III-B-1

B. STAND-ALONE RAILROAD SYSTEM III-B-1

1. Routes and Mileage III-B-1

a. Main Line III-B-1
b. Branch Lines III-B-2
c. Interchange Points III-B-2
d. Total Route Mileage III-B-3

2. Track Miles and Weight of Track III-B-3

a. Main Lines III-B-5
b. Branch Lines. III-B-6
c. Sidings III-B-6
d. Other Tracks III-B-6

3. Yards III-B-7

a. Miles and Weight of Yard Track III-B-8

4. Other III-B-9

a. Joint Facilities III-B-9
b. Intermodal Facilities III-B-9
c. Automotive Facilities III-B-9
d. Signal/Communications System III-B-10
e. Turnouts, FEDs and AEI Scanners III-B-11
f. RTC Model Simulation of SBRR Configuration III-B-12

III. STAND-ALONE COST

B. STAND-ALONE RAILROAD SYSTEM

1. Routes and Mileage

The rail network that SunBelt posited for the SBRR totals 580.64 miles, including 578.24 miles of track constructed and owned by the SBRR and 2.4 miles of track owned by Canadian National (over which the SBRR would operate pursuant to NS's existing trackage rights agreement). SunBelt Opening III-B-2. The SBRR system includes two main line segments traversing three states—Alabama, Mississippi, and Louisiana. SunBelt Opening III-B-1 to III-B-2. NS accepts the general scope and configuration of the SBRR posited by SunBelt. NS Reply Ex. III-B-1 contains a map depicting the SBRR rail lines, yards, interchange points, and intermodal and automotive facilities posited by NS.

a. Main Line

SunBelt has included a total of two main line segments which include:

1. Birmingham, AL to New Orleans, LA;
2. McIntosh, AL to Burstall, AL;

NS's Operating Plan and RTC simulation (presented in Part III-C below) demonstrate that the track and yard capacity posited by SunBelt are insufficient to enable the SBRR to provide the level of train service required by its customers. Moreover, SunBelt's proposed SBRR configuration does not account for the full costs of the intermodal terminals or automotive handling facilities that the SBRR would need to meet the requirements of general freight, automotive, and intermodal shippers. NS's Reply Evidence addresses those serious deficiencies in SunBelt's SARR by providing (and accounting for the cost of) those facilities.

b. Branch Lines

SunBelt's proposed SBRR configuration does not include any branch lines. While SunBelt's selected traffic group includes traffic originating and/or terminating on certain NS branch lines, SunBelt did not include those branches in the SBRR's track configuration. Rather, SunBelt posits that the SBRR would handle that traffic to the junction point between NS's current main line (which was replicated by SunBelt) and the branch lines that SunBelt elected to exclude. The SBRR would interchange traffic moving to or from customers located along the excluded branch lines with the residual NS, which would bear the cost of originating and/or terminating that traffic while receiving a revenue division based on its limited haul over the branch line. Nevertheless, NS accepts SunBelt's assumption for purposes of this case, but addresses a separate issue that arises as a result of that assumption. SunBelt's track configuration for the SBRR does not include the tracks that would be required to interchange traffic with NS at those branch line junctions. NS does not interchange traffic at those locations today, and therefore does not have tracks in place upon which such SBRR-NS interchange could be accomplished. NS's track configuration for the SBRR addresses this omission by incorporating an appropriate number of track feet of interchange trackage for use by the SBRR and NS in transferring cars at those new interchange locations.

c. Interchange Points

SunBelt posits that the SBRR interchanges traffic with six Class I railroads—NS, CSX, UP, BNSF, KCS, and CN—and with various regional and short-line railroads with which NS interchanges traffic today. SunBelt's workpapers identify 12 "major" interchange points along the SBRR network.[1] NS determined that SunBelt's Operating Plan necessitates the addition of

[1] *See* SunBelt Opening WP "SBRR interchanges.xlsx."

interchange track at locations where SunBelt did not account for the track, facilities, or time necessary to complete the interchange activities.[2] NS's Reply Evidence rectifies this omission by accounting for the time and resources required to interchange cars at all of the locations at which the SBRR would be required to interchange its selected traffic (*see* Part III-C), and by including in the SBRR's physical configuration all of the track facilities necessary to conduct those interchange operations (*see* Part III-F).

d. Total Route Mileage

SunBelt posits that the SBRR would build and own a total of 578.2 route miles. NS accepts this figure. Table III-B-1 summarizes the main line track facilities posited in SunBelt's Opening Evidence and accepted in NS's Reply Evidence.

Table III-B-1
SBRR Constructed Route Mileage

Segment Changes	Open Constructed Miles	Reply Constructed Miles	Difference
Add Lead Branches			
Birmingham, AL - New Orleans, LA	365.7	365.7	0.0
McIntosh, AL - Burstall, AL	212.5	212.5	0.0
TOTAL ROUTE MILES -	**578.2**	**578.2**	**0.0**

Source: NS Reply WP "SUNBELT RR Route Miles Opening Grading NS Reply.xlsx," tab "IIIB Tables"

2. Track Miles and Weight of Track

SunBelt assumes that the SBRR would require a total of 770.5 miles of main line, interchange, setout, and yard tracks. *See* SunBelt Opening III-B-4, Table III-B-3. As NS

[2] NS Reply WP "SUNBELT RR Route Miles Opening Grading NS Reply.xlsx," Tab "New Interchange Tracks."

demonstrates in Part III-C below, the track capacity and configuration posited by SunBelt are based upon a fatally deficient operating plan and RTC simulation from which the outputs are meaningless. Among the most glaring deficiencies in SunBelt's RTC simulation are (1) its failure to include 1,622 necessary trains, which affected 91% of SunBelt's own issue traffic; (2) its failure to model the movement of SBRR road and local trains completely and accurately; (3) numerous operating assumptions that violate applicable laws and regulations, industry "best practices" and the laws of physics; and (4) its failure to account properly for train delays due to random outages, line maintenance activities, and foreign train crossings. *See infra* Part III-C-B. In addition, SunBelt's yard service plan ignored entirely the need to classify and switch the nearly 500,000 cars of general freight "carload" traffic that SunBelt selected for the SBRR. The result of those evidentiary failures was a significant understatement of the main line and secondary tracks, interchange tracks, and yard tracks required to support the SBRR's train operations.

NS's Reply Evidence provides the additional main line, secondary track, interchange tracks, and yard tracks that the SBRR would need to serve its selected traffic group. NS's RTC simulation demonstrates that the physical plant posited by NS is required to accommodate the SBRR's train operations under real-world conditions. As NS demonstrates below, the yards and intermodal and automotive facilities posited by NS are optimally sized and configured to support the SBRR's train operations. *See infra* III-C-1-b.

With the additions and modifications posited by NS, the SBRR would have a total of 881.5 miles of track, consisting of 578.2 miles of main line track, 135.6 miles of second and third main line track, 23.5 miles of interchange track, 15.8 miles of set out track, 117.7 miles of yard track, and 10.6 miles of customer access track.

Table III-B-2 compares the track miles to be constructed and owned by the SBRR, based upon SunBelt's Opening Evidence, and the revised number of track miles resulting from NS's correction of the errors and omissions in SunBelt's Opening Evidence.

Table III-B-2
SBRR Constructed Track Mileage

Type of Track	Open Constructed Miles	Reply Constructed Miles	Difference
(1)	(2)	(3)	(4)
1. Main line track			
a. Single first main track	578.2	578.2	0.0
b. Other main track	124.1	135.6	11.5
c. Total main line track	702.4	713.9	11.5
2. Helper pocket and setout tracks			
a. Setouts and Helper Pockets	4.5	15.8	11.3
b. Customer Access Sidings	0.0	10.6	10.6
c. Total Helper pocket and setout tracks	4.5	26.4	21.9
3. Yard and Interchange Tracks			
a. Yard Tracks (Incl. IM/Auto)	63.6	117.7	54.1
b. Interchange Tracks	0.0	23.5	23.5
c. Total Yard and Interchange Tracks	63.6	141.2	77.6
5. Total track miles	**770.5**	**881.5**	**111.1**

Source: NS Reply WP "SUNBELT RR Route Miles Opening Grading NS Reply.xlsx," tab "IIIB Tables"

a. Main Lines

SunBelt posits that the SBRR would construct and operate two main line segments, with 578.2 miles of first main line track and an additional 124.1 miles of second main line track and passing sidings. SunBelt Opening III-B-4, Table III-B-3. Based upon its Reply Operating Plan and RTC simulation, NS demonstrates that the SBRR would, in fact, require 578.2 miles of first main line track, and 135.6 miles of additional main line track and passing sidings. Stick

diagrams depicting the SBRR main line tracks (including second main and passing sidings) are set forth in NS Reply Exhibit III-B-2.

SunBelt posits that SBRR main line track and passing sidings carrying 20 million or more gross tons per year ("MGT") would be constructed with new 136-pound continuous welded rail ("CWR"). SunBelt Opening III-B-4. Standard rail is used for all main line track, except that premium (head-hardened) rail is used on curves of three degrees of more, where rail wear is heaviest. Main line segments carrying less than 20 MGT (and all branch lines) would be constructed with new 115-pound CWR. SunBelt Opening III-B-5. NS accepts SunBelt's proposed specifications for main line tracks.

b. Branch Lines.

As described above, the SBRR's track network includes no branch lines.

c. Sidings

The SBRR track configuration posited by NS would include 135.6 miles of second line main track and passing sidings. Stick diagrams depicting the SBRR's second main line track and passing sidings are set forth in NS Reply Exhibit III-B-2. Second main line track and passing sidings on lines carrying at least 20 MGT would be constructed with new 136-pound continuous welded rail ("CWR"). Second main line track and passing sidings on lines carrying less than 20 MGT would be constructed with new 115-pound CWR. The second main line track and passing sidings posited by NS are depicted on the stick diagrams set forth in NS Reply Exhibit III-B-2.

d. Other Tracks

SunBelt's proposed SBRR configuration includes certain other categories of track, including set-out tracks for bad order cars. NS's proposed track configuration likewise includes such facilities. The SBRR will require a total of 15.8 miles of setout tracks. Those tracks will consist of 115-pound new CWR. Pocket and setout tracks are double-ended and 735 feet in

length. This provides 600 feet in the clear to accommodate both the occasional bad-order car and the temporary storage of maintenance-of-way ("MOW") equipment. The location of the pocket and setout tracks posited by NS are shown on the stick diagrams set forth in NS Reply Exhibit III-B-2.

SunBelt's track configuration does not include the railroad-owned industrial and/or spur tracks at any of the customer locations that the SBRR must serve. The SBRR clearly would need such facilities to pick up and set off cars at customer facilities. NS addresses this deficiency in SunBelt's track configuration and Operating Plan by including in the SBRR's physical plant the industry and/or spur tracks necessary to provide local service. Stick diagrams depicting the industry and spur tracks included in NS's proposed SBRR configuration are set forth in NS Reply Exhibit III-B-2. Spur and industrial track would be constructed with 115-pound new rail.

3. Yards

As NS demonstrates (at III-C-1-b), the location, sizing, and configuration of the SBRR yards posited by SunBelt were untethered to the workload that the SBRR actually would have to perform at each facility. SunBelt's narrative evidence and workpapers confirm that it gave no consideration whatsoever to the number of cars that the SBRR would have to classify and block at intermediate yards in order to handle the one-half million annual "carload" shipments that it selected for the SBRR's traffic group. *See infra* Part III-C-A-1-c. Indeed, SunBelt failed to provide a "hump" yard at Birmingham, AL.[3] Further, the "mid-size" yards posited by SunBelt are undersized to support the SBRR's train operations.

---

[3] A hump yard is a large classification yard that contains a "hump track" that is elevated and connected to multiple classification tracks. A yard locomotive pushes cars up the front side of the hump. At the top, the car is released and gravity enables the car to roll down the back side of the hump. The car is "classified" by using a system of power switches to direct it onto the appropriate classification track with other cars headed to the same destination (or intermediate yard) further along the network.

NS's Operating Plan addresses this fatal deficiency in SunBelt's Opening Evidence by positing a group of yards that are optimally sized and configured to support the SBRR's train operations.[4] Sufficient capacity is provided where the SBRR would need it to classify and block its "carload" traffic. NS's Operating Plan includes "industrial support" tracks at locations where limited switching activities occur.

Overall, NS's proposed SBRR configuration includes a total of seven yards, including one "hump" yard at Birmingham, AL , three medium "flat switching" yards,[5] and three small "flat switching" yards.[6] NS's proposed configuration removes six yards posited by SunBelt. Instead, NS's track configuration provides "industrial support" tracks at 15 locations, which are used to pick up and set off small numbers of cars. The location, size, and configuration of the SBRR yards and industrial support tracks posited by NS are set forth in the stick diagrams in NS Reply Exhibit III-B-2.

a. Miles and Weight of Yard Track

The SBRR's seven yards include a total of 107.9 miles of track. Details are shown in NS Reply workpaper "SBRR Yard List NS Reply," Tab "Main Yards and Facilities." The yard tracks have 115-pound new CWR. The main running tracks through the yards and the initial yard leads have the same weight and type of rail as the adjacent main line tracks. In addition, the SBRR's industrial support tracks total 6.6 miles of track. Industrial support tracks have 115-

---

[4] *See infra* III-C-1-b.

[5] A "flat switching yard" consists of tracks on flat ground, and is not equipped with a hump track or power switches. Cars are classified manually by moving them between parallel tracks that are connected by "ladder" tracks at one or both ends. Flat switching is more time consuming and far less efficient than switching at a hump yard. At larger flat switching yards, specific tracks are designated for receiving, classifying or forwarding cuts of cars, while at smaller flat switching yards, tracks are used interchangeably for any of those tasks.

[6] *See* NS Reply WP "SBRR Yard List NS Reply," Tab "Reply Yard and Facility List."

pound new CWR. *See* NS Reply WP "SBRR Yard List NS Reply.xls," Tab "Ind. Support Yards."

4. Other

a. Joint Facilities

SunBelt operates over 2.4 miles of trackage rights pursuant to NS's existing agreements with CN. SunBelt asserts that the SBRR "steps into the shoes of NS" under that agreement. SunBelt Opening III-C-5. NS accepts SunBelt's posited use of trackage rights over CN at Mays Yard in New Orleans, LA.

b. Intermodal Facilities

The SBRR would need two intermodal facilities—at Birmingham, AL, and New Orleans, LA—to handle the 596,544 units of intermodal traffic selected by SunBelt.[7] *See* SunBelt Opening III-A-9, Table III-A-5. Intermodal traffic constitutes the majority of SunBelt's selected traffic, yet SunBelt's SARR configuration did not include any SBRR-owned intermodal terminals. NS addresses this glaring deficiency in SunBelt's evidence by including in its SBRR configuration two small intermodal facilities that the SBRR would need at Birmingham, AL, and New Orleans, LA. The intermodal facilities posited by NS are designed to accommodate the volume of SBRR intermodal traffic handled at each location in the peak year. *See* NS Reply at III-C-154.

c. Automotive Facilities

SunBelt's SBRR stick diagrams indicate an automotive facility at the New Orleans, LA yard. However, SunBelt failed to include necessary operating expenses to account for this facility. NS posits an automotive facility at New Orleans, LA. NS's Operating Plan accounts for

[7] *See* SunBelt Opening at I-45, Table III-A-5 at III-A-9.

the costs that this facility generates, and equips the facility with all of the infrastructure that is necessary to handle automotive traffic in a manner consistent with customer requirements, including rail spur track, paved loading and unloading areas, guard rails and security fencing, storage areas for the haulage vehicles that load and unload new cars, and facilities for terminal personnel to perform the tasks associated with the transportation of automobiles.[8] *See* NS Reply III-C-155.

d. Signal/Communications System

In SunBelt's configuration for the SBRR, all main lines are equipped with a Positive Train Control ("PTC") system from the outset of operations. As discussed in Parts III-C and III-F below, this assumption ignores the reality that PTC has yet to be implemented by any railroad, and indeed that the technology does not currently exist in deployable form.

Consistent with conditions in the real world of railroading, NS's configuration for the SBRR includes a Centralized Traffic Control ("CTC") system for the beginning of operations in 2011, and then assumes the overlay of a PTC system by December 31, 2015 (the current deadline established by Congress for railroads to implement PTC). This is necessary in large part because key elements of PTC do not exist even today in 2013. *See* Federal Railroad Administration, Report to Congress on Positive Train Control Implementation Status, Issues, and Impacts (August 2012) (included as NS Reply WP "2012 FRA PTC Report.pdf"). NS fully explains the costs and effects of this process in Section III-F.

SunBelt has configured the SBRR to conduct communications using a microwave system, with microwave towers at 20-mile intervals along the SBRR. *See* SunBelt Opening III-F-37. SunBelt posits that locomotive engineers, dispatchers, and field supervisory personnel

[8] *See* NS Reply WP " SBRR Yard List NS Reply," Tab "Auto Facilities."

would be equipped with radios connected to the microwave system. NS accepts SunBelt's assertion that it will provide personnel with radios. Certain employees would also be equipped with cellular telephones for emergency use as a back-up to the radios. NS accepts the costs for material and installation of the SBRR Communications and Microwave Systems. *See infra* Part III-F.

e. Turnouts, FEDs and AEI Scanners

SunBelt specifies No. 20 turnouts for all turnouts between the SBRR's main tracks in CTC territory. No. 20 turnouts also are used for yard lead tracks and the main running tracks at both ends of each of the SBRR's major and mid-size yards. SunBelt specifies No. 14 turnouts between main tracks and all other tracks, including other yards, interchange tracks, and the connections with origin and destination spurs (which SunBelt did not build), where trains move at slower speeds. No. 10 turnouts are used within yards and for setout and MOW equipment storage tracks. NS accepts these specifications.

However, NS rejects SunBelt's placement of Failed Equipment Detectors ("FEDs") at 35-mile intervals along the SBRR route. Placing FEDs every 35 miles is unreasonable, leaving more than twice the distance between FEDs as is NS's practice in the real world. SunBelt offers no rationale for its decision to ignore NS's FED configuration. Thus, in NS's configuration for the SBRR, FEDs, which include hot-bearing, dragging-equipment, cracked-wheel, and wide/shifted load detection systems, are spaced according to the actual FEDs on the current NS system, as indicated in NS's track charts. The FEDs are spaced approximately every 15 miles. Each FED is accompanied by two setout tracks, each located within two miles on either side of the FED. *See infra* Section III-F. Each such track is a 735-foot, single-ended track (with 600 feet in the clear) to facilitate the setout of bad-order cars from trains operating in either direction.

These tracks are used primarily for temporary storage of bad-order cars detected by the FEDs, as well as for temporary storage of work equipment.

Automatic Equipment Identification ("AEI") scanners are located at or near each of the locations where the SBRR interchanges trains with other railroads. A total of 20 AEI scanners have been provided. The AEI scanners have been placed so as to enable them to capture all train movements that occur on the SBRR, including both local and interline movements.

f. RTC Model Simulation of SBRR Configuration

A simulation of a SARR's operations can be used to test whether a complainant's proposed SARR configuration (including main line track capacity, yards and other facilities) are adequate to enable the SARR to provide the necessary level of service to its selected traffic group.[9] NS conducted a simulation of the SBRR's peak year operations utilizing the Rail Traffic Controller ("RTC") Model, based upon the physical infrastructure provided for in this Part III-B. The specific inputs to the RTC Model used by NS, and the results of that simulation, are discussed in Part III-C-3. NS's RTC simulation demonstrates that the track capacity and configuration posited by NS are both necessary and adequate to provide the services required to meet the needs of the SBRR's customers, and that the track configuration posited by SunBelt are not.

---

[9] *See, e.g.*, *WFA II*, STB Docket No. 42088, at 14 (RTC model enables complainant to "test the adequacy of the configuration (to make sure the [SARR] would have sufficient capacity to handle the peak forecast demand)"). Contrary to SunBelt's assertions (SunBelt Opening III-C-13 to III-C-14; SunBelt Opening Ex. III-C-2), an RTC Model simulation of a SARR's operations cannot prove that the SARR's operating plan is "feasible." Rather, the Model used to perform an RTC simulation must incorporate all of the elements of a "feasible" operating plan in order for the simulation to generate valid results. *See infra* III-C-89 to III-C-90.

Table Of Contents

Page

III. STAND-ALONE COST III-C-1

C. OPERATING PLAN III-C-1

INTRODUCTION III-C-1

A. SunBelt Did Not Present A Feasible Operating Plan For Its SARR III-C-12

1. SunBelt's "Automated" Operating Plan Methodologies Are Fatally Flawed And Should Be Rejected. III-C-12

a. SunBelt's "Automated" Train Service Plan Failed To Capture Hundreds Of Trains That Are Necessary To Provide Complete On-SARR Service. III-C-13

b. SunBelt Had All The Data Necessary To Develop The Detailed Operating Plan Required By The Board's Regulations. III-C-19

c. SunBelt's Yard Service Plan Is Based Upon Unsupported Mathematical Calculations That Produce Absurd Results. III-C-30

d. SunBelt's Operating Plan Is Woefully Short of Yard Crews And Locomotives III-C-37

2. SunBelt Has Failed To Present A Feasible Operating Plan For General Freight Traffic III-C-41

3. SunBelt Has Not Presented A Feasible Operating Plan For the Issue Traffic III-C-52

4. SunBelt's Operating Plan Fails To Account For The SBRR's Reciprocal Obligations To Connecting Carriers. III-C-60

a. SunBelt's Operating Plan Makes No Provision For Pre-Blocking Cars Interchanged By The SBRR To Connecting Carriers III-C-64

b. SunBelt Improperly Assumes That Locomotives Will Run Through On All Trains Interchanged By SBRR With Other Railroads. III-C-67

c. SunBelt's Allocation Of Responsibility For Fueling Locomotives Is Inconsistent With Both NS's Intercarrier Agreements And Real World Operating Practices..... III-C-69
d. SunBelt Makes No Provision For Running Repairs To Foreign Railcars On The SBRR Network..... III-C-73

5. SunBelt's Operating Plan Does Not Comply With Regulations And Best Practices Relating To The Transportation Of TIH Shipments. III-C-77

a. SunBelt's Operating Plan Does Not Track TIH Traffic..... III-C-79
b. SunBelt's Assumed Train Speeds Exceed Those Allowed For Trains Carrying TIH Traffic. III-C-81
c. SunBelt's Operating Plan Fails To Provide The Personnel That The SBRR Would Need To Handle TIH Commodities Safely. III-C-83

B. SunBelt's RTC Model Simulation Is Meaningless..... III-C-89

1. SunBelt's RTC Simulation Is Based Upon A Fatally Deficient Train Service Plan..... III-C-90
2. SunBelt's RTC Model Contains Incorrect Grade Information. III-C-104
3. SunBelt's RTC Model Does Not Properly Account For Random Outages And Train Delays..... III-C-106
4. SunBelt Failed To Input Foreign Railroad Crossings And Road Crossings Into Its RTC Model..... III-C-112
5. SunBelt's RTC Simulation Fails To Give Effect To The Impact Of Hi-Rail Vehicles..... III-C-114

1. General Parameters and Methodology III-C-118

a. SBRR Car Blocking and Train Service Plan III-C-121

i. Carload Traffic..... III-C-121
ii. Intermodal Traffic..... III-C-131
iii. Unit Train Traffic..... III-C-132

b. Development of SBRR Yard Facilities..... III-C-133

i. Birmingham Hump Yard III-C-139
ii. Flat Switching Yards..... III-C-143
iii. Track Allocation For Ancillary Functions..... III-C-145

c. Traffic Flow and Interchange Points III-C-146
d. Joint Use and Interchange Agreements III-C-148
e. Track and Yard Facilities III-C-149

i. Main Line Track III-C-149
ii. Side Tracks and Spurs III-C-149
iii. Yards III-C-150
iv. Intermodal Facilities III-C-154
v. Automotive Facilities III-C-155

f. Crew-Change Location/Times III-C-156

i. Road Crews III-C-156

g. Switching and Yard Activity III-C-157

i. Locomotive inspections and fueling III-C-157
ii. Railcar inspections III-C-158

(a) Inspection procedures III-C-158
(b) Trains requiring inspection III-C-161

h. Trains and Equipment III-C-163

i. Train Sizes III-C-163
ii. Locomotives III-C-163

(a) Road Locomotives III-C-164
(b) Helper Locomotives III-C-169
(c) Switch/Work Train Locomotives III-C-169

iii. Railcars III-C-172

i. Crew Districts and Crew Requirements III-C-173

i. Road Crews III-C-173
ii. Yard Crews III-C-175

2. Other III-C-178

a. Car Repair Facilities III-C-178
b. Train Control and Communication III-C-179

3. NS's RTC Model Simulation III-C-180

a. Train Size and Weight III-C-181
b. Maximum Train Speeds III-C-182
c. Road Locomotive Consists III-C-182
d. Dwell Times at Origins and Destinations III-C-183

i. General Freight Traffic III-C-183
ii. Unit Train Coal Traffic III-C-186

e. Dwell Times at Yards III-C-187
f. Time Required to Interchange Trains With Other Railroads. III-C-188
g. Crew Change Locations/Times III-C-188
h. Track Inspections/Maintenance Windows III-C-188
i. Time for Random Failures/Line Outages III-C-189

Table Of Contents

Page

III. STAND-ALONE COST III-C-1

C. OPERATING PLAN III-C-1

INTRODUCTION III-C-1

A. SunBelt Did Not Present A Feasible Operating Plan For Its SARR. III-C-12

1. SunBelt's "Automated" Operating Plan Methodologies Are Fatally Flawed And Should Be Rejected. III-C-12

a. SunBelt's "Automated" Train Service Plan Failed To Capture Hundreds Of Trains That Are Necessary To Provide Complete On-SARR Service. ... III-C-13

b. SunBelt Had All The Data Necessary To Develop The Detailed Operating Plan Required By The Board's Regulations. III-C-19

c. SunBelt's Yard Service Plan Is Based Upon Unsupported Mathematical Calculations That Produce Absurd Results. III-C-30

d. SunBelt's Operating Plan Is Woefully Short of Yard Crews And Locomotives III-C-37

2. SunBelt Has Failed To Present A Feasible Operating Plan For General Freight Traffic. III-C-41

3. SunBelt Has Not Presented A Feasible Operating Plan For the Issue Traffic. III-C-52

4. SunBelt's Operating Plan Fails To Account For The SBRR's Reciprocal Obligations To Connecting Carriers. III-C-60

a. SunBelt's Operating Plan Makes No Provision For Pre-Blocking Cars Interchanged By The SBRR To Connecting Carriers. III-C-64

b. SunBelt Improperly Assumes That Locomotives Will Run Through On All Trains Interchanged By SBRR With Other Railroads. III-C-67

c. SunBelt's Allocation Of Responsibility For Fueling Locomotives Is Inconsistent With Both NS's Intercarrier Agreements And Real World Operating Practices. III-C-69

d. SunBelt Makes No Provision For Running Repairs To Foreign Railcars On The SBRR Network. III-C-73

5. SunBelt's Operating Plan Does Not Comply With Regulations And Best Practices Relating To The Transportation Of TIH Shipments. III-C-77

a. SunBelt's Operating Plan Does Not Track TIH Traffic. III-C-79
b. SunBelt's Assumed Train Speeds Exceed Those Allowed For Trains Carrying TIH Traffic. III-C-81
c. SunBelt's Operating Plan Fails To Provide The Personnel That The SBRR Would Need To Handle TIH Commodities Safely. III-C-83

B. SunBelt's RTC Model Simulation Is Meaningless. III-C-89

1. SunBelt's RTC Simulation Is Based Upon A Fatally Deficient Train Service Plan. III-C-90
2. SunBelt's RTC Model Contains Incorrect Grade Information. III-C-104
3. SunBelt's RTC Model Does Not Properly Account For Random Outages And Train Delays. III-C-106
4. SunBelt Failed To Input Foreign Railroad Crossings And Road Crossings Into Its RTC Model III-C-112
5. SunBelt's RTC Simulation Fails To Give Effect To The Impact Of Hi-Rail Vehicles. III-C-114

1. General Parameters and Methodology III-C-118

a. SBRR Car Blocking and Train Service Plan III-C-121

i. Carload Traffic III-C-121
ii. Intermodal Traffic III-C-131
iii. Unit Train Traffic III-C-132

b. Development of SBRR Yard Facilities III-C-133

i. Birmingham Hump Yard III-C-139
ii. Flat Switching Yards III-C-143
iii. Track Allocation For Ancillary Functions III-C-145

c. Traffic Flow and Interchange Points III-C-146
d. Joint Use and Interchange Agreements III-C-148
e. Track and Yard Facilities III-C-149

i. Main Line Track III-C-149
ii. Side Tracks and Spurs III-C-149

iii. Yards III-C-150
iv. Intermodal Facilities III-C-154
v. Automotive Facilities III-C-155

f. Crew-Change Location/Times III-C-156

i. Road Crews III-C-156

g. Switching and Yard Activity III-C-157

i. Locomotive inspections and fueling III-C-157
ii. Railcar inspections III-C-158

(a) Inspection procedures III-C-158
(b) Trains requiring inspection III-C-161

h. Trains and Equipment III-C-163

i. Train Sizes III-C-163
ii. Locomotives III-C-163

(a) Road Locomotives III-C-164
(b) Helper Locomotives III-C-169
(c) Switch/Work Train Locomotives III-C-169

iii. Railcars III-C-172

i. Crew Districts and Crew Requirements III-C-173

i. Road Crews III-C-173
ii. Yard Crews III-C-175

2. Other III-C-178

a. Car Repair Facilities III-C-178
b. Train Control and Communication III-C-179

3. NS's RTC Model Simulation III-C-180

a. Train Size and Weight III-C-181
b. Maximum Train Speeds III-C-182
c. Road Locomotive Consists III-C-182
d. Dwell Times at Origins and Destinations III-C-183

i. General Freight Traffic III-C-183
ii. Unit Train Coal Traffic III-C-186

e. Dwell Times at Yards III-C-187
f. Time Required to Interchange Trains With Other Railroads. III-C-188
g. Crew Change Locations/Times III-C-188
h. Track Inspections/Maintenance Windows III-C-188
i. Time for Random Failures/Line Outages III-C-189

III. STAND-ALONE COST

C. OPERATING PLAN

INTRODUCTION

SunBelt has failed to meet its burden of tendering an operating plan that satisfies the Board's well-established requirements.[1] This failure is of such a magnitude that it warrants dismissal of the entire case. But at a minimum, SunBelt's Operating Plan should be rejected in its entirety for this and its other shortcomings.

Most importantly, SunBelt's Operating Plan is not a complete and feasible plan even for the issue traffic. Indeed, SunBelt's Operating Plan cannot provide complete service to more than 90% of the issue traffic in the Base Year. Failure to serve the issue traffic from origin to destination represents a per se failure by SunBelt to tender a *prima facie* case on opening. This fundamental flaw in SunBelt's operating plan for the SBRR is a direct result of the methodologies that SunBelt employed SunBelt made in developing its operating evidence.[2] SunBelt cannot repair this colossal error on Rebuttal because it arises from SunBelt's own methodological choices. *IPA*, STB Docket No. 42127 at 3. Accordingly, this fundamental failing requires that the Board dismiss SunBelt's Complaint.

In addition, the Board's SAC decisions articulate several minimum prerequisites for a "feasible" operating plan.[3] A complainant must "design[] a SARR specifically tailored to serve

---

[1] *See CP&L*, 7 S.T.B. at 259 (complainant has the burden of demonstrating an operating plan would meet the needs of the traffic group).

[2] As NS shows *infra*, SunBelt's consultants programmed the computer (at Line 142 of the "SQL" script) to omit trains "because they only [sic] the SARR system at one of the SARR end points, or only move a few miles on the SARR before exiting the system."

[3] *See e.g., CP&L*, 7 S.T.B. at 259 (complainant carries the burden to provide a feasible operating plan).

an identified traffic group" selected for its SARR. *AEPCO 2011*, STB Docket No. 42113, at 4.[4] "Based on the traffic group to be served, the level of services to be provided, and the terrain to be traversed, a detailed operating plan must be developed for the SARR." *Id.* (emphasis added).[5] A complainant need not replicate precisely the operations of the incumbent railroad, but it must demonstrate that the operating plan it proposes is "capable of providing the service required by the SARR's customers." *Duke/NS*, 7 S.T.B. at 99.[6] Moreover, "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."[7] While a SARR may choose to "step into the shoes" of the incumbent carrier under existing trackage rights, joint facility, interchange, run-through power and other intercarrier agreements, complainant may not assume that the SARR would enjoy more favorable terms than the incumbent carrier under those agreements. *See AEPCO 2002*, 6 S.T.B. at 328. Nor may complainant "hypothesize" that the SARR could secure rights or agreements that are not available to the defendant carrier. *Id.* Finally, the Board has made clear that "[t]he parties must provide appropriate documentation to support their [operating plan and expense] estimates." *See Rate Regulation Reforms,* Ex Parte No. 715, at 6; *AEPCO 2011*, STB Docket No. 42113, at 4-5. SunBelt's Opening Evidence fails to satisfy these fundamental requirements, and its Operating Plan should be rejected in its entirety.

---

[4] *See also Rate Regulation Reforms*, Ex Parte No. 715 (served July 25, 2012) at 5; *Xcel*, 7 S.T.B. at 610 ("The operating plan must be able to meet the transportation needs of the traffic the SARR proposes to serve."); *TMPA I*, 6 S.T.B. at 589 ("[T]he SARR must meet the transportation needs of the traffic in the group by providing service that is equal to (or better than) the existing service for that traffic.").

[5] *See also Otter Tail*, STB Docket No. 42071, at 6; *Xcel*, 7 S.T.B. at 598; *TMPA I*, 6 S.T.B. at 586.

[6] *See also AEPCO 2011*, STB Docket No. 42113, at 28; *Xcel*, 7 S.T.B. at 610.

[7] *WFA I*, STB Docket No. 42088, at 15. SunBelt itself acknowledges this essential requirement. *See* SunBelt Opening I-49.

The SARRs presented in prior SAC cases have generally involved a limited mix of traffic, moving primarily in unit train service. By contrast, fully 44% (471,597 carloads) of the traffic that SunBelt selected for the SBRR—including all of the "issue" traffic—is "general freight" traffic.[8] That traffic moves in single-car or multiple-car shipments to and from 336 customers at 53 SBRR-served stations.[9] A feasible operating plan for general freight traffic must account for the handling of each individual car from its origin (or on-SARR location) to its destination (or off-SARR junction). Such a plan necessarily includes local train service to pick up the car at origin, switching of the car (at a local serving yard) into a block for movement with other cars destined to the same point further along the SARR network, movement of the car in one or more road trains (via one or more intermediate yards) to a local serving yard near its destination (or point of interchange), and local service to deliver the car to the consignee (or off-SARR location).[10]

Rather than presenting a "detailed" operating plan "tailored" to the specific requirements of the SBRR's general freight traffic, SunBelt proffered a skeletal plan based on the premise that "[t]he SBRR operates complete trains, including general freight, coal and intermodal trains, in local and interline (including overhead) service." SunBelt Opening III-C-8 (emphasis added). Indeed, SunBelt asserts that "[t]he SBRR was conceived as a railroad that would primarily handle trainload quantities of goods." SunBelt Opening I-53. Consistent with that (erroneous) premise, SunBelt's Operating Plan virtually ignores the activities (other than line-haul movement

---

[8] Unit train shipments of coal account for barely one percent of the SBRR Peak Year traffic posited by SunBelt. *See* SunBelt Opening, III-C-3, Table III-C-1.

[9] *See* NS Reply WP "SBRR Local Stations and Customers.xlsx."

[10] NS Reply Exhibit III-C-1, "Carload Operations Overview" is a video that depicts the manner in which NS and other railroads transport general freight traffic across the national rail network.

of road trains) required to transport general freight traffic across a rail network safely and efficiently. SunBelt's operating plan narrative and workpapers contain no meaningful analysis of the service requirements of the merchandise traffic it selected, and provide little indication that SunBelt applied any "expert" rail operations knowledge in developing that plan. To the contrary, SunBelt's "Operating Plan" consists of little more than a series of "automated" data analyses and undocumented spreadsheet calculations.

The flawed methodologies applied by SunBelt in developing its operating plan for the SBRR resulted in numerous glaring deficiencies:

- Rather than developing a road and local train service plan tailored to the specific needs of its selected traffic, SunBelt chose to "adopt" historical NS trains as a surrogate for the trains that the SBRR would operate. However, the "automated" methodology that SunBelt devised to select NS trains for inclusion in the SBRR operating plan intentionally excluded 1,622 of the trains in which the selected traffic actually moved during the Base Year—including 447 local trains needed to originate the issue traffic at McIntosh, AL. As a result, there are significant "gaps" in the on-SARR train service reflected in SunBelt's Operating Plan. This fatal error affects 1,500 of 1,656 (or 91%) of SunBelt's Base Year "issue" traffic). *See infra* III-C-13-to III-C-30.[11]

- The SBRR's Base Year traffic group contains approximately 7,300 carloads of Toxic-by-Inhalation ("TIH") commodities—including 100% of the issue traffic, which consists entirely of chlorine. Yet, nowhere in its Operating Plan or workpapers does SunBelt mention—much less provide for—compliance with the myriad safety laws, regulations and best practices that apply to the transportation of hazardous commodities. *See infra* III-C-77 to III-C-89. To the contrary, SunBelt's Operating Plan permits trains carrying TIH commodities to operate at speeds of up to 60 MPH in clear violation of the 50 MPH speed limit imposed by federal law, and fails to track TIH shipments as they move across the SBRR system (as required by law and industry best practices).

- SunBelt's Operating Plan contains no classification or "car blocking" plan for the 471,597 Peak Year carloads of general freight in the SBRR traffic group. SunBelt Opening III-C-3, Table III-C-1. Indeed, SunBelt's Opening Evidence makes no mention whatsoever of "classification" among the activities that would occur at

---

[11] *See FMC*, 4 S.T.B. at 736 (rejecting complainant's operating plan in part for understating the number of trains).

SBRR yards. SunBelt's failure to consider that critical element of "carload" rail service resulted in a substantial understatement of the SBRR's yard locomotive and yard crew requirements, and the time required to move general freight traffic across the SBRR system (thereby rendering its operating expense estimates invalid). *See infra* III-C-41 to III-C-52.[12]

- The SBRR yard configurations posited by SunBelt are based upon unsupported spreadsheet calculations that are utterly divorced from the requirements of the SBRR's traffic. Nowhere in its Opening Evidence or workpapers does SunBelt identify—much less account for—the number of general freight cars that the SBRR would have to classify, switch, or otherwise handle at its yards every day. The result is an Operating Plan that undersizes the SBRR's yards, and fails to provide any yard capacity at other locations where it is needed. *See infra* III-C-30 to III-C-41.[13]

- The SBRR track configuration posited by SunBelt does not include the railroad-owned spurs and industrial tracks that the SBRR would need to access customer locations. *See* SunBelt Opening WP "SBRR Opening Stick.pdf." In other words, it is physically impossible for the SBRR (as constructed by SunBelt) to pick up or set off cars at customer facilities. *See infra* III-C-51.

- The SBRR's traffic group contains nearly 600,000 units of intermodal traffic. SunBelt Opening III-C- 3, Table III-C-1. SunBelt's Operating Plan asserts that "[t]he SBRR serves . . . . intermodal facilities." SunBelt Opening III-C-3. But the SBRR does not build a single intermodal facility anywhere along its 580-mile rail network. *See* SunBelt Opening WP "SBRR Yard Matrix.xlsx." As NS demonstrates (*infra* III-C-154 to III-C-155), the SBRR would need intermodal terminal capacity at both Birmingham, AL and New Orleans, LA.[14]

- The SBRR does not have any car repair personnel. SunBelt assumes that, because the SBRR would acquire cars under full-service leases, its cars would be maintained by the lessor, making proprietary personnel unnecessary (SunBelt Opening III-D-8). This assumption limits considerably the ability of the SBRR to perform running repairs to foreign line cars, as required by both the AAR Car Interchange Rules and the terms of NS's intercarrier agreements (which the SBRR purports to adopt). *See infra* III-C-73 to III-C-77.

---

[12] *See CP&L*, 7 S.T.B. 255-56 (rejecting complainant's operating plan in part for failure to account for all elements of service).

[13] *See FMC*, 4 S.T.B. 737, n.88, 89 (discussing problems with mathematical attempts to develop an operating plan).

[14] *See CP&L*, 7 S.T.B. 255-56 (rejecting complainant's operating plan in part for failure to account for all elements of service).

- SunBelt asserts that the SBRR's interline relationships with connecting carriers "are based on NS's joint use and interchange agreements with such carriers; the SBRR steps into NS's shoes under these agreements." SunBelt Opening III-C-5. However, SunBelt's Operating Plan embodies a variety of assumptions that are inconsistent with the terms of NS's intercarrier agreements (which were produced to SunBelt in discovery). More importantly, SunBelt assumes that the SBRR would enjoy the benefit of those agreements (including pre-blocking of cars prior to receipt in interchange, and the performance of minor repairs to SBRR's cars while off-line) without any obligation to provide "reciprocal" services to connecting carriers. *See infra* III-C-60 to III-C-77.

- SunBelt's RTC simulation—upon which SunBelt explicitly relies to "confirm that the SBRR's configuration, facilities and operating plan are feasible" (SunBelt Opening III-C-15-16)—is based upon SunBelt's fatally flawed Operating Plan. The RTC Model constructed by SunBelt also contains numerous modeling errors, including incorrect grade information; failure to account properly for delays caused by random failures and maintenance windows; failure to account for the time required for foreign trains to cross the SBRR's lines; and failure to model train movements completely and accurately (thereby understating the time and resources required to serve the SBRR's selected traffic). Those glaring errors render the outputs of SunBelt's RTC simulation meaningless.[15]

Indeed, SunBelt has utterly failed to present a "feasible" operating plan even for its own "issue" traffic. This case involves a single issue movement—chlorine shipments that originate at SunBelt's plant at McIntosh, AL and move (via Birmingham, AL) to New Orleans, LA, where NS forwards the cars to UP for further transportation to the consignee (OxyVinyls) at LaPorte, TX. In the real world, SunBelt requires NS to provide local service to the McIntosh facility seven days per week. On weekdays, NS provides twice-daily local train service at McIntosh—NS Train A33 serves SunBelt's plant in the morning, while NS Train A34 provides additional

[15] *See e.g. AEPCO 2011*, STB Docket No. 42113, at 30 (rejecting complainant's operating plan in part for failure to properly account for random outages); *id.* at 28 (rejecting complainant's operating plan in part for failure to account for program maintenance); *Xcel*, 7 S.T.B. at 611-12 (rejecting complainant's operating plan in part for flawed grades and curves).

local service in the evening.[16] NS Train A32 provides service to the SunBelt facility on Saturday and Sunday.

As discussed in detail below (at III-C-52 to III-C-60), cars are not simply "picked up" or "dropped off" at SunBelt's McIntosh plant. Rather, SunBelt's detailed instructions require NS local train crews to sort inbound cars (left by NS road trains on a siding north of the SunBelt plant) by commodity and to place those cars on specific tracks. Local train crews are also responsible for "blocking" outbound SunBelt cars for movement either north (to Birmingham and points beyond) or south (to Mobile, AL and points beyond). The hazardous nature of the commodities shipped by SunBelt (which include both chlorine and caustic soda) requires NS local train crews to comply with both federal safety regulations and a variety of safety-related procedures mandated by SunBelt and NS in handling SunBelt's cars. Performing the myriad functions required to meet SunBelt's service requirements consumes up to 24 hours (and two NS local assignments) per day. Because NS does not have a yard in the vicinity of McIntosh,[17] switching and car blocking must be performed largely on the NS main line, occupying that line for lengthy periods of time every day. As Figure III-C-9 (*infra* III-C-55) demonstrates, NS local trains incur, on average, more than 11 hours picking up, setting off, and switching cars at McIntosh.[18]

---

[16] Neither of the other shippers at McIntosh { } requires twice-daily service. NS provides a second daily local service at McIntosh solely to meet the needs of SunBelt. *See infra* III-C-53.

[17] In addition to the main line, NS has one parallel track that runs the length of the SunBelt facility at Milepost 108, and a 8,233-foot siding north of the plant (between Milepost 106.7 and Milepost 105) on which inbound cars are placed by NS road trains, and outbound cars are blocked and placed by the NS local trains for pickup by NS road trains.

[18] *See also* NS Reply WP "Yard and Local Crew 2011 ytd.xls."

SunBelt cannot credibly claim ignorance of the extensive local train operations required to serve the issue chlorine shipments. The extensive switching and blocking activity required to meet SunBelt's needs occurs in plain sight outside the SunBelt plant every day. {{

}} *See infra* III-C-57.[19] Nevertheless, the Operating Plan proffered by SunBelt in its Opening Evidence completely ignores the unique service requirements of the issue traffic, fails to provide local train service to originate SunBelt's own traffic, and handles SunBelt's chlorine shipments in a manner that violates federal regulations and rail industry best practices.[20]

For example, among the 1,622 trains that SunBelt intentionally removed from the SBRR's train list by applying its ill-conceived "automated" train selection methodology were 447—or 92%—of the 487 NS A32, A33 and A34 local trains that originated the "issue" traffic (and delivered the associated empty cars) during the Base Year. The SBRR train list upon which SunBelt's Operating Plan is based contains only 40 of those 487 local trains. In other words, SunBelt's Operating Plan does not provide the local train service needed to originate its own

---

[19] {{

}}

[20] It is noteworthy that SunBelt's operating "expert," Mr. McDonald, did not bother to visit McIntosh in connection with the preparation of SunBelt's Operating Plan. Nor did witness McDonald visit Birmingham, the hub of the SBRR network and site of its only "major" yard (*see* SunBelt WP "SBRR Yard Matrix.xlsx," Tab SBRR Yards"). SunBelt's Opening Evidence and workpapers contain no reference to, or documentation of, such site visits. By contrast, NS operating witnesses Johnson and Smith visited both McIntosh and Birmingham, and their observations are documented in the workpapers supporting NS's Reply Evidence. *See* NS Reply WP "Site Visits" folder.

shipments at McIntosh! This fatal defect affects 1,500 carloads, or 91%, of the Base Year issue traffic. *See infra* III-C-19.

With only 40 local trains to serve McIntosh during the entire Base Year it is clearly impossible for the SBRR to serve the McIntosh plant even once—much less twice—per day. Nor could the SBRR call upon yard crews based at its proposed McIntosh yard to provide such service, because SunBelt posits that the SBRR would have only one yard engine and one yard crew, working one eight-hour shift per day, stationed at that yard.[21] As NS demonstrates below (at III-C-175 to III-C-178), that lone yard assignment is not sufficient even to switch the 206 cars per day that would move through the McIntosh yard. It is inconceivable that the same yard assignment could complete that substantial volume of yard switching work (including building SBRR road trains for movement north), and also perform pickups and setoffs at SunBelt twice per day, all in a single shift. In short, the Operating Plan posited by SunBelt is—on its face — utterly incapable of meeting the service requirements of the issue traffic.[22] *See infra* III-C-52 to III-C-60.

Moreover, SunBelt's Operating Plan and RTC simulation incorporate an assumption that trains performing pickups and setoffs at customer facilities could complete those work events in 30 minutes. *See infra* III-C-99 to III-C-102. As the foregoing summary of the service that NS provides at McIntosh every day shows, it is simply impossible for an SBRR train crew to perform all of the necessary pickups, setoffs, blocking, and switching of cars required to meet the needs of SunBelt (much less other customers at McIntosh), along with the TSA mandated chain

---

[21] *See* SunBelt Opening WP "SBRR Yard Assignments_Open.xlsx."

[22] *See AEPCO 2011*, STB Docket No. 42113, at 28; *Xcel*, 7 S.T.B. at 610.

of custody requirements, in a 30-minute period. SunBelt's assumption that the SBRR could do so is flatly inconsistent with the realities of real world railroading.[23]

Finally, in arguing that NS is "market dominant" with respect to the issue traffic, SunBelt's Opening Evidence makes frequent references to the unique requirements associated with the transportation of chlorine traffic.[24] However, SunBelt's Operating Plan is utterly silent with respect to the safety and service requirements of the issue traffic. Indeed, SunBelt's Operating Plan narrative never mentions the fact that the SBRR would transport approximately 7,300 carloads of TIH commodities. Instead, SunBelt's Operating Plan and RTC simulation portray a "trainload railroad" that handles TIH and other hazardous commodities in a manner that violates federal rail safety regulations and industry best practices. As the Board knows, PHMSA regulations issued in January 2009 restrict the maximum speed of any train carrying five or more TIH cars to 50 MPH.[25] SunBelt's RTC simulation permits SBRR trains carrying the "issue" traffic (and other TIH shipments) to operate at speeds of up to 60 MPH between Birmingham and New Orleans—a blatant violation of federal law. Nor does SunBelt demonstrate the SBRR's ability to comply with Transportation Security Administration ("TSA") regulations mandating that railroads provide location and shipping information for TIH cars in their physical custody or control within 30 minutes after receiving a request for such information.[26] SunBelt's failure to develop any type of classification or blocking plan for general freight traffic makes it impossible for the SBRR to comply with that regulatory

---

[23] *See. e.g., AEPCO 2011*, STB Docket No. 42113, at 28; *Xcel*, 7 S.T.B. at 610.

[24] *See* SunBelt Opening II-B-4 to II-B-5, II-B-14 to II-B-15.

[25] *See* 49 C.F.R. § 174.9. Even before those regulations existed, the rail industry had long adopted an operating "best practice" limiting the movement of "Key Trains" to 50 MPH. *See* NS Reply WP "AAR Circular OT-55-L.pdf." AAR Circular OT-55 was originally issued in 1990.

[26] *See* Rail Transportation Security, 37 Fed. Reg. 72130, 72131 (Nov. 26, 2008).

requirement—much less keep track of the precise location in the train of every TIH car, as NS and other Class I carriers do to enable them to provide such information to first responders in the event of a derailment or other incident involving a train carrying TIH traffic.[27]

These glaring deficiencies in SunBelt's operating evidence cannot be attributed—as SunBelt seeks to do—to any deficiency in the data produced by NS in response to SunBelt's discovery requests. Rather, as NS demonstrates below (at III-C-A-1), the fatal deficiencies in SunBelt's Operating Plan are the direct result of the methodological choices that SunBelt made in utilizing various "shortcuts" to develop its operating evidence. *See* NS Reply Ex. III-C-8. As discussed in greater detail in the following sections of this Part III-C, SunBelt's computer-generated Operating Plan is not a proper substitute for expert analysis of the facilities and services required to serve the traffic that SunBelt chose for its SARR.[28]

In short, SunBelt's Opening Evidence fails to present a "feasible" operating plan—*i.e.*, one that is capable of meeting the service requirements of the SBRR's customers, particularly shippers of general freight. Indeed, SunBelt's complete failure to present an Operating Plan capable of meeting the service requirements of its own traffic constitutes a failure of proof that warrants dismissal of the Complaint.

Moreover, because SunBelt's operating expense estimates are inextricably linked to its fatally deficient Operating Plan and RTC Model simulation, there is no credible evidentiary support for those estimates. Accordingly, if it does not dismiss SunBelt's Complaint outright for failure of proof—as it should—the Board must reject both SunBelt's Operating Plan and its

---

[27] *See infra* III-C-79 to III-C-81.

[28] *See FMC*, 7 S.T.B. at 737, n. 88, 89 (warning about automated operating plans and rejecting complainants operating plan).

operating expense estimates in their entirety, and base its decision on the operating plan and related expense estimates set forth in NS's Reply Evidence.[29]

The numerous fatal deficiencies in SunBelt's Operating Plan are discussed in detail in the following sections of this Part III-C.

A. SunBelt Did Not Present A Feasible Operating Plan For Its SARR.[30]

1. SunBelt's "Automated" Operating Plan Methodologies Are Fatally Flawed And Should Be Rejected.

The Board's SAC regulations and precedents make clear that a complainant is required to present—and properly document—a "detailed operating plan" that is "specifically tailored to serve an identified traffic group."[31] In order to satisfy this requirement, complainant must develop (1) a road train service plan capable of providing line-haul transportation between all origins (or on-SARR junctions) and destinations (or off-SARR junctions) between which the SARR's selected traffic moves; (2) a local train service plan to pick up and set off cars at all customer facilities and interchange points served by the SARR; (3) a yard service plan capable of supporting the SARR's road and local train operations (including, in the case of carload shipments of general freight traffic, the intermediate classification and switching necessary to move individual cars from train to train along the network);[32] and (4) adequate shops, facilities, equipment and personnel to support the SARR's train and yard operations.

---

[29] *See AEPCO 2011*, STB Docket No. 42113 at 30 (rejecting the AEPCO operating plan in favor of the defendants plan as a better reflection of the "realities of real world rail transportation")

[30] NS's critique of SunBelt's Operating Plan is sponsored by NS witnesses Ron Johnson, Dewey Smith, Dale Schaub, Dave Wheeler, Michael Williams, Kenneth LeCroy, Benton Fisher and Michael Matelis.

[31] *See. e.g., Rate Regulation Reforms,* Ex Parte No. 715, at 5; *AEPCO 2011*, STB Docket No. 42113, at 4; *Xcel*, 7 S.T.B. at 598; *TMPA I*, 6 S.T.B. at 589.

[32] *See* NS Reply Ex. III-C-1, "Carload Operations Overview."

a. SunBelt's "Automated" Train Service Plan Failed To Capture Hundreds Of Trains That Are Necessary To Provide Complete On-SARR Service.

Rather than developing an operating plan specifically designed to accommodate the traffic that it selected, SunBelt proffered a plan that consists primarily of "automated" tabulations of data extracted from NS train records, and a series of undocumented spreadsheet calculations. For example, SunBelt's "train service plan" for the SBRR is a list of trains that NS operated in the SBRR's service territory during the Base Year (July 30, 2010 through July 29, 2011). As SunBelt explained:

> Statistics for the [SBRR] peak period trains were . . .developed from NS car event data provided in discovery for the January 2010 to September 2011 time period. In particular, Messrs. Fapp and Humphrey matched the SBRR's revenue carloads to the NS trains that moved the relevant cars (including loaded and empty cars).

SunBelt Opening Ex. III-C-2 at 12.[33] NS trains identified in this computerized data matching process were "adopted" by SunBelt as a surrogate for SBRR trains, adjusted in length and/or number to reflect Peak Year (2021) traffic volumes, and input into SunBelt's RTC Model to "confirm" the feasibility of SunBelt's Operating Plan. *Id.*

SunBelt's train selection process is fatally flawed. There is no indication that SunBelt's operating expert, Mr. McDonald, played any role whatsoever in "designing" this computer-generated train service plan.[34] Rather, the road and local trains upon which SunBelt's Operating

---

[33] *See also* SunBelt Opening III-C-2 ("The peak traffic volume and train movements were developed by SunBelt Witness Fapp using the 2010 through September 2011 traffic and car/train movement data provided by NS in discovery. . ."); III-C-13 ("SunBelt Witnesses Fapp and Humphrey developed SBRR's trains moving during the peak-seven day simulation period. The peak trains were based on the NS trains carrying traffic in the SBRR's traffic group forecasted from the base period to the Peak Year (the last year of the DCF model life.)").

[34] The operating inputs sponsored by witness McDonald are listed in SunBelt Opening Ex. III-C-2, at 2. The listed inputs do not include a specification of the train services that the SBRR would

Plan is based were compiled by witnesses Fapp and Humphrey of L.E. Peabody & Associates—neither of whom has any railroad operating experience—through a computerized search of NS train records.[35] SunBelt's decision to rely upon "automated programming" (SunBelt Opening Ex. III-C-1 at 4) to develop the SBRR's train service plan, rather than applying actual rail operations expertise—even to verify the results of its computerized processes—resulted in a monumental error that is fatal to its Operating Plan.

The methodology that SunBelt employed to develop the SBRR's train service plan failed to capture 1,622 trains that are needed for the SBRR to provide complete origin-to-destination (or on-SARR junction to off-SARR junction) train service. Even more egregiously, SunBelt's flawed train selection methodology resulted in a failure to include the local trains required to originate 91% of the issue traffic! In developing its traffic and revenue evidence, SunBelt performed a multi-step analysis using the data sources provided by NS in discovery.[36] That process involved, among other things, identifying waybill information for cars that SunBelt

---

need to operate in order to meet customer requirements. While the list of witness McDonald's inputs includes a reference to "train size" (*id.*), SunBelt's narrative evidence describes yet another computer-based methodology pursuant to which SunBelt determined the maximum size of SBRR trains by identifying the longest train (by train symbol) found in NS's train event data. *Id.* at 3; SunBelt Opening III-C-9, n.6.

[35] Mr. Humphrey is a computer programmer. SunBelt Opening IV-47. Mr. Fapp once worked for BHP Copper, Inc. (which owns three proprietary railroads), but did not serve in any operating capacity with those railroads. SunBelt Opening IV-32-33. Mr. Fapp states that he held "operations management positions" with Arizona Lithographers (in Tucson, AZ) and MCA-Universal Studios in Universal City, CA, where, as "Tour Operations Manager" his duties included "vehicle routing and scheduling, personnel scheduling, forecasting facilities utilization, and designing and performing queuing analyses." *Id.* Managing the operation of Universal Studios' legendary tour trolley hardly qualifies Mr. Fapp to design a train service plan for a Class I freight railroad.

[36] The methodology employed by SunBelt in performing its traffic selection and revenue calculation analysis is summarized in SunBelt Opening WP "SRR Traffic Selection Methodology v5.docx" a copy of which is reproduced as NS Reply Exhibit III-C-2.

considered for selection as part of the SBRR's traffic group, linking that waybill information to NS's car event data (to determine where and how those cars moved on the SBRR network), and identifying the NS trains associated with those car events. During that process, SunBelt developed a highly detailed database that linked each NS waybill with the NS trains and car events that defined the movement of each car over the SBRR system. That database—which SunBelt submitted as workpaper "ttWaybill_Leadt_Unit_full_NS_Event"—is referred to in this Reply Evidence as the "SunBelt Car/Train Database."

SunBelt first identified more than 22,100 trains from the NS data that were associated with the movement of the SBRR's traffic in the Base Year. Of these, 15,156 were determined to have originated or terminated SBRR revenue shipments or moved across multiple SARR points. As Figure III-C-1 indicates, the resulting train list upon which SunBelt's Operating Plan and RTC simulation are based (set forth in SunBelt WP "Base Year Train List 5-24 with L-E car counts.xlsx"), however, accounted for only 13,400 of those trains—indicating that SunBelt omitted another 1,756 trains from the final SBRR train list.

Figure III-C-1
Base Year Trains Missing from SunBelt's Operating Plan

	Road	Local	Other	Total
Trains Associated with SBRR Traffic	8,692	6,290	174	15,156
Trains Accounted for in SBRR Operating Statistics	8,663	4,697	40	13,400
Trains Eliminated by SunBelt				
Categorically Excluded	-	-	134	134
Trains "Missed" by SunBelt	29	1,593	-	1,622

Source: SunBelt Car/Train Database; NS Reply Ex. III-C-3, "SBRR_Trains_Analysis"[37]

NS's analysis of SunBelt's workpapers indicates that the trains "dropped" by SunBelt from the final SBRR train list fall into several categories. First, it appears that SunBelt categorically excluded, either manually or via computer programming instructions, a total of 134 trains, including NS work trains and three Amtrak trains.[38] NS does not challenge the exclusion of those 134 trains from the SBRR's train list.[39] However, the other 1,622 trains missing from the SBRR's train list—(including 29 road trains and 1,593 local trains)— transported SunBelt's

[37] NS Reply Exhibit III-C-3, "SBRR_Trains_Analysis," analyzes the trains found in SunBelt's Car/Train Database, and identifies the categories of trains that were ultimately excluded from SunBelt's "Base Year Train List 5-24 with L-E car counts.xlsx" (as shown in Figure III-C-1). NS Reply workpaper "SunBelt_Car/Train_Database _Missing_Trains" identifies the 1,622 trains that were captured in SunBelt's Car/Train Database but omitted from SunBelt's final SBRR train list.

[38] *See* Figure III-C-1, Line 3, "Categorically Excluded."

[39] As a technical matter, the exclusion of all work trains was incorrect. It is not unusual for a work train, during a return movement to its home terminal, to encounter a loaded car that has gone "bad order" and been set out by a road train. The work train often picks up the defective car and carries it to the terminal. In such instances, the work train may report a "train event" to document its handling of the revenue car.

selected traffic to or from local origins or destinations, and moved over SBRR segments.[40] The omission of those 1,622 essential trains from SunBelt's Operating Plan created major "gaps" in SBRR train service, particularly the local train service required to originate and terminate the selected traffic. SunBelt's failure to account for so many trains that are necessary to provide uninterrupted on-SARR service renders its Operating Plan incapable of "meeting the needs of its customers," and results in a substantial understatement of the SBRR's facility, locomotive, car and crew expenses.[41]

Amazingly, SunBelt's failure to account for all of the trains needed to provide complete on-SARR train service affects 91% of SunBelt's own issue traffic. For example, as Figure III-C-2 below illustrates, {{

---

[40] *See* Figure III-C-1, Line 6, "Other Dropped Trains." Those trains that SunBelt failed to include in its Operating Plan are identified in NS Reply Exhibit III-C-3, "SBRR_Trains_Analysis."

[41] *See FMC*, 7 S.T.B. at 739 (rejecting complainants operating plan in part because FMC "understated the number of trains, and in turn the locomotive and crew requirements").

[42] The event type "PFPS" listed on Line 1, column 10 of Figure III-C-2 means "Car Pulled from Patron Siding." The events listed in Lines 2 and 3, "DFLC" and "ARIL" mean "Departed from Location" and "Arrival at Intransit Location," respectively. A glossary of terms used in the event data provided by NS in discovery is set forth in NS Reply WP "Car Event Decoder.doc."

}}

Figure III-C-2

{{

}}

In fact, of 487 NS A32, A33, and A34 local trains that served the McIntosh facility during the Base Year, SunBelt's train selection methodology captured only 40.[43] In other words, SunBelt's "automated" Operating Plan fails to include 447 trains—or 92% of all the trains that served its own facility in the Base Year. This glaring error in SunBelt's train service plan results in a total failure of the SBRR to serve SunBelt's own issue traffic. Figure III-C-3 illustrates the number of local trains by train symbol that were identified in the NS car event data, in SunBelt's Car/Train Database, and in SunBelt's final train list. In total, SunBelt missed 92% of the local trains necessary to serve its own McIntosh facility.

[43] *See* NS Reply WP " McIntosh_Locals.xlsx."

Figure III-C-3
SunBelt Missed 92% Of The Trains Necessary To Serve Its Own McIntosh Facility

Train Symbol	Total Identified in Car Event Data	Included in Sunbelt Car/Train Database (ttWaybill_Leadt_ Unit_full_NS_event)	Identified as Handling SBRR Selected Traffic	Identified in Sunbelt's SBRR Base Year Train List
A32	262	261	146	5
A33	272	272	267	15
A34	143	143	74	20
Total	677	676	487	40

Source: NS Reply WP "McIntosh_Locals.xlsx."

Overall, of 1,656 carloads of SunBelt "issue" traffic that moved in the Base Year, the SBRR's Operating Plan failed to provide a local train to originate 1,500 cars, or 91% of that traffic.

Any railroad operations expert could have discerned that the list of trains set forth in SunBelt Opening WP "Base Year Train List 5-24 with L-E car counts.xlsx" left major "gaps" in SBRR train service—especially since 447 of the missing trains were local trains that serve the sole issue origin in this case—SunBelt's McIntosh plant. Moreover, had SunBelt consulted the SunBelt Car/Train Database that it compiled for purposes of developing its traffic and revenue evidence, it would have been apparent—even to a computer programmer—that those trains were necessary to provide uninterrupted on-SARR service for the issue traffic (and the SBRR's other selected traffic). But SunBelt failed to consider the detailed information set forth in the SunBelt Car/Train Database, or otherwise to verify the accuracy and completeness of the train list developed by its computerized train selection methodology.

b. SunBelt Had All The Data Necessary To Develop The Detailed Operating Plan Required By The Board's Regulations.

Throughout its Opening Evidence, SunBelt complains repeatedly about problems that it supposedly encountered in processing and using the train and car event data provided by NS in discovery. *See, e.g.,* SunBelt Opening II-C-1; SunBelt Opening Ex. III-A-2; SunBelt Opening

Ex. III-C-1.[44] However, the omission of 1,622 trains that are essential to the SBRR's ability to provide uninterrupted train service is a direct result of SunBelt's faulty methodologies, not any deficiency in the underlying NS data. Indeed, the SunBelt Car/Train Database contained all of the trains that SunBelt failed to include in its SBRR train service plan—but SunBelt chose not to use it in preparing its Operating Plan. An extract from the SunBelt Car/Train Database is set forth in Figure III-C-4 below.

---

[44] As NS Reply Ex. III-C-8 demonstrates, SunBelt's claims regarding the quality of the NS data are nothing more than a "smokescreen" proffered in a transparent attempt to excuse the glaring failures of proof that permeate SunBelt's Opening Evidence. In reality, the unprecedented volume of information furnished by NS was more than sufficient to enable SunBelt to submit a complete and accurate SAC presentation.

Figure III-C-4
Extract From SunBelt Car/Train Database {{

}}

Figure III-C-4 illustrates the information that appears in the SunBelt Car/Train Database for certain cars that moved on Train {{

}}

The SunBelt Car/Train Database is also searchable by Waybill Number, rather than by Train Number. Figure III-C-5 below contains an extract of the complete movement information set forth in the SunBelt Car/Train Database for {{

}}

---

[45] NS Reply Ex. III-C-4 contains complete information for all cars on Train {{ }} set forth in the SunBelt Car/Train Database. Figure III-C-4 is an extract of page 1 of that Exhibit.

Figure III-C-5
Extract From SunBelt Car/Train Database {{

}}

{{

[46] *See also* NS Reply Ex. III-C-5. The Event Type "ICHR" denotes a car received in interchange by NS. As discussed below, {{

}} *See infra* III-C-65.

}}[47]

With the detailed, shipment-specific information contained in the SunBelt Car/Train Database, SunBelt could have developed a complete and accurate list of the trains required to provide uninterrupted on-SARR service to its selected traffic group. Indeed, every one of the trains that are missing from SunBelt's Operating Plan is listed in the "TRN" Column of the SunBelt Car/Train Database. *See* NS Reply WP "SunBelt Car/Train Database."

However, in developing its Operating Plan, SunBelt apparently made a conscious decision not to take advantage of the detailed (and linked) waybill, train, and car movement data that it had compiled for traffic and revenue purposes. Rather, it appears that SunBelt employed different data sources and methodologies to compile the SBRR's Base Year train list than it did in developing the SunBelt Car/Train database.

Indeed, the workpapers underlying SunBelt's final SBRR train list indicate that the 1,622 trains that are missing from its Operating Plan were removed intentionally, pursuant to programming instructions developed by witnesses Fapp and Humphrey. Specifically, Line 104 of the "SQL" script setting forth the programming instructions used by SunBelt to "adopt" NS trains for the SBRR indicates that SunBelt began with a list of all of the trains that were

---

[47] {{

}}

contained in the SunBelt Car/Train Database.[48] However, in a subsequent step (Line 142), SunBelt's computer programmers defined an additional prerequisite for trains to be included in the final SBRR train list: "Requiring>1 Milepost from Train Sheet Data OnSARR."[49] A note at the top of the list of trains excluded by SunBelt's train selection methodology explains that "[t]hese trains were removed from the list because they only (sic) the SARR system at one of the SARR end points, or only move a few miles on the SARR system before exiting the system."[50] In other words, SunBelt's computer programmers intentionally excluded from the SBRR's train list any train that operated in and around a single SBRR station, at one of the SARR end points, or that only moved "a few miles" on the SARR, even if such trains were carrying SunBelt's selected traffic. It is not surprising that this ill-advised computer programming instruction resulted in the elimination of 1,593 local trains that are needed to serve the SBRR's traffic—local trains frequently work in and around a single operating station (which, for consistency, is identified in the NS train event data by a single milepost designation) and travel only a few miles. Indeed, SunBelt's methodology resulted in the intentional exclusion of virtually every NS A32 and A33 train, as those trains operate exclusively within the McIntosh operating station, which is the southern terminal of the Burstall-McIntosh leg of the SBRR system.[51]

---

[48] *See* SunBelt Opening WP "SunBelt Base Year Trains.xlsx;" *see also* NS Reply WP "SunBelt Base Year Trains – Response.xlsx," Tab "Sql," Line 104 (indicating that, in developing the SBRR's final train list, SunBelt began with a list of trains created in Step 17 of the process used to create the SunBelt Car/Train Database); *see also* NS Reply Ex. III-C-2.

[49] *See* NS Reply WP SunBelt Base Year Trains – Response.xlsx," Tab "Sql," Line 142.

[50] SunBelt Opening WP "SunBelt Base Year Trains.xlsx;" *see also* NS Reply WP SunBelt Base Year Trains – Response.xlsx," Tab "Removed."

[51] The fact that SunBelt's computerized train selection process captured a greater number of the NS A34 trains than it did the A32 and A33 trains (see Figure III-C-3) is attributable to the fact that the A34 trains often serve stations both north and south of McIntosh (and therefore frequently report events involving multiple stations).

Notwithstanding SunBelt's complaints about the quality of the NS train event file (*see, e.g.*, SunBelt Opening Ex. III-A-2), those data are not the source of the massive failure of proof in SunBelt's train service plan. Indeed, both the SunBelt Car/Train Database (and the original NS train event and car event files from which SunBelt extracted that data) contain every one of the trains that SunBelt failed to account for in its Operating Plan.[52] Those trains are missing only from the final SBRR train list set forth in SunBelt Opening workpaper "Base Year Train List 5-24 with L-E car counts.xlsx." The foregoing discussion of SunBelt's "automated" train selection process demonstrates beyond question that the failure of SunBelt's Operating Plan and RTC simulation to account for all of the trains required to serve the SBRR's customers was caused by the explicit programming instructions that SunBelt intentionally applied to create the SBRR's train list, not any deficiency in the source data furnished by NS. Because this flaw results from SunBelt's methodological choices, SunBelt may not fix it on rebuttal. *See IPA*, STB Docket No. 42127, at 3.

SunBelt also attempts to blame the quality of NS data for a blatant methodological "shortcut" that it employed in modeling local trains operating in "turn service" in its RTC simulation.[53] Claiming that the information provided by NS in discovery was inadequate to enable it to ascertain the routing and work events of NS "turn service" local trains, SunBelt elected to model the movement of those trains based upon an assumption that they would operate nonstop from their origin terminal to the "furthest location" indicated in the data, and then

---

[52] *See* NS Reply Ex. III-C-3, "SBRR_Trains_Analysis."

[53] A local train operating in "turn service" departs from its origin terminal (typically a serving yard in proximity to the customer facilities that it serves), makes one or more stops to pick up and/or set out cars at customer locations or interchange points, then returns to its origin terminal. Such trains are referred to herein as local "turn service" trains. By contrast, local trains in "straightaway service" complete their journey at a location that is different than their origin terminal.

proceed directly back to their origin terminal, with a single 45-minute dwell at the "furthest location." SunBelt Opening III-C-13-14. This methodological "shortcut"—which fails to account for the considerable time and resources actually required to pick up and set out cars at customer facilities along the train's route of movement—cannot be justified (as SunBelt attempts to do) on the grounds that SunBelt lacked sufficient information to model local "turn service" trains completely and accurately.[54]

As an initial matter, it should have been obvious to SunBelt's experts that NS's train event file—which identifies the aggregate number of cars moving on a train but does not contain any information about the identity or destination of individual cars—was not an appropriate source of information to model local train service. The train event file contains no information that would enable SunBelt to determine which cars need to be picked up at (or delivered to) which customer facilities by any local train on a given date.[55] Rather, such car-specific movement information can be found in the "car event" data furnished to SunBelt in discovery. SunBelt made extensive use of that car event data in compiling the SunBelt Car/Train Database, and in preparing its traffic and revenue evidence. But the methodologies employed by SunBelt in developing its train service plan, yard sizing and configuration, and RTC simulation make no effort whatsoever to consider the movement of individual cars. Rather, SunBelt candidly acknowledges that "[t]he SBRR was conceived as a railroad that would primarily handle trainload quantities of goods." SunBelt Opening I-53. That methodological choice, which

---

[54] The RTC simulation submitted as part of NS's Reply Evidence accounts for the intermediate stops made by both "straightaway" and "turn" local trains.

[55] Such carload visibility is essential to the development of a feasible operating plan for general freight traffic. SunBelt's total failure to account for the movement of individual cars as they traverse the SBRR network resulted in an operating plan and track/yard configuration that are woefully inadequate to meet the needs of the SBRR's selected traffic group.

amounts to a departure from reality—not any limitation imposed by the data available to it—doomed SunBelt's Operating Plan and RTC simulation.

Moreover, SunBelt's assertion that the inadequate nature of NS data prevented it from developing a detailed local train service plan is demonstrably false. The SunBelt Car/Train Database contains all of the car-specific movement information that SunBelt would have needed to model the movement of local "turn service" trains. Figure III-C-6 is an extract from the information contained in the SunBelt Car/Train Data base for NS {{

}} Figure III-C-6—which is excerpted from the SunBelt Car/Train Database—contains all of the information required to model the movement of this local "turn service" train completely and accurately.

Figure III-C-6
Extract From SunBelt Car/Train Database {{

}}

{{

[56] A copy of the complete information for Train A47 that appears in the SunBelt Car/Train Database is set forth in NS Reply Exhibit III-C-7.

}}[59]

As Figure III-C-6 clearly demonstrates, the Car/Train Database that SunBelt itself constructed from the data provided by NS in discovery contains sufficient information to enable SunBelt to have determined not only the locations at which SBRR local trains (including "turn" locals) were required to work en route, but also which individual cars those trains would need to pick up or set off at each location.

Indeed, SunBelt had multiple sources from which it could have determined the route of movement of SBRR trains. In addition to the robust data source created by SunBelt itself, NS produced to SunBelt in discovery other documentation that SunBelt could have used in modeling the routes of SBRR trains. NS document "Train Schedule Sept. 2011.xls"[60] provided

---

[57] The notation "PFPS" in Column 8 of Figure III-C-6 means "Pulled From Patron Siding."

[58] The notation "PACT" in Column 8 of Figure III-C-6 means "Placed at Customer Track."

[59] *See* NS Reply Ex. III-C-6.

[60] Produced to SunBelt at DVD-009. *See* NS Reply WP Folder "Documents Produced in Discovery III-C," "Train Schedule Sept. 2011.xls."

information regarding the schedules and operating stations served by NS road trains. Another document provided by NS, designated as "Local routes and customers updated.xls,"[61] contained information regarding the routes traversed by NS local trains, as well as the names and operating station locations for NS customers located in the territory replicated by the SBRR. SunBelt's Opening Evidence indicates that it did, in fact, consult those data sources for certain purposes. SunBelt Opening Ex. III-C-1 at 10, n.8. However, SunBelt apparently chose to ignore that information in developing and modeling the SBRR's local train service plan.

c. SunBelt's Yard Service Plan Is Based Upon Unsupported Mathematical Calculations That Produce Absurd Results.

SunBelt likewise failed to apply any credible railroad operating analysis in developing its proposed sizing and configuration for SBRR yards. The yards posited by SunBelt are based entirely upon unsupported spreadsheet calculations. SunBelt's narrative evidence states only that the SBRR has a total of 13 yards that "are used for train staging, 1000/1500-mile car inspections, crew changes, locomotive repair, servicing and fueling, interchanges, local train operations and originating/terminating traffic." SunBelt Opening III-B-5-6.[62] SunBelt offers no explanation of the methodology that it employed to determine the number of yards that the SBRR would need, where to locate those yards, or the number and configuration of the tracks and other facilities assigned to each yard. More importantly, nowhere in its Opening Evidence or workpapers does SunBelt identify the number of cars that would be classified, switched, or otherwise handled at

---

[61] Produced to SunBelt at DVD-004. *See* NS Reply WP Folder "Documents Produced in Discovery III-C," "Local routes and customers updated.xls."

[62] Tellingly, while certain tracks in SunBelt's "yard matrix" workpaper are designated as "utility" tracks, SunBelt's narrative does not mention "car classification" or "intermediate switching" among the activities to be performed at SBRR yards. As discussed below (at III-C-A-2), SunBelt's failure to proffer any car classification or blocking plan for the 471,597 carloads of general freight traffic that it selected for its SARR renders its Operating Plan infeasible.

each SBRR yard each day, nor does SunBelt make any effort to establish a nexus between its yard, yard locomotive, and yard crew estimates and the daily workload at each location. Having omitted this information on Opening, SunBelt is precluded from providing it on Rebuttal.[63]

Indeed, the only "evidence" proffered by SunBelt to support its estimate of the SBRR's yard requirements is a workpaper titled "SBRR Yard Matrix.xlsx."[64] That workpaper sets forth SunBelt's conclusions regarding the location of each yard, the number and length of the "utility" and other tracks at each yard, and the ancillary facilities and personnel (such as turnouts, rip tracks, locomotive servicing and fueling facilities, crew facilities, car inspectors, and yard crews) assigned to each location. SunBelt does not explain how it determined the number (or length) of the yard tracks at each yard, nor does it proffer any evidence demonstrating that those facilities are sized and configured in a manner that would support the operations required to serve the SBRR's selected traffic group.

Even a cursory examination of SunBelt's "yard matrix" reveals that the SBRR's yard requirements are based on a series of spreadsheet calculations, rather than any meaningful analysis of the SBRR's yard operations.[65] "Utility" tracks (which are apparently intended for classification purposes)[66] are sized in 400-foot (or, in a few instances 600-foot) increments.[67] SunBelt proffers no evidence whatsoever to support its decisions regarding how many

---

[63] *See, e.g., SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2.

[64] A copy of SunBelt Opening workpaper "SBRR Yard Matrix.xlsx" is set forth in NS Reply Ex. III-C-9.

[65] *See FMC*, 7 S.T.B. at 737, n.88, 89 (noting problems with attempting to develop an operating plan from mathematics).

[66] *See* SunBelt Opening WP "SBRR Yard Matrix.xlsx," Tab "UTILITY TRACK LENGTH, Column "Classification Track Miles" (which sums the lengths of the "utility" tracks posited for each yard).

[67] *See* SunBelt Opening WP "SBRR Yard Matrix.xlsx," Tab "UTILITY TRACK LENGTH."

classification tracks to build at each location—much less any rationale for the lengths of those tracks—based upon the level of activity at each yard. Because the errors in yard sizing and service result from SunBelt's own chosen methodology, SunBelt cannot repair them on rebuttal. *IPA*, STB Docket NO. 42127, at 3.

SunBelt's decision to base its yard configuration evidence on figures untethered to the actual requirements of the SBRR's traffic produced absurd results. For example, SunBelt's "yard matrix" assigns 12 "utility" tracks to the SBRR's "mid-size" yard at New Orleans, but only seven "utility" tracks to the SBRR's only "major" yard at Birmingham, AL.[68] Had SunBelt developed a car classification and blocking plan for the SBRR's general freight traffic, it would have known that the SBRR would need to classify an average of 1,217 cars per day at Birmingham, but only 442 cars per day at New Orleans.[69] Likewise, the information regarding NS's current yard operations furnished to SunBelt in discovery showed that NS today classifies an average of { } cars per day at Birmingham.[70] Based on the relative daily workloads at those locations, SunBelt's assignment of 12 "utility" tracks at New Orleans and only seven at Birmingham defies logic. Even more nonsensically, SunBelt's "yard matrix" assigns identical total "utility" track capacity (4.22 miles) to the SBRR's Birmingham and Selma, AL yards. But those two yards have very different classification track capacity requirements. If SunBelt had evaluated the SBRR's car classification requirements in designing its yards, it would have

---

[68] *See* SunBelt Opening WP "SBRR Yard Matrix.xlsx," Tab "UTILITY TRK LENGTH," Lines 1, 3.

[69] *See* NS Reply WP "SBRR ReplyYard Operations.xlsx," Tab "Yard Operations" Lines 1, 3.

[70] *See* NS Reply WP "Documents Produced in Discovery," file "Hump Yard Volumes.xlsx." SunBelt's Car/Train Database is searchable by location. By counting the number of cars whose first or last "EVENT TYPE" occurred at a particular location, SunBelt could have estimated the average daily classification and switching requirements at the SBRR's classification yards.

discerned that the daily classification volume at Selma (180 cars per day) is but a fraction of the 1,217 cars that the SBRR would classify daily at Birmingham, so that providing the same classification track capacity at both locations makes no sense.[71] As NS demonstrates below (at III-C-133 to III-C-139), the number of classification tracks required in a particular yard is a function both of the number of cars per day that move through the yard and of the number (and size) of outbound blocks that must be built in the yard.[72] As NS's location-specific analysis of the SBRR's yard classification capacity requirements shows, the SBRR would, in fact, need 26 classification tracks (totaling 79,274 feet) at Birmingham but only eight classification tracks (totaling 20,000 feet) at Selma.[73] As these examples demonstrate, SunBelt's failure to analyze the SBRR's Peak Year classification and blocking requirements—or even to consult the historical yard activity data provided by NS in discovery—resulted in an understatement of the capacity requirements at most SBRR yards.

Indeed, SunBelt's "yard matrix" methodology failed to provide any classification tracks at several locations at which the SBRR would need to switch and classify cars. For example, the SBRR would be required to classify an average of 110 cars per day at Wilton, AL, and 107 cars per day at Hattiesburg, MS, in the Peak Year.[74] Likewise, the SBRR would be required to switch approximately 40 cars per day at Vance, AL, Boligee, AL, Tuscaloosa, AL, and Maplesville,

---

[71] *See* NS Reply WP "SBRR Reply Yard Operations.xlsx," Tab "Yard Operations" Lines 1, 5.

[72] *See Otter Tail*, STB Docket No. 42071, at 19 (holding that yard configuration is a function of many factors including dwell time and flow in and out of the yard).

[73] *See* NS Reply Ex. III-C-11.

[74] *See* NS Reply WP "SBRR Reply Yard Operations.xlsx," Tab "Yard Operations" Lines 6, 7.

AL.[75] Yet, SunBelt assigned no "utility" track capacity, no car inspectors, and no yard locomotives or crews to any of those locations.[76]

Moreover, the smaller SBRR yards designated by SunBelt as "interchange" yards are not configured in a manner that would enable the SBRR to accommodate all of the required daily activities at those locations.[77] SunBelt assigns between 1.06 and 2.11 track-miles (in most cases consisting of a single track) for interchange at those yards.[78] SunBelt does not provide any separate track capacity to accommodate cars that would be switched or set out at those locations. As stated above, during the Peak Year, an average of 110 cars per day at Wilton, AL, 107 cars per day at Hattiesburg, MS, and approximately 40 cars per day at Boligee, AL, Tuscaloosa, AL, and Maplesville, AL, would be picked up and/or set off by SBRR trains.[79] Cars left for interchange to another carrier, or to be picked up by an SBRR local train for delivery to customer facilities, would occupy the sole track provided by SunBelt—often for hours (or even until the following day). This would make it impossible for SBRR to place other trains on those tracks for interchange, or even to clear the main line for a crew change. Conversely, a full SBRR train occupying the track would leave no room for other SBRR trains to set off (or switch) cars at those locations. NS's Operating Plan addresses this deficiency in SunBelt's Operating Plan by

---

[75] *See* NS Reply WP "SBRR Reply Yard Operations.xlsx," Tab "Yard Operations" Lines 9, 10, 11, 12. SunBelt's operating plan does not provide for any yard facility at Vance, AL.

[76] *See* SunBelt Opening WP "SBRR Yard Matrix.xlsx," Tab "SBRR YARDS," Lines 11, 12.

[77] SunBelt Opening WP "SBRR Yard Matrix.xlsx," Tab "SBRR YARDS," identifies those smaller yard by the name "Boligee Int.," "Tuscaloosa Int.," etc., indicating that their intended purpose is to accommodate the interchange of trains with other carriers.

[78] *See* SunBelt Opening WP "SBRR Yard Matrix.xlsx," Tab "SBRR YARDS," Lines 6-13.

[79] *See* NS Reply WP "SBRR Reply Yard Operations.xlsx," Tab "Yard Operations," Lines 6, 7, 10, 11, 12.

providing both track capacity for interchange with connecting carriers and "industrial support tracks" for picking up, setting off, or switching cars. *See infra* III-C-153 to III-C-154.

As the foregoing examples demonstrate, SunBelt's spreadsheet-based yard sizing methodology produced a group of SBRR yards whose capacity and configuration bear little resemblance to those that a least cost, most efficient railroad would build to serve the SBRR's selected traffic group.

Perhaps the most glaring omission resulting from SunBelt's approach to yard sizing and configuration is its failure to provide for a "hump" yard at Birmingham. Figure III-C-7 is an aerial photograph of NS's Norris Yard at Birmingham.

FIGURE III-C-7
NS's Norris Yard at Birmingham, AL



SunBelt's evidence gives no indication that it intended the SBRR's "major" yard at Birmingham to be equipped with one or more "hump" tracks.[80] To the contrary, SunBelt posits that "[i]nterior yard switches and set-out track switches are hand-thrown switches." SunBelt Opening III-B-7 (emphasis added). As the Board knows, a hump yard requires a sophisticated

---

[80] *See* SunBelt Opening II-B-7; SunBelt Opening WP "SBRR Yard Matrix.xlsx," Tab "UTILITY TRK LENGTH."

system of power switches and car retarders that enable yard personnel to quickly change the "destination" track onto which each car is switched as it passes over the hump to the "classification yard" portion of the facility. SunBelt's decision to equip all SBRR yards only with hand-thrown switches confirms that the Birmingham Yard is not designed for "hump" operations. Attempting to classify more than 1,200 cars per day at Birmingham by having a locomotive push cars around—a process known as "flat switching"—would render operations at the SBRR's only "major" yard for less efficient, and would increase the transit times for cars moving through that facility. The absence of a hump yard at Birmingham renders SunBelt's Operating Plan for general freight traffic infeasible.

d. SunBelt's Operating Plan Is Woefully Short of Yard Crews And Locomotives.

The SBRR yard crews and yard locomotives posited by SunBelt bear no relationship to the actual work that would have to be performed on a daily basis. SunBelt posits that the SBRR would need only one yard crew, operating only one shift per day, at its Birmingham, McIntosh and New Orleans yards.[81] Correspondingly, a single SW1500 yard locomotive is assigned to each of those locations.[82] The three yard locomotives resulting from those assignments is increased by a spare margin of one locomotive to generate SunBelt's estimated requirement of four yard locomotives.[83] No other SBRR yard was assigned any yard crews or yard locomotives.

SunBelt proffers no explanation as to how it determined that the SBRR's work requirements at Birmingham, McIntosh, and New Orleans could be satisfied by a single yard

---

[81] *See* SunBelt Opening WP "SBRR Yard Assignments_Open.xlsx," Tab "Crews."

[82] *See* SunBelt Opening WP "SBRR Operating Statistics.xls."

[83] *Id.*

engine and crew.[84] It is utterly unrealistic to assume (as SunBelt did) that a single yard assignment —operating only one shift per day—could classify 1,217 cars at Birmingham, especially without the benefit of a "hump" track and related facilities. Even with such track facilities, a single yard engine could not simultaneously perform all of the operations required as part of the classification process—including pulling cars from receiving tracks, shoving them over the hump, switching the resulting blocks into outbound trains, segregating "bad order" cars and moving them to and from rip tracks, and switching empty cars between trains and storage tracks as needed. As NS's Operating Plan shows, the SBRR would require a total of nine yard crews (three crews on each of three shifts per day) to handle the Peak Year volume of daily classification work. Those crews would need six SD40 locomotives (rather than the single antiquated SW1500 unit posited by SunBelt) to perform the required switching at Birmingham.[85] At New Orleans, a single yard assignment working only one shift could not classify 442 cars per day. Rather, NS demonstrates that the SBRR would need a total of four yard assignments, providing 24-hour coverage seven days per week, to maintain fluid yard operations at New Orleans.[86] Nor could a single yard crew working one shift accommodate the daily workload (including the handling of SunBelt's TIH traffic) at McIntosh. NS's Operating Plan more realistically provides for two yard assignments (providing first and second shift coverage) at McIntosh enabling the SBRR to provide the same level of twice-daily service to SunBelt as Olin/SunBelt requires NS to do today. In short, SunBelt's allocation of yard assignments and yard engines is simply divorced from reality.

---

[84] Having failed to provide one on Opening, SunBelt is precluded from doing so on Rebuttal. *See, e.g., SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2.

[85] *See* NS Reply WP "SBRR Reply Yard Assignments.xlsx."

[86] *See* NS Reply WP "SBRR Reply Yard Assignments.xlsx."

Moreover, SunBelt assigns no yard crews or locomotives at all to the SBRR's other ten yards.[87] The utter illogic (and purely "mathematical" nature) of SunBelt's approach to determining the SBRR's yard locomotive and yard crew requirements is perhaps best illustrated by the fact that SunBelt did not assign any yard locomotives or yard crews to the SBRR's yards at Meridian, MS and Selma, AL, where SunBelt did provide multiple classification tracks. As NS's Reply Evidence demonstrates, the SBRR would be required to classify 291 cars per day at Meridian, and 180 cars at Selma.[88] SunBelt attempts to justify this glaring omission by asserting that "SBRR local crews are not limited to operating local trains, but instead are flexible enough to operate road trains over routes on which they are certified, as well as to perform any switching operations that may be required in yards." SunBelt Opening III-C-7. However, SunBelt's Operating Plan fails to demonstrate that the SBRR has sufficient local train crews to perform the necessary pickups and setoffs at customer facilities—much less to take on the additional duty of switching 100 or more cars per day within SBRR yards. Nor has SunBelt identified or accounted for the additional time that would be required for local crews to do so, or the impact of that assumption on the SBRR's overall locomotive and crew requirements.[89]

The nonsensical nature of the yard sizes and configurations, and yard locomotive and crew assignments, posited by SunBelt reflects its failure to apply any credible operational experience or judgment in developing and verifying the SBRR's yards, and related equipment and personnel, requirements. At bottom, they amount to nothing more than wishful thinking.

---

[87] *See* SunBelt Opening WP "SBRR Yard Assignments_Open.xlsx," Tab "Crews;" SunBelt Opening WP "SBRR Operating Statistics.xls."

[88] *See* NS Reply WP "SBRR Reply Yard Operations.xlsx," Tab "Yard Operations," Lines 2, 5.

[89] Indeed, SunBelt's RTC model allows only 30 minutes of dwell time for "straightaway" local trains to work at intermediate yards—clearly not enough time to accomplish the many tasks that SunBelt would have such local crews perform. *See infra* III-C-98 to III-C-104.

The Board should reject those estimates. NS's realistic estimates of the SBRR's yard, yard locomotive and yard crew requirements are discussed in detail at III-C-1-e, III-C-1-h, and III-C-1-i.

* * * * *

As the foregoing discussion demonstrates, SunBelt's Operating Plan for the SBRR is based upon a series of computerized data selection processes and unsupported spreadsheets, rather than any credible analysis of the operations that the SBRR would need to perform in order to serve its selected traffic. The methodologies that SunBelt chose to use in developing its operating evidence are replete with obvious errors and unsupported assumptions that render SunBelt's entire train service plan, yard configurations, yard locomotive fleet, and yard crew assignments invalid. In particular, SunBelt's Opening Evidence fails to establish any rational connection between the facilities and personnel posited by SunBelt and the volume of classification and switching work that the SBRR would have to perform in moving general freight traffic along the SBRR network.

These fatal deficiencies in SunBelt's Operating Plan are self-inflicted—as NS has shown, they are directly attributable to SunBelt's ill-conceived and poorly executed methodologies, and not (as SunBelt alleges) to any deficiency in the extensive information provided by NS in discovery. To the contrary, SunBelt successfully utilized that NS data to select the SBRR's traffic and to calculate its revenues. But, for reasons known only to SunBelt, it chose not to use the shipment-specific SunBelt Car/Train Database that it created for traffic and revenue purposes to prepare—or even to verify—its operating evidence. That decision proved fatal to SunBelt's case—the Operating Plan generated by SunBelt's "automated" methodologies is irreparably flawed and the Board must reject it.

2. SunBelt Has Failed To Present A Feasible Operating Plan For General Freight Traffic.

SunBelt states that "[t]he SBRR was conceived as a railroad that would primarily handle trainload quantities of goods." SunBelt Opening I-53 (emphasis added). According to SunBelt, "[t]he SBRR operates complete trains, including general freight, coal and intermodal trains, in local and interline (including overhead) service." SunBelt Opening III-C-8 (emphasis added).

SunBelt's characterization of the SBRR as a "trainload" railroad is fundamentally inconsistent with the traffic group that it selected for its SARR. While the traffic group in most prior SAC cases has consisted of unit train shipments of coal and intermodal traffic (occasionally augmented by smaller volumes of general freight traffic), SunBelt posits a SARR that would transport more than 470,000 carloads of general freight traffic, accounting for 44% of all carloads on its network. SunBelt Opening III-C-3, Table III-C-1. While coal and intermodal shipments move predominantly between a limited number of origins and destinations in trainload service on the SBRR, general freight traffic is "carload" business that moves in single or multi-car shipments between a wider range of origins and destinations.

The operations involved in transporting merchandise traffic are far more complex, and more labor and capital intensive, than those of a rail system designed primarily to handle unit trains. A merchandise railroad must be capable of accommodating an ever-changing mix of hundreds of different commodities. Such shipments often require specialized car types (such as cushioned boxcars for newsprint or dedicated tank cars to handle specific chemicals). Traffic volumes and train sizes vary from day to day, and service schedules must be adjusted to meet the needs of customers. Given the truck-competitive nature of many merchandise commodities, customer expectations for service quality and reliability are high. Carriers must be able to track

the location of each car as it travels across the network, and to advise customers regarding the status of their shipments at each stage in the process of transporting them.

In order to satisfy these customer requirements, NS and other Class I railroads create a "trip plan" for each individual general freight car. A "trip plan" includes a scheduled train service plan to move the car on one or more trains from origin to destination (or point of interchange with another railroad); a blocking plan to facilitate the transfer of the car between trains at intermediate yards as it travels along the carrier's network; and a local train service plan to deliver an empty car for loading at origin, pick up the loaded car for line-haul movement, and deliver the loaded car at its destination.[90] Developing a trip plan enables the carrier to track the movement of each car across the network, to adjust the plan as necessary in response to unforeseen events (such as a train delay that results in cars missing "connections" to other road or local trains), to adjust yard assignments to accommodate surges in arriving traffic, and to provide customers access to information regarding the status of their shipments (especially important for customers who employ "just in time" inventory practices).[91] Olin/SunBelt relies on NS's trip plan and car tracking system today to manage its real world rail shipments.

---

[90] The "trip plans" created by NS for general freight cars are similar to the shipment plans used by Federal Express or United Parcel Service to ensure efficient, scheduled service for packages shipped from one location to another. Upon receiving a request for service, those carriers develop a package-specific plan that includes pickup by truck at the customer's facility (analogous to local train service at origin); delivery to a regional sorting facility (analogous to a local serving yard); intercity transportation by truck and/or air to a major facility such as Federal Express' Memphis hub (analogous to linehaul movement to a major rail classification yard); transfer to another airplane or truck to complete the intercity transportation (analogous to intermediate switching between road trains); delivery to a regional sorting facility close to the destination (analogous to road train delivery to a serving yard near the destination); and delivery by truck to the consignee (analogous to local train service to the receiver's facility). Planning and coordination of each step in this "trip plan" is essential for Federal Express—or a Class I railroad—to provide on-time delivery in conformity with customer requirements.

[91] Trip plans also provide a useful tool for measuring a railroad's service performance.

In order to execute successfully "trip plans" for thousands of daily general freight shipments, a railroad must design a scheduled train service plan that is capable of meeting customer service requirements, and yard classification and switching operations that are adequate to support those train services. Rail transportation of merchandise traffic involves two distinct types of train service: "road train" service to move cars between points along the carrier's network, and "local train" service to pick up cars from, or set off cars at, customer facilities. The "cycle" of a typical general freight shipment includes the following operations:

1. Local train service to place an empty car at the origin customer facility;
2. Local train service to pick up the car at the origin customer facility after it has been loaded (most often on a subsequent day);
3. Movement of the loaded car from the origin customer facility to a nearby serving yard;
4. "Classification" of the loaded car (with other cars destined to the same location or intermediate terminal) for further movement along the railroad's network;
5. Road train service to move the car along the network (via one or more yards) to a point closer to the car's ultimate destination;
6. Local train service to deliver ("set-off") the loaded car at the consignee's facility;
7. Local train service to pick up the empty car at the consignee's facility after it has been unloaded, and move it back to a local yard where it can be placed in an outgoing train for movement to its next point of loading.[92]

In order to facilitate efficient handling of large volumes of carload traffic, railroads "classify" cars into "blocks" moving to a common point further along the network. All Class I carriers operate large "hump" yards (as well as smaller "flat switching" yards) for that purpose. NS and other railroads assemble blocks of cars both for movement to another yard on their own lines ("internal blocks") and for interchange to connecting carriers. Internal blocks facilitate the

---

[92] *See* NS Reply Ex. III-C-1, "Carload Operations Overview."

handling of merchandise traffic across a carrier's own network. In addition to creating "internal" blocks for their own traffic, railroads cooperate with connecting carriers to "pre-block" cars that move in interline service. As discussed in greater detail below (at III-C-64 to III-C-67) NS builds blocks of merchandise cars for delivery to other Class I carriers at all of the major interchange points that the SBRR would serve. Specifically, NS pre-blocks general freight cars for delivery to both {{

}} *Id.* This practice improves the overall efficiency of the national rail network by enabling cars to move from a major yard on one railroad's lines to a major yard on the connecting carrier's system without requiring additional switching enroute—which, as the Board knows, is the least cost, most efficient way of handling large volumes of general freight in interline service.

SunBelt's Opening Evidence fails to account for the facilities, personnel, and time required to transport the substantial volume of general freight traffic that it selected for the SBRR in accordance with customer needs and the terms of the NS intercarrier agreements that the SBRR purports to adopt. SunBelt's failures of proof involve virtually every aspect of "carload" railroading, and render its Operating Plan for general freight traffic infeasible.

First, as SunBelt itself acknowledges, the SARR presented in its Opening Evidence is "conceived" as a "trainload" railroad. SunBelt Opening I-53. But 44% of the traffic that SunBelt selected for the SBRR is "carload" traffic! The SBRR must design and execute an operating plan that provides for the complete movement of each of those cars from its specific origin (or on-SARR location) to its specific destination (or off-SARR junction), including not only line-haul transportation along the SBRR network, but also the necessary classification,

blocking, and switching of those cars at intermediate yards. Nowhere in its operating evidence does SunBelt present a "trip plan" to track and move general freight cars across the SBRR network, or otherwise demonstrate the SBRR's ability to transport its merchandise traffic efficiently and in accordance with the requirements of its customers (including SunBelt itself). To the contrary, SunBelt made an intentional methodological decision to base its Operating Plan solely on "train" movements. SunBelt's RTC simulation likewise portrays the SBRR's general freight train service as essentially an "overhead" operation. In other words, SunBelt's Operating Plan and RTC simulation for general freight traffic mimic the operations of a typical coal-hauling unit train SARR, not the carload network required for the traffic selected by SunBelt.

The "trainload-only" nature of SunBelt's Operating Plan is further reflected in its statement that the SBRR interchanges "run-through trains" with connecting carriers. SunBelt Opening III-C-5. As the Board (and SunBelt's operating expert, Mr. McDonald) know full well, railroads interchange cuts of merchandise cars (rather than entire trains) at hundreds of interchange points throughout the rail network every day. SunBelt's train-centric Operating Plan does not reflect the realities of handling general freight traffic.

Second, SunBelt presented no car classification or blocking plan for the SBRR's general freight traffic. SunBelt states that "[SBRR] yards are used for train staging, 1000/1500-mile car inspections, crew changes, locomotive repair, servicing and fueling, interchanges, local train operations and originating/terminating traffic."[93] However, SunBelt's Opening Evidence makes no mention of—much less adequate provision for—the car classification and blocking activities required to handle the more than 470,000 carloads of general freight traffic in the SBRR's

---

[93] SunBelt Opening III-B-5 to III-B-6; *see also* SunBelt Opening I-44 (SBRR yards used for "fueling, crew changes, inspections, servicing, and other operations").

selected traffic group—including the issue traffic. Apparently seeing that flaw, Mr. Crowley, who is not SunBelt's operating expert and has not sponsored SunBelt's operating evidence, attempts to redeem SunBelt's plan in his verified statement responding to NS's motion for an abeyance in this matter. Although he writes there that "the SBRR performs inter- and intra-train switching on much of the overhead carload traffic (e.g. Birmingham),"[94] simply asserting that the SBRR "performs" switching does not make it so. Indeed, Mr. Crowley's statement is contradicted by SunBelt's actual submission that is sponsored by its operating experts, which does not include any switching or car classification (or a plan for car blocking or classification) as an activity performed in the SBRR's yards.[95] Given the significant amount of work associated with classifying cars in a carload network, one would think SunBelt's operating experts would have discussed it in detail.

Indeed, as NS demonstrated above, SunBelt failed to establish any nexus between the SBRR's yard, yard locomotive, and yard crew requirements and the number of cars that would actually need to be classified, switched, or handled on a daily basis at each location. As a result, the yard facilities, yard locomotive fleet, and yard crew assignments posited by SunBelt are inadequate to support the SBRR's train operations. SunBelt's failure to provide "hump" tracks and power switches at the SBRR's major yard at Birmingham, AL, further underscores the fact that SunBelt gave little (if any) consideration to the car classification and switching activities required to handle the SBRR's traffic efficiently and cost-effectively.

---

[94] Reply of SunBelt Chlor Alkali Partnership to Norfolk Southern Railway Company's Motion to Hold Case in Abeyance Pending Completion of Rulemaking, Verified Statement of Thomas D. Crowley at 9 (Oct. 11, 2012).

[95] SunBelt Opening III-B-5-to III-B-6.

The fact that the majority of the general freight traffic selected by SunBelt is "overhead" to the SBRR network does not eliminate the need for the SBRR to classify and switch cars at intermediate points. Many of the overhead merchandise shipments selected by SunBelt travel in more than one road train during their journey on NS, and would do so on the SBRR as well. Because SunBelt elected to base its Operating Plan on NS's historical trains, rather than developing its own train service plan, SunBelt cannot contend that the SBRR would handle "overhead" general freight cars in a different manner or with fewer trains and classifications than NS did in the Base Year. SunBelt's operating evidence fails to account for the time and resources required to transfer general freight traffic between trains at intermediate yards.

As NS demonstrated above, using the detailed, shipment-specific information contained in the SunBelt Car/Train Database, SunBelt could have developed a complete operating plan that included all of the train services and yard activity required to provide uninterrupted on-SARR service for its selected traffic group. Indeed, the car event data provided to SunBelt in discovery (and incorporated by SunBelt into the SunBelt Car/Train Database) contained shipment-specific information regarding the particular blocks in which each carload shipment actually moved on NS. Figure III-C-8 is an extract from NS's car event file for the same car (corresponding to Waybill {{ }}) discussed in connection with Figure III-C-5 (at page III-C-23) above.

Figure III-C-8

{{

}}

As both Figure III-C-8 above and Figure III-C-5 show {{

}}

Armed with such detailed information from NS's car event data, any operating expert could have determined not only the locations at which the general freight traffic selected by the SBRR was switched and classified, but also the specific block(s) into which each car was switched, where block(s) were "swapped" between trains during their movement along the SBRR network, and the ultimate destination of each block. But, instead of using that information to develop a complete operating plan for the SBRR's general freight traffic, SunBelt chose to ignore it and to posit instead a "trainload" SARR.

Third, the Operating Plan proffered by SunBelt does not account fully for the local train services and spur/industrial track facilities necessary to provide local service at SBRR-served origins and destinations. As discussed above (at III-C-13 to III-C-19), SunBelt's computerized train selection methodology failed to capture 1,593 local trains—or 25% of all local trains that the SBRR would need to operate to pick up and deliver cars at customer facilities. The local trains that SunBelt "missed" in developing its train service plan include 92% of the NS A32, A33 and A34 local trains that provide twice-daily service to SunBelt's McIntosh facility! SunBelt's failure to provide local service to its own facility renders its Operating Plan infeasible on its face. Moreover, the track configuration shown in the "stick diagrams" submitted as SunBelt Opening workpaper "SBRR Opening Sticks.pdf" does not include the railroad-owned spur and industrial tracks necessary to access customer facilities, nor does SunBelt's engineering evidence account for the cost of constructing those tracks. Without those tracks, service to the SBRR's general freight customers is not only not "feasible," it is literally impossible. This is another, and very basic, failure of proof that warrants dismissal of the Complaint.

Fourth, neither SunBelt's Operating Plan nor its RTC Model simulation properly account for the time required to provide local service at customer facilities. Rather, SunBelt modeled the

movement of SBRR local trains by assigning "generic" dwell times to work events at customer facilities. As discussed below (at III-C-98 to III-C-104), SunBelt's RTC simulation consistently assigns 30 minutes of dwell time for road trains and local trains operating in "straightaway" service to perform pickups and setoffs at customer locations. For local trains operating in "turn service" (such as those that serve SunBelt's McIntosh plant), SunBelt modeled the train to move directly from its origin terminal to the end point of its turn route, dwell there for 45 minutes, and then proceed directly back to its origin terminal, all without making any intermediate stops at customer facilities. SunBelt Opening III-C-13-14, Ex. III-C-2 at 7. SunBelt assumes that the 45-minute dwell applied at the "turn" location represents sufficient time for the train both to serve all the local customers on its route, and to reverse direction prior to returning to its origin terminal.[96] By applying those generic dwell times to all work events, SunBelt's Operating Plan and RTC simulation fail to account for the substantial time and resources required to provide local train service to the SBRR's general freight customers. As discussed below (at III-C-102 to III-C-104), NS's Operating Plan and RTC simulation properly account for the work events performed by all SBRR trains.

In short, by failing to address in any meaningful fashion the necessary elements of "carload" railroading, SunBelt's Operating Plan and RTC Model simulation significantly understate the time, facilities, equipment, and personnel required to serve the SBRR's general freight customers. This serious deficiency renders SunBelt's Operating Plan infeasible, and its

---

[96] As NS demonstrated above (at III-C-A-1-b) SunBelt's attempt to justify this methodological "shortcut" based on the quality of NS data lacks credibility. In reality, SunBelt had multiple sources from which it could have accurately modeled the SBRR's local trains, and identified which cars were picked up or set off at which customer facilities by those trains. *See* NS Reply III-C-29 to III-C-30. However, SunBelt chose not to use that information in developing and modeling the SBRR's local train service plan.

estimated train transit times, car and locomotive cycle times, locomotive and car fleet sizes, and crew requirements invalid. NS's operating evidence corrects these deficiencies by properly accounting for the time required to perform local service and intermediate switching; incorporating those time requirements into NS's Operating Plan and RTC Model simulation; and developing an accurate estimate of the number of locomotives, cars, and crews actually required to serve the SBRR's traffic group in a manner consistent with shipper needs (as required by the Board's SAC regulations).

3. SunBelt Has Not Presented A Feasible Operating Plan For the Issue Traffic.

Not only did SunBelt fail to proffer a "feasible" operating plan for merchandise traffic generally, its Opening Evidence does not even present an operating plan that is capable of handling the TIH issue traffic in compliance with applicable laws and SunBelt's own real world requirements. As the following discussion demonstrates, virtually every element of SunBelt's Operating Plan for the SBRR to serve the issue traffic is fatally flawed. The glaring deficiencies in that operating plan—and, in particular, SunBelt's failure to account for the time and resources required for the SBRR to provide the same level of service that SunBelt demands from NS today —warrant dismissal of the Complaint.

The issue traffic in this case involves only a single movement—shipments of chlorine from SunBelt's McIntosh, AL plant to OxyVinyls at LaPorte, TX, moving via Birmingham, AL, and New Orleans, LA. An NS local train picks up that traffic (and other non-issue SunBelt shipments) at McIntosh, and builds blocks of cars containing SunBelt's traffic (and other cars originating at McIntosh) for various NS road trains, one of which picks the cars up and moves them to Birmingham, AL. At Birmingham, the issue cars are run through the hump yard and reclassified into a block of cars headed for New Orleans. That block is built into a train that

handles them to New Orleans, LA. At New Orleans, NS forwards the cars to UP for further transportation to LaPorte, TX.

In the real world, SunBelt requires NS to serve the McIntosh facility seven days per week. {

}

NS does more than simply "pick up" or "drop off" cars at SunBelt's McIntosh plant. {

---

[97] NS local trains serving SunBelt on Saturday/Sunday occasionally pick up or set off cars for { } as well, if time permits.

}

The hazardous nature of the commodities shipped by SunBelt (which include both chlorine and caustic soda) requires NS local train crews to comply with both federal safety regulations governing these commodities and a variety of safety-related procedures mandated by SunBelt and NS. {

---

[98] NS Reply Ex. III-C-12 is a video produced by SunBelt to NS in discovery that depicts the detailed mechanical inspection performed by SunBelt employees on rail cars that carry TIH commodities prior to loading. NS train crews perform an additional mechanical inspection prior to moving outbound loaded cars.

[99] *See also* 49 C.F.R. § 1580.107 (requiring the crew and SunBelt personnel to inspect TIH shipments to "minimize the vulnerability of TIH and other RSSM cars from attack by terrorists possessing improvised explosive devices (IED's)").

}

{

}

Performing the many switching movements and inspection procedures involved in meeting SunBelt's service specifications requires each of two NS local assignments to work at McIntosh for up to 12 hours each day. Figure III-C-9 sets forth the average number of employees and hours that NS local train assignments incurred in serving McIntosh between January and September 2011.

Figure III-C-9[100]
McIntosh Local Crew Job Requirements{

}

While NS local trains also serve { }, those shippers generate a combined volume of only {{ }} cars per day, on average. The time incurred by NS local trains at McIntosh is attributable primarily to the needs of SunBelt's traffic.

---

[100] *See also* NS Reply WP "Yard and Local Crew 2011 ytd.xls."

NS does not currently have a yard in the vicinity of McIntosh. The available track facilities in and around McIntosh consist of the NS main line, one parallel lead track that runs the length of the SunBelt facility at Milepost 108, and an 8,233-foot siding north of the SunBelt plant (between Milepost 106.7 and Milepost 105). Inbound cars are placed by NS road trains on that siding, and outbound cars are blocked by NS local trains and placed on the siding for pickup by NS road trains. The lack of sufficient car storage capacity within the SunBelt plant, and the uneven flow of inbound empty cars (which often tend to "surge" during certain periods) frequently requires NS to place empty cars on the NS lead track until they can be moved into the SunBelt facility. The limited track capacity at McIntosh requires local trains to perform most of the switching and car blocking required to meet SunBelt's requirements on the NS main line. As a result, the main line is occupied by local trains for lengthy periods of time every day, restricting the movement of NS through trains.[101]

SunBelt's operating witness, Mr. McDonald, apparently did not bother to visit McIntosh to observe NS's operations first-hand.[102] Nevertheless, SunBelt should be intimately familiar with both the service requirements of the issue chlorine shipments, and the challenges that NS

---

[101] In order to alleviate the current congestion at McIntosh, NS's Operating Plan provides an additional 8,000 feet of track at the SBRR's McIntosh yard to hold overflow empty cars generated by SunBelt. NS also posits that the SBRR would provide dedicated service to SunBelt with two daily yard assignments (enabling them to perform some of the switching required to serve SunBelt in the yard, rather than on the main line). These adjustments to NS's real world operations reduce the number of hours each day that the SBRR main line would be blocked by local train activity.

[102] SunBelt's Opening Evidence and workpapers contain no reference to, or documentation of, a site visit by Mr. McDonald to McIntosh. Nor do they indicate that witness McDonald visited Birmingham, the hub of the SBRR network and site of its only "major" yard (*see* SunBelt WP "SBRR Yard Matrix.xlsx," Tab SBRR Yards"). By contrast, NS operating witnesses Johnson and Smith visited both McIntosh and Birmingham. Their observations are documented in the workpapers supporting NS's Reply Evidence. *See* NS Reply WP "Site Visits" folder.

faces in providing the level of service demanded by SunBelt.[103] The extensive switching and blocking activity required to serve SunBelt's traffic occurs in plain sight outside the SunBelt plant every day. Moreover, {

} {{

}}[104]

The Operating Plan proffered by SunBelt does not account for the time and resources required for the SBRR to satisfy the unique service requirements of the issue traffic—indeed, SunBelt's Opening Evidence makes no mention of those requirements. SunBelt's Operating Plan fails in numerous ways to provide the rail service required to meet the needs of SunBelt's traffic.

First, the list of trains to be operated by the SBRR under SunBelt's operating plan does not include the local trains required to originate the issue traffic. The "automated" train selection methodology that SunBelt used to "adopt" historical NS trains as a surrogate for the SBRR's trains was based on computer programming instructions that intentionally eliminated 1,622 trains (including 1,593 local trains) that the SBRR would need to operate in order to provide uninterrupted train service for its selected traffic.[105] *See supra* III-C-13 to III-C-19. Of the 1,593 local trains discarded by SunBelt's "automated" methodology, 447 were NS Trains A32, A33 or

---

[103] *See, e.g.*, NS Reply WP "McIntosh Yard Operations Letter.pdf."

[104] {{

}}

[105] As explained above (at III-C-25) the programming code prepared by SunBelt's experts for SunBelt's "automated" train selection process excluded any train that operated only "at one of the SARR end points." This ill-conceived programming instruction resulted in the exclusion of the vast majority of the trains that serve SunBelt's McIntosh facility, which is located at the southern terminus of the SBRR's Burstall-McIntosh segment.

A34, the local trains that provide service to SunBelt. Overall, SunBelt excluded from the SBRR Operating Plan 92% of the 487 NS local trains that originated the "issue" traffic (and delivered empty cars) at McIntosh during the Base Year. In other words, SunBelt's Operating Plan fails to provide local train service to originate its own shipments at McIntosh! This fatal defect affects 1,500 cars, or 91%, of the Base Year issue traffic. *See supra* III-C-19.

Second, by providing only 40 local trains to serve McIntosh during the entire Base Year, SunBelt's Operating Plan obviously makes it impossible for the SBRR to serve the McIntosh plant even once—much less twice—per day. Nor could the SBRR call upon yard engines and crews based at its proposed McIntosh yard to provide the necessary service—SunBelt posits that the SBRR would have only one yard engine and one yard crew, working only one eight-hour shift per day, stationed at the McIntosh yard.[106] As NS demonstrates below (at III-C-178), that lone yard assignment is not sufficient to switch the 206 cars (including SunBelt "issue" and non-issue cars) that would move through the McIntosh yard each day. Any suggestion that the same engine and crew could complete that substantial volume of yard switching work (including building SBRR road trains for movement north), and also perform pickups and setoffs at SunBelt and other McIntosh industries twice per day—all in a single shift—is simply not credible. In short, the Operating Plan posited by SunBelt is—on its face —utterly incapable of meeting the needs of the issue traffic.[107]

Third, SunBelt's Operating Plan and RTC simulation incorporate an assumption that trains performing pickups and setoffs at customer facilities could complete those work events in 30 minutes. *See infra* III-C-98 to III-C-104. SunBelt's assignment of only 30 minutes of dwell

---

[106] *See* SunBelt Opening WP "SBRR Yard Assignments_Open.xlsx."

[107] *See AEPCO 2011*, STB Docket No. 42113, at 28; *Xcel*, 7 S.T.B. at 610.

time to provide local service is particularly egregious with respect to McIntosh, given its first-hand knowledge of the extended time that NS local trains spend each day in serving the issue traffic. But SunBelt's Opening Evidence makes no mention whatsoever of the twice-daily local service that NS provides at McIntosh in the real world, nor does it account for the many hours that would be required for SBRR local trains to pick up and set off cars in conformity with SunBelt's detailed instructions. As the foregoing summary of the service that NS provides at McIntosh every day shows, it is impossible for an SBRR train crew to perform all of the necessary pickups, setoffs, blocking, and switching of cars required to meet the needs of SunBelt during a 30-minute period. SunBelt's assumption that the SBRR could do so is flatly inconsistent with the realities of real world railroading.[108]

Fourth, and finally, SunBelt's market dominance evidence makes frequent references to the unique handling requirements associated with its chlorine traffic.[109] However, SunBelt's Operating Plan does not address (much less account for) the safety and service requirements of the issue traffic. Indeed, SunBelt's Operating Plan narrative never mentions the fact that the SBRR would transport approximately 7,300 carloads of TIH commodities, or that the issue traffic consists exclusively of chlorine shipments. Instead, SunBelt's Operating Plan and RTC simulation portray a "trainload railroad" that handles TIH and other hazardous commodities in the same manner as any other traffic. PHMSA regulations issued in January 2009 restrict the maximum speed of any train carrying five or more TIH cars to 50 MPH.[110] However, SunBelt's

---

[108] *See. e.g., AEPCO 2011*, STB Docket No. 42113, at 28; *Xcel*, 7 S.T.B. at 610.

[109] *See* SunBelt Opening II-B-4 to II-B-5, II-B-14 to II-B-15.

[110] *See* 49 C.F.R. § 174.9. Even before those regulations existed, the rail industry had long adopted an operating "best practice" limiting the movement of "Key Trains" to 50 MPH. *See* NS Reply WP "AAR Circular OT-55-L.pdf." AAR Circular OT-55 was originally issued in 1990.

RTC simulation features SBRR trains carrying the "issue" traffic (and other TIH shipments) operating at speeds of up to 60 MPH between Birmingham and New Orleans—a blatant violation of those federal regulations. Moreover, SunBelt's failure to develop any type of classification or blocking plan for general freight traffic makes it impossible for the SBRR to comply with Transportation Security Administration ("TSA") regulations that require Class I railroads (which the SBRR will be by its Peak Year of operations) to provide location and shipping information for TIH cars in their physical custody or control within 5 minutes of a request for such information.[111] Under SunBelt's Operating Plan, the SBRR would lack the information required to respond to such a request. Nor could the SBRR keep track of the precise location in the train of every TIH car, as all Class I carriers do to enable them to provide such information to first responders in the event of a derailment or other incident involving a train carrying TIH traffic.[112]

In short, virtually every aspect of SunBelt's operating plan fails to meet the service requirements associated with the issue traffic. Moreover, the handling of that traffic, as portrayed in SunBelt's Operating Plan and RTC analysis, violates applicable federal safety regulations and industry-wide best practices. SunBelt's failure to address those issues and requirements, with which it is intimately familiar in the real world, constitutes a failure to make a *prima facie* case with respect to the issue traffic. Accordingly, the Board should dismiss SunBelt's complaint.

4. SunBelt's Operating Plan Fails To Account For The SBRR's Reciprocal Obligations To Connecting Carriers.

SunBelt posits that the SBRR would interchange traffic with "six (6) Class I railroads (UP, BNSF, CN, CSXT, KCS, and NS) as well as with several short line railroads in the same

---

[111] *See* Rail Transportation Security, 37 Fed. Reg. 72130, 72131 (Nov. 26, 2008).

[112] *See infra* III-C-80 to III-C-81.

manner that NS does today." SunBelt Opening at III-B-3. According to SunBelt, the SBRR's interchange relationships with those carriers "are based on NS's joint use and interchange agreements with such carriers; the SBRR steps into NS's shoes under these agreements." SunBelt Opening at III-C-5 (emphasis added).

SAC precedent permits a SARR to "step into the shoes" of the defendant railroad, as SunBelt proposes. However, in doing so, complainant must "assume that the SARR would have the benefit of the same opportunities under the same terms" as the incumbent carrier. *See AEPCO Guidance Decision*, 6 S.T.B. at 328 (emphasis added). In other words, while a complainant may adopt the incumbent carrier's existing trackage rights and joint facility agreements, interchange arrangements, and run-through and power sharing agreements as part of its SARR operating plan, it may not assume that the SARR would enjoy more favorable terms than the incumbent carrier under those agreements. *See id.* at 328-29.[113] Nor may a complainant "hypothesize non-existent revenue or cost-sharing arrangements" or assume that the SARR could secure operating rights that it "could not [otherwise] unilaterally create." *Id.* These well-established principles are a logical corollary to the fundamental SAC requirement that a SARR's operating plan must be "realistic, *i.e.*, consistent with the underlying realities of real-world railroading."[114] *See* SunBelt Opening at I-51 (acknowledging "fundamental requirement" that a SARR operating plan must be "consistent with the underlying realities of real-world railroading").

---

[113] *See also CP&L*, 7 S.T.B. at 255 (citing *West Texas*, 1 S.T.B. at 667).

[114] *See, e.g., WFA I*, S.T.B. Docket No. 42088 at 15; *See also AEPCO 2011*, S.T.B. Docket No. 42113, at 16 ("The assumptions used in the SAC analysis, including the operating plan, nonetheless must be realistic, *i.e.*, consistent with the underlying realities of real-world transportation."); *Xcel*, S.T.B. Docket No. 42057 (Jan. 19, 2005) at 12 ("[T]he assumptions used in the SAC analysis, including the operating plan, must be realistic, *i.e.*, consistent with the underlying realities of real-world railroading.").

SunBelt's Operating Plan is replete with assumptions that violate these basic tenets of the stand-alone test. While the SBRR purports to "step into NS's shoes" under NS's intercarrier arrangements, the relationships between the SBRR and connecting railroads portrayed in SunBelt's Operating Plan are inconsistent with the terms of NS's existing agreements. SunBelt also posits the existence of intercarrier arrangements that not only do not exist today, but are inconsistent with real-world operating practices in the territory that the SBRR would serve.

Interchange agreements, run-through train agreements, locomotive sharing arrangements, and similar operating agreements are generally based upon the principle of "reciprocity." Under such arrangements, one carrier provides specified services (such as pre-blocking cars for interchange or providing locomotives to power trains while on another carrier's lines) in exchange for the same or similar services from the other party. The "reciprocal" nature of the agreements confers equivalent benefits on both carriers, and encourages them to adopt operating practices that enhance the overall efficiency of the rail network. Absent such reciprocity, railroads would have little economic incentive to enter into such cooperative arrangements with other carriers.

SunBelt's Operating Plan assumes that the SBRR would enjoy the benefits available to NS under its existing intercarrier agreements, but makes no provision for the SBRR to take on reciprocal obligations for the benefit of the other parties to those arrangements. More importantly, SunBelt makes a variety of operating assumptions that contradict the unequivocal language of the NS agreements that it purports to adopt, and posits intercarrier arrangements between the SBRR and connecting railroads of a type that do not exist today. As a result, SunBelt fails to account for the full stand-alone costs of serving the SBRR's selected traffic. *See Coal Rate Guidelines*, 1 I.C.C. 2d 520, 542-43 (1985); *AEPCO Guidance Decision*, 6 S.T.B. at

329 ("[T]he SARR may be assumed to have the same cost-sharing arrangements as the defendant carriers have on each segment, so long as the terms of those arrangements (including operational provisions and terms of compensation) are the same as those applicable to the defendant carriers.").

SunBelt cannot claim ignorance of the terms governing NS's interline relationships. All of NS's Trackage Rights Agreements, Joint Facility Agreements, Intercarrier Service Agreements ("ISAs"), and Run-Through Train Agreements were made available to SunBelt, either as Bates-numbered documents or via access to NS's Real Property Management System ("RPMS").[115] RPMS tracking systems indicate that SunBelt's outside counsel and consultants did, in fact, utilize RPMS to access 1,132 different NS agreements.[116] SunBelt acknowledges that it reviewed many of NS's existing agreements and utilized them in developing its operating plan. *See, e.g.*, SunBelt Opening at III-C-4 to III-C-5; SunBelt Opening Ex. III-C-2. SunBelt has no excuse for failing to present an operating plan that is consistent with both real-world operating practices and its stated assumption that the SBRR "steps into NS's shoes."

This section of NS's Reply Evidence describes the many ways in which SunBelt's Operating Plan violates the terms of NS's intercarrier agreements, posits agreements that do not exist, and is otherwise inconsistent with prevailing rail industry practices. It bears repeating that every one of the NS intercarrier agreements referred to in this section was provided to SunBelt as part of NS's massive response to SunBelt's discovery requests. SunBelt's failure to take into account the "reciprocal" nature of interline rail operations results in a substantial understatement of the costs (in time and resources) required to serve the SBRR's selected traffic group.

---

[115] RPMS is an electronic database that contains a variety of NS contracts and agreements. *See* NS Reply WP "M. Warren 6-3-2011 Letter to J. Moreno re RPMS Access.pdf."

[116] *See* NS Reply WP "RPMS_Access.xlsx."

a. SunBelt's Operating Plan Makes No Provision For Pre-Blocking Cars Interchanged By The SBRR To Connecting Carriers.

Intercarrier blocking agreements improve operational efficiency by placing cars destined to common locations into "blocks" that remain together as they move across the rail network, thereby reducing the switching required at intermediate locations. "Pre-blocking" cars prior to forwarding them in interchange reduces the burden on the receiving carrier to classify individual cars for movement to customer facilities or interchange points further along that carrier's system. NS's interchange relationships with connecting carriers—which the SBRR purports to "adopt" as its own (SunBelt Opening at III-C-4 to III-C-5)—provide for reciprocal "pre-blocking" of cars prior to interchange at major gateways. For example, NS and {{

}}[117] For example, as required by the ISA, and as illustrated below in Figure III-C-10, {{ }}

Figure III-C-10 is an excerpt of NS's car event data that illustrates that the car corresponding to Waybill {{

}} As Figure III-C-10 shows, the car event data provided to SunBelt in discovery plainly identified the "blocks" that NS builds

---

[117] {{

}}
Copies of the NS intercarrier agreements referred to in this section are included in NS Reply WP folder "Documents Produced in Discovery. III-C."

for {{ }} pursuant to the intercarrier agreements that the SBRR purports to adopt.

Figure III-C-10

{{

}}

Likewise, NS's ISA with {{

}}[118] Similarly, NS's ISA with {{

}}[119] NS has similar reciprocal blocking agreements with {{ }}[120]

---

[118] {{
}}

[119] *See* {{
}}

[120] *See, e.g.*, {{

}}

These arrangements improve service efficiency and lower costs by reducing the number of times that individual cars must be handled during their journey from origin to destination.

SunBelt's Operating Plan and RTC simulation are based upon trains that NS actually operated during the "Base Year" (July 30, 2010 to July 29, 2011). SunBelt Opening at III-C-15. Those real-world NS trains contained numerous blocks of general freight traffic that were created by other railroads for NS's benefit, or reciprocally pre-blocked by NS for the benefit of connecting carriers, pursuant to NS's ISAs. By "adopting" NS's trains as its own, the SBRR enjoys the benefits of NS's blocking arrangements with other carriers, including reduced switching requirements and increased efficiency in moving merchandise traffic across the SBRR network.

However, SunBelt's Operating Plan makes no provision for the SBRR to pre-block cars for NS or any other railroad with which it would interchange traffic—indeed, SunBelt's Operating Plan contains no car classification or blocking plan whatsoever. SunBelt had access to all of NS's ISAs, and explicitly posits that the SBRR "steps into NS's shoes" under those agreements. SunBelt Opening at III-C-4 to III-C-5. Although the ISAs provide clear instructions regarding the respective obligations of NS and its connecting carriers to pre-block cars for one another, SunBelt ignored those commitments in designing its Operating Plan for the SBRR. Instead, SunBelt simply assumed—contrary to reality—that every other railroad would act to SBRR's benefit and expect nothing in return. As a result, SunBelt's Operating Plan fails to fulfill the SBRR's reciprocal obligations to connecting carriers under the very agreements that it purports to adopt.[121]

---

[121] *See CP&L*, 7 S.T.B. at 255 (SARR may not assume changed service to suit its operating plan unless it shows affected "connecting carriers...would not object.").

The entirely one-sided interchange relationships contemplated by SunBelt's Operating Plan violate the Board's requirement that a SARR assume the defendant's agreements "under the same terms" as the incumbent carrier. *AEPCO Guidance Decision*, 6 S.T.B. at 328. Moreover, SunBelt's implicit assumption that other railroads would pre-block thousands of cars for the SBRR's benefit each week, without receiving reciprocal benefits, is utterly inconsistent with "the underlying realities of real-world railroading." *WFA I*, S.T.B. Docket No. 42088, at 15.

b. SunBelt Improperly Assumes That Locomotives Will Run Through On All Trains Interchanged By SBRR With Other Railroads.

SunBelt's Operating Plan assumes that every train received by the SBRR from a connecting carrier, or delivered by SBRR to a connecting carrier, will be a run-through train. SunBelt Opening at III-C-5 ("All trains interchanged with other railroads are run-through trains, with the locomotive power staying with the train."). This assumption contradicts the clear terms of NS's interline service agreements, which do not universally provide for run-through power. *See, e.g.*, {{

}}[122]

There are a variety of reasons why railroads may not be willing to permit their locomotives to remain with trains forwarded to a connecting carrier. Where traffic flows are characterized by a substantial directional imbalance, a run-through power arrangement may

---

[122] The following ISAs with Class I carriers provide that power is not run through for specific trains: {{

}}

confer disproportionate benefits on one party, which makes an agreement unwise. Likewise, a substantial difference in the length of haul on each carrier's lines may create a disadvantage for one of the carriers in the movement. If the volume of traffic (and trains) interchanged between the carriers is relatively small, the parties may not perceive sufficient benefits from running power through. The practice of running power through on all trains is especially infrequent in connection with trains interchanged between Class I railroads and their short line connections.[123]

In some cases, railroads may not have sufficient locomotives available to participate in a run-through agreement. Traffic imbalances may make it difficult to keep power in a particular area. Market conditions may require locomotives be deployed elsewhere to meet the needs of priority traffic. A surge in business may require that a carrier keep locomotives on its own lines, rather than making units available for run-through operations. In order to be commercially feasible, a run-through arrangement must provide advantages for both participating railroads.

Notwithstanding the unequivocal restriction on run-through power set forth in many of NS's existing ISAs, SunBelt blithely asserts that "all" trains that the SBRR interchanges with another railroad will follow the SBRR's preferred practice to run through the locomotives. SunBelt proffers no evidence whatsoever that NS (or other connecting carriers) would be willing to abandon their current practices in favor of a "100% run-through" arrangement with the SBRR. Such an assumption is utterly inconsistent with the premise that the SBRR "steps into NS's

---

[123] The following NS agreements with shortline carriers in the territory replicated by the SBRR do not permit run-through power: {{

}}

shoes" and with the Board's prohibition against "hypothesizing" intercarrier agreements that do not exist in the real world. *See AEPCO 2002*, 6 S.T.B. at 328-29.

SunBelt's erroneous and self-serving assumption regarding the extent to which run-through power would be utilized in connection with SBRR interline train movements results in a significant understatement of the SBRR's locomotive requirements, by assuming that foreign locomotives would be available to power SBRR trains where such locomotives are not available to NS today. NS's Operating Plan addresses that deficiency in SunBelt's Opening Evidence by requiring the SBRR to acquire a fleet of locomotives sufficient to handle the SBRR's selected traffic in accordance with the terms of NS's real-world intercarrier agreements. To the extent that those agreements contemplate run-through service, NS has modeled those trains accordingly.

c. SunBelt's Allocation Of Responsibility For Fueling Locomotives Is Inconsistent With Both NS's Intercarrier Agreements And Real World Operating Practices.

SunBelt assumes that fueling and inspecting locomotives used in interline service would, in most instances, be the responsibility of connecting carriers rather than the SBRR. Citing "[witness] McDonald's experience," SunBelt asserts that "it is likely that trains received in interchange from NS or another railroad will have locomotives with full fuel tanks." SunBelt Opening Ex. III-C-2 at 5.[124] Nevertheless, SunBelt adopts (what it self-servingly characterizes as) the "conservative" assumption that "the locomotives on some trains will need fueling." *Id.* (emphasis added). SunBelt's assumption is both inconsistent with the "reciprocity" principle

---

[124] SunBelt does not explain what "experience" led witness McDonald to conclude that SunBelt's assumptions are consistent with real-world railroad practices, nor did it cite a single instance in which responsibility for fueling locomotives is allocated by real-world carriers in the manner proposed by SunBelt.

reflected in NS's intercarrier agreements and contrary to prevailing real-world operating practices. Moreover, SunBelt's ambiguous assertion that "some" trains will need fueling does not address in any meaningful way the SBRR's responsibility to fuel locomotives in connection with its interline train movements.

Although the terms of NS's interchange and run-through train agreements with connecting carriers differ in certain respects, one common principle underlying those agreements is the reciprocity of each party's obligation with respect to locomotive fueling. NS's run-through train agreements provide in some manner for "equalization" of the costs of fueling locomotives.[125]

SunBelt's Operating Plan contemplates no such reciprocity. To the contrary, under SunBelt's plan, connecting carriers would be required, in all cases, to deliver trains to the SBRR with "locomotives with full fuel tanks." SunBelt Opening Ex. III-C-2 at 5. In return, the SBRR would fuel "some" locomotives prior to forwarding trains to those carriers This non-reciprocal fueling obligation is patently inconsistent with the terms of the NS intercarrier agreements upon which, SunBelt says, the SBRR's interchange relationships are based. SunBelt Opening at III-C-4-5.[126]

SunBelt's assumption that connecting carriers would, in all instances, deliver locomotives with full fuel tanks defies the reality of everyday railroading. In particular, it is NS's practice to

---

[125] *See, e.g.*, {{

}}

[126] *See CP&L*, 7 S.T.B. at 255 (requiring a showing by complainant that affected "connecting carriers … would not object").

fuel at {{

}} SunBelt's vague proposal that the SBRR would fuel only "some" locomotives does not come close to meeting the expectations of {{ }} for any of these movements. SunBelt's unsubstantiated assertion regarding fueling ignores these real-world practices, as well as the well-documented agreements that NS produced to SunBelt in discovery.

While NS's run-through train agreements often obligate carriers to {{

}}[127]

[127] *See* NS Reply WP {{

}}

It is simply not feasible to require a railroad to refuel every locomotive at every interchange point just prior to delivery to the receiving carrier. Such a provision would require carriers to build and operate fueling facilities at or near every interchange point—a particularly onerous and expensive requirement for the SBRR itself, given its plan to interchange traffic at multiple locations across the SBRR network.[128]

Rather than impose such an unreasonable requirement, intercarrier agreements typically balance the parties' obligation to provide fuel used in interline train operations by adopting some form of fuel "equalization." Equalization agreements are designed to guarantee both carriers the economic equivalent of a full fuel tank in connection with locomotives received in interchange, without literally requiring that every locomotive be delivered with a full tank. For example, an NS agreement with {{

}} SunBelt's plan to fuel

---

[128] *See* SunBelt Opening WP "SBRR interchanges.xlsx."

[129] *See also* NS Reply WP {{

}}

"some" locomotives is utterly inconsistent with the terms of the NS intercarrier agreements that the SBRR purports to adopt, and with the prevailing industry practice of imposing reciprocal obligations on railroads to fuel locomotives (or, in the alternative, to reimburse connecting carriers pursuant to an agreed "equalization" formula). SunBelt's one-sided and operationally infeasible assumptions regarding the obligations of the SBRR and connecting carriers to fuel locomotives used in interline train service results in a significant understatement of both the facilities that the SBRR would need to satisfy its fueling obligations, and the time (and corresponding personnel) needed to perform those duties—both of which result in understated costs. NS's Reply Evidence corrects this deficiency in SunBelt's operating plan by providing sufficient facilities and staffing at SBRR yards to accommodate the fueling activities that the SBRR would have to perform in order to comply with the reciprocal obligations imposed by the NS agreements upon which the SBRR's intercarrier relationships purport to be based.

d. SunBelt Makes No Provision For Running Repairs To Foreign Railcars On The SBRR Network.

The North American rail industry follows a practice of permitting rail cars to be "free running"—*i.e.*, cars may travel beyond the lines of the owning carrier to a destination served by another railroad. This practice promotes optimal utilization of the overall railcar fleet, and reduces the cost of providing rail service. It also inevitably results in the need for railroads to make minor repairs to cars that do not belong to them, pursuant to the interchange rules promulgated by the AAR. SunBelt's Operating Plan ignores this reality of day-to-day railroading, and makes no provision whatsoever for the SBRR to perform "running repairs" on foreign carrier equipment.

SunBelt posits that the SBRR would acquire its rolling stock pursuant to "full service" car leases. SunBelt Opening at III-D-6. SunBelt assumes that, under such leases, the car lessor

would be responsible for all required maintenance of and repairs to the SBRR's leased equipment. SunBelt Opening at III-D-8 ("As full service lease payments include maintenance costs, no other maintenance costs are included."). SunBelt further assumes that privately-owned rail cars would be repaired and maintained by the shippers that supplied them. *Id.*[130]

Based upon those assumptions, SunBelt concludes that the SBRR would not need any proprietary car repair facilities or personnel, and none are provided for in SunBelt's Operating Plan. Without such resources, it would be physically impossible for the SBRR to perform running repairs on any foreign line car that became disabled while on the SBRR network—a daily occurrence for every Class I railroad. The increased "out of service" time that cars would experience under SunBelt's assumptions would seriously impair the efficiency of the SBRR's operations, both by preventing it from making minor repairs that would enable it to place cars quickly back into service, and by increasing the number of cars required to provide timely service to the SBRR's customers.

Indeed, SunBelt produced in discovery a car inspection video that illustrates a common defect that would put a car out of service but for a minor repair. *See* NS Reply Ex. III-C-12 (Car Inspection Video at 2:05). The video illustrates a bent hand hold, yielding less than 2.5" of clearance, which would have to be repaired prior to the car being placed into service. The notion that a minor issue like a bent hand hold would not be repaired simply because the car was not owned by the SBRR is illogical. Such a stance would result in unnecessary service delays and insufficient cars available to serve the SBRR's traffic.

---

[130] As NS demonstrates below (at III-C-178 to III-C-179), SunBelt's assumption that the SBRR would not need any facilities or personnel to make running repairs to the SBRR's own car fleet is wrong.

More importantly, the inability to perform running repairs to rail cars and intermodal equipment would make it impossible for the SBRR to comply with its obligations under AAR rules and the terms of its intercarrier agreements. The AAR Interchange Rules impose on all member railroads a mutual obligation to perform running repairs to foreign line cars and intermodal equipment that require such assistance while on a carrier's lines. *See* Association of American Railroads, *2012 Field Manual of the A.A.R. Interchange Rules*, Rule 1(2)(a)(7) ("Running repairs as provided in these rules that are owner's responsibility may be made by a repair facility acting as the railroad's agent without requesting owner's disposition. Repairs must be completed while on handling line railroad or at a facility served by the handling line railroad.") (emphasis added); *see also* NS Reply WP "AAR Intermodal Interchange Rules.pdf" at sec. 27(b)(1) ("The carrier in possession of a trailer or chassis in interchange service shall provide maintenance to tires and tubes, including proper inflation, the repair of flat tires, pulled valve stems, etc.)"; *id.* sec. 42(a) ("The carrier in possession of the trailer shall provide good maintenance to the landing gear, including minor repairs and lubrication."); *id.* sec. 57 ("The carrier in possession of the trailer or container shall provide proper maintenance to the heating and/or refrigeration unit . . ."); *id.* Appendix B (Providing provisions for "Correct Unit Repair Procedures"). SunBelt posits that the SBRR's Vice President – Mechanical would "supervise[ ] the SBRR's mechanical function . . . . as well as administration of the AAR Interchange Rules with respect to the SBRR's use of other railroads' locomotives and equipment on trains that operate in interline service." SunBelt Opening Ex. III-D-1, at 6. However, SunBelt's operating plan provides no car repair forces to enable the SBRR to comply with its obligations under those rules.

As a participant in the U.S. rail system, the SBRR would benefit from the AAR's rules, as NS (and other railroads) would be required to repair any SBRR car that became disabled while on their lines. However, under SunBelt's Operating Plan, the SBRR would be unable to comply with its reciprocal obligation to perform running repairs to foreign cars that became disabled while traversing the SBRR network. (SBRR's car lessor would have no obligation to repair foreign line cars, which would not be covered by the full-service equipment lease between the lessor and the SBRR.) SunBelt's failure to provide car repair facilities or personnel on the SBRR is also inconsistent with the terms of the NS intercarrier agreements upon which the SBRR's operating plan is supposedly based.[131]

By failing to give the SBRR any capacity to repair foreign railcars, SunBelt has ignored one of the most fundamental expectations of the industry—that railroads will work cooperatively to ensure that cars requiring minor repairs can quickly return to service, thereby improving the efficiency and fluidity of the rail network. SBRR's inability to satisfy its obligation to perform running repairs renders its Operating Plan infeasible. NS's Reply Evidence addresses this serious deficiency in SunBelt's Operating Plan by providing sufficient facilities and staffing at SBRR yards to enable it to perform running repairs to both SBRR and foreign carrier cars.

* * * * *

As the foregoing discussion demonstrates, SunBelt's SARR Operating Plan violates in numerous ways the principle of "reciprocity" that underlies the cooperative relationships among

---

[131] *See, e.g.*, NS Reply WP {{

}}

railroads that interchange traffic with one another. SunBelt declares that the SBRR "steps into NS's shoes" under its intercarrier agreements (SunBelt Opening at III-C-5), and takes full advantage of the benefits conferred upon NS under those agreements. However, the SBRR does not reciprocate: it accepts "pre-blocked" cars in interchange from foreign railroads, but does not "pre-block" cars for delivery to those carriers; while it expects connecting carriers to deliver all locomotives with full fuel tanks, it fails to adequately define its own obligation to fuel locomotives in connection with interline traffic; and the SBRR avails itself of industry wide rules guaranteeing mutual assistance in performing minor repairs to foreign cars, but itself lacks the resources necessary to provide such repairs for the benefit of other carriers. In short, SunBelt posits a SARR whose operations conflict with longstanding industry practices and AAR rules, violate the terms of the very agreements upon which its intercarrier relationships are predicated, and depend on non-existent arrangements in violation of SAC precedent, without providing a scintilla of evidence that connecting carriers would agree to the one-sided arrangements SunBelt hypothesizes.[132] Such a SARR would not be capable of providing interline service that meets the needs of its customers.

5. SunBelt's Operating Plan Does Not Comply With Regulations And Best Practices Relating To The Transportation Of TIH Shipments.

SunBelt's complaint challenges NS's rates for chlorine—which is designated as a TIH commodity.[133] SunBelt's market dominance evidence is replete with references to the unique requirements associated with the transportation of this dangerous commodity. For example, SunBelt relies heavily upon the fact that chlorine requires specialized handling to argue that the

---

[132] *See CP&L*, 7 S.T.B. at 255 (complainant may not change service to suit its operating plan without evidence that affected "connecting carriers ... would not object").

[133] *See* SunBelt Opening II-B-4, discussing the characteristics of Chlorine.

issue traffic is not subject to effective intermodal competition.[134] While SunBelt relies heavily on the risks and special handling requirements associated with chlorine shipments to support its claim that NS is "market dominant," SunBelt's Operating Plan fails to address those risks or to provide for compliance with laws, regulations, and "best practices" for the handling of TIH traffic.

The Base Year traffic group selected by SunBelt includes approximately 7,300 carloads of TIH commodities.[135] But SunBelt's Operating Plan makes no provision for the safe handling of TIH cars in compliance with federal and state laws and regulations, industry best practices, or even SunBelt's own corporate policies. Indeed, SunBelt's operating evidence makes no mention whatsoever of TIH commodities—a startling omission for a complainant whose "issue" traffic consists entirely of chlorine, and one that interacts with railroads on a daily basis to ensure that dangerous commodities shipped at SunBelt's direction are transported safely.

SunBelt's Operating Plan fails in three fundamental ways to account for the proper handling of TIH commodities:

> (1) The SBRR is not capable of tracking the movement and location of individual TIH cars, as required by law. Rather, as discussed above, SunBelt's Operating Plan provides only for the movement of "complete trains" along the SBRR network, and makes no attempt to track the movement, or address the particular service requirements, of general freight "carload" traffic, including TIH shipments. The SBRR also does not have any means of providing "trip plans" for TIH cars—plans that are necessary both for route risk assessment and to enable the SBRR to monitor TIH shipments.

---

[134] *See, e.g.*, SunBelt Opening II-B-4 to II-B-5 (describing the transportation characteristics and modes for Chlorine); II-B-14 to II-B-15 (describing the challenges of transloading chlorine).

[135] *See* NS Reply WP "SBRR TIH Shipments.xlsx;" *see also* NS Reply WP "SBRR Key Trains in Base Year Peak Week.xls."

(2) SunBelt's Operating Plan and RTC simulation do not limit the speed of trains carrying TIH commodities to 50 MPH or less , as required by federal law and industry best practices.

(3) SunBelt's Operating Plan does not provide the personnel that the SBRR would need to comply with rules and best practices associated with the movement of TIH commodities and other hazardous materials.

a. SunBelt's Operating Plan Does Not Track TIH Traffic.

TSA regulations prescribe a number of strict handling requirements for rail shipments of TIH commodities. Among those rules is a requirement that railroad operators and rail hazardous materials shippers and receivers provide location and shipping information for TIH cars in their physical custody or control within 30 minutes after receiving a request for such information. *See* Rail Transportation Security, 37 Fed. Reg. 72130, 72131 (Nov. 26, 2008). NS's operating rules for TIH commodities—which were provided to SunBelt in discovery—also require that {

} *Id.*

---

[136] NS produced a copy of its HM-1 operating rules to SunBelt in discovery. *See* NS Reply WP Folder "Documents Produced in Discovery III-C," "Hazardous Materials Instructions (NS-DP-C-3237 to 3301).pdf," produced at DVD-01.

Each of those rules serves a crucial purpose. {

}

In order to comply with applicable regulations and common sense safety practices, a railroad must develop, and adhere to, a "blocking plan" in assembling trains that transport TIH shipments. However, SunBelt's Operating Plan includes no plan whatsoever for "blocking" merchandise traffic generally—much less tracking the shipments placed into particular blocks. Instead, SunBelt's Operating Plan presents a "trainload" railroad (SunBelt Opening I-53), and makes no effort to identify the individual cars moving in SBRR trains or to address any unique service requirements associated with those cars. SunBelt's methodological decision to premise its Operating Plan and RTC simulation solely on "train" movements means that the SBRR lacks the capability to identify whether a particular train is carrying TIH commodities (much less where in the train those cars are located). This serious deficiency in SunBelt's evidence illustrates why a "feasible" operating plan for general freight traffic must take into account the

---

[137] *See* NS Reply WP "HM-1" at 32.

car-specific requirements of the SARR's customers. SunBelt's failure to develop a blocking plan for the SBRR's general freight traffic—which includes thousands of cars of TIH traffic—renders the SBRR incapable of complying with federal regulations and industry best practices for the safe handling of TIH materials.[138]

b. SunBelt's Assumed Train Speeds Exceed Those Allowed For Trains Carrying TIH Traffic.

Both federal regulations and railroad best practices restrict the speed of trains carrying TIH cars to a maximum of 50 MPH. In January 2009, PHMSA issued regulations restricting TIH or hazmat trains to 50 MPH. *See* 49 C.F.R. § 174.9. Even before PHMSA issued formal regulations addressing this issue, the railroad industry had voluntarily adopted a 50 MPH restriction for "Key Trains."[139] "Key Trains" are defined as any train containing five[140] or more loaded cars containing materials considered to be a "Inhalation Hazard," 20 or more carloads or intermodal tank loads of hazardous materials, or one or more carloads of a radioactive substance. *See id.* Key Trains are restricted to a maximum speed of 50 MPH, and are required to hold the main track during any train meet involving a siding that is restricted to 10 MPH or less. *See id.*

{

}

---

[138] Federal regulations also require railroads to conduct annual route risk assessments for TIH shipments and, in connection therewith, to maintain records of the actual route of movement for TIH cars. The Operating Plan set forth in SunBelt's Opening Evidence, which fails to create a "trip plan" for TIH cars, would not enable the SBRR to comply with that requirement.

[139] *See* NS Reply WP "AAR Circular OT-55-L.pdf." AAR Circular OT-55 was initially published in 1990, and has been revised periodically since, most recently in December, 2010.

[140] NS's definition of Key Trains is broader, and includes any train that contains one or more loaded cars of TIH materials.

Notwithstanding these industry wide rules and best practices, SunBelt's Operating Plan and RTC simulation permit trains on the SBRR's Birmingham, AL, to New Orleans, LA, segment—including trains carrying TIH shipments—to operate at 60 MPH![141] The speed limit imposed on trains carrying TIH traffic is designed to reduce the potential for an incident involving TIH shipments over every segment of the national rail network, including tracks that would otherwise permit higher train speeds. SunBelt makes no provision for the SBRR to comply with this critical PHMSA regulation and industry best practice. Indeed, under SunBelt's skeletal Operating Plan, which does not provide any car-specific visibility, the SBRR would not even know which trains are carrying commodities that are subject to the 50 MPH mandate.[142]

SunBelt's failure to comply with the train speed restriction for "Key Trains" is, to say the least, puzzling. SunBelt must be familiar with the concept of "Key Trains." It places extensive demands on NS to comply with safety regulations when performing twice-daily local service to SunBelt's McIntosh plant. Indeed, before picking up loaded shipments, the NS crew must first check the work list to determine whether the outbound shipments include any TIH or hazardous materials. For hazardous materials, the switch crew must comply with all applicable government, NS, and SunBelt rules. The crew is also required to confirm that SunBelt

---

[141] NS Reply WP "Key Trains in NS Reply RTC Simulation.xls" identifies the Key Trains in the RTC simulation. SunBelt does restrict traffic on the Burstall, AL, to McIntosh, AL, segment to 49 MPH—but not for reasons directed toward handling TIH materials safely. As SunBelt explains, it restricts train speeds below 60 MPH "where a speed restriction is required by NS's operating timetables . . . for safety reasons (such as to maintain a safe braking distance), to reduce under balance in curve super elevation per FRA track safety regulations and reduce track/curve wear, and to avoid high-speed gage separation on curves exceeding 3 degrees."). *See* SunBelt Opening Ex. III-C-2 at 3.

[142] The Base Year trains "adopted" by SunBelt for its Operating Plan and RTC Model handled nearly 5,500 cars of TIH traffic. As NS demonstrates below (at III-C-91 to III-C-92), SunBelt's RTC Model permits those trains to travel at 60 MPH between Birmingham, AL, and New Orleans, LA, in violation of both federal regulations and industry best practices.

certification and signature appear on the shipping documents for all hazardous shipments. SunBelt's demands on NS in performing these safety checks illustrate SunBelt's keen awareness of the safety-sensitive nature of the product it ships. And yet, its Operating Plan fails to mention any of those requirements, let alone take them into consideration. NS, on the other hand, presents an Operating Plan that identifies Key Trains and restricts their maximum speed to 50 MPH.

c. SunBelt's Operating Plan Fails To Provide The Personnel That The SBRR Would Need To Handle TIH Commodities Safely.

Transporting TIH commodities in compliance with government regulations and industry best practices requires a railroad to employ staff to organize internal employee training, coordinate safety procedures both internally and with other railroads, and to interact with federal and state authorities on matters relating to the handling of hazardous shipments. Federal regulations require that railroads designate one primary and at least one alternate Rail Security Coordinator ("RSC") at the corporate level to serve as the point of contact for intelligence information and security related activities and communications with TSA. 49 C.F.R. § 1580.101(b). While the RSC may perform other duties, this individual must be available 24-hours a day, seven days a week and must coordinate the railroad's security practices and procedures with law enforcement and emergency response agencies. 49 C.F.R. § 1580.101(b).

In addition, TSA, in conjunction with the Department of Homeland Security and the Department of Transportation, has issued 24 recommended "action items" relating to the handling of TIH materials, including a recommendation that railroads "designate an individual with overall responsibility for hazardous materials transportation security planning, training, and implementation . . . [as well as] an individual with overall responsibility for security planning

and countermeasure implementation for company-designated critical infrastructure."[143] Other TSA-recommended action items include establishing a liaison with other railroad security officers as well as with "state and local law enforcement, emergency responders, security agencies, and industrial partners." *Id.* The responsibilities contemplated by these recommendations are extensive and time-consuming, particularly for a Class I railroad (which the SBRR will be by the Peak Year). In addition to numerous environmental protection personnel who assist with hazardous materials compliance, NS employs a Hazmat Compliance Manager as well as four Hazmat Compliance Officers—one for each region, as well as a director of infrastructure security.[144]

SunBelt's Operating Plan does not provide sufficient personnel to perform these safety-related functions in connection with the SBRR's TIH traffic. SunBelt does not have a Rail Security Coordinator (much less a primary and alternate person in that position, as recommended by TSA). Rather, SunBelt assumes that a single "Manager—Testing and Environmental" would be responsible for all safety issues relating to hazardous commodities across the entire SBRR system.[145] SunBelt posits that this person's duties would include "investigation of any problems involving cars containing hazardous commodities while on the SBRR (and related federal reporting requirements)." *See* SunBelt Opening Ex. III-D-1 at 7. Assuming that the SBRR

---

[143] *See* TSA, System Security Practices Affecting the Transportation of TIH Materials, http://www.tsa.gov/what_we_do/tsnm/freight_rail/tih_materials.shtm; http://www.tsa.gov/stakeholders/rail-transportation-security-rule%E2%80%93-49-cfr-1580.

[144] *See* Press Release, Norfolk Southern receives its 12th TRANSCAER National Achievement Award (April 11, 2012), *available at* http://www.nscorp.com/nscportal/nscorp/Media/News%20Releases/2012/ns_transcaer.html (acknowledging TRANSCAER safety awards awarded to each of the four NS hazardous materials compliance officers)

[145] SunBelt Opening Exhibit III-D-1 at 7.

would attempt to comply with applicable government regulations, this manager would be responsible for all of the following tasks:

(1) EPA, FRA, and TSA regulations, reporting and response;

(2) SBRR's response to spills, Non-Accident Releases or hazmat incidents in general;

(3) Management and testing of waste water treatment;

(4) Community outreach and training of first responders across the SBRR's 580-mile network;

(5) Collecting damages resulting from failure of customers to meet hazardous materials containment responsibilities;

(6) Railroad Infrastructure Security and Risk Assessment;

(7) Development and review of guidelines for property leases; and

(8) Maintenance and enforcement of all rules and procedures to ensure the safe and proper handling of hazardous materials moving over the SBRR.[146]

Clearly, one person could not reasonably be expected to perform all of those functions.

In short, SunBelt's Operating Plan fails to provide the processes, personnel, and car-specific shipment tracking required for the SBRR to comply with federal regulations and industry wide best practices relating to the transportation of TIH and hazardous shipments. Accordingly, SunBelt's Operating Plan for TIH traffic is inconsistent with both federal law and "real world" railroad practices, and is not feasible. NS's Operating Plan provides for five personnel to address environmental functions, including the handling of Hazmat materials. Included in these five personnel is one manager, and two assistant managers – Hazmat and TIH Compliance, who would oversee all environmental hazmat and TIH issues. *See* NS Reply III-D-3-ii-e-v-i.

* * * * *

[146] For discussion of specific environmental responsibilities, see NS Reply Part III-D-3-ii-e-v-i.

SunBelt's failure to submit an operating plan that incorporates the resources, processes, and personnel that all railroads devote to handing TIH commodities safely is particularly glaring, given the role of SunBelt's parent company, Olin, as an industry leader that demands both safe handling of its hazardous material shipments and full compliance with government rules and regulations by rail carriers that serve it.[147] SunBelt cannot credibly profess ignorance of those rules and best practices, which are part of the fabric of SunBelt's everyday operations. Olin has vast experience in manufacturing and shipping hazardous substances, and touts its strong institutional commitment to safety.[148] Olin is a member of the American Chemistry Council—the organization responsible for establishing CHEMTREC and TRANSCAER—two initiatives dedicated to chemical transportation safety.

Given Olin's and SunBelt's keen eye toward safety in their own handling of TIH and hazardous commodities, and SunBelt's "real world" insistence that rail carriers do likewise, the failure of SunBelt's Operating Plan and RTC simulation to address the unique requirements of hazardous commodities transportation is stunning. The SARR presented by SunBelt does not

---

[147]In discovery, SunBelt produced extensive documentation regarding the safe handling of chlorine, including an interactive video that reviews characteristics of chlorine, transportation regulations—including DOT's HazMat transportation regulations—and personal safety. SunBelt also produced a video that NS has included as NS Reply WP "Olin Railcar Inspection Video" that illustrates the extensive railcar inspection the corporation demands.

[148] Indeed, Olin's website touts its commitment to the Environment, Health and Safety, noting that "Olin is strongly committed to excellence in protecting the environment, healthy, safety and security of our employees and those that live and work around our plants." *See* http://www.olin.com. Further, Olin's Chlor Alkali business is a "Responsible Care" company—part of a "global initiative aimed at minimizing any negative impact from the manufacture, distribution and use of chemicals . . ." *Id.* Olin also offers "Stewardship seminars," which, as Olin explains "are another demonstration of our firm commitment to the American Chemistry Council (ACC) *Responsible Care Process* and our commitment to The Chlorine Institute's *Chlorine Safety Stewardship*, with the Institute's specific focus on all activities associated with the safe and environmentally responsible production, handling, transportation, use, and ultimate disposition of chlorine . . ." *See* NS Reply WP "2009 Customer Seminar-Niagara Falls.pdf."

track the movement of TIH cars; makes no special provision for "blocking" those cars within trains in a manner that reduces the potential for environmental incidents; violates the federally-mandated speed limit for trains carrying TIH cars; and lacks the personnel required to devote sufficient attention to the myriad rules, regulations, and best safety practices that are essential to the safe handling of TIH and hazardous rail shipments. These glaring deficiencies result in a significant understatement of the costs associated with the transportation of TIH and hazardous commodities that SunBelt elected to include in the SBRR's traffic group—including 100% of the "issue" traffic. Tellingly, no SunBelt company witness is identified as a sponsor of any portion of the SBRR's Operating Plan. It should come as no surprise that an operating plan conceived only by outside counsel and consultants would fail to reflect SunBelt's real world awareness of, and sensitivity to, the realities of transporting TIH commodities and other hazardous shipments.

NS's Operating Plan corrects these deficiencies and provides for the handling of the SBRR's TIH and hazardous shipments in a manner that complies with all applicable federal regulations, industry best practices, and customer specifications.

* * * * *

As the foregoing sections of this Part III-C of NS's Reply Evidence show, SunBelt's operating evidence is based on flawed methodologies, fails to address essential elements of an operating plan for carload traffic, and contains other glaring errors. The SBRR's Operating Plan is incapable of providing complete on-SARR train service for the more than 470,000 carloads of general freight traffic that it selected—including 91% of the issue traffic! This failure to tender an operating plan for the SBRR that can serve the issue traffic from origin to destination constitutes a fundamental failing more egregious than in any prior case. NS cannot find any prior case in which the operating plan tendered by the complainant failed to provide complete

train service from origin to destination for the issue traffic. This colossal shortcoming in SunBelt's evidence alone constitutes a failure to tender a *prima facie* case. And because it results from SunBelt's own methodological choice as reflected in its computer programming, it cannot be repaired on Rebuttal. Accordingly, the case must be dismissed for failure to present a prima facie case.

Moreover, SunBelt's Operating Plan for the SBRR suffers from numerous other flaws. The SBRR has no car blocking or classification plan for merchandise traffic—indeed, SunBelt's Operating Plan never mentions "classification" among the activities that the SBRR would be required to perform. The size and configuration of the SBRR's yards, and the number of yard locomotives and yard crews assigned to those facilities, are based upon mathematical calculations that are unsupported by credible evidence and inconsistent with the daily workload at each location. The SBRR's traffic group includes thousands of carloads of TIH and other hazardous commodities, but SunBelt's Operating Plan makes no provision for the SBRR to comply with laws, regulations, and industry wide best practices applicable to the handling of such shipments. The SBRR claims to "step into NS's shoes" under NS's intercarrier agreements and avails itself of the benefits of those arrangements, but makes no provision to perform "reciprocal" services for connecting carriers. Any one of these deficiencies renders SunBelt's Operating Plan "infeasible"—collectively, they constitute a failure to present a *prima facie* case and warrant dismissal of the Complaint.[149]

---

[149] SunBelt's Opening Evidence contains numerous other errors and faulty assumptions that further undermine its Operating Plan and expense estimates. For example, SunBelt posits that the SBRR would have a Positive Train Control ("PTC") system from the outset of operations in June 2011, even though PTC technology did not exist in 2011 and still does not exist in deployable form today. *See* SunBelt Opening III-B-7, III-F-38 to III-F-39. The staffing provided by SunBelt's Operating Plan (including train crews, crew management personnel, dispatchers, operations control personnel, managers of locomotive and yard operations, and

By contrast, NS's Reply Evidence presents a comprehensive operating plan for the SBRR that is tailored to the specific needs of the traffic group actually selected by SunBelt. NS's Operating Plan fully accounts for the facilities, equipment, and personnel necessary to provide the road and local train services, intermediate classification and switching, and pick-ups and set-offs at shipper facilities and interchange points required to serve the SBRR's traffic in a manner that is consistent with customer requirements, applicable laws and real-world operating practices. The Board should dismiss SunBelt's complaint outright. But if it were to decide not to do so, it must adopt NS's Operating Plan as the basis for decision in this case.

B. SunBelt's RTC Model Simulation Is Meaningless.

SunBelt attempts to satisfy its evidentiary burden of proffering a "feasible" SARR configuration and operating plan by presenting a simulation of the SBRR's peak-period operations using the Rail Traffic Controller ("RTC") Model.[150] SunBelt asserts that its RTC Model ran to a successful conclusion, and produced Peak Year transit times that were "lower than the NS's transit times during the comparable period."[151] According to SunBelt, this modeling exercise "confirm[s] that the SBRR's configuration, facilities and operating plan are feasible."[152] Contrary to those assertions, SunBelt's RTC simulation is—like the Operating Plan that is based upon—fatally flawed, and its outputs are meaningless.

As an initial matter, SunBelt's assertion that a "successful" RTC simulation of a SARR's peak week operations confirms the feasibility of a complainant's operating plan is not correct.

---

intermodal and automotive terminal personnel) is woefully inadequate to support the activities required to serve the SBRR's customers. *See* NS Reply Part III-D.

[150] SunBelt Opening III-C-13 to III-C-16; Ex. III-C-2.

[151] SunBelt Opening III-C-14 to III-C-15.

[152] SunBelt Opening III-C-16.

An RTC Model simulation does not—and cannot—prove that an operating plan is "feasible." Rather, an RTC simulation indicates whether the complainant's proposed SARR configuration is adequate to enable the SARR to execute an otherwise "feasible" operating plan. *See, e.g., WFA II*, STB Docket No. 42088, at 14 (RTC Model enables complainant to "test the adequacy of the configuration (to make sure the [SARR] would have sufficient capacity to handle the peak forecast demand)"); *WFA I*, STB Docket No. 42088, at 16 (same); *AEP Texas*, STB Docket No. 41191, at 17 (RTC simulation used "[t]o assess the adequacy of the proposed track configuration for the TNR to handle the expected traffic"). A properly conducted RTC Model simulation also generates various operating statistics that can be used in estimating a SARR's operating expenses.

However, in order for an RTC simulation to produce meaningful results, the inputs to the model must account for all elements of a "feasible" operating plan—*i.e.*, one that is capable of meeting the transportation needs of the SARR's customers and is fully consistent with real-world railroading. In other words, a "feasible" operating plan is a necessary prerequisite for a credible RTC simulation. If the train services, yard activities, dwell times or other operating assumptions input to the RTC Model do not reflect a feasible operating plan, a "successful" simulation cannot cure those deficiencies, nor can it prove that the SARR's physical facilities are adequate. In this case, SunBelt's RTC model suffers from "garbage in, garbage out."

1. SunBelt's RTC Simulation Is Based Upon A Fatally Deficient Train Service Plan.

The RTC Model upon which SunBelt's simulation of the SBRR's peak period operations is based is founded upon the fatally deficient train service plan presented in SunBelt's operating evidence. As NS demonstrated above, the train selection methodologies employed by SunBelt failed to capture 1,622 NS trains that are essential to enable the SBRR to provide uninterrupted

train service for the SBRR's traffic. That glaring error, which created "gaps" in train service for thousands of carloads of general freight traffic—including more than 91% of SunBelt's own issue traffic—was carried forward into SunBelt's RTC simulation. Specifically, the list of trains input into SunBelt's RTC Model is the same list (set forth in SunBelt Opening workpaper "Base Year Train List 5-24 with L-E car counts.xlsx") that SunBelt developed for its deficient Operating Plan. Of the 1,622 Base Year trains missing from the SBRR's train list, 41 trains operated during the week in the Base Year upon which SunBelt's RTC analysis is based. Taking the growth in SBRR traffic volumes in the Peak Year into account, this means that 50 peak period road and local trains are "missing" from SunBelt's RTC simulation.[153] To put this omission in perspective, a total of 523 peak period trains were modeled in SunBelt's RTC simulation. SunBelt Opening Ex. III-C-2 at 12. The 50 trains excluded by SunBelt's flawed train selection methodology represent nine percent the 573 trains that should have been included in that simulation. In other words, the capacity analysis resulting from SunBelt's RTC simulation understates by nine percent the number trains that the SBRR would operate during the peak period. The failure of SunBelt's RTC Model to account for a significant number of the SBRR's trains—many of which are local trains that would operate in and around the congested McIntosh area—renders SunBelt's RTC simulation invalid, and fatally undermines SunBelt's reliance upon that simulation to demonstrate that the SBRR's configuration and facilities are adequate.

Moreover, the manner in which the SBRR's road and local trains were modeled in SunBelt's simulation is inconsistent with applicable laws and regulations, industry wide safety practices, the requirements of the SBRR's customers—including SunBelt itself—and other

---

[153] See NS Reply WP "SunBelt Missing Trains-Peak Period.xls."

aspects of real world railroading. In SunBelt's RTC simulation, trains carrying TIH commodities are permitted to operate at speeds up to 60 MPH on the SBRR line between Birmingham, AL, and New Orleans, LA.[154] Because the issue traffic in this case consists entirely of chlorine, a TIH commodity, a large number of SBRR trains are "Key Trains" (as defined by law and rail industry practice). Indeed, of 5,227 Merchandise trains operated by the SBRR in the Base Year, 3,794 trains—or 73%—are "Key Trains" that are subject to the federally-mandated 50 MPH maximum speed limit.[155] The SBRR operations portrayed in SunBelt's RTC simulation violate PHMSA and FRA regulations (and industry wide "best practice") that restrict the maximum speed of such trains. *See supra* III-C-81 to III-C-83. Moreover, the absence of any car classification and blocking plan in SunBelt's Opening Evidence reflects the failure of SunBelt's Operating Plan and RTC simulation to provide for compliance with federal regulations that require railroads to track the location of TIH cars in their physical custody or control, so that such information can be made available to government agencies or emergency responders.[156] By incorporating this invalid—indeed, unlawful—assumption, SunBelt's RTC simulation understates the time that trains carrying TIH cars would

---

[154] In developing its RTC Model, SunBelt adopted NS's practice of reducing train speeds below 60 MPH "for safety reasons" including maintaining a safe braking distance between trains, reducing track/curve wear, and avoiding high-speed gage separation. SunBelt Opening Ex. III-C-2 at 3-4. However, it did not reduce the maximum speed of trains carrying TIH traffic, or otherwise adopt the "best practices" of NS (and other railroads) with respect to "Key Trains." *See supra* III-C-79 to III-C-81.

[155] *See* NS Reply WP "Key Trains Analysis.xlsx."

[156] *See* 37 Fed. Reg. 72130, 72131 (Nov. 26, 2008).

occupy the SBRR's tracks. NS's RTC simulation addresses this error in SunBelt's RTC Model by limiting all "Key Trains" operated by the SBRR to a maximum speed of 50 MPH.[157]

SunBelt's RTC simulation does not model the movement of SBRR road trains accurately or completely. While SunBelt's model includes "work events" for SBRR trains (*i.e.*, stops en route to change crews, serve customer facilities or interchange traffic with other carriers), NS's analysis of SunBelt's RTC simulation revealed that SunBelt did not accurately account for all of the work events that road trains must perform during their journey across the SBRR network. For example, Figure III-C-11 is an extract from the NS car event data produced in discovery that sets forth the route of movement and work events for NS Train {{ }} As Figure III-C-11 shows, the train departed{{ }} with a consist of {{ }} The train made intermediate stops at {{ }} before arriving at its final destination, {{ }} The car event data provided by NS in discovery (and set forth in Figure III-C-11) shows that Train {{ }} picked up and/or set off cars at each of those locations. In SunBelt's RTC simulation, this train is modeled to stop only at {{ }} Accordingly, SunBelt's RTC evidence does not account for the work events at {{ }}

[157] A list of the "Key Trains" in NS's RTC simulation is set forth in NS Reply WP "Key Trains in NS Reply RTC Simulation.xls."

Figure III-C-11
Route of Movement and Work Events for NS Train {{

}}

Figure III-C-12 is a "screenshot" of SBRR Train GM29MCIIRO (the SBRR general freight train that corresponds to NS Train 182) as it was modeled in SunBelt's RTC simulation. As Figure III-C-12 shows, in SunBelt's RTC simulation, Train GM29MCIIRO stops en route at {{ }} but does not stop to pick up or set out cars at {{ }} where it should have picked up {{ }} As Figure III-C-12 shows, SunBelt's RTC analysis does not account for the time (and track capacity) required for this road train to perform all of the required work events at points along its route of movement.

Figure III-C-12
"Screenshot" of SBRR Train GM68MCIIRO {{

}}

Likewise, Figure III-C-13 is an extract from the NS car event data that sets forth the route of movement and work events for NS Train {{

}}

Figure III-C-13
Route of Movement and Work Events for NS Train {{

}}

As Figure III-C-13 shows, the train departed {{

}} It made intermediate stops at {{

}} before traveling to its final destination, {{ }} The car event data provided by NS in discovery (and set forth in Figure III-C-13) shows that Train {{

}} Figure III-C-14 is a "screenshot" of SBRR Train IM780LIIRO (the SBRR general freight train that corresponds to NS Train {{ }} as it was modeled in SunBelt's RTC simulation. As Figure III-C-14 shows, in SunBelt's RTC simulation, Train IM780LIIRO stops en route at {{

}}

Figure III-C-14
SunBelt Opening RTC Model of Train {{

}}

As these examples demonstrate, SunBelt's RTC Model does not properly account for all of the work events that SBRR trains would have to perform at intermediate locations.

SunBelt did not even try to model the work events performed by SBRR local trains operating in "turn service." Instead, SunBelt simply assumed that such trains would travel nonstop from their origin terminal to the furthest location indicated in the NS event data, dwell for 45 minutes, and then proceed directly back to their origin terminal. SunBelt Opening III-C-

13-14; Ex. III-C-2 at 7.[158] According to SunBelt, this generic dwell time allowance for "turn service" local trains is sufficient to account for both "any switching occurring at the turn location and the time needed for the crew to walk to the other end of the train and board the locomotive on that end [in order to reverse direction]." SunBelt Opening Ex. III-C-2 at 7.

SunBelt's rationale is fundamentally flawed, for several reasons. First, while SunBelt's 45 minute allowance purports to include time for industry switching "at the turn location," it makes no allowance whatsoever for switching required to serve customers at intermediate locations served by SBRR local trains. As NS's MultiRail and RTC analyses show, many of the "turn service" local trains operated by the SBRR would be required to perform pickups and setoffs at multiple locations (or industries) along their route of movement. Moreover, SunBelt's suggestion that reversing the direction of a "turn service" local train can be accomplished simply by having the crew "walk to the other end of the train" necessarily assumes that all such trains are powered by two locomotives in a DP configuration. That assumption is directly contradicted by SunBelt's own evidence, which states that "the SBRR will operate its local trains with a single GP38 locomotive where possible." SunBelt Opening Ex. III-C-2 at 2 (emphasis added). Indeed, NS's analysis of the workpapers underlying SunBelt's RTC simulation indicates that 97 of 145 (or 67%) of the SBRR local trains modeled by SunBelt operated with only one locomotive.[159] In order for those trains to reverse direction, the crew would need to run the power around the train and reattach it to the other end. That process alone would consume at

---

[158] As NS demonstrated above (at III-C-19 through III-C-30), SunBelt's claim that this methodological "shortcut" was necessitated by alleged deficiencies in the data provided by NS is demonstrably false.

[159] *See* NS Reply WP "SBRR Local Trains in SunBelt RTC Simulation.xlsx."

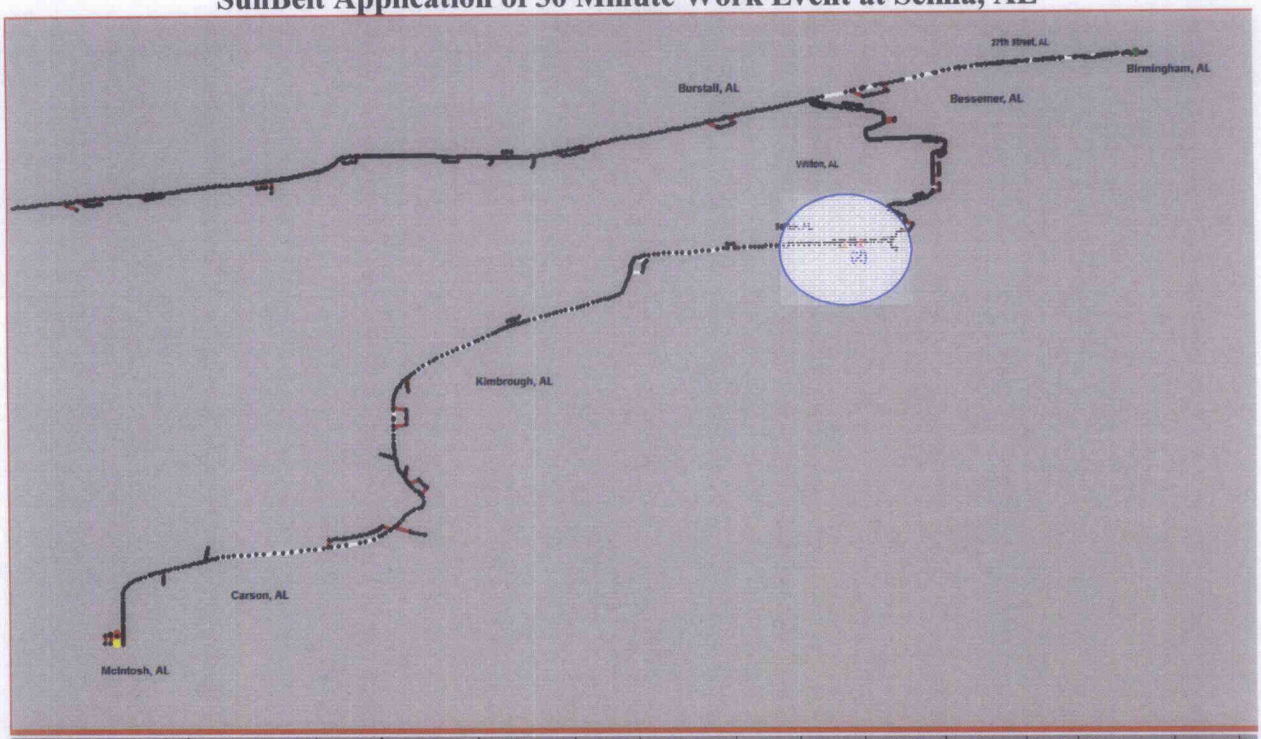
least the 45 minutes allocated by SunBelt for both industry switching and reversal of direction.[160] NS's Operating Plan and RTC simulation correct this error by incorporating both 45 minutes for local trains operating in "turn service" with a single locomotive to reverse direction, and the location-specific dwell times associated with any work events that those trains are required to perform.

Moreover, even where SunBelt's RTC simulation did include the necessary "work events" to be performed by SBRR road or local trans, the "dwell time" allocated by SunBelt's RTC Model for those activities is consistently understated. While SunBelt stated explicitly its dwell time assumptions for events such as interchanges (30 minutes) and crew changes (15 minutes) (SunBelt Opening Ex. III-C-2 at 5-6), it did not articulate any explicit rule regarding the time required for road or local trains to pick up or set off cars at customer facilities or interchange points (further illustrating SunBelt's failure to give serious consideration to the service requirements of general freight traffic). However, NS's analysis of SunBelt's RTC simulation reveals that SunBelt allocated 30 minutes of dwell time for any "work event" that involved picking up or setting cars off a train. Figure III-C-15 below illustrates SunBelt's application of a 30-minute dwell time to perform intermediate switching.

---

[160] SunBelt's further assertion that "[n]o additional time is allotted for reversing direction if the procedure occurs at a location where the train is interchanged with another railroad" (SunBelt Opening Ex. III-C-2 at 7 (emphasis added)) is utterly nonsensical. By definition, a local train operating in "turn service" returns to its origin terminal, and is not interchanged with another railroad. This statement graphically illustrates SunBelt's failure to apply operating expertise—or common sense—in designing its Operating Plan and RTC simulation.

Figure III-C-15
SunBelt Application of 30 Minute Work Event at Selma, AL



	Node	Node Location	Field Milepost	Requested Arrival DD:HH:MM	Requested Departure DD:HH:MM	Protect Depart Time ?	Minimum Dwell HH:MM:SS	Departing Loads	Departing Empties	Trailing Departing Tons	Trailing Departing Feet	Crew #	Departing Direction	Max Speed
1	08108.180MB2	ET McIntosh	108.180	FLOAT	2:23	No	30:00	84	5	9575	5687	1	North	60
2	08_N189.40-A	ET Selma	189.400	FLOAT	FLOAT	No	30:00	84	5	9575	5687	1	North	60
3	08--134.9301	ET Pape Jct.	134.930	FLOAT	FLOAT	No	0	84	5	9575	5687	1	North	60

Edit route nodes of the GM19MCIIRO | RTC coordinates: (16,763, -2,477 | 1220 node(s) and 2524 link(s) captured in rubberband box

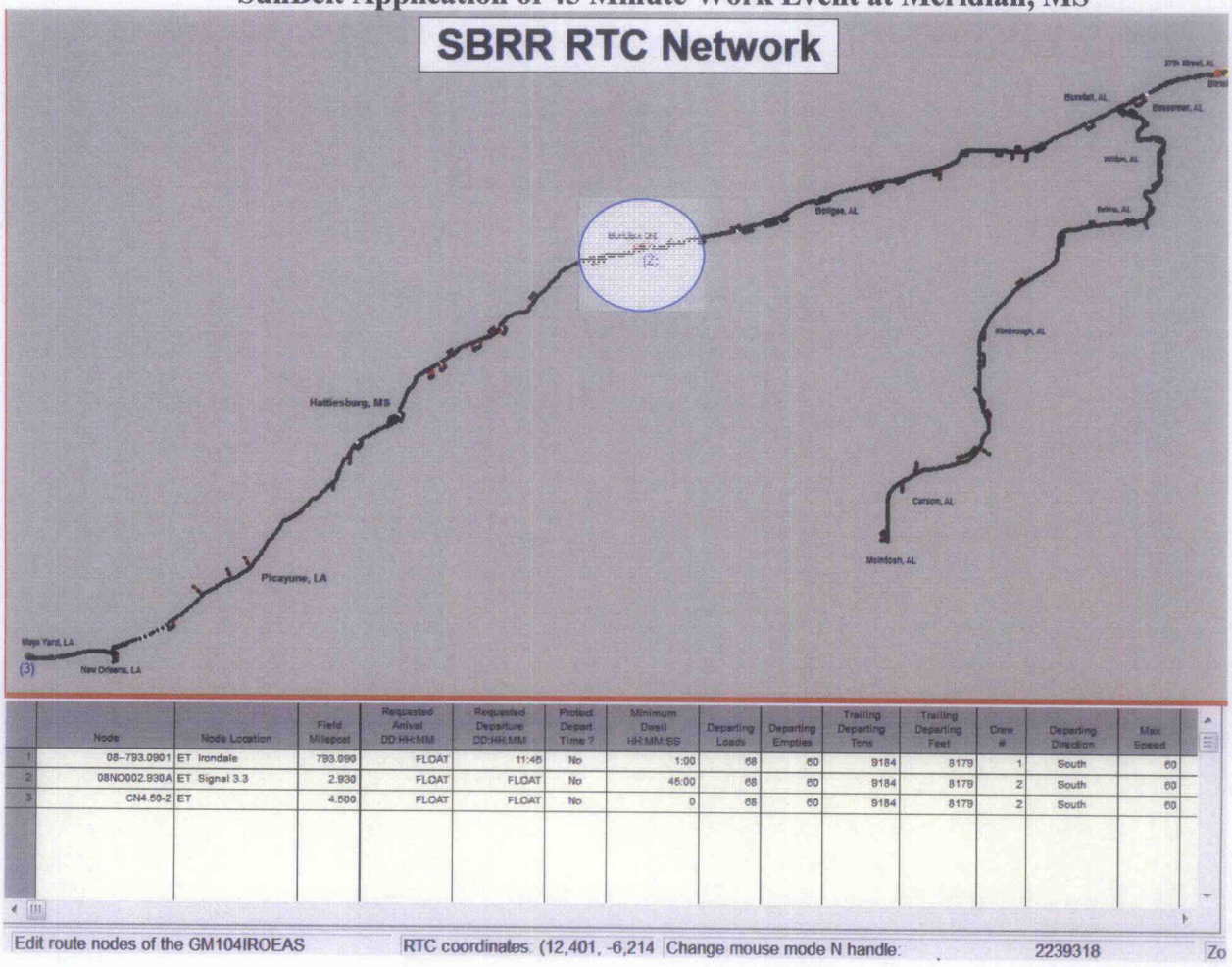
As Figure III-C-15 shows, SBRR train GM19MCIIRO (SunBelt's version of NS Train {{ }} dwelled at Selma for 30 minutes. Because the train did not change crews at Selma (see Column 12, "Crew") the 30 minutes appears to be allocated for picking up and setting out cars at that location. As the car event data illustrates, Train {{ }}[161]

Likewise, in Figure III-C-16 below, 45 minutes of dwell time are allocated to SBRR Train GM104IROEAS's intermediate stop at Meridian, MS.

---

[161] *See* NS Reply WP "Dwell_Examples.xlsx."

Figure III-C-16
SunBelt Application of 45 Minute Work Event at Meridian, MS



	Node	Node Location	Field Milepost	Requested Arrival DD:HH:MM	Requested Departure DD:HH:MM	Protect Depart Time ?	Minimum Dwell HH:MM:SS	Departing Loads	Departing Empties	Trailing Departing Tons	Trailing Departing Feet	Crew #	Departing Direction	Max Speed
1	08--793.0901	ET Irondale	793.090	FLOAT	11:45	No	1:00	68	60	9184	8179	1	South	60
2	08NO002.930A	ET Signal 3.3	2.930	FLOAT	FLOAT	No	45:00	68	60	9184	8179	2	South	60
3	CN4.50-2	ET	4.500	FLOAT	FLOAT	No	0	68	60	9184	8179	2	South	60

The "Crew" column in the table at the bottom of Figure III-C-16 indicates that the train changed crews at that location, accounting for 15 minutes of dwell time. The remaining 30 minutes represents the time that (SunBelt assumed) would be required to switch cars into and out of the train. As the car event data illustrates, NS Train {{ }} (of which the GM104IROEAS is a replica) set out {{ }}[162]

The 30-minute dwell time assumption reflected in SunBelt's RTC Model significantly understates the time actually required to switch cars into and out of trains at intermediate yards and customer facilities. As NS demonstrated above, "serving" general freight customers—

---

[162] *See* NS Reply WP "Dwell_Examples.xlsx."

including SunBelt itself—involves more than simply "dropping off" or "picking up" cars at the customer's facility.[163] Rather, a road or local train may be required to perform multiple tasks such as "spotting" cars in a particular order on a customer's tracks, re-ordering cars on a customer's tracks, or handling both inbound cars (which may be loaded and/or empty) and outbound cars (which likewise may be loaded or empty or both). Service to a particular operating station may involve switching cars at multiple industries located at that station.[164] If an operating station is also an interchange point, the train may be required to pick up cars left by a connecting carrier, or to place a cut of cars on an interchange track to be picked up by that carrier. The specific tasks to be performed vary from station to station, and may also vary from day to day at a particular location. For these reasons, applying a standard 30-minute dwell to every intermediate stop made by a road or local train does not accurately reflect the time (and resources) required to provide "carload" rail service. Indeed, as NS Reply WP "Dwell_Examples.xlsx" shows, the NS Train {{ }} depicted in Figure III-C-15 actually dwelled for {{ }} rather than 30 minutes assumed by SunBelt, while picking up and setting off cars during its intermediate stop at Selma, AL. Likewise, the NS Train {{ }} depicted in Figure III-C-16 required {{ }} rather than 30 minutes, to complete its intermediate switching of cars at Meridian, MS.

NS's RTC Model addresses this fundamental deficiency in SunBelt's RTC simulation by applying location-specific dwell times based upon the average daily activity at each location. NS witnesses Johnson, Schaub, and Smith evaluated the switching required at each station based

---

[163] The extensive switching operations and other actions performed by NS local train crews in serving SunBelt on a twice-daily basis are described in detail above at III-C-52 through III-C-60.

[164] Indeed, the traffic selected by SunBelt moves to and/or from more than 336 customers located at more than 53 SBRR-served stations. *See* NS Reply WP "SBRR Local Stations and Customers.xlsx."

upon the average number of cars delivered to or picked up at each location in the MultiRail "SuperSim" simulation, as well as their knowledge regarding customer requirements and the functions performed by real-world NS trains and crews at particular stations each day. Based on that assessment, witnesses Johnson, Schaub, and Smith developed location-specific dwell times that reflect the average time that would be required to serve that station. NS Reply workpaper "Dwell by Location in NS Reply RTC.xls" sets forth the dwell times assigned to SBRR train work events in NS's Reply RTC simulation.

Witnesses Johnson, Schaub, and Smith determined that the most efficient method of serving SunBelt's McIntosh facility would be to provide such service with yard assignments based at the SBRR's McIntosh yard, rather than with local trains similar to NS Trains A32, A33 and A34 that serve SunBelt today. NS's track configuration for the SBRR also provides for 8,000 feet of track at the SBRR's McIntosh yard, which can be used to hold "overflow" cars that cannot be placed on SunBelt's plant tracks due to heavy volume. These modifications to the manner in which SunBelt is served today are designed to address the chronic congestion at SunBelt's plant and to reduce the time that the SBRR main line would be blocked by local trains performing pickups, setoffs, and switching at that facility.

The issue traffic does not include all of the traffic that NS originates at SunBelt's McIntosh facility. Specifically, SunBelt elected not to include cars that move south from McIntosh to Mobile, AL, and points beyond. Accordingly, the residual NS would be required to provide "parallel" service to the McIntosh facility. That decision by SunBelt means that SunBelt would incur further delays in servicing SunBelt during time periods when NS was accessing the plant to pick up and/or set off SunBelt cars moving to/from points south of McIntosh. The time

consumed by NS in servicing the SunBelt facility would further complicate (and delay) the SBRR's operations at McIntosh.

NS's RTC model conservatively incorporates two four-hour time periods each day during which the SBRR main line would be occupied by SBRR yard assignments serving the SunBelt facility. In the real world, the volume of daily activity at the SunBelt facility ties up the main line for even longer periods of time each day.[165]

The unrealistic 30-minute dwell time assumption applied by SunBelt in modeling the SBRR's train operations had the effect of significantly understating the time that trains would occupy main line segments of the SBRR network, consuming track capacity that SunBelt's RTC simulation assumes would be available to other SBRR trains. SunBelt's demonstrably faulty dwell time inputs invalidate the purported "success" of SunBelt's RTC simulation. They also result in a substantial understatement of the equipment and crews required to provide complete train service to the SBRR's selected traffic.

2. SunBelt's RTC Model Contains Incorrect Grade Information.

In constructing its RTC Model, SunBelt made numerous errors in coding the grades along the SBRR network.[166] The incorrect grade information in SunBelt's RTC Model—affected 1,215 distinct "links" within the SBRR network. This flaw in SunBelt's RTC Model is attributable to inputting errors committed by SunBelt, not to any deficiency in the information provided by NS. Correct grade information for the entire NS system was produced to SunBelt in

---

[165] *See supra* III-C-52 to III-C-60.

[166] *Xcel*, 7 S.T.B. at 611-12 (rejecting complainant's operating plan in part for flawed grades and curves).

discovery.[167] NS replaced the incorrect grades in SunBelt's RTC Model with the correct grade values shown on NS's track charts.[168]

Correcting the erroneous grades incorporated into SunBelt's RTC Model invalidates its assertion that its RTC simulation ran to a "successful" conclusion. SunBelt Opening III-C-15-16. NS replaced the incorrect grades in SunBelt's RTC Model with the correct grade values shown on NS's track charts. NS then ran SunBelt's RTC simulation with the correct grades, without making any other changes to the Model. That single adjustment caused several SBRR trains to stall, resulting in a failure of SunBelt's RTC Model to run to a successful completion.[169] Figure III-C-17 depicts the location at which SunBelt's RTC simulation failed when the correct grade values were assigned. NS Reply workpaper in folder "Grade Test.zip" demonstrates that the trains listed in Figure III-C-17 stalled when the correct grade information was taken into account.

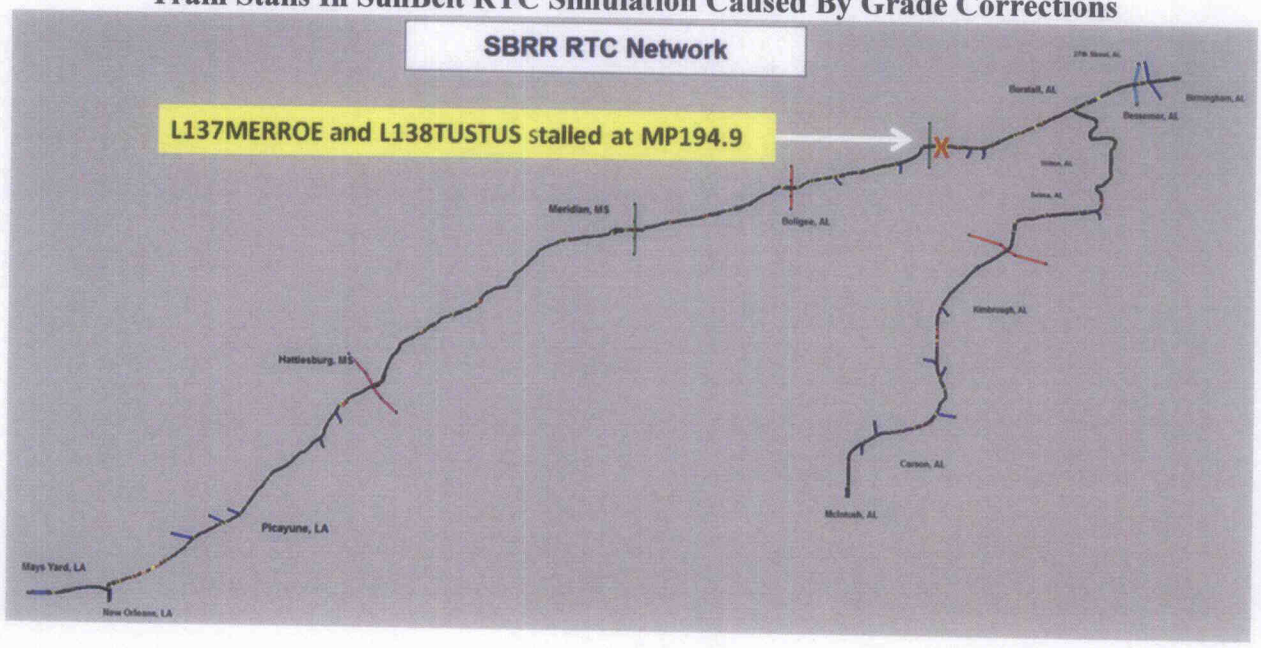
---

[167] Accurate grade information for the NS system was set forth in two files, "Track Chart Documents and Data.doc" and "grd_ns.txt," that were produced along with NS's electronic track chart data on NS-DP-C-DVD-004 (originally part of the *DuPont v. NS* production). Those documents are included in NS Reply WP Folder "Documents Produced in Discovery III-C."

[168] *See* NS Reply WP "SunBelt_Detailed Changes.xlsx."

[169] *See* NS Reply WP "SBRR_GradeTest.zip," which is a version of SunBelt's RTC model with one modification correcting the grades.

Figure III-C-17
Train Stalls In SunBelt RTC Simulation Caused By Grade Corrections



3. SunBelt's RTC Model Does Not Properly Account For Random Outages And Train Delays.

SunBelt acknowledges that "[r]andom events that affect track, signals and equipment are a part of everyday railroading. It is unrealistic to expect that no such events would occur during the SBRR's peak traffic period . . . or that such events would not affect train operations during that period." SunBelt Opening Ex. III-C-2 at 8-9. SunBelt purports to account for random failures on the SBRR by "select[ing] the kinds of outages that [witness McDonald] deemed most likely to occur including operational outages, such as a broken knuckle or drawbar, a train going into emergency braking mode, or a broken rail." *Id.* at 9 (emphasis added). SunBelt's "selection" of random outages for inclusion in its RTC Model is seriously flawed. As a result, SunBelt's RTC simulation does not realistically portray the delays that the SBRR would experience as a result of random outages.[170]

---

[170] *See AEPCO 2011*, STB Docket No. 42113, at 28-30 (criticizing complainant's operating plan for failing to account properly for random outages).

In identifying outages to be input to SunBelt's RTC Model, witness McDonald categorically excluded certain types of NS failures that (he posits) "would not be incurred by the SBRR due to differences in the two railroads' operations." SunBelt Opening Ex. III-C-2 at 9. For example, witness McDonald did not include any delays caused by a locomotive failure in his list of SBRR outages. SunBelt Opening Ex. III-C-2 at 10. In the real world, locomotive failures are a common source of random delays.[171] SunBelt's rationale for excluding locomotive failures is as follows:

> SBRR trains would not be stranded and block track as all through trains operate with at least two (2) locomotives and in the event of the failure of one locomotive would move under the remaining operational power to the next yard, where the inoperative locomotive would be replaced.

SunBelt Opening Ex. III-C-2 at 12.

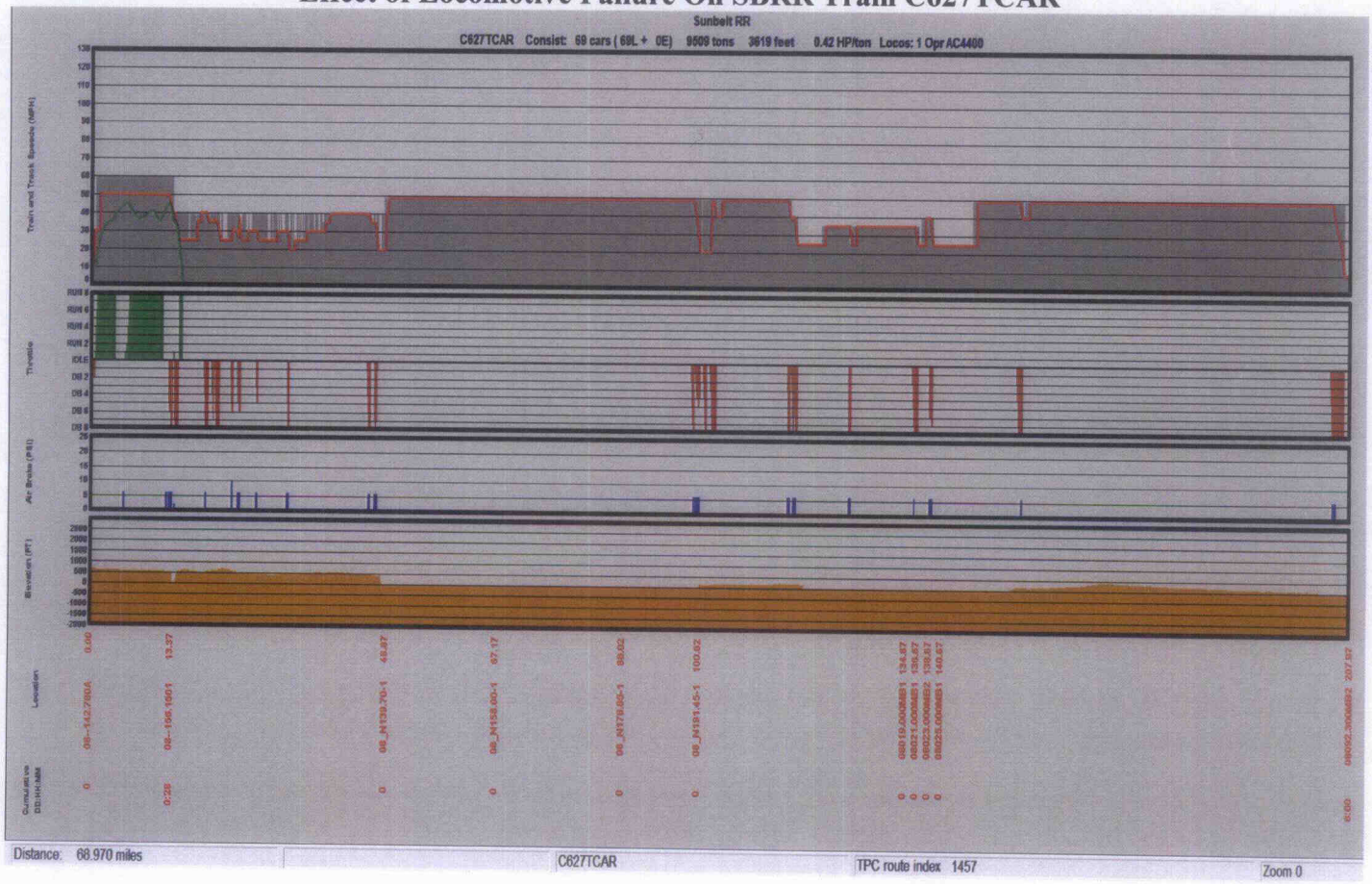
This purported justification for ignoring the impact of locomotive failures on the SBRR's operations is nonsensical. Railroads determine the number of locomotives required to power a train based on its length, trailing tonnage, and the terrain over which it will operate. Locomotives are expensive assets, and railroads do not routinely "overpower" trains by assigning more units than are required to move them based on those parameters. If NS (or SBRR) places two locomotives on a particular train, it does so because two units are required to move that train over the subject territory. As any operating expert would know, SunBelt's assumption that a train powered by two locomotives could complete its journey with only one unit in service after experiencing a locomotive failure defies the laws of physics.

---

[171] As NS Reply workpaper "NS Reply SBRR - Delays.xlsx" shows, NS experienced 10 delays due to "Engine Failure" in the territory replicated by the SBRR during the time period that SunBelt used to estimate random outages for the SBRR's peak period.

Nevertheless, to "test" SunBelt's assumption, NS witness Wheeler analyzed the impact of a locomotive failure on the ability of SBRR road trains to "move under the remaining operational power to the next yard." SunBelt Opening Ex. III-C-2 at 12. Figure III-C-18 depicts the movement of SBRR Train C627TCAR, a loaded coal train with two locomotives (in DP configuration) and a consist of 69 cars operating on May 26, 2011 between Birmingham, AL, and the SBRR-served utility at Carson, AL. Witness Wheeler removed one of the locomotives from the train to simulate the effect of a locomotive failure on the ability of SBRR Train C627TCAR to proceed. Figure III-C-18 is a "screenshot" of Train C627TCAR as it attempted to continue its journey with a single locomotive.

Figure III-C-18
Effect of Locomotive Failure On SBRR Train C627TCAR



As the "Train and Track Speeds" graph at the top of Figure III-C-18 shows, Train C627TCAR is unable to maintain a consistent operating speed and stops altogether in the vicinity of Burstall, AL—blocking the SBRR main line—after traveling approximately 14 miles from SBRR's Birmingham yard. The train stalls far short of Carson (which is 55 miles further south) or even Selma, AL, the next terminal at which a replacement locomotive might be available. This screenshot from SunBelt's own RTC simulation illustrates the nonsensical nature of SunBelt's assertion that SBRR trains would be immune to delays caused by locomotive failures.

In any event, witness McDonald's rationale does not support SunBelt's decision to ignore locomotive failures involving SBRR local trains. SunBelt posits that "[t]he SBRR will operate its local trains with a single GP38 locomotive where possible." SunBelt Opening Ex. III-C-2 at 2. In fact, 97 (or 67%) of the 145 local trains modeled in SunBelt's RTC simulation operate with a single locomotive.[172] A local train that experienced a failure to its only locomotive obviously would not be able to continue its journey, and would block the track it was occupying when the failure occurred. Accordingly, SunBelt's decision to eliminate locomotive failures involving local trains from the list of random outages developed for its model cannot be justified even if (contrary to the laws of physics) witness McDonald's conclusion with respect to road trains were otherwise credible.[173]

---

[172] *See* NS Reply WP "SBRR Local Trains in SunBelt RTC Simulation.xlsx."

[173] SunBelt's assumption that the SBRR would never experience a locomotive failure is especially nonsensical in light of its decision to select SW1500 locomotives for the SBRR's yard service. As NS demonstrates below (at III-C-169 to III-C-172), that antiquated model—which has not been manufactured since 1974—has one of the highest failure rates of any locomotive type in NS's fleet. A locomotive failure within a busy yard can wreak havoc on a carrier's operations, and cause delays to road and local trains arriving at, and departing from, the yard.

The list of random outages "selected" by witness McDonald also failed to account for a variety of other events that would, in reality, affect the SBRR's train operations. For example, witness McDonald did not select any of the "Mechanical (Other Than Locomotive)" failures reflected in the real world data furnished by NS. The category of "Other" mechanical failures includes events such as sticking brakes and dragging equipment. Nor did witness McDonald "select" for inclusion in SunBelt's analysis any delays caused by a train meeting another train that has stalled due to a mechanical problem. SunBelt's RTC Model also contains no delays attributable to broken rails or end-of-train device failures. The data provided to SunBelt show that, in reality, NS experienced each of those types of failures in the territory replicated by the SBRR during the time period upon which SunBelt based its peak period random outage analysis.[174] SunBelt offers no evidence to support its (indefensible) assumption that the SBRR would be immune to such occurrences. Likewise, witness McDonald's list of outages contains no delays on account of regulatory activities such as rules checks, random drug screening, or similar actions by FRA inspectors. As a Class I carrier by its Peak Year of operations, the SBRR would be subject to such random inspections and testing. SunBelt proffers no rationale for categorically excluding such real world failures and delays from its RTC analysis.

SunBelt's decision to exclude entire categories of delay events that real world railroads experience on a daily basis resulted in an RTC simulation that understates the impact of random failures on the SBRR's operations. As SunBelt reported, "the end result of [witness McDonald's selection process] was to include 25 operational and maintenance outages as inputs to the RTC

---

[174] *See* NS Reply WP "NS Reply SBRR – Delays.xlsx."

Model." SunBelt Opening Ex. III-C-2 at 10.[175] The data provided to SunBelt in discovery show that, in reality, NS experienced a total of { } random outages in the territory replicated by the SBRR during the period analyzed by witness McDonald.[176] NS addresses this deficiency by incorporating 45 random outage events in its RTC Model.[177]

SunBelt's RTC Model likewise understates the impact of program maintenance activities on the SBRR's operations.[178] SunBelt's list of 25 outages includes only one event reflecting a conflict between a train movement and an SBRR maintenance of way gang.[179] In other words, SunBelt's RTC Model assumes that the SBRR would experience only one maintenance-related train delay across its 580-mile rail network during the entire 10-day period covered by its RTC simulation. SunBelt's assumption that required maintenance activities would have such a *de minimis* impact on SBRR trains does not comport with the realities of real world railroading. The absence of delays caused by program maintenance in the random outage data produced by NS in discovery is attributable to the timing of the "peak period" and the manner in which NS schedules program maintenance across its system. Specifically, NS gangs perform program

---

[175] *See* SunBelt Opening WP "Delay_2009(on-sarr).xlsx." As the name of this workpaper suggests, SunBelt apparently based its "selection" of random outages on data for 2009 that was provided to SunBelt's counsel and consultants in connection with a different SAC proceeding. NS corrects this error by utilizing the 2011 random outage information furnished to SunBelt in discovery.

[176] NS Reply WP "NS Reply SBRR - Delays.xlsx."

[177] See NS Reply WP "List of Outages in RTC model.xlsx." Certain categories of random outages set forth in the data provided to SunBelt in discovery are addressed by other aspects of NS's operating plan and RTC simulation, and therefore were not included in NS's Reply RTC simulation. For example, delays resulting from trains having to wait for the arrival of crews or locomotive power are not included because NS's operating plan provides a sufficient number of crews and locomotives to avoid such occurrences.

[178] *AEPCO 2011*, STB Docket No. 42113, at 28 (rejecting complainant's operating plan in part for failure to account for program maintenance).

[179] *See* SunBelt Opening WP "Delay_2009(on-sarr).xlsx."

maintenance on the Alabama Subdivision (and other southern portions of the NS network) during the early months of the year, when weather conditions inhibit such work further north. NS performed heavy program maintenance on the Alabama Subdivision during the first quarter of 2011.[180] However, that work had been completed, and the NS gangs had moved north, by the peak period (May 19 – 28) replicated in SBRR's RTC simulation.[181] Unlike NS, the SBRR would not operate a large rail network spanning the Northeast, Southeast, and portions of the Midwest. Accordingly, it is not likely that the SBRR would concentrate its program maintenance in the same manner as NS. In order to more accurately reflect the impact of program maintenance activity on the SBRR's train operations, NS developed four "maintenance windows" (two each on the SBRR's McIntosh – Burstall line and Birmingham – New Orleans line) and incorporated them into NS's Reply RTC Model.[182]

SunBelt's flawed random outage "selection" process produced an RTC simulation that fails to account for the impact of random outages and maintenance activities on the SBRR's train operations and, therefore, does not accurately measure the SBRR's track capacity requirements.[183]

4. SunBelt Failed To Input Foreign Railroad Crossings And Road Crossings Into Its RTC Model.

SunBelt's RTC simulation does not take account of the impact of conflicts between SBRR trains and foreign trains at locations where the SBRR's lines intersect those of other railroads. In building its RTC Model, SunBelt failed to input any foreign railroad crossings into

---

[180] *See* NS Reply WP "2011 T&S Schedule."

[181] *See* SunBelt Opening Ex. III-C-2 at 12.

[182] *See* NS Reply WP "NS Reply MAINTENANCE WINDOWS.xlsx."

[183] *See AEPCO*, STB Docket No. 42113, at 28, 30 (rejecting complainant's operating plan).

the SBRR network, nor did SunBelt incorporate any delay events to simulate the impact of conflicts between SBRR and foreign trains. Instead, SunBelt's RTC simulation assumes (contrary to reality) that SBRR trains would at all times proceed unimpeded by foreign train movements. This means that SunBelt's simulation does not take account of the delays that real world railroads inevitably experience as a result of being required to reduce train speeds, or to hold trains at crossings, to accommodate foreign trains crossing their lines.

In reality, the SBRR's operations would be impacted by foreign train movements on a daily basis. The NS lines replicated by the SBRR include seven locations at which the SBRR's tracks and those of other railroads intersect. Information regarding the number and location of these foreign train crossing points was readily available to SunBelt on the NS track charts produced in discovery.[184] Moreover, as SunBelt's experts know, information regarding the number of foreign trains that cross NS's lines is publicly available from the FRA.[185]

NS's Reply RTC simulation corrects this deficiency in SunBelt's evidence by taking account of both the number and location of foreign train crossing movements each day during the peak period. Specifically, NS constructed several miles of "foreign" rail lines at the locations where they intersect the SBRR network. NS then modeled the interaction of foreign trains with SBRR trains, and allowed the RTC Model to "resolve" conflicts between those trains. The foreign train crossings along the SBRR system and the number of foreign train movements per day at each of those locations included in NS's Reply RTC simulation are set forth in NS Reply workpaper "At-Grade Foreign Crossing Train Data.xlsx."

---

[184] *See* NS Reply WP Folder "Documents Produced in Discovery III-C," "Track Chart Documents and Data.doc."

[185] *See* http://safetydata.fra.dot.gov/OfficeofSafety; *see also* NS Reply WP "At-Grade Foreign Crossing Train Data.xlsx."

SunBelt's RTC Model also fails to account for the impact of at-grade road crossings on the SBRR's train operations. The NS Alabama Division track charts provided to SunBelt in discovery identified the locations of all actively-protected (*i.e.*, flashing lights and/or crossing gates) public road crossings along the SBRR system. While SunBelt included some of those crossings in its RTC Model, it failed to account for road crossings at 158 other locations. Accurate coding of road crossings is an important step in developing an RTC Model. In the real world, the rail lines of NS and other carriers include sidings that cross active roads. Unless such road crossings are coded accurately into the RTC Model, the Model may resolve train conflicts in a manner that allows trains to dwell on those sidings (and block the road) for extended periods of time. Many local jurisdictions have ordinances that impose fines on railroads for blocking main roads in this manner. NS corrected this error by including the missing road crossings in its RTC Model.[186]

SunBelt's failure to evaluate foreign train and at-grade road crossing points in its simulated SBRR network, or to include any input for train delays caused by train crossing movements, further invalidates the train transit times and equipment cycle times generated by SunBelt's RTC simulation.

5. SunBelt's RTC Simulation Fails To Give Effect To The Impact Of Hi-Rail Vehicles.

SunBelt's RTC simulation purports to take into account the fact that the SBRR would need to perform twice-weekly FRA-mandated track inspections, using hi-rail vehicles. However, SunBelt assumes that such inspections "can be performed between train movements . . . . or the hi-rail vehicle can follow a train on the same block (with the dispatcher's approval).

---

[186] A list of the public road crossings missing from SunBelt's RTC Model and included in NS's Reply RTC Model is set forth in NS Reply WP "SunBelt Missing Road Crossings.xlsx."

Accordingly, there is no need to allot separate time for FRA-prescribed track inspection in the RTC Model." SunBelt Opening Ex. III-C-2 at 8.

SunBelt's assumption that hi-rail vehicles performing FRA-mandated track inspections could, in all instances, share track blocks with SBRR trains is wrong. As SunBelt witness McDonald should know, hi-rail vehicle movements are generally not regulated by the railroad's signal system. Rather, hi-rail vehicles occupy track pursuant to "track warrants" communicated to the operator of the vehicle by dispatching personnel. A track warrant issued to a hi-rail vehicle creates an "absolute block" that cannot be shared by a train. Hi-rail vehicles travel at a maximum speed of 35 MPH and make frequent stops as inspectors exit the vehicle to examine track, ties or other infrastructure. A hi-rail vehicle can exit the line only at a road crossing, where it is possible to switch from steel wheels to rubber tires. For these reasons, SunBelt's suggestion that the SBRR would permit trains and hi-rail vehicles to travel in the same track block is both contrary to prevailing practice and highly dangerous.

SunBelt's self-serving assumption that hi-rail vehicles would never conflict with or delay SBRR trains results in a further understatement of the SBRR's track capacity requirements.

* * * * *

As the foregoing discussion demonstrates, SunBelt's RTC Model and simulation (1) are based on a fatally deficient operating plan from which 50 peak period trains are "missing;" (2) include incorrect grade information; (3) fail to model the movement of SBRR road and local trains completely and accurately; (4) incorporate assumptions that violate applicable laws and regulations, industry "best practices" and even the laws of physics; (5) fail to account in any meaningful way for delays that SBRR trains would experience on a daily basis as a result of random outages, foreign train crossings, and at-grade public highway crossings; and (6) contain

other errors and faulty assumptions that undermine the validity of SunBelt's RTC simulation. In short, the RTC simulation proffered by SunBelt in support of its Operating Plan—and the outputs of that simulation—have no basis in reality, and the Board should disregard them.

Even if SunBelt's RTC simulation were credible—and it clearly is not—SunBelt has not presented evidence that supports its claim that the simulation "confirms" the adequacy of the SBRR's track configuration and Operating Plan. SunBelt Opening III-C-15-16. According to SunBelt, its RTC simulation proves that "[t]he SBRR's trains operate in a manner that produces faster train speeds and transit times on average than NS demonstrated in the provided train movement data." SunBelt Opening III-C-16. Based on that assertion, SunBelt contends that "[t]he SBRR's ability to provide service equal to or better than the service provided by NS therefore is confirmed." *Id.* SunBelt is mistaken.

"Service quality" for general freight traffic is not (as SunBelt assumes) a function of the speed at which trains operate along a line of railroad or the transit times that they achieve between stations. The process of serving merchandise shippers involves far more than simply operating road trains between origin and destination terminals. Rather, general freight service involves a multi-step "trip plan" for each car that includes not only line-haul movement in one or more road trains, but also placement of an empty car for loading at origin, local train service to pick up the car once it is loaded, classification and switching of the car at one or more yards to ensure that it is transferred efficiently between trains, local train service to deliver the car to its final destination, and compliance with any special customer instructions during all phases of the movement.[187] As NS's Reply Evidence demonstrates, SunBelt's Operating Plan utterly fails to account for those critical elements of general freight rail service—and, in particular, the time

[187] *See* NS Reply Ex. III-C-1.

required to perform them—and its RTC simulation is premised entirely upon that fatally deficient Operating Plan. SunBelt's RTC Model does not include 50 of the 573 peak period trains that are necessary to provide uninterrupted service to the SBRR's customers. SunBelt does not even mention, much less account for, the special rules and handling requirements associated with the thousands of cars of TIH traffic in the SBRR's traffic group—including the issue traffic. SunBelt's failure to account for those critical elements of general freight operations renders the SBRR service posited by SunBelt, on its face, inferior to the real world service provided by NS.

Moreover, SunBelt's suggestion that the train speeds and transit times achievable by the SBRR are significantly faster than NS's real-world train speeds and transit times is misleading. As an initial matter, the SBRR train speeds and transit times posited by SunBelt are the product of a fatally-flawed RTC simulation whose results are meaningless. For example, as NS demonstrates above (at III-C-81 to III-C-83), SunBelt's RTC Model allows "Key Trains" containing chlorine and other TIH commodities to operate between Birmingham and New Orleans at speeds of up to 60 MPH—in clear violation of the federally-mandated 50 MPH speed limit for such trains.[188] That error alone invalidates SunBelt's train speed and transit time comparison for general freight trains. Moreover, the failure of SunBelt's RTC Model to simulate accurately the impact of random outages on train operations, or the time that trains would dwell while performing "work events" like pickups and setoffs at customer facilities and inspections, fueling, and switching at intermediate yards invalidates the transit times generated by SunBelt's RTC simulation. For these reasons, SunBelt's transit time calculations are entitled to no evidentiary weight.

---

[188] *See* NS Reply WP "Key Trains Analysis.xlsx."

The train speeds and transit times reflected in SunBelt's RTC simulation are (like the rest of its operating evidence) utterly unrealistic. As NS Reply workpaper "Transit Time Comparison.xlsx" shows, when the errors and omissions in SunBelt's RTC Model are corrected, the resulting transit times are, in virtually every instance, longer than those generated by SunBelt's flawed analysis. By contrast, the transit times produced by NS's RTC simulation are, in virtually all instances, better than (but comparable to), NS's real world experience. In short, NS's RTC simulation provides results that are more consistent with the realities of real-world railroading.

NORFOLK SOUTHERN'S OPERATING PLAN FOR THE SBRR

1. General Parameters and Methodology

SunBelt's Operating Plan is fatally deficient and infeasible. The Board has stated that, even if the defendant carrier demonstrates that a complainant's operating evidence is rejected—as it should be here—the defendant must submit its own operating plan and present its own operating, maintenance, and capital cost estimates.[189] NS is adhering to that Board admonition. However, to be explicit, NS is not waiving its argument that SunBelt has failed to present a *prima facie* case—including for failing to present an operating plan to serve the issue traffic from origin to destination and for presenting an operating plan with so many other colossal shortcomings—by doing so.

---

[189] *See Duke/CSXT*, 7 S.T.B. at 430 ("When the plan presented in a SAC case by the complainant is unfeasible, it is generally incumbent on the defendant railroad to present a realistic alternative so that the SAC analysis may be completed."); *see also CP&L*, 7 S.T.B. at 242 ("[T]he shipper's operating plan for the stand-alone railroad (SARR) designed here is unworkable, and the Board's SAC analysis is therefore based on the operating plan proposed for the SARR by NS.").

NS presents in this section of its Reply Evidence the complete and feasible Operating Plan for the SBRR that SunBelt failed to proffer in its Opening Evidence.[190] Based upon the Operating Plan set forth in this Part III-C, NS defined and quantified the track and facilities that the SBRR would need to handle its selected traffic (*see supra* Section III.B), and developed an accurate estimate of the SBRR's operating expenses (*see infra* Section III.D).

NS's Operating Plan was developed by a group of operating experts led by witness Ron Johnson. Drawing on their extensive experience with NS's day-to-day freight operations, personal observation of rail operations at key points on the SBRR (including both McIntosh and Birmingham), the data furnished to SunBelt in discovery, and SunBelt's own Opening Evidence and workpapers, NS's operating witnesses developed an operating plan that accounts for all of the road and local train services, intermediate classification and switching of carload shipments, and pick-ups and set-offs at customer facilities and interchange points required to serve the SBRR's selected traffic, in a manner consistent with customer needs, applicable laws, and real-world railroad operating practices. NS's Operating Plan includes the main line and secondary track; yard facilities and personnel; intermodal and automotive facilities; locomotives and cars, crews, and other operating personnel; repair facilities; and management and administrative support that the SBRR would need to provide service in the least-cost, most efficient manner, consistent with customer requirements and in accordance with applicable laws and safe operating practices. NS developed, from the ground up, a complete Operating Plan that, unlike the plan submitted by SunBelt, is capable of meeting the service requirements of the SBRR's customers.

The starting point for NS's Operating Plan was the traffic group actually selected by SunBelt, rather than a collection of trains culled from an historical database (upon which SunBelt

---

[190] *Id.*

relied exclusively in designing its Operating Plan). In designing that Operating Plan, NS did not rely upon any data regarding NS's real world traffic, facilities, or equipment that were not made available to SunBelt.

NS's Operating Plan for the SBRR consists of four major elements:

(1) A comprehensive car blocking and train service plan that accounts for the complete movement of every carload in the SBRR's selected traffic group (and associated empty car movements) across the SBRR network, and a local train service plan that provides the required pick ups and set offs at all customer facilities (including SunBelt's McIntosh facility) and interchange locations.

(2) A group of yards, intermodal and automotive terminals, industrial support tracks, and other facilities adequate to support the SBRR's road and local train operations, locomotive fueling and servicing, car inspections, and car repair functions, as well as the intermediate classification and switching activities that SunBelt failed to account for in its Operating Plan.

(3) A specification of the locomotives, equipment, and personnel (including dispatchers, crew management personnel, operations control center staff, locomotive operations managers, division superintendants, car inspectors and repair personnel, and safety and training personnel) required to support the SBRR's operations.

(4) An RTC Model simulation based upon NS's complete and feasible Operating Plan, which demonstrates the adequacy of the facilities, equipment, and personnel posited by NS.

The SBRR's car blocking and train service plan was developed by witnesses Ron Johnson, Dale Schaub, Dewey Smith, and Clark Cheng of NS, and Benton Fisher of FTI Consulting. The sizing and configuration of the SBRR's yard facilities was developed by NS witness Kenneth LeCroy, with inputs provided by witnesses Johnson, Schaub, and Smith. Witnesses Johnson and Schaub of NS developed the SBRR's locomotive, car fleet, and personnel requirements. NS's RTC Model and simulation of the SBRR's peak period operations were developed by witness Dave Wheeler and NS witness Michael Williams. The background and qualifications of the witnesses sponsoring NS's operating evidence are set forth in Part IV.

The methodologies that NS employed in developing each element of its Operating Plan are described in the following sections. NS Reply Exhibit III-B-1 is a map that depicts the SBRR's rail lines, yards, interchange points, and intermodal and automotive facilities.

a. SBRR Car Blocking and Train Service Plan

The first step that NS undertook in developing its Operating Plan was to analyze the traffic that SunBelt selected for the SBRR. The selected traffic includes unit train shipments of coal, intermodal traffic moving in "trainload" shipments, automobiles transported in specialized Multilevel rail cars, and general freight (including TIH and other hazardous commodities) moving in a variety of equipment types. While all of these categories of traffic move over the same track network, each has unique operating characteristics and handling requirements. Unit train service is most common in connection with shipments of coal and grain. Intermodal shipments also travel frequently (but not exclusively) in "trainload" service. Conversely, merchandise and automotive shipments normally move in single- or multi- car shipments and travel in more than one train between origin and destination, requiring the carrier to classify and block those cars at intermediate locations along their route of movement. Accordingly, the operations required to transport "carload" traffic are more complex, and require more facilities and labor, than "trainload" shipments. Because SunBelt elected to posit a SARR that carries substantial volumes of "carload" traffic, the SBRR's operations are different from those of a "trainload" carrier that handles primarily unit train shipments. NS's Operating Plan addresses the distinct service requirements of the SBRR's carload, intermodal, and unit train traffic.

i. Carload Traffic

NS's Operating Plan is specifically tailored to address the requirements of the carload freight that SunBelt actually selected. In order to enable the SBRR to transport carload traffic efficiently across its system, NS developed a detailed car blocking and train service plan for that

traffic. Starting with SBRR's selected traffic file, NS built a plan for that traffic "from the ground up" rather than relying (as SunBelt did) upon historical NS train movement data as a surrogate for the SBRR's operations.[191] NS's Operating Plan is designed to accommodate the volume of carload traffic that the SBRR would handle in the Peak Year (July 30, 2020 to July 29, 2021).

In developing the SBRR's carload blocking and train service plan, NS utilized the "MultiRail" program. MultiRail is a sophisticated modeling tool that integrates information regarding a railroad's traffic, network configuration, and customer service requirements to generate blocking plans and train schedules that are optimized to serve an identified traffic group.[192] The MultiRail program facilitated the task of analyzing the specific services required by the 471,597 carloads of general freight traffic that SunBelt selected for the SBRR.[193] MultiRail has been used by all of the North American Class I railroads in connection with their network planning and service design activities.

---

[191] The traffic incorporated in NS's Operating Plan was obtained by identifying the waybills for SunBelt traffic summarized in SunBelt Opening Table III-A-1, breaking down each of these waybills by car or container, and incorporating operating details for each shipment. The resulting data set can be found in NS Reply WP "Sunbelt_2011_Operating_Plan_Dataset_101112.zip"

[192] MultiRail is commercially available from Oliver Wyman. http://rail.railplanning.com/multi-rail/. *See* NS Reply WP "MultiRail Freight Edition.pdf." MultiRail has been used by parties to create blocking plans and train schedules in a number of prior STB proceedings. *See, e.g., Seminole Electric Cooperative, Inc. v. CSX Transportation, Inc.*, STB Docket No. 42110 (Reply Evidence of CSX); *Canadian National Railway Company, Grand Trunk Corporation and Grand Trunk Western Railroad Incorporated—Control—Illinois Central Corporation, Illinois Central Railroad Company, Chicago, Central and Pacific Railroad Company and Cedar River Railroad Company*, S.T.B. Fin. Docket No. 33556 (served May 25, 1999). NS has arranged with Oliver Wyman for both SunBelt and the Board to be permitted limited access to MultiRail for purposes of this case.

[193] *See* SunBelt Opening III-C-3, Table III-C-1.

The following is a summary description of the methodology that NS employed in developing the SBRR's carload blocking and train service plan.[194]

First, the SBRR's selected carload traffic was analyzed to identify the specific details at the shipment level (origin, junctions, car type, etc.); the resulting shipment-level details were imported into the MultiRail program.[195] NS witness Cheng began with SunBelt's Base Year traffic file, corrected for SunBelt's volume overstatement described in Section III-A, above. These Base Year traffic volumes were increased based on commodity group-specific growth factors provided by witness Benton Fisher, to determine the Peak Year traffic volumes that needed to be accounted for in the SBRR's car blocking and train service plan.[196] The number of empty car movements associated with the SBRR's carload shipments was developed by applying NS's actual 2011 loaded car-mile ratios, by car type and ownership type, as reported in NS's R-1 Annual Report, Schedule 755.[197] The resulting loaded and empty Peak Year volumes were then input to the MultiRail program for analysis.

Next, NS input to the MultiRail program the physical network for the NS lines replicated by the SBRR system. The physical network input to MultiRail included the yard locations

---

[194] The methodologies and processes that NS employed in conducting its MultiRail analysis of the SBRR's traffic are described in detail in NS Reply Workpaper "Modeling Operating Plan in MultiRail for SunBelt Rate Case.doc" and in other files in NS Reply WP folder "MultiRail."

[195] The SBRR's coal and grain unit train traffic was not input to MultiRail, as that traffic moves in a single train between a single origin (or on-SARR junction) and a single destination (or off-SARR junction), so that a "trip plan" for each individual car was not necessary. As discussed below (at III-C-131 to III-C-132), the SBRR's trainload intermodal traffic was analyzed separately by MultiRail to determine train schedules and terminal handling for those trains.

[196] The commodity group-specific growth factors applied by witness Cheng are set forth in NS Reply WP "Modeling Operating Plan in MultiRail for SunBelt Rate Case.doc" at 5. The SBRR's Peak Year traffic volumes are discussed in detail in Section III-A above.

[197] NS Reply WP "Modeling Operating Plan in MultiRail for SunBelt Rate Case.doc" at 3.

identified by NS as necessary to support the SBRR's train operations, and the intermodal and automotive facilities that the SBRR would need to serve those segments of its traffic group.

NS then input an initial list of "blocks" to be created by, and moved along the SBRR network in, the MultiRail program. NS based this initial list of blocks on the blocks that NS builds in its current daily operations in the territory replicated by the SBRR. The initial list of blocks input to MultiRail included both "internal" blocks to move cars between points along the SBRR network, and "external" blocks of cars to be forwarded to connecting rail carriers. Thus, the SBRR blocking plan developed by NS accounts for both traffic blocks that would be built by other railroads (including the residual NS) off-SARR and received by the SBRR and blocks that the SBRR would reciprocally be required to build for delivery to NS and other railroads pursuant to the NS intercarrier arrangements that the SBRR adopted. This assured that the SBRR's interline traffic would move in the most efficient and lowest-cost manner possible, and in a manner consistent with NS's intercarrier agreements.[198]

After the initial SBRR blocking plan was input to MultiRail, the SBRR's carload traffic was "flowed" through the program, which assigned each individual car to one or more blocks as necessary to move it from origin (or on-SARR junction) to destination (or off-SARR junction). In each case, MultiRail selected the least-cost, most-efficient routing available. This process generated, for each car, a "blocking sequence" that defined its movement across the SBRR system.[199] Cars that failed to flow completely were flagged in a "Traffic Routing – Flows with No Block Option Report" generated by MultiRail. Witness Cheng reviewed that report and defined additional "blocks" as necessary to complete the movement of all cars. In an iterative

---

[198] The blocks that NS and connecting carriers build for one another in the territory replicated by the SBRR pursuant to NS's intercarrier agreements are described above at III-C-64 to III-C-67.

[199] *See* NS Reply WP Folder "MultiRail," "Block_NS_SBRR.mbp."

process, traffic was flowed through MultiRail again until every car in the SBRR's traffic group flowed successfully through the MultiRail program and was assigned a complete "blocking sequence."

When all of the SBRR cars flowed successfully through the MultiRail program, NS applied a number of "quality control" measures to ensure the efficiency of the SBRR's blocking plan. For example, MultiRail generates a "Traffic Circuity Report" that identifies unnecessarily circuitous routings. NS consulted the "Traffic Circuity Report" to determine whether the routing of certain cars required adjustment to provide more efficient handling. In addition, the "Block Bypass Report" and "Excessive Handling Report" generated by MultiRail identified opportunities to consolidate or eliminate blocks, thereby enabling certain groups of cars to "run through" classification facilities without further handling. NS used the Block Bypass Report to optimize the handling of individual cars (or blocks of cars). The foregoing steps produced a comprehensive "blocking plan" that provides for the movement of every carload shipment across the SBRR network in an efficient manner, and enables the SBRR to track those movements.[200]

Once a detailed blocking plan for all SBRR carload traffic was created, the next step was to design a train service plan capable of transporting those traffic blocks across the SBRR network. As it did in developing its blocking plan, NS utilized MultiRail in designing the SBRR's train service plan. NS input an initial list of SBRR trains based on NS's real-world train schedules for the territory replicated by the SBRR (which were produced to SunBelt in discovery).[201] Witness Smith assigned one or more blocks of cars to each train, based upon the train's direction of movement, the distance it would travel along the SBRR network, and the

---

[200] NS Reply WP Folder "MultiRail," "Block_NS_SBRR.mbp" identifies the general freight traffic blocks incorporated into NS's Operating Plan.

[201] *See* NS Reply WP Folder "Documents Produced in Discovery III-C," "Schedule.xls."

intermediate stops it was scheduled to make en route. NS applied a number of quality control measures to ensure that each and every block generated by MultiRail was moved along the SBRR network as required. MultiRail generated a "Block Train Validity Check Report" that identified any "stranded" blocks. Based on the block-to-train assignments, witness Smith also identified the yard locations at which individual blocks of cars would be picked up or set off by road trains and at which individual cars would need to be transferred between blocks. In an iterative process similar to that used in developing the SBRR's blocking plan, trains were added or adjusted as necessary to provide complete, efficient on-SARR service for all SBRR traffic blocks.

Local train service requirements were based upon several factors. First, witness Johnson analyzed the daily volume of merchandise cars that would arrive at and depart from each terminal location. In addition to daily traffic volume, witness Johnson considered the number of distinct customer facilities that would have to be served by each local train assignment, as well as the direction of travel, and distance of customer facilities from the subject SBRR serving yard. For example, a single local train operating in "turn service" might be capable of picking up and setting off a group of 40 merchandise cars at several customer facilities located along the same secondary line. However, as often occurs in the real world, if the customers are more widely dispersed (*e.g.*, some customers are located on a branch line east of the serving yard, while others are located on a different branch west of that yard), a second local assignment might be required to pick up and set off the same number of cars on a daily basis. Finally, in determining the number and frequency of local trains, railroads must take into account the particular work that each local assignment must do along its route of movement. A local train may be required to

perform a variety of specialized tasks, such as "spotting" cars on specific tracks in a specific order, to satisfy a particular carload customer's requirements. *See supra* III-C-41 to III-C-43.

As discussed above (at III-C-A-3), providing local service at SunBelt's McIntosh plant (where the issue traffic originates) involves extensive switching as well as compliance with a variety of special requirements. Both inbound and outbound shipments must be classified into blocks and placed on particular tracks specified by SunBelt. Because SunBelt's traffic includes substantial volumes of chlorine (a TIH commodity), the NS crew must perform a number of safety-related checks and comply with various government, NS, and Olin rules and procedures in handling those cars. *Id.*[202] In the real world, local trains performing those operations in connection with NS's twice-daily service to SunBelt occupy the main line for lengthy periods of time. In order to reduce such interference with road train operations, and to address the chronic shortage of track space at SunBelt's facility, witnesses Johnson and Smith modified the current operation by providing for service to SunBelt by two daily yard assignments based at the SBRR's McIntosh yard, and adding to that yard several tracks that would be used to store "overflow" cars from the SunBelt plant. NS's Operating Plan takes account of such location-specific service requirements at all customer facilities, and accounts for both the level of service and the time required to meet the needs of the NS customers whose traffic SunBelt selected for the SBRR.[203]

A realistic train service plan must also consider not only the number of road and local trains physically required to handle a particular traffic group, but also the schedule upon which those trains will operate. To provide the most efficient service to their customers, railroads

---

[202] *See also* NS Reply Ex. III-C-12.

[203] *See* NS Reply Ex. III-C-13.

carefully coordinate road train schedules with the schedules on which local trains serving customer locations operate. This minimizes both the "dwell time" spent by road trains at intermediate terminals, and the time required to deliver cars to customer facilities following their arrival at a serving yard (or, conversely, the time between picking up a car at a customer facility and the time it departs in a road train). NS's MultiRail analysis not only identified the trains that the SBRR would need to operate, but also developed the schedule upon which they would operate. By contrast, SunBelt's Operating Plan does not reflect any effort to coordinate the schedules of SBRR trains.

Once all of the required trains were input, and blocks were assigned to the trains required to move them, NS conducted a simulation of the SBRR's Peak Year train operations utilizing MultiRail's "SuperSim" (or trip planning) function. The "SuperSim" analysis simulated the movement of SBRR trains and the transfer of blocks of cars between trains (and of individual cars between blocks) during a typical seven day period during the Peak Year. The simulation confirmed that NS's Operating Plan accounted for the complete movement of every carload shipment.[204] It also generated "Terminal Clock Reports" that identified the times at which SBRR trains (and the blocks of cars traveling in them) arrived at, and departed from, intermediate terminals along the network.[205]

---

[204] NS Reply WP "tripplans.txt."

[205] *See* NS Reply WP folder "MultiRail, file "Terminal Clock Reports." NS's MultiRail analysis assumes that cars classified or swapped in blocks at the SBRR's "hump" yard at Birmingham, AL will spend ten hours of dwell time in the yard (four hours in the receiving yard, two hours going through the classification "bowl," and four hours in the forwarding yard prior to departure). At the SBRR's "flat switching" yards, the assumed dwell time for cars is eight hours. These dwell time assumptions represent the minimum dwell time for cars moving through yards in NS's real world operations. Publicly available data indicate that NS's average terminal dwell time is 22.1 hours, which is the lowest among the four major U.S. Class I carriers. *See* NS Reply

The "SuperSim" element of NS's MultiRail analysis generated a "trip plan" for each individual SBRR carload shipment. That "trip plan" includes, for each car, scheduled train services that provide line haul transportation (on one or more trains, as necessary) along the SBRR network; a blocking sequence that identifies the locations at which the car must be classified or switched; the locations where the car must be transferred between trains; and a local train service plan to deliver empty cars for loading at origin, pick up loaded cars for line-haul movement, and deliver loaded cars to destination customer facilities. Having such a trip plan for each car enables the SBRR to track the car's movement as it proceeds along the network, and to comply with federal regulations governing the movement of TIH shipments (which represent a considerably higher proportion of SBRR's traffic than NS's. *See* Section III-D-9-e. NS's Operating Plan also gives the SBRR the ability to provide customers real-time access to information regarding the location of their shipments—a service that shippers such as SunBelt have come to expect in today's competitive general freight transportation marketplace.

As it did for its blocking plan, NS validated its train service plan by performing several quality checks on the output of the MultiRail program. For example, NS reviewed a "Train Volume Summary Report" in MultiRail to identify trains that were "too long" or "too short" in comparison to NS's real world trains.[206] NS consulted the Terminal Clock Reports to identify situations in which road trains would experience excessive dwell time at a particular location, and adjusted the schedules of road and/or local trains as necessary to improve overall system

---

WP "NS Performance Measures.pdf." Performance Measure Reports are published by the AAR and are available at: http://aar.org/rpm.aspx.

[206] NS's Operating Plan adopts the same assumption regarding maximum train length as SunBelt—*i.e.,* the maximum length of SBRR trains is based upon the longest train, by train symbol, operated by NS in the Base Year. *See* SunBelt Opening III-C-9, n. 6.

fluidity and efficiency. These adjustments reduced the SBRR's locomotive, car, and crew expenses.

NS performed two separate analyses of the SBRR's carload traffic using the MultiRail process described above. One plan, based on the SBRR's projected Peak Year traffic volumes, was used to develop the SBRR's infrastructure requirements and inputs for the RTC simulation.[207] A second analysis, based on Base Year traffic levels, was used to develop the SBRR's Operating Plan and to calculate the SBRR's operating statistics that drive the operating expenses. Exhibits III-C-14 and III-C-15 present flow charts summarizing the components of NS's analyses of the SBRR Operating Plan for the Base Year and Peak Year traffic volumes, in order to determine the SBRR operating expense and infrastructure requirements, respectively.

NS's MultiRail analysis produced a number of outputs that were used to develop various elements of NS's Operating Plan. Witness LeCroy used information generated by MultiRail regarding the time at which trains arrived at, or departed from, the SBRR's yards, and the blocks (and block sizes) arriving and departing on each train, to size and configure the SBRR's yards. The RTC Model developed by witnesses Wheeler and Williams utilized a variety of outputs from the MultiRail process, including (1) the track network as developed in MultiRail; (2) a list of the SBRR's road and local trains that SunBelt failed to include in its operating plan and RTC simulation (including, for each of those "missing" trains, the number of cars, trailing tons and

---

[207] MultiRail simulates the daily operations of the SBRR under "ideal" conditions—*i.e.*, it assumes that all trains run on schedule, and are not affected by events such as random track outages, locomotive failures, weather and maintenance activities. NS's RTC simulation tests the adequacy of the SBRR's track configuration taking such delay factors into account.

trailing length, and the number of locomotives); and (3) the work events performed by each train as it travels along the SBRR network.[208]

ii. Intermodal Traffic

The traffic selected by SunBelt for the SBRR includes nearly 600,000 units of intermodal traffic. SunBelt Opening III-C-3, Table III-C-1. NS's Operating Plan for trainload movements of intermodal traffic was developed in the following manner.

As it did in developing the SBRR's carload blocking and train service plan, NS began by analyzing the intermodal traffic that SunBelt selected for the SBRR and breaking out for each shipment the flat car that SunBelt associated with each container or trailer. Consequently, the traffic records for intermodal shipments included both a "Container/Trailer Waybill" for each individual container or trailer moving in intermodal service and a "Flat Car Waybill" for each flat car carrying those containers and trailers.[209]

Once the records for the SBRR's "trainload" intermodal traffic were identified, the SBRR's intermodal trains were input to MultiRail and flowed across the SBRR network. Flowing the SBRR's intermodal traffic through MultiRail enabled NS to develop data for intermodal shipments similar to that generated for the SBRR's carload traffic, including a list of SBRR intermodal trains; their length, trailing tons and locomotive consists; the intermodal containers and/or trailers moving on each train; and any work events performed by each train en

---

[208] The specific MultiRail outputs relied upon by witness LeCroy in analyzing the SBRR's yard requirements are set forth in NS Reply WP Folder "MultiRail." The specific MultiRail outputs relied upon by witnesses Wheeler and Williams in developing NS's RTC Model simulation of the SBRR's operations are set forth in NS Reply WP Folder "RTC."

[209] In its analysis of the SBRR's Base Year intermodal shipments, NS determined that there were very few empty flat-car movements on the lines replicated by the SBRR. Rather than apply the NS system-wide empty return ratio as it did for other car types, NS made the conservative assumption not to include additional empty flat cars in its MultiRail analysis and SBRR Operating Plan.

route. That information was utilized by witnesses Johnson and Smith in designing the SBRR's intermodal facilities at Birmingham, AL, and New Orleans, LA. As with carload traffic, NS's Operating Plan for intermodal traffic accounts for all of the services, facilities, and time required to handle that traffic in accordance with customer requirements.

iii. Unit Train Traffic

The traffic selected by SunBelt for the SBRR includes 13,882 carloads of coal, virtually all of which moves in unit train service. Because unit train shipments, by definition, move intact between a single origin (or on-SARR location) and a single destination (or off-SARR point), it was not necessary to develop "trip plans" in MultiRail for individual cars traveling in a unit train. Rather, NS incorporated the intact movement of unit train traffic between SARR origin and SARR destination directly into its Operating Plan and RTC Model simulation. While SunBelt accounted for the line-haul movement of unit trains across the SBRR network, the destination dwell times assigned to those trains in SunBelt's RTC simulation was significantly understated. NS's Operating Plan adjusts those dwell times as necessary to reflect real world operations at coal origins and destinations served by the SBRR. *See AEPCO 2011*, STB Docket No. 42113 at 29 (accepting defendants dwell times "because they reflect real-world railroading"); *see also infra* III-C-186 to III-C-187.

* * * * *

The analysis of the SBRR's traffic performed by NS utilizing the MultiRail program enables the Board to trace the movement of each individual carload of general freight traffic from its arrival on the SBRR through its delivery to a destination customer or interchange with a connecting carrier. In contrast to SunBelt's fatally deficient Opening Evidence, NS's MultiRail analysis identifies and accounts for all of the road and local train services, intermediate classification and switching of individual cars, "swapping" of blocks between trains, and pick

ups and set offs at customer facilities and interchange points that are necessary to handle the carload traffic that SunBelt selected for the SBRR. The data generated by MultiRail also reflects the time required to perform those activities—a critical operating plan element that SunBelt completely failed to address. The results of NS's MultiRail simulation were used in designing the SBRR's yards and intermodal and automotive facilities, and in assessing the adequacy of the SBRR network in NS's RTC Model simulation.

b. Development of SBRR Yard Facilities

A critical element of a "feasible" operating plan for a railroad (like the SBRR) that proposes to handle nearly one-half million shipments of cars of "carload" general freight traffic is a group of yards, and a yard service plan, that are adequate to support the carrier's road and local train operations. The daily activities at the SBRR's yards would include:

- "classifying" cars delivered by road trains for further movement along the network (and organizing those cars into blocks to facilitate their movement);
- "swapping" blocks of cars between trains; receiving cars picked up by local trains at customer facilities and classifying them for movement in outbound road trains; switching cars delivered by road trains into local trains for delivery to customer facilities;
- performing "running" repairs to freight cars so they can be placed back into service;
- serving as a "home" terminal (and crew reporting point) for local trains; and
- a variety of tasks necessary to support inbound and outbound trains (such as fueling locomotives, performing required inspections, and serving as a crew change location).

SunBelt's Operating Plan does not explain how the SBRR would perform these essential yard functions, nor does it demonstrate that the yards posited by SunBelt are sufficient to support

the SBRR's carload operations.[210] Indeed, SunBelt's Opening Evidence does not even mention car classification and blocking among the tasks that the SBRR would perform at its yards, even though those activities are essential to the operation of any carload rail network.[211] Nor does SunBelt calculate the number of cars that would be moved through or require activity at any specific yard. And SunBelt affirmatively disavows any obligation for the SBRR to provide personnel and facilities to repair foreign carrier cars that are "bad ordered" while on the SBRR's lines. *See supra* III-C-73 to III-C-77; SunBelt Opening III-D-8. The only evidence that SunBelt proffered to support its proposed design and staffing for the SBRR's yards is a series of unsupported spreadsheets. As NS demonstrated above (at III-C-30 to III-C-41), the yard sizes and configurations, yard locomotive fleet, and yard crew assignments posited by SunBelt are completely divorced from (and inconsistent with) the workload that the SBRR would have to perform on a daily basis.

In contrast, NS developed a group of yards for the SBRR that is optimally sized and configured to accommodate the specific traffic group selected by SunBelt. NS's yard sizing and configuration is based upon a detailed analysis of the SBRR's anticipated daily workload and car inventory at each location. In developing the SBRR's yards, NS witness LeCroy took into account not only the number of cars that would move through each SBRR yard daily, but also the number and size of the blocks in which those cars would arrive and depart, the time of day at which trains (and blocks) would be scheduled to arrive and depart, and the amount of time that blocks and cars would dwell (and, therefore, occupy track space) at each yard. As the following

---

[210] Having failed to provide yard operations or explanation on Opening, SunBelt is precluded from doing so on Rebuttal. *See, e.g., SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2.

[211] *See supra* III-C-41 to III-C-52; *see also* NS Reply Ex. III-C-1 "Carload Operations Overview."

discussion shows, NS's location-specific analysis of the SBRR's yard requirements results in increases in the size of most SBRR yards, due primarily to the failure of SunBelt's "yard matrix" to take into account the primary function performed at those yards—car classification and blocking. At the same time, NS's analysis identified several opportunities to replace SBRR yards with smaller "industrial support" tracks. In total, NS's Operating Plan includes a total of seven SBRR yards, compared to 13 yards (five "major" or "midsize" yards and eight smaller "interchange" yards) posited by SunBelt.

Following is a summary description of the methodology that NS employed in sizing and configuring the SBRR's yards:[212]

The first step in NS's analysis of the SBRR's yard requirements was to determine the type of yard required at each location. NS and other Class I carriers operate two basic types of switching yards, "hump" yards, and "flat switching" yards. At a hump yard, cars are classified via a process in which a yard locomotive pushes cars (or blocks of cars) up the front side of a "hump" track.[213] Cars are blocked by using a system of power switches and car retarders to direct individual cars onto the appropriate classification track on the other side of the "hump" with other cars destined to the same location further along the network. A hump yard consists of (1) a "receiving yard" area, where inbound trains (and cars brought to the yard by local trains or foreign carriers) are received prior to classification; (2) a "classification yard" area (sometimes referred to as the "bowl") where cars are classified by moving them over the hump track onto a

---

[212] The methodology that NS witness LeCroy employed in developing the size and configuration of the SBRR's yard facilities is described in detail in NS Reply workpapers "Basic Guidelines.doc;" "Terminal Capacity Requirement Tracking Process For Hump Classification Yards.doc;" and "Terminal Capacity Requirement Tracking Process For Flat Classification Yards.doc."

[213] *See* NS Reply Ex. III-C-1 "Carload Operations Overview."

classification track; and (3) a "forwarding yard" area where cuts of cars that have been classified are assembled into outbound trains for further transportation along the carrier's network.[214] The configuration and facilities at a hump yard enable railroads to classify cars more efficiently than at "flat switching" yards. Hump yards may also contain a variety of other tracks and facilities, including long tracks that can be used to stage trains or hold them for a crew change or interchange with a connecting carrier; "running tracks" that enable trains carrying traffic that does not require classification, such as unit trains, to bypass the classification area; and "rip" tracks onto which bad order cars are placed for repair or other disposition. Hump yards may also contain crew facilities, facilities for fueling and servicing locomotives, and tracks upon which running repairs to rail cars can be performed. SunBelt's unsubstantiated and illogical yard design did not provide for even a single hump yard anywhere on the SBRR's network. Figure III-C-7, *supra*, is an aerial photograph of NS's hump yard at Birmingham, AL.

"Flat switching" yards are simpler in design, and come in a variety of sizes, based on the needs at a particular location, and are efficient for handling smaller volumes of traffic.[215] As its name suggests, a flat switching yard consists of tracks on flat ground, and is not equipped with a hump track or power switches. Cars must be classified manually by moving them between parallel tracks that are connected by "ladder" tracks at one or both ends. Flat switching is more time consuming and far less efficient than switching at a hump yard, but the trade-off for lower capital costs to handle smaller volumes is standard practice in the rail industry. At larger flat switching yards, specific tracks are designated for receiving, classifying, or forwarding cuts of

---

[214] NS Reply Figure III-C-7 is a photograph of NS's Norris Yard at Birmingham. The configuration of Norris Yard is representative of the hump yards operated by NS and other Class I railroads.

[215] *See* NS Reply Ex. III-C-1 "Carload Operations Overview."

cars, while at smaller flat switching yards, tracks are often used interchangeably for any of those tasks.

NS determined whether to site a hump yard or flat switching yard at each SBRR yard location based upon the anticipated daily volume of activity at that location. Specifically, based upon NS's experience and the configuration of its real world yards, NS categorized each SBRR yard as a hump yard or flat switching yard based on the aggregate volume of cars in outbound blocks departing the yard on a daily basis.[216] As Figure III-C-19 shows, if the aggregate daily volume in outbound blocks was at least 900 cars, then the terminal was designated and configured as a hump yard. Only the SBRR yard at Birmingham, AL fell into this category. Yards with an aggregate daily volume of fewer than 900 cars were designated and configured as "Small Flat," "Medium Flat," or "Large Flat" yards, based upon the volume thresholds set forth in Figure III-C-19. At locations where the aggregate daily outbound volume was less than 50 cars, NS determined that a least cost, most efficient railroad would not construct a yard to perform the required switching activity, and replaced the yard posited by SunBelt with one or more "industrial support" tracks.

Figure III-C-19
SBRR Yard Designations Based On Aggregate Daily Outbound Block Volume

Category	Daily Volume (Cars)	Number of SBRR Yards
Hump	900 or more	1
Large flat	601-900	0
Medium flat	201-600	3
Small flat	51-200	3
Industrial support	0-50	15

[216] Aggregate outbound volume provides an appropriate measure of the daily workload at a particular yard, because it reflects the number of cars that have been "handled" (*i.e.*, classified and switched into outbound trains) at that yard each day.

Once the type of yard facility required at each location was determined, NS witness LeCroy conducted a detailed, location-specific analysis to develop the size and configuration for each individual SBRR yard. Following is a summary description of the methodology that witness LeCroy employed in developing the capacity requirements and track configuration for each SBRR yard.[217]

Witness LeCroy's evaluation of the track capacity requirement at SBRR yards consisted of three related analyses. First, he determined the static track capacity requirement for each yard. "Static" capacity refers to the number of track feet required to hold a given inventory of rail cars—*i.e.*, to "park" the cars end-to-end. For example, if at a given point in time there are 500 rail cars in a yard, and those cars are, on average, 60 feet in length, the "static" track capacity required to accommodate those cars is 30,000 feet of track (500 cars x 60' per car = 30,000 feet). The "static" track capacity of a yard does not take into account the additional footage required to enable a railroad to move cars around during the classification process. In order to determine the "practical" track capacity of a yard—*i.e.*, the number of track feet required to enable the carrier to process (*i.e.*, receive, classify, and prepare for departure) a given inventory of cars efficiently—the "static" track capacity must be increased by a "fluidity factor" that makes allowance for the movement of cars within the yard. The second analysis performed by witness LeCroy applied a widely-accepted fluidity factor to the "static" track capacity of each SBRR yard to determine its "practical" track capacity requirement. Once the "practical" track capacity requirement for each yard was determined, witness LeCroy performed a third analysis to

---

[217] The methodology that witness LeCroy employed is described in detail in NS Reply workpapers "Basic Guidelines.docx;" "Terminal Capacity Requirement Tracking Process For Hump Classification Yards.docx" and NS Reply workpaper "Terminal Capacity Requirement Tracking Process For Flat Classification Yards.docx"

determine the optimal configuration for that "practical" track capacity, based upon the unique characteristics of the car classification and blocking performed at each yard, as reflected in the number and size of the blocks handled at that particular location.

i. Birmingham Hump Yard

Based upon the criteria set forth in Figure III-C-19, NS posits that the SBRR would have a hump yard at one location, Birmingham, AL. Witness LeCroy calculated the "static" capacity requirement for SBRR's Birmingham Yard based upon outputs from NS's "SuperSim" simulation of the SBRR's operations at that location. Utilizing information regarding the daily arrivals, departures, and classification volume for Birmingham Yard set forth in the report titled "Yard Connections With Blocks By Outbound Train" generated by MultiRail, witness LeCroy determined the inventory of cars that would be present in Birmingham Yard during the peak hour of each day during the "SuperSim" simulation period.[218] The car inventory present during the peak hour of a given day defines the minimum "static" track capacity required to accommodate the volume of carload traffic moving through the yard on that day. Witness LeCroy averaged the peak hourly inventories for the days included in NS's "SuperSim" simulation, to arrive at an "average peak daily inventory" for SBRR's Birmingham Yard.[219] Because NS's "SuperSim" process was based upon an average week (rather than the peak week) during the Peak Year, the average peak daily inventory developed by witness LeCroy for the Birmingham Yard is conservative—it represents the number of cars that the SBRR would need to accommodate at

---

[218] *See* NS Reply Ex. III-C-11"SBRR Yard Requirements"; *see also* NS Reply WP folder "MultiRail," file "Yard Connections With Blocks By Outbound Train."

[219] In calculating that average, witness LeCroy excluded the first and last days of the simulation period. The first day of the "SuperSim" period is a "warm-up" day during which only a limited number of blocks and train connections are made. Likewise, the last day of the simulation is a "cool-down" period. Therefore, the level of activity during those two days of the simulation is not representative of the week as a whole.

that location during the busiest hour of a typical day during the Peak Year (rather than the maximum capacity required for the peak hour of the peak week). Witness LeCroy then multiplied the average peak daily inventory by an assumed average car length of 60 feet to determine the "static" track capacity requirement for SBRR's Birmingham Yard.[220] The "static" track capacity requirement was calculated separately for the "receiving" yard area, classification "bowl," and "forwarding" yard area at the Birmingham Yard.

To determine the "practical" track capacity required at SBRR's Birmingham Yard, witness LeCroy added to the "static" track capacity developed in the process described above a "fluidity factor" of 0.6. This fluidity factor is based upon commonly accepted principles regarding the amount of track (in relation to "static" capacity) required to maintain fluidity within a rail facility. The 0.6 fluidity factor applied by witness LeCroy is based upon NS's real world experience in a variety of operational settings.[221] A fluidity factor of 0.6 is also supported by a number of independent sources. For example, a 2006 study of statewide rail capacity conducted by the Washington State Transportation Commission made the following observation regarding "practical" capacity requirements within a rail yard:

> Tacoma Rail uses a rail industry rule of thumb for infrastructure utilization which states that available track should not be utilized in excess of 60 percent by railcars. Utilization in the range of 50 to 60 percent indicates mild congestion. At that level, there are some restrictions on operations. Ratios in excess of 60 percent indicate significant congestion and reduced responsiveness. At a time of significant utilization, railcars have to be moved and shuffled

---

[220] Automotive and intermodal cars (which are longer than standard freight cars) are not normally classified in the same manner as merchandise shipments. Accordingly, witness LeCroy's choice of 60 feet per car in measuring the "static capacity" of SBRR yards is appropriate. Capacity requirements for the SBRR's automotive and intermodal terminals were developed separately by NS witnesses Johnson and Schaub.

[221] *See* NS Reply WP "Terminal Capacity Requirement Tracking Process For Hump Classification Yards," at 13-14.

> excessively to make room for other cars while attempting to keep cars in logical sequences. Utilization in excess of 80 percent indicates a yard is in gridlock and all activities are severely delayed.[222]

A minimum fluidity factor of 0.6 for rail yards has also been endorsed by the Department of the Army. A 2003 study titled "Army Rail Operations" discussed a variety of planning factors for rail classification yards, and concluded that "[d]aily yard capacity is equal to 1.6 times SYC [Static Yard Capacity]. This Figure takes into account that the number of cars in a yard at any given time will not exceed 60 percent of the static capacity."[223]

Witness LeCroy calculated the "practical" track capacity requirement separately for the receiving yard area, classification bowl, and forwarding yard area within SBRR's Birmingham Yard. The resulting "practical" track capacity requirement represents the total number of track feet that the SBRR must build to support the car handling activities within each portion of the Birmingham yard. Based on the foregoing methodology, witness LeCroy determined that SBRR's Birmingham Yard would require a "practical" track capacity of 36,191 track feet in the receiving yard area, 79,274 track feet in the "classification bowl," and 36,079 track feet in the forwarding yard area.[224]

After determining the "practical" track capacity required for SBRR's Birmingham Yard, witness LeCroy performed a third analysis to determine the specific configuration (number and length of classification tracks) that would optimize the utilization of that classification track capacity. For the classification bowl portion of the Birmingham Yard, witness LeCroy based this

---

[222] *See* NS Reply WP "Statewide Rail Capacity and System Needs Study.pdf" at A-27.

[223] *See* NS Reply WP "Army Rail Operations.pdf."

[224] *See* NS Reply Ex. III-C-11 "SBRR Yard Requirements." Witnesses LeCroy and Johnson also determined the number and length of tracks that the SBRR would need to support other activities performed at each hump yard.

analysis on information reported by MultiRail regarding the number of blocks per day, and the average size of those blocks, that the SBRR would be required to handle.[225] Consistent with NS (and industry) practice, witness LeCroy assumed that tracks within the "bowl" would have a minimum length of 2,000 feet and would be no longer than 3,000 feet.[226] Based upon those real world parameters, witness LeCroy assigned blocks sequentially to each classification track at the Birmingham Yard until its capacity was occupied. For example, a block of 40 cars (of 60' each) would occupy 2,400 of track space, leaving little additional capacity for a second block on a 2,500-foot classification track. Conversely, a 3,000 foot classification track can hold one block of 20 cars and three additional blocks of ten cars. Witness LeCroy continued this process of assigning blocks of cars to classification tracks within the yard (the "block to track" process) until all of the blocks were assigned to a track. When all blocks had been assigned, any remaining footage in the "practical" track capacity of the "bowl" area (as calculated above) was allocated among the tracks created in the "block to track" assignment process.

Based on NS's experience (and consultation with witness Johnson), witness LeCroy divided the "practical" track capacity for tracks within the receiving yard and forwarding yard

---

[225] *See* NS Reply WP "Terminal Capacity Requirement Tracking Process For Hump Classification Yards," at 14-15.

[226] SunBelt's classification track lengths are transparently the product of a "mathematical" exercise that assigns track lengths in 400-foot (or, in a few instances, 600-foot) increments, without giving any apparent consideration to the number of cars (or size of blocks) that those tracks would need to hold on a daily basis. SunBelt's "yard matrix" provides for classification tracks less than 2,000 feet in length at every "major" and "mid-size" yard on the SBRR network, including its "major" yard at Birmingham. Six of the twelve classification tracks posited by SunBelt for the SBRR's New Orleans yard are less than 2,000 feet in length—indeed, one of those tracks is only 750 feet long (and therefore could hold only twelve 60-foot freight cars). The SBRR yards at Meridian, MS, Selma, AL and McIntosh, AL likewise have one or more classification tracks that are less than 2,000 feet. *See* SunBelt Opening WP "SBRR Yard Matrix.xlsx," Tab "UTILITY TRK LENGTH." Based upon NS's experience, witness LeCroy concluded that classification tracks of less than 2,000 feet would have limited utility in the context of a general freight operation of the type contemplated by the SBRR's selected traffic.

areas among five "long" tracks of 9,000, 8,000, 8,000 5,500 and 5,500 feet in both the receiving yard and the forwarding yard.[227] Witness LeCroy added an additional 7,700-foot track to the forwarding yard area to provide additional capacity to stage trains at Birmingham, the SBRR's busiest yard. The size of the "long" tracks posited by witness LeCroy for the SBRR's Birmingham Yard accounts for factors that would affect the demand for "long" track capacity, including both the length of the SBRR trains moving to/from the yard each day and the time of day at which those trains arrive and depart (as reflected in the MultiRail "SuperSim" simulation). The "long" tracks provided for in NS's Operating Plan are designed to support fluid SBRR train operations.[228]

ii. Flat Switching Yards

Witness LeCroy employed a similar methodology in sizing and configuring the SBRR's six flat switching yards. Based upon the criteria set forth in Figure III-C-19 above, witness LeCroy determined that the SBRR would require "medium" flat switching yards at three locations (McIntosh, AL, Meridian, MS, and New Orleans, LA) and "small" flat switching yards at three other locations (Selma, AL, Wilton, AL, and Hattiesburg, MS).[229] He began his sizing analysis for those yards by calculating the "static" track capacity requirements based upon the outputs from NS's "SuperSim" simulation of the SBRR's operations. Utilizing information regarding the arrivals, departures, and classification volume for each flat switching yard location set forth in the "Yard Connections With Blocks By Outbound Train" report generated by

---

[227] A maximum length of 9,000 feet for "long" tracks is sufficient to enable the SBRR to accommodate its merchandise trains (most of which are 8,000-9,000 feet in length). *See* SunBelt Opening WP "Base Year Train List 5-24 with L-E car counts.xlsx."

[228] Witnesses LeCroy and Johnson also determined the number and length of tracks that the SBRR would need to support other activities performed at the Birmingham Yard.

[229] *See* NS Reply Ex. III-C-11 "SBRR Yard Requirements."

MultiRail, witness LeCroy determined the inventory of cars that would be present in a particular flat switching yard during the peak hour of each day during the "SuperSim" simulation period.[230] He then averaged the peak hourly inventories for the days included in NS's "SuperSim" simulation to determine the average peak daily inventory for each flat switching yard.[231] Using the average peak daily inventory for a typical day during the Peak Year, rather than the maximum capacity required for the peak hour of the peak week, produced a conservative estimate of each flat switching yard's "static" track capacity requirement. The average peak daily inventory was multiplied by an assumed average car length of 60 feet to determine the overall "static" track capacity requirement for each SBRR flat switching yard.

Witness LeCroy calculated the "practical" track capacity requirement for each flat switching yard by applying to each yard the same "fluidity factor" of 0.6 that he used in sizing the SBRR's hump yard at Birmingham, AL. The resulting "practical" track capacity requirement represents the total number of track feet that the SBRR must build to support the required car classification and blocking activities at each flat switching yard.[232]

After determining the "practical" track capacity required at each flat switching yard, witness LeCroy performed a third analysis to identify the specific configuration that would optimize the utilization of each yard's available capacity. He allocated each yard's overall "practical" track capacity among the classification tracks in a manner that produced optimally-

---

[230] *See* NS Reply Ex. III-C-11 "SBRR Yard Requirements."

[231] As he did in calculating that average peak daily inventory for the Birmingham hump yard, witness LeCroy excluded the first and last days of the "SuperSim" simulation period.

[232] Witnesses LeCroy and Johnson also determined the number and length of tracks that the SBRR would need to support other activities performed at each flat switching yard.

sized classification tracks of between 2,000 feet and 3,000 feet in length.[233] At each of the SBRR's "medium" flat switching yards, witness LeCroy allocated a portion of the yard's "practical" track capacity to one or more arrival and departure tracks, based upon factors affecting the demand for such track capacity, including both the length of the SBRR trains moving to/from the yard each day and the time of day at which those trains arrive and depart (as reflected in the MultiRail "SuperSim" simulation). For example, at Meridian, MS, witness LeCroy allocated 8,500 feet of the overall "practical" capacity of 21,638 feet for a "long" track to enable the SBRR to accommodate the frequent intermodal trains arriving and departing that location.[234] The remaining 13,138 feet was divided among one 3,000-foot classification track and four 2,500-foot classification tracks.[235] At the SBRR's "medium" flat switching yard at McIntosh, AL, witness LeCroy provided three additional tracks (totaling 8,000 feet of additional "practical" capacity) to enable the SBRR to accommodate up to 80 "overflow" cars from SunBelt's McIntosh facility. Witness LeCroy (in consultation with witnesses Johnson and Smith) determined that the SBRR would not need separate arrival and departure tracks at "small" flat switching yards other than Selma, AL (where the 180 cars per day to be classified was close to the 200-car threshold for a "medium" yard).[236]

iii. Track Allocation For Ancillary Functions

In addition to receiving and staging trains, classifying and blocking cars for movement along the network, and preparing outbound trains for departure, the SBRR would perform a number of ancillary support functions at its yard facilities, including staging and servicing

---

[233] *See* NS Reply Ex. III-C-11 .

[234] *See* NS Reply Ex. III-C-11 (Meridian Yard).

[235] *See* NS Reply Ex. III-C-11 (Meridian Yard).

[236] *See* NS Reply Ex. III-C-10 (Selma Yard).

locomotives, performing minor repairs to railcars, and car storage. The design and configuration of the SBRR's yards incorporates appropriate track capacity to support those functions. The number and length of tracks dedicated to ancillary functions at each SBRR yard were developed by witnesses Johnson and Schaub based upon their real world experience.

* * * * *

The SBRR yard configurations developed by witness LeCroy reflect the service requirements of the specific body of carload traffic that SunBelt selected for its SARR. Witness LeCroy's location-specific analyses prescribe a group of yards that are sized reasonably (but conservatively) to accommodate the SBRR's daily terminal workload, and configured in a manner that optimizes the utilization of those facilities and enhances the efficiency of the SBRR's operations. NS Reply Exhibit III-C-11 sets forth the specifications for each SBRR yard developed by witness LeCroy.

c. Traffic Flow and Interchange Points

NS's Operating Plan accommodates the SBRR's Peak Year traffic volume of more than one million carload, intermodal, and unit train coal shipments in the least cost, most efficient manner, consistent with all applicable laws and regulations, rail industry "best practices," and customer requirements. The SBRR operates a total of 15,156 Base Year trains (8,692 road trains and 6,290 local trains) over a rail network consisting of 578.24 route miles of SBRR constructed track and 2.4 miles of trackage rights over Canadian National (with respect to which the SBRR "steps into NS's shoes" as a trackage rights tenant). The SBRR originates, terminates, interchanges and classifies and/or switches cars at 7 yards and 15 industrial support facilities, and serves 336 customer facilities at more than 53 unique stations[237] and 12 interchange points.

---

[237] *See* NS Reply WP "SBRR Local Stations and Customers.xlsx."

NS's Operating Plan provides complete and uninterrupted train service for all of the SBRR's selected traffic. (As discussed above, SunBelt's Operating Plan failed to include 1,622 road and local trains that the SBRR would need to operate in order to serve its customers.)

NS's plan accounts for all of the road and local train services, intermediate classification and switching, and location-specific pick ups and setoffs required to meet the needs of the SBRR's customers. NS's MultiRail analysis created a "trip plan" for each individual freight car (other than cars moving in unit train service), so that the SBRR would be capable of tracking the movement of each car, assuring that it is classified into the correct block (and train) at each intermediate yard, and providing customers with real time access to information about the status of their shipment.

SunBelt's narrative evidence states that the SBRR interchanges traffic "with other railroads at various points on the SBRR system." SunBelt Opening III-C-4. SunBelt's workpapers identify 12 "major" interchanges. SunBelt Opening WP "SBRR interchanges.xlsx."

SunBelt's list includes certain interchange points that reflect its decision not to directly serve each customer facility from which it selected traffic. Instead, SunBelt's Operating Plan contemplates that the SBRR would handle the traffic along its two main lines, and interchange cars to/from NS at that location, leaving the residual NS to serve the customer facilities.

For example, the SBRR's selected traffic includes shipments for customers { } originating or terminating at Spocari, AL, and Uniontown, AL. NS serves those locations today via a branch line in the Demopolis District. SunBelt's configuration for the SBRR does not include the Demopolis District branch line; rather SunBelt assumes that the SBRR would interchange traffic moving to/from customers { } at Spocari, AL, and { } at Uniontown, AL with the residual NS at

Marion Junction, AL. Likewise, the SBRR's selected traffic includes shipments for customers { } originating or terminating on the Chalmette & Louisiana Southern Branch at Chalmette, LA, and Braithwaite, LA.[238] SunBelt's configuration for the SBRR does not include that line, so the SBRR would have to interchange traffic moving to/from those locations at the branch line's interchange in New Orleans.

SunBelt's Operating Plan does not account for the additional costs associated with those new interchange points. Because NS does not interchange traffic at these branch lines (or at various other points where branch lines excluded by SunBelt from the SBRR network intersect the NS main line), NS does not have interchange facilities at those locations. The SBRR would be required to construct tracks to support interchange with the residual NS at the new interchanges that it proposes to create. NS's track configuration includes interchange tracks at nine locations, and its engineering evidence accounts for the cost of constructing them.[239]

d. Joint Use and Interchange Agreements

SunBelt asserts that the SBRR's Operating Plan reflects "interchange relationships with other Class I carriers and various regional and short line railroads" that are "based on NS's joint use and interchange agreements with such carriers." SunBelt Opening III-C-4 to III-C-5. SunBelt posits that the SBRR "steps into NS's shoes under these agreements." *Id.* at III-C-5. NS has demonstrated that SunBelt's Operating Plan violates the terms of NS's intercarrier agreements in numerous ways. *See supra* III-C-A-4. NS's Operating Plan corrects those errors in SunBelt's Operating Plan, and provides for the SBRR both to enjoy the benefits and to perform the obligations of NS under its intercarrier agreements.

---

[238] *See* SunBelt Opening WP "2010 Coal 80-Chem 40-Auto 60.xlsx."

[239] *See* NS Reply WP "SBRR Reply Yard Operations.xlsx."

e. Track and Yard Facilities

i. Main Line Track

NS's Operating Plan and RTC simulation identify additional main line and secondary track, yard tracks and facilities, and intermodal and automotive facilities that the SBRR would need to serve its selected traffic, but which SunBelt failed to include in the SBRR's physical plant. As NS demonstrated above, SunBelt's Operating Plan and RTC simulation failed to account for 1,622 trains—or nine percent of the trains that the SBRR would operate during the Base Year. That fatal error alone renders SunBelt's track configuration evidence inadequate. NS's Operating Plan, RTC simulation, and engineering evidence account for all the main line and secondary track that the SBRR would need to execute a feasible operating plan.

ii. Side Tracks and Spurs

The general freight traffic selected by SunBelt for the SBRR originates or terminates (or both) at more than 336 customer facilities at 53 unique station locations along the SBRR network.[240] The track configuration proffered by SunBelt in its Opening Evidence does not include the railroad-owned spur tracks or industrial tracks required to provide local service at those locations.[241] While SunBelt's RTC simulation shows SBRR trains moving to and from customer locations in performing work events, SunBelt's engineering evidence does not account for the cost of constructing and maintaining the carrier-owned spur and industrial tracks necessary to access the SBRR's customer facilities. *See* SunBelt Opening WP "SBRR Opening

---

[240] *See* NS Reply WP "SBRR Local Stations and Customers.xlsx."

[241] *See* SunBelt Opening III-B-4-5. The spurs and industrial tracks that are owned by NS at customer facilities were shown on the track charts provided to SunBelt in discovery. *See* NS Reply WP Folder "Documents Produced in Discovery III-C," Sub-folder "Track Charts."

Sticks.pdf."[242] Without those tracks, service to the SBRR's general freight customers is not only not "feasible," it is physically impossible.

NS addresses this glaring deficiency in SunBelt's track configuration and Operating Plan by including in the SBRR's physical plant the sidings, spurs, and industrial lead tracks that the SBRR would need to serve its general freight customers.[243]

iii. Yards

As NS demonstrates above (at III-C-30 to III-C-37), SunBelt's opening submission is devoid of any evidence demonstrating that the yards posited by SunBelt are appropriately sized and configured to support the necessary classification and blocking of its selected general freight traffic, "swapping" of blocks of cars between SBRR road trains, and the extensive operations required to provide local train service in accordance with the needs of the SBRR's customers.[244] SunBelt did not even calculate the number of cars that each yard would need to handle, which is an essential data point for determining yard sizes. Rather, the size and configuration of SBRR yards, and SunBelt's estimates of the SBRR's yard locomotive and yard crew requirements lack any credible support and produce nonsensical results. For example:

- SunBelt's "yard matrix" assigns identical "utility" track capacity to the SBRR's Birmingham and Selma yards, even though the number of cars per day to be

---

[242] SunBelt's Opening Evidence includes turnouts at many customer locations, but not the connecting spur and/or industrial tracks needed to access customer facilities.

[243] *See* NS Reply Ex. III-B-1.

[244] Having failed to provide yard sizing information on Opening, SunBelt is precluded from doing so on Rebuttal. *See, e.g., SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2.

classified at those locations (1,217 at Birmingham and 181 at Selma) varies widely.[245]

- SunBelt's "yard matrix" assigns only seven "utility" tracks to the SBRR's "major" yard at Birmingham, AL (which will classify 1,217 cars per day), but assigns twelve "utility" tracks to its mid-size yard at New Orleans (which will classify only 442 cars per day).[246]

- SunBelt's "yard matrix" does not assign any yard locomotives or yard crews to the SBRR's Selma, Meridian, Wilton, or Hattiesburg yards, despite the fact that each of those yards must classify more than 100 cars per day in the Peak Year.[247]

As these examples illustrate, the failure of SunBelt's operating "experts" to analyze the classification and car blocking operations that the SBRR would need to perform—or even to consult the historical yard activity data provided by NS in discovery—resulted in a failure to take into account the capacity requirements at most SBRR yards.

The most serious deficiency in SunBelt's yard service plan is its failure to include a "hump" yard at Birmingham.[248] As NS demonstrates above, "hump" yards enable a railroad to process large volumes of railcars far more efficiently than is possible at a "flat switching" yard. The absence of a hump yard at Birmingham is a fatal deficiency that renders SunBelt's Operating Plan highly inefficient and infeasible for carload traffic.

---

[245] *See* SunBelt Opening WP "SBRR Yard Matrix.xlsx," Tab "UTILITY TRK LENGTH," Lines 1, and 4; NS Reply Ex. III-C-11 "SBRR Yard Requirements" (Birmingham and Selma Yards).

[246] *See* SunBelt Opening WP "SBRR Yard Matrix.xlsx," Tab "UTILITY TRK LENGTH," Lines 1 and 3; NS Reply Ex. III-C-10, "SBRR Reply Yard Operations.xlsx" Tab "Yards."

[247] *See* SunBelt Opening WP "Yard Crew Assignments_Open.xlsx;" NS Reply Ex. III-C-10 "SBRR Reply Yard Operations.xlsx."

[248] SunBelt's "yard matrix" does not indicate that any SBRR yard is equipped with a "hump" track. Moreover, SunBelt's configuration specifies that all "[i]nterior yard switches and set-out track switches are hand-thrown switches." SunBelt Opening III-B-7 (emphasis added). The specification of hand-thrown switches precludes "hump" operations, which require the use of power switches to quickly direct cars moving over the "hump" track to the appropriate destination track.

In contrast to SunBelt's nonsensical approach, NS witness LeCroy conducted a detailed analysis of the track capacity and configuration requirements at each individual SBRR yard location, which is described above (at III-C-133 to III-C-146). Based upon the volume of cars handled at each location each day, he prescribed an appropriately sized yard to accommodate the switching activity at each location. He then evaluated the number of cars that would be present in a yard during the peak hour of each day, and the time that those cars would dwell in the yard, to determine the "static" and "practical" track capacity required at each location. Witness LeCroy then allocated the required track capacity among the classification, arrival, and departure tracks based upon a more detailed examination of the number and size of the blocks of cars that would need to be accommodated at each facility. The result of this detailed location-specific analysis is a network of yards that is optimized to handle the specific traffic group selected by SunBelt for the SBRR.

NS's Reply Evidence posits that the SBRR would require a total of seven yards, including a "hump" yard at Birmingham, AL. Figure III-C-20 summarizes the yards contemplated by NS's Operating Plan.

Figure III-C-20
SBRR Yards by Type – NS Reply

Yard Location	Size	Cars Classified Per Day
Birmingham, AL	Hump Yard	1,217
New Orleans, LA	Medium Flat Yard	442
McIntosh, AL	Medium Flat Yard	206
Meridian, MS	Medium Flat Yard	291
Selma, AL	Small Flat Yard	180
Wilton, AL	Small Flat Yard	110
Hattiesburg, MS	Small Flat Yard	107

In addition to those seven yards, NS includes 15 "industrial support" facilities at locations where fewer than 50 cars would need to be picked up, set off, or switched on a daily basis. For example, NS built 3,000 feet of industrial support track at Boligee, Tuscaloosa, and Maplesville, in order to accommodate the approximately 40 cars that, on average, would need to be switched or classified at those locations on a daily basis in the Peak Year. At locations with smaller car volumes, such as Livingston (seven cars per day) and Sargon (six cars per day), only 1,000 feet of industrial support track is necessary to accommodate the daily switching activity. The largest industrial support facility is at Vance, AL, which is built to accommodate the necessary classification activity as well as the multimodal traffic that comes through that yard. *See* NS Reply WP "SBRR Reply Yard Operations.xlsx."

Figure III-C-21 identifies the locations and size of the industrial support tracks included in NS's Operating Plan.

Figure III-C-21
SBRR Industrial Support Track Locations

Station	State	OS	# of Tracks		Total Track Feet
			500'	1000'	
Vance	AL	A512	0	4	4,000
Boligee	AL	A578	2	2	3,000
Tuscaloosa	AL	A533	2	2	3,000
Maplesville	AL	161N	2	2	3,000
Jackson	AL	88MB	1	2	2,500
Marion Jct	AL	207N	1	2	2,500
Kimbrough	AL	36MB	1	2	2,500
Breyer	MS	A628	1	2	2,500
Dragon	MS	A712	2	1	2,000
Ryan	AL	7R	2	1	2,000
MacMillan	AL	35MB	2	1	2,000
Richburg	MS	A721	2	1	2,000
Shows Field	MS	A690	2	1	2,000
Livingston	AL	A594	2	0	1,000
Sargon	AL	34R	2	0	1,000

NS's Operating Plan supports the SBRR's train operations with an optimally sized and designed group of yards and smaller industrial support tracks, that are tailored to the location-specific requirements of the traffic that the SBRR would handle. The Board should adopt NS's yard locations, sizes and configurations in lieu of the unsupported (and facially nonsensical) yard evidence presented by SunBelt.

iv. Intermodal Facilities

The traffic selected by SunBelt includes 596,544 units of Peak Year intermodal traffic. SunBelt Opening Table III-A-5. More than 30,000 of those intermodal shipments are either local, interline forwarded or interline received traffic (*i.e.*, they originate or terminate, or both, at a points served by the SBRR).[249] SunBelt's Opening Evidence fails to account properly for the intermodal terminal costs that the SBRR would incur. SunBelt understates the cost of both the facilities and the personnel required to serve the SBRR's intermodal traffic, which constitutes 55% of all Peak Year selected traffic. *See* SunBelt Opening III-A-4.

A glaring deficiency in SunBelt's Operating Plan for intermodal traffic is its failure to provide any SBRR-owned intermodal terminals along its 580-mile network. Witness Johnson determined that the SBRR would need two intermodal terminals at Birmingham, AL, and New Orleans, LA, neither of which is accounted for in SunBelt's Operating Plan.

The intermodal facilities posited by NS are designated as small facilities, based upon the SBRR Peak Year volume of intermodal traffic handled at each location. Based upon the volumes that the SBRR would handle at each location (and on NS's experience in serving that

---

[249] SunBelt's Table III-C-1 (on page III-C-3) incorrectly classifies large volumes of cross-over intermodal traffic as "overhead" traffic. In reality, a substantial number of those shipments would originate and/or terminate at local points served by the SBRR.

traffic today), the small facilities are designed to handle less than 50,000 lifts annually. NS's Reply evidence presents a "realistic alternative"—and the only feasible Operating Plan and associated costs—for the SBRR's intermodal traffic.

v. Automotive Facilities

SunBelt's selected traffic includes a subset of NS's real world automotive traffic.[250] But SunBelt's Operating Plan does not fully account for the physical facilities or personnel required to handle this service-sensitive line of business. SunBelt suggests that the SBRR would operate an Automotive Terminal, yet fails to account for all of the necessary costs of that facility. SunBelt Opening workpaper "SBRR Facilities Cost.xlsx" tallies the total cost of an automotive facility to be $2.1 million, and then (inexplicably) multiplies that amount by "0" to require $0 in SBRR investment in automotive facilities. *See* SunBelt Opening WP "SBRR Facilities Cost.xlsx", Tab "Auto Yards."

SunBelt's automotive terminal is not equipped with crew facilities, yard buildings, or other facilities that are necessary to support the handling of automotive traffic. *Id.* For example, SunBelt failed to account for the paved surfaces needed to provide a clean and stable loading/unloading area for new vehicles.[251] Its specifications also do not include guard rails or fencing, both of which are necessary to provide security for high-value vehicles. Nor does SunBelt's design include spur tracks to hold the rail cars associated with the volume of automotive traffic handled at these yards. In short, SunBelt's automotive terminals are inadequate to provide the level of service demanded by automotive shippers.

---

[250] *See* NS Reply WP "SBRR Selected NS Traffic.xlsx."

[251] *See* SunBelt Opening WP "SBRR Facilities Cost.xlsx", Tab "CONSTRUCT Auto."

NS's Operating Plan provides for one small automotive terminal at New Orleans, LA.[252] The size of the terminal was determined by witness Johnson based upon the average daily inbound and outbound volume of automotive traffic produced to SunBelt in discovery, adjusted by a 31% growth factor to account for Peak Year volume levels. Witness Johnson calculated that the SBRR would have to handle an average of just over seven automotive rail cars per day in the Peak Year, and that a small terminal would therefore suffice.[253] The terminal posited by NS is equipped with all of the infrastructure and equipment needed to handle automotive traffic in conformity with customer requirements, including rail spurs, paved loading/unloading areas, guard rails and security fencing, storage for the haulage vehicles that load and unload new cars, and facilities for terminal personnel.

f. Crew-Change Location/Times

i. Road Crews

SunBelt states that "[t]he SBRR follows the efficient modern railroad practice of calling train crews sufficiently in advance of a train's arrival at the designated crew-change point so that the crew is ready to board the train when it arrives and the in-coming crew has de-trained." SunBelt Opening III-C-6. While such a practice might be possible at locations where there are crew reporting terminals, SunBelt has made no provision for reporting terminals at the locations at which its Operating Plan creates new interchanges with the residual NS. For example, SunBelt proposes that the SBRR would interchange trains with the residual NS at Marion Junction. However, NS's nearest crew base is in Selma, AL, nearly 14 miles away. Any

---

[252] *See* NS Reply WP "SBRR Reply Yard Operations.xlsx" Tab "Terminal Operations."

[253] Witness Johnson calculated this average by using a standard 11.5 vehicles per rail car (which is the average number of vehicles loaded on a railcar on NS), and assumed 330 loading days per year (the average number of days per year railcars are loaded on NS, which takes into account automotive industry work schedules).

interchange at Marion Junction would require the residual NS to taxi crews to/from the Selma yard. Similarly, SunBelt posits a new interchange with NS at Wilton Junction, AL, which is 36 miles away from NS's closest home terminal, at Birmingham, AL.

SunBelt states that its crew districts reflect "a least-cost SARR's flexibility to maximize the efficiency of its crew assignments within the constraints of the federal '12-hour' (hours of service) law." SunBelt Opening III-C-6. NS accepts SunBelt's specification of the SBRR's four Crew Districts. However, SunBelt's estimate of the number of train crews required by the SBRR is significantly understated, for several reasons. SunBelt's Operating Plan failed to take account 1,622 road and local trains that the SBRR would be required to operate in the Base Year alone. That omission resulted in a substantial understatement of the SBRR's crew requirements. In addition, SunBelt's RTC simulation failed to account for a variety of factors (including random outages and the time required to provide service at customer facilities), that would increase the number of crews needed to cover the SBRR's train operations. And SunBelt's calculations fail to account for the dead-heading of crews that will be required to move crews to locations where they are needed. Further, SunBelt significantly underestimated the frequency with which relief crews would be needed to relieve crews whose on-duty time expires prior to bringing the train to the next crew district. NS's Operating Plan corrects these deficiencies, and accounts for the number of crews that the SBRR would need. *See infra* Part III-D.

g. Switching and Yard Activity

i. Locomotive inspections and fueling

NS accepts SunBelt's proposal that the one SBRR system locomotive shop will be located at Birmingham, AL. SunBelt Opening III-C-7. One locomotive shop is insufficient to perform all the necessary inspections and repairs required for SBRR locomotives, however. Based upon NS's Operating Plan, which accounts for all of the required train services, and posits

that SBRR "steps into NS's shoes" with respect to both benefits and obligations under NS's intercarrier agreements, the SBRR would also require locomotive servicing trucks and personnel at four yards—Birmingham, Meridian, New Orleans, and McIntosh—in order to cover the maintenance activities necessary to keep engines in working order and, when necessary, to return them to service in a timely fashion, in order to maintain the needed level of service.[254]

Moreover, SunBelt's vague assertion that the SBRR would fuel "some" locomotives (SunBelt Opening Ex. III-C-2 at 5) fails to properly allocate responsibility for locomotive fueling between the SBRR and connecting carriers and results in a substantial understatement of the number of locomotives that will need to be fueled on the SBRR. *See supra* III-C-69 to III-C-73. As a result of these errors, SunBelt's Operating Plan also understates the number of locations at which locomotive fueling must be available. SunBelt provides fixed fueling platforms at only one of the 13 SBRR yards. *See* SunBelt Opening WP "SBRR Yard Matrix.xlsx."

NS's Operating Plan accounts for the fueling of all locomotives as necessary along the system. NS's Operating Plan provides fixed fueling platforms at the Birmingham yard, and will provide DTL fueling at Birmingham, Meridian, New Orleans, and McIntosh. *See* NS Reply SBRR Reply Yard Operations.xlsx," tab "Yard and Loco Car Shop."

ii. Railcar inspections

(a) Inspection procedures

SunBelt's Operating Plan provides for 1,500-mile inspections of coal trains and 1,000-mile inspections of non-coal trains at its Birmingham yard. SunBelt Opening III-C-7. NS does not challenge the frequency of these FRA-mandated inspections, and NS accepts SunBelt's description of car inspection procedures. However, to the extent that SunBelt expects that the

---

[254] *See* NS Reply WP "SBRR Reply Yard Operations.xlsx."

SBRR would be able to perform sufficient inspections on "originating trains by car inspection crews at the Meridian, Selma, McIntosh and New Orleans yard locations" to "at all times [comply] with FRA-mandated safety and inspection rules," it is mistaken. SunBelt Opening III-C-7. The provision of car inspection capabilities at only five yards is insufficient to ensure safe, reliable railcar inspections—and thus operations—along the SBRR. The level of car inspection posited by SunBelt could not meet federal law requirements, let alone the obligations that railroads have with one another to meet inspection and maintenance requirements for delivery of railcars in interchange. NS's Operating Plan provides for railcar inspection at seven SBRR yard locations. *See* NS Reply WP "SBRR Reply Yard Operations.xlsx," tab "Yard and Loco Car Shop."

While SunBelt asserts that the SBRR complies at all times with FRA-mandated safety and inspection rules, its evidence shows that it has not provided sufficient car inspection capacity to conduct the number of inspections that would be required by law. SunBelt posits that the SBRR would acquire its railcars under full service leases; however, that does not excuse the SBRR from its obligation to inspect all railcars as required by FRA regulations.[255] When the FRA cites a carrier for operating a railcar that does not meet FRA requirements, the carrier is liable for the violation, regardless of which party owns the car.

While SunBelt is entitled to assume that the SBRR would operate as a least-cost, most-efficient railroad, it has provided absolutely no support for its assumption that it could cut car inspection locations and still operate safely. SunBelt points to no industry standard or real-world experience that would support the notion that its level of car inspection is sufficient. Indeed, it

---

[255] *See* 49 C.F.R. § 215 (railcar inspection regulations).

cannot point to any such data, as the inspection facilities at these five yards would simply not have the capacity to inspect the number of cars needing inspection on a daily basis.

In an attempt to defend its insufficient yard inspection capacity, SunBelt asserts that "road train crews perform inspection functions at other yards as necessary." SunBelt Opening III-C-7. The assumption that train crews would perform detailed inspections at other locations is not sound. Car inspectors require specialized, quarterly training; SunBelt's Operating Plan does not account for the cost of providing such training to train crew personnel. The brake tests commonly performed by train crews are less rigorous than car inspections. For example, train crews do not replace brake shoes if they show wear during a brake test. NS discusses the role of the car inspector in more detail in Part III-D.

Thus, not only would the car inspection crews that SunBelt places at five SBRR yards have more cars to inspect because of the concentration of inspections at fewer yards, but they would likely face a significantly higher number of repairs because rail car parts will go without inspection for a longer period of time, meaning that inspections are likely to take longer and be more complex. SunBelt's failure to provide sufficient car inspection locations also increases the possibility of serious incidents on the railroad, in particular as its Operating Plan permits railcars to cycle between terminals that do not have inspectors. NS's Operating Plan follows the real-world practice of ensuring that railcars do not cycle through multiple terminals without undergoing a mechanical inspection.

Moreover, even to the limited extent that SunBelt did provide for railcar inspectors, it significantly understated the number of inspectors necessary. SunBelt calculated the number of inspectors necessary based upon the number of trains it determined would pass through a yard during the peak period. *See* SunBelt Opening Ex. III-D-1 at 8. SunBelt provided for three, three-

person inspection shifts per day at Birmingham, and only one inspector at its Selma, McIntosh, Meridian, and New Orleans yards working one shift, five days per week. SunBelt included one "floating inspector" for a total of 19 car inspectors. However, as NS has demonstrated, SunBelt's calculations are utterly unsupported because SunBelt dropped more than 1,600 trains from its Operating Plan. Any calculations SunBelt generated based on the number of trains SunBelt claimed would originate, terminate, or pass through any of its yards are therefore inaccurate on their face. Accordingly, SunBelt's estimate of the SBRR's inspection crew requirements cannot be accepted.

SunBelt's failure to provide adequate inspection capability leaves the SBRR vulnerable to transporting unsafe railcars with undetected defects. NS's Operating Plan provides seven railcar inspection locations and a total of 28 inspectors. At its Birmingham yard there will be 14 car inspectors. At the Meridian, New Orleans, and McIntosh yards, NS has supplied three car inspectors each. Hattiesburg has two car inspectors and Selma and Wilton each have one, with one floating inspector to cover additional inspection requirements. *See* NS Reply WP "SBRR Reply Yard Operations.xlsx," tab "Yard and Loco Car Shop." NS has developed procedures to ensure that railcars operating on the SBRR are properly inspected and are safe and meet FRA standards. The car inspection procedures that would be used on the SBRR are detailed in the workpapers accompanying NS's Reply Evidence. *See id.* NS's Operating Plan presents the best evidence of the needs of a SARR the size of the SBRR.

(b) Trains requiring inspection

SunBelt's approach to train inspections is similarly flawed. SunBelt assumes that "each of the SBRR's yards where trains originate is an inspection point and all trains are inspected either by a car inspection crew or by the train crew." SunBelt Opening III-C-8. As explained above, the SBRR cannot substitute train crews for trained car inspection crews. SunBelt assumes

that the SBRR would require a total of 19 inspectors, stationed at five SBRR yards.[256] NS generally accepts SunBelt's methodology for determining the number of inspectors necessary at individual inspection points. However, as with its other calculations, SunBelt has understated the train volumes because SunBelt failed to account for hundreds of necessary trains in its operating plan. As such, SunBelt's train-volume calculations are inaccurate.

Witness Johnson assigned inspectors to particular locations based on the daily number of merchandise and coal/other bulk cars that would require inspection at each facility.[257] NS's Operating Plan contemplates a total of 28 inspectors at seven yards, as explained above. In addition, NS assigns "line of road" inspectors, who travel along the line and repair cars while on-line. NS has assigned eight line of road inspectors, two based at each of the following locations: Birmingham, AL, McIntosh, AL, Meridian, MS, and New Orleans, LA. *See* NS Reply WP "SBRR Reply Yard Operations.xlsx," tab "Yard and Loco Car Shop." SunBelt ignored this necessity and makes no provision for repairing cars that break down along their route of movement. In addition, NS included car inspection managers who are responsible for the supervision, safety, and efficiency of car inspectors, as well as interfacing with rail car owners or lessors for the purpose of determining repair disposition of bad order cars. There are two Managers of Car Inspectors—one at Birmingham to address car repair issues and provide necessary supervision north of Meridian, and one located at Meridian to address issues and supervise locations south of Meridian and Kimbrough, *e.g.*, McIntosh and New Orleans. *See* NS Reply WP "SBRR Reply Yard Operations.xlsx," tab "Yard and Loco Car Shop"; NS Reply Part III-D.

---

[256] SunBelt Opening WP "Inspection Crews.xlsx."

[257] *See* NS Reply WP "SBRR Reply Yard Operations.xlsx," Tab "Yard Loco and Car Shop."

h. Trains and Equipment

i. Train Sizes

In its RTC Model, SunBelt based the maximum length of SBRR trains on the longest train (by train symbol) shown in the historical train data furnished by NS in discovery. *See* SunBelt Opening III-C-9, n.6. NS accepts SunBelt's methodology as a reasonable approach to determining maximum train sizes. Accordingly, in developing NS's Operating Plan, NS applied the same train profiles (including train length, number of loaded and empty cars, total feet, total tons and trailing tons) that SunBelt used in its RTC simulation. However, as described above (at III-C-13 to III-C-19), SunBelt's SBRR train list did not include 1,622 road and local trains that NS used to transport the selected traffic. NS's Operating Plan and RTC Simulation correct that error by adding to the SunBelt's list of SBRR trains the additional trains required to provide complete train service for all of the SBRR's selected traffic.

ii. Locomotives

SunBelt asserts that the SBRR could operate a 580-mile rail network that transports nearly 1.1 million Peak Year shipments (SunBelt Opening III-C-3, Table III-C-1) with a locomotive fleet consisting of just 26 ES44AC road locomotives, 16 GP38 locomotives to power local trains and work trains, and 4 SW1500 switch locomotives to perform all required yard operations.[258] SunBelt posits that the SBRR would operate all road trains, and 33% of its local trains, in a 1/1 "Distributed Power" ("DP") locomotive configuration. SunBelt Opening III-C-10; Ex. III-C-2 at 6, n.6.[259] SunBelt's Operating Plan contemplates 13 yards (including five yards at

---

[258] *See* SunBelt Opening III-C-10, Table III-C-3.

[259] *See also* SunBelt Opening III-C-10; *See* NS Reply WP "SBRR Local Trains in SunBelt RTC Simulation.xlsx."

which it indicates the SBRR would classify cars), but provides yard engines at only three of those facilities, leaving 10 SBRR yards without any "resident" motive power.[260]

NS accepts SunBelt's specification of the ES44AC model for SBRR road trains and GP38 locomotives for local and work trains. However, SunBelt significantly understates the number of locomotives that the SBRR would need to operate its road and local trains. Moreover, SunBelt's selection of SW1500 locomotives for the SBRR's extensive yard service requirements is nonsensical—that antiquated locomotive model's limited availability, high failure rate and limited tractive power make it an illogical choice for a least cost, most efficient railroad.

(a) Road Locomotives

The Peak Year fleet of only 26 ES44AC locomotives posited by SunBelt is utterly inadequate to handle the SBRR's road train operations. SunBelt's estimate of the SBRR's locomotive requirements is based directly upon operating statistics generated by its RTC simulation.[261] As NS has demonstrated above, SunBelt's RTC simulation suffers from numerous flaws—not the least of which is its failure to account for nearly 10% of the SBRR's peak period trains—that render its outputs meaningless. Accordingly, SunBelt's estimate of the SBRR's locomotive requirements is not supported by any credible evidence.

Various assumptions underlying SunBelt's Operating Plan also contributed to its understatement of the SBRR locomotive requirements. For example, SunBelt's assumption that every train interchanged between the SBRR and a connecting carrier would be a "run-through"

---

[260] *See* SunBelt Opening WP "SBRR Yard Matrix.xlsx," Tab UTILITY TRACK LENGTH;" SunBelt Opening WP ""SBRR Operating Statistics.xls.

[261] *See* SunBelt Opening III-C-1 ("The operating plan and the RTC Model . . . . provide the basis for many of the SBRR's annual operating expenses shown in Part III-D."); III-D-1 ("The RTC output was directly used to calculate the SBRR's locomotive hours and car hours . . . .The resulting statistics were utilized to determine overall locomotive requirements.")

train with the power intact (SunBelt Opening III-C-5) had the effect of reducing the number of locomotives that the SBRR would need. However, that assumption contradicts the terms of NS's interline service agreements, which do not in all instances provide for run-through power. To the extent that the SBRR "steps into NS's shoes" (as SunBelt posits—SunBelt Opening III-C-4-5), locomotives would run through on interline trains only to the extent that they do so today.

Likewise, SunBelt's failure to account properly for the classification and switching of general freight cars at intermediate yards led to a significant understatement of the SBRR's yard locomotive requirements. As NS demonstrates below, the SBRR would need a fleet of 18 SD40 locomotives—four times the number of SW1500s posited by SunBelt—to accommodate the classification, switching, and other tasks performed at the SBRR's yards.[262] SunBelt's failure to model the SBRR's operations completely and accurately—and, in particular, its failure to account for the time required to serve customer facilities—resulted in a further understatement of the SBRR's road and local train locomotive requirements.

The inadequacy of the locomotive fleet posited by SunBelt is clearly demonstrated by considering the level of utilization implied by SunBelt's estimate. To put that estimate into perspective, conducting the SBRR's operations with a fleet of only 26 road locomotives, 16 GP38's for local service, and four switch engines would require SBRR locomotives to achieve an average of 186,000 locomotive unit miles ("LUMs") per year. In reality, during the year 2011, NS's actual locomotive fleet averaged 47,000 LUMs for all locomotives, while CSXT averaged 54,000 LUMs for all locomotives.[263] As these figures demonstrate, SunBelt's locomotive fleet assumptions for the SBRR are demonstrably inconsistent with reality.

---

[262] See NS Reply WP "SBRR Reply Yard Assignments.xlsx."

[263] *See* NS Reply WP "R1 Loco Miles.xlsx."

SunBelt's assumption that the SBRR would deploy all road locomotives—and approximately 33% of the GP38 units used in local service—in a DP configuration is not consistent with operating practice in the territory replicated by the SBRR.[264] The environment in which Eastern railroads operate is significantly different than that experienced by Western carriers. In particular, trains operated by Eastern railroads like NS (and the SBRR) are generally shorter in length and travel shorter distances than trains typically operated in the West. The average length of haul for SBRR trains is only 275 miles for general freight trains, 179 miles for coal trains, and 194 miles for intermodal trains.[265] Given those operating parameters, the cost of outfitting locomotives for DP operations, and the extra time (and yard expense) required to position locomotives and to initialize communications between units for DP operation, are simply not justified. That is why NS's use of DP today is confined to a limited number of road trains such as PRB coal unit trains and long intermodal trains.[266]

As reported in *Trains* Magazine:

> Indeed, the entire Northeast quadrant of the country is practically devoid of distributed power. Norfolk Southern's system road foreman of engines, Shannon Mason, says the shorter distances his trains operate make the setup time and logistical challenges of distributed power less worthwhile.
>
> Even UP's [Mike] Iden, a distributed power proponent, says he believes it's a tool that's not for use everywhere. 'You cannot look

---

[264] SunBelt Opening III-C-10; Ex. III-C-2 at 6, n.6; *see also* SunBelt Opening III-C-10; NS Reply WP "SBRR Local Trains in SunBelt RTC Simulation.xlsx."

[265] *See* SunBelt WP "Base Year Train List_Statistics_Open.xlsx," Tab "Trains-On-SARR."

[266] SunBelt's proposal to operate SBRR local trains in DP configuration makes little sense. Most local trains are neither long enough, nor do they travel a sufficient distance, to benefit from the use of DP. It is also inconsistent with SunBelt's narrative evidence, which states that "local trains and work trains are powered by GP38 locomotives, using one locomotive per train where possible." SunBelt Opening III-C-10; *see also* SunBelt Opening Ex. III-C-2 at 2 ("[t]he SBRR will operate its local trains with a single GP38 locomotive wherever possible.")

> at distributed power as a technology you can just plug in and use,' he says. 'You have to have the right operation and the right railroad to use it properly.'
>
> In 2010, NS and CSX officials believe only certain routes in their networks justify the expense and effort that distributed power entails.[267]

Nevertheless, a number of the trains that NS operates in a DP configuration today traverse the territory replicated by the SBRR. For example, NS Trains 225 and 226, which provide premium intermodal service between Atlanta and Los Angeles (in conjunction with UP), operate between Atlanta and Meridian with locomotives in DP configuration. Likewise, NS operates Train 340, an eastbound general freight train received from KCS at Meridian, in DP configuration, because stopping the train at the interchange point to reconfigure the power would result in delay to the train and congestion at the busy Meridian gateway.[268] For that reason, and because SunBelt otherwise applied reasonable train profiles, NS accepts, for purposes of this case only, the assumption that locomotives on SBRR road trains would operate in a 1/1 DP configuration.

However, SunBelt's election of DP configurations on all trains interchanged with the residual NS would impose on NS the obligation (and expense) of ensuring that all locomotives on trains interchanged with the SBRR are capable of operating in a DP configuration. It is well-established that a complainant may not assume that connecting railroads would change their operations to suit the SARR's preferences without accounting for any costs that such changes would impose on the connecting carriers. Accordingly, the SBRR is required to bear the cost of

---

[267] *See* NS Reply WP "Distributed Power Trains Magazine Article.pdf" (Freight Train Unbounded: Distributed power: it's a bigger deal than you think," *Trains* (September 2010), at 31-32 (emphasis added)).

[268] However, the westbound Train 339, which NS forwards to KCS at Meridian, is not built by NS with locomotives in DP configuration.

equipping the NS locomotives used in interline service with the SBRR with DP capability.[269] SunBelt's operating expense evidence makes no provision for those costs.[270] NS addresses this deficiency in SunBelt's operating cost calculations by requiring the SBRR to account for the cost of equipping those NS locomotives that operated in the territory replicated by the SBRR in 2011 (and therefore could be placed on trains interchanged to the SBRR) for DP operations. *See infra* Part III-D.

NS's Operating Plan provides sufficient power to conduct the SBRR's road train operations safely and efficiently. In this case, NS developed the SBRR's locomotive requirements by individual location (rather than on a "systemwide basis"), to account for the SBRR's fleet needs at particular locations, taking into account the imbalances in SBRR's traffic flows and the need to reposition locomotives. The methodologies that NS used to develop the correct number of SBRR road, local, helper, and yard locomotives is discussed in Part III-D.

SunBelt's road locomotive estimate includes a spare margin of { } percent. SunBelt Opening III-C-11. NS accepts that figure as an appropriate out-of-service factor, but corrects the erroneous manner in which SunBelt applied it. The figure that SunBelt calculated is the proportion of total time that locomotives are out of service; the actual spare additive must be adjusted slightly upward.[271] The correct spare margin is { } percent. In addition to this spare

---

[269] *See Duke/NS Reconsideration*, 7 S.T.B. at 872-73 (modifying the SAC analysis "to include the cost for NS to retrofit the number of NS locomotives that would be needed for this service").

[270] SunBelt attempts to side-step the Board's requirement by assuming (contrary to fact) that "foreign-road locomotives will be equipped for DP operations" before the SBRR's "peak period" (in 2021) and that connecting carriers will voluntarily enter into run-through arrangements with the SBRR that require a DP locomotive configuration on all trains. SunBelt Opening Ex. III-C-2 at 6, n.6. SunBelt's self-serving assumption violates the prohibition on "hypothesized" agreements. *AEPCO Guidance Decision*, 6 S.T.B. at 328.

[271] As an illustrative example, assume that SunBelt had determined that out-of-service time represented ten percent of total time. If a spare margin of ten percent were applied to the utilized

margin, SunBelt applied a "peaking factor" of 15.1 percent to reflect the increased locomotive requirement during the peak week of the Peak Year. *Id*; *see also* NS Reply Part III-D.

In total, the SBRR would require a fleet of 38 ES44AC locomotives to accommodate its road train operations.

(b) Helper Locomotives

The NS territory replicated by the SBRR does not include any segments on which NS utilizes dedicated helper service today. Accordingly, the SBRR does not employ helper service or helper locomotives.

(c) Switch/Work Train Locomotives

SunBelt's Operating Plan provides that "[t]he SBRR uses EMD SW1500 locomotives for switch service." SunBelt Opening III-C-11. The rationale articulated by SunBelt for selecting SW1500 units for yard service is its assertion that "[t]his type of locomotive is commonly used by Class I and other railroads for such service."[272] *Id.*

SunBelt's choice of SW1500 model locomotives for the SBRR's yard engine fleet is inconsistent with the realities of real world railroading, for several reasons:

First, with only 1500 horse power, a single SW1500 unit cannot generate sufficient tractive power to perform most switching operations, even at a "flat switching" yard. For that reason, it would be necessary to "double" those units to conduct flat switching.[273] And the

---

time, the results would account for only nine percent of locomotive time—as 10% x 90% = 9%—and total locomotive time would not be accounted for.

[272] SunBelt's assertion that SW1500s are "commonly used" for switching service is, at best, disingenuous. The vast majority of switching and yard operations on NS and other Class I railroads is performed with different, more powerful locomotive types.

[273] Indeed, given the weight of the loaded tank cars that comprise a significant portion of the SBRR's traffic, NS's Operating Plan provides two SD40 units for each yard assignment at the SBRR's Birmingham and McIntosh yards.

limited tractive power of the SW1500 model makes it totally unsuitable for "hump" yard operations. SunBelt's Operating Plan assigns only one SW1500 locomotive at the SBRR's Birmingham, McIntosh and New Orleans yards.[274] Operating alone, a single SW1500 locomotive would not have the tractive power necessary to shove the large cuts of cars that the SBRR would handle every day at those locations. Similarly, when handling a large cut of cars, the locomotive must provide the braking effort for switching operations. A single SW1500 is too light for the work required at larger SBRR yards and does not have sufficient breaking power to stop a large cut of cars. At Birmingham (where, as NS demonstrates above, the SBRR would need a "hump" yard), a single SW1500 locomotive (operating one shift) could not switch the 1,217 cars per day that the SBRR would need to classify at that location.[275] Nor could a single SW1500 unit accommodate the SBRR's daily classification volume of 442 cars in one shift at New Orleans or 206 cars at McIntosh.[276] Thus, even if SunBelt's yard locomotive estimate were accurate—and it is not—the SBRR would need at least twice as many SW1500 units to perform the switching services that SunBelt assumes would be handled by four engines.

Second, because General Motors Electro-Motive Division ("GM-EMD") ceased production of the SW1500 model in 1974, any available SW1500 locomotives would be (in the Base Year) at least 37 years old. Accordingly, they would experience a higher failure rate than other locomotive models that SunBelt could have chosen for the SBRR's yard service. Indeed, in 2010, NS's fleet of SW1500 locomotives had a failure rate of {{ }} percent, one of the

---

[274] *See* SunBelt WP "SBRR Yard Assignments_Open.xlsx;" SunBelt Opening WP "SBRR Operating Statistics.xls."

[275] See NS Reply WP "SBRR Reply Yards Operations.xlsx," Line 1.

[276] See NS Reply WP "SBRR Reply Yards Operations.xlsx," Lines 3, 4.

highest failure rates among any locomotive type.[277] At a minimum, selecting SW1500s for yard service would require the SBRR to allow for a much higher "spare margin" to account for the increased frequency of failures experienced by those locomotives in real world operations.

Third, it is not clear that the SBRR could acquire a sufficient number of serviceable SW1500 units to satisfy its yard locomotive requirements. The SW1500 model was manufactured by GM-EMD between June 1966 and January 1974. During that time, a total of only 808 units were built.[278] The total number of SW1500's in active service is dwindling—indeed, NS has only two SW1500 units in its locomotive fleet today.[279]

For these reasons, it would be irrational for a least cost, most efficient railroad commencing operations in 2011 to choose the SW1500 model to handle its yard operations. Witness Johnson rejected the use of SW1500s for switching service, and instead equipped the SBRR's yards with an appropriate number of SD40 locomotives. SD40s are used for yard switching operations at locations across the NS system today, and would provide more economical and reliable service for the SBRR.

As discussed above, SunBelt's Operating Plan fails to account for most of the work required to classify and switch general freight cars moving through the SBRR's yards. As a result, SunBelt's estimate of the SBRR's yard locomotive fleet requirements is greatly understated. NS corrects this deficiency by providing a fleet of 18 SD40 locomotive units for switching operations at the SBRR's yards. The number of yard locomotives allocated to each

---

[277] *See* NS Reply WP "Failure Rate for NS and Non-NS Units – YTD 2010.pdf."

[278] *See* http://en.wikipedia.org/wiki/EMD_SW1500.

[279] *See* JAMES W. KERR, THE OFFICIAL LOCOMOTIVE ROSTERS & NEWS OF NORTH AMERICA (2012 ed.) at 100.

yard facility in NS's Operating Plan is set forth in Figure III-C-22, below.[280] The number of yard assignments, yard locomotives and yard crews (per shift) contemplated by NS's Operating Plan was developed by NS witnesses Johnson and Schaub, based upon the average number of car handlings at each yard during each shift.

* * * * *

Figure III-C-22 summarizes the estimates of SunBelt and NS regarding the number of locomotives that the SBRR would require to execute a feasible operating plan for the SBRR's selected traffic group.

Figure III-C-22
SBRR Locomotive Requirements

Locomotive Model	SunBelt Opening	NS Reply	Difference
ES44AC	26	38	12
GP38	16	21	5
SW1500	4	--	(4)
SD 40	0	18	18
Total	46	77	31

iii. Railcars

SunBelt utilized shipment data produced by NS to determine car ownership. SunBelt Opening III-C-12. SunBelt's car ownership percentages are consistent with those developed by NS. NS does not challenge SunBelt's mix of system cars and shipper-provided equipment, but corrects SunBelt's improper conversion of intermodal flat equipment to be exclusively railroad-provided, as described in Part III-D.

---

[280] In addition to the 15 units identified in Figure III-C-23, NS includes three spare units based on accepting SunBelt's 15% additive for yard power, because those units are assigned to specific locations and thus do not travel throughout the system as do the SBRR's road locomotive units.

In addition, SunBelt's car requirements are understated. SunBelt calculated the SBRR's car requirements based upon operating statistics generated by its RTC Model simulation. *See id.* As NS demonstrated above, those operating statistics are utterly unreliable because the RTC Model upon which that simulation was based suffers from numerous fatal flaws and omissions—not the least of which is SunBelt's failure to account for all of the necessary trains, the yard operations necessary to fuel and inspect trains and switch traffic to/from local trains, or the customer switching activity necessary to serve the SBRR's local industries. Accordingly, SunBelt's railcar estimates are not credible.

As NS explains in greater detail in Part III-D below, NS's railcar fleet estimates are based upon the number of car-miles and car-hours derived from NS's detailed Operating Plan, which properly accounts for all of the activities required to handle merchandise traffic moving in SBRR trains. NS's car fleet estimates are the best evidence of record, and should be adopted by the Board.

i. Crew Districts and Crew Requirements

SunBelt's Operating Plan provides for four crew assignment locations—Birmingham, AL, Selma, AL, Meridian, MS, and New Orleans, LA. SunBelt Opening III-C-6; *see also* SunBelt Opening Ex. III-C-2 at 7. NS accepts SunBelt's assumed crew district locations.

i. Road Crews

NS calculated the number of crew starts for non-unit trains based upon outputs from its MultiRail simulation. NS's analysis produces separate crew starts for road and local trains, as well as for unit trains. NS's Operating Plan provides for 123 road crew personnel as well as 52

local crews, stationed at the above-referenced crew districts.[281] In particular, NS determined that many local trains operating in the Alabama Division require three crew members—including a brakeman—in order to complete their work within the Hours of Service limits. As explained, *supra* at III-C-A-3, customers require local crews to perform numbers tasks, such as setting out and picking up cars, blocking cars, repositioning cars on numerous tracks, and performing inspections, among others. These numerous tasks, combined with the physical constraints at customer locations, limited mainline access, and the need to work multiple industries during a shift, were considered in determining whether to add a third crewperson, or to split the work into two assignments. NS further explains its rationale for adding a third crewperson to certain local crews below at III-D-3-a.

SunBelt's road crew requirements are based upon SunBelt's fatally flawed Operating Plan and RTC simulation, and should be rejected. NS's road crew requirements consider the needs of all of the trains that the SBRR would have to operate, the need for deadhead crew starts, and a realistic estimate of the frequency that relief crews are needed, and should be accepted by the Board as the best evidence.[282]

---

[281] *See* NS Reply WP "Reply SBRR Train Statistics MultiRail 2011.xlsx;" "Reply SBRR Train Statistics Unit Base Year.xlsx."

[282] Unlike unit train operations, in which there is an exact balance between loaded and empty trains, the movement of general freight and intermodal traffic is not perfectly balanced east-west or north-south. The need to balance crews and home terminals was taken into consideration in locating the SBRR's home terminals and determining whether to have crews operate in turnaround service (leaving from and returning to the home terminal each day) or straight-away service (departing the home terminal and spending a night at an away terminal, with a return movement on a subsequent day). Ideally in straight-away service the crew can operate another train back to its home terminal after an overnight. When it can not, it is necessary to "deadhead" the crew back to its home terminal. *See* NS Reply III-D-3-a.

ii. Yard Crews

As NS demonstrates above, SunBelt's yard service plan fails to account for the primary activity at the SBRR yards—car classification and blocking. Moreover, SunBelt proffered no explanation whatsoever as to how it determined how many crews would be needed at a particular yard, and the resulting yard assignments are nonsensical. For example, SunBelt assigned one yard crew, working only one shift, five days a week, to the SBRR's McIntosh yard. This is clearly insufficient, given that SunBelt itself demands service seven days per week, twice daily on weekdays! As a result, SunBelt's estimates of the SBRR's yard locomotives and yard crew requirements are wholly unsupported by any record evidence, and should be rejected. *See supra* III-C-52 to III-C-60.

In contrast, NS's Operating Plan properly accounts for all of the activities—including intermediate classification and switching, and local service required to meet the needs of the SBRR's customers, including SunBelt. NS's Operating Plan includes an appropriate number of yards that are optimally sized and configured to handle the SBRR's carload traffic. Based upon those yard configurations, and the daily volume of trains, cars, and blocks moving through each facility, witness Johnson determined the number of yard assignments and yard crews that would be required to handle the workload at each SBRR yard.[283]

NS's yard assignments are based on a detailed analysis of the SBRR's anticipated workload at each location, and take into account not only the number of cars that would move through each SBRR yard daily, but also the time of day at which trains (and blocks) would be scheduled to arrive and depart. As the following discussion shows, NS's location-specific analysis of the SBRR's yard workload results in a significant increase to the number of yard

---

[283] *See* NS Reply WP "SBRR Reply Yard Assignments.xlsx."

assignments that are required, due primarily to the failure of SunBelt's "yard matrix" to take into account the volume of car classification and blocking to be performed by yard crews.

Witness Johnson determined the number of yard assignments required at each location based upon outputs from NS's MultiRail analysis. Specifically, the "Terminal Clock" feature of MultiRail identifies the time at which trains and cars arrive at and depart from the SBRR's yards. Witness Johnson reviewed the trains and cars that would originate or terminate at a particular yard during each 8-hour shift (e.g., 8:00 a.m. to 4:00 p.m.), in order to determine the inventory of cars that would require handling during that shift. Based upon the volume of cars handled in the yard, the number of inbound and outbound trains, and any industry switching to be performed by yard crews during a particular shift, witness Johnson assigned an appropriate number of yard assignments for each shift.[284] *See* NS Reply WP "Yard crew assignment process.doc."

Witness Johnson also considered the size of the yard in determining how many yard assignments were required. At the SBRR's Birmingham hump yard, where more than 1,200 cars would be handled daily, witness Johnson assigned nine crews per day—three crews for each of the three shifts, including one hump crew and two "pullback" crews to switch cars that have been classified in the bowl into outbound trains. The number of yard crew assignments at the SBRR's flat switching yards was likewise based upon an analysis of cars per shift handled in the yard, the number of inbound and outbound trains, and any industry switching to be performed by yard crews. NS Reply workpaper "SBRR Reply Yard Assignments.xlsx" indicates the number of yard crew assignments required by the SBRR at each yard.

---

[284] Customers located adjacent (or in close proximity) to a yard facility may be served by a yard engine and crew, rather than a separate local train assignment.

Witness Johnson assigned a "utility position" to expedite the work flow at certain yards. Yard switchmen work with different crews to expedite various tasks, such as coupling tracks, handling switches, protecting shove movements, lacing air hoses, and applying and releasing hand brakes. Utility persons may also assist in assembling blocks from various tracks into trains and setting out cars designated for the yard when a road train arrives. These positions are necessary to maintain the fluidity of yard operations and to alleviate congestion during the busiest periods. Witness Johnson assigned utility positions at the SBRR's four busiest yards, Birmingham, New Orleans, McIntosh, and Meridian. *See* NS Reply WP "SBRR Reply Yard Assignments.xlsx."

Figure III-C-23 compares the yard assignments provided by SunBelt and by NS at each yard. In total, NS's Operating Plan includes 86 yard crew personnel, including switch crews and utility crews—compared to the eight yard crew members posited by SunBelt.[285]

FIGURE III-C-23
NS/SunBelt Yard Assignment Comparison

		SunBelt			NS				
Yard Name	Cars Classisifed/Day	Crews/Day	Shifts/Day	Shifts/Week	Crews/Day	Shifts/Day	Shifts/Week	SunBelt Yard Engines	NS Yard Engines
Birmingham	1217	1	1	7	9*	3	21	1	6
New Orleans	441	1	1	6	4*	3	21	1	2
McIntosh	206	1	1	5	2*	2	14	1	2
Meridian	291	0	0	0	2*	2	14		1
Selma	180	0	0	0	1	1	7		1
Wilton, AL	110	0	0	0	1	1	7		1
Hattiesburg, MS	107	0	0	0	1	1	7		1
Vance, AL	40	0	0	0	1	1	7		1

* indicates a utility position is added to each shift

Figure III-C-23 illustrates the clear disconnect between SunBelt's yard crew staffing and the number of cars per day to be classified at each SBRR yard. For example, SunBelt's provision of one yard crew and one yard engine on only one shift at Birmingham—the SBRR's busiest yard—is utterly insufficient to handle 1,217 cars per day. As mentioned above, to handle

---

[285] *See* NS Reply WP "SBRR Reply Yard Assignments.xlsx."

all of the traffic, NS has assigned three crews per shift, as well as one utility person. Similarly, SunBelt's assignment of one crew, working only one shift five days per week at McIntosh is not only insufficient to handle the number of cars that will need to be classified, but also fails to take into consideration the fact that SunBelt's own facility requires service seven days per week, including twice daily service most days and that many of those jobs take an entire shift to complete. *See supra* III-C-52 to III-C-60. NS has assigned two shifts, seven days per week to handle the traffic at the SBRR's McIntosh yard as well as one utility position on each shift to account for the volume of traffic that would be handled. NS's yard crew assignments are derived based upon location-specific analysis of the volume of traffic handled in each yard on any given shift, and as such offer the best evidence of the SBRR's yard assignment requirements.

2. Other

a. Car Repair Facilities

Because the SBRR proposes to acquire its rolling stock pursuant to "full service" leases under which SBRR cars would be repaired and maintained by the lessor (SunBelt Opening III-D-6-8), SunBelt assumed that the SBRR would not need any car repair facilities or personnel, and provided none for its SBRR Operating Plan. As NS demonstrated above (at III-C-73 to III-C-77), this assumption renders the SBRR incapable of performing running repairs on foreign line cars that become disabled while on the SBRR network, or cars that become disabled on line of road, as required by the AAR's Interchange Rules and the terms of the NS intercarrier agreements that the SBRR purports to adopt as its own. The increased "out of service" time resulting from SunBelt's assumption would also impair the SBRR's operations by preventing it from placing cars quickly back into service and increasing the number of cars required to serve its selected traffic.

NS addressed this issue by building a car shop and a locomotive repair shop in Birmingham. In addition, NS's Operating Plan provides RIP tracks at the SBRR's four largest yard locations: Birmingham, Meridian, New Orleans, and McIntosh. NS includes one expedite track at each of Meridian, New Orleans, and McIntosh.[286] NS's Operating Plan provides the necessary car repair facilities to account for running repairs that the SBRR will inevitably have to perform along its system.

b. Train Control and Communication

SunBelt assumes that "the SBRR network employs a Positive Train Control ("PTC") system for all train control and communications." SunBelt Opening III-C-16. As NS explains in Section III-F, SunBelt ignores the reality that PTC has yet to be implemented by any railroad, and indeed the technology is not even ready for implementation. SunBelt cannot assume the use of a technology that is not available for use today, and certainly was not available in 2011, when the SBRR would begin operations. SunBelt's claim that it could reduce "investment expenditures" by "installing a PTC system from the outset" is irrelevant, for it is plainly not feasible for the SBRR to install a PTC system years before any functional system exists. SunBelt Opening III-C-17. Instead, the SBRR would be required to construct a Centralized Traffic Control ("CTC") system for the beginning of operations in 2011, and then overlay a PTC system by the December 31, 2015 deadline for installation. This two-step process is consistent with both the real world—in which NS and all other Class I railroads are required to convert their CTC systems to PTC—and with the Board's holding in *AEPCO 2011* that the SARR analyzed in that case would be required to install PTC as an overlay to CTC in 2015. *See AEPCO 2011*, STB Docket No. 42113, at 33. NS's Operating Plan is designed with the

---

[286] *See* NS Reply WP "SBRR Reply Yard Operations.xlsx."

assumption that PTC will not be installed until 2015. NS fully explains the costs and effects of this aspect of the SBRR SAC analysis in Section III-F.

3. NS's RTC Model Simulation

SunBelt's RTC simulation is based on an Operating Plan that is fatally flawed and entitled to no evidentiary weight. SunBelt's Model does not even attempt to measure the capacity requirements for nearly 10% of the "peak period" trains that the SBRR would have to operate to provide complete train service to its customers—including SunBelt itself! For that reason alone, any conclusions drawn from SunBelt's RTC simulation regarding the adequacy of the SBRR's physical plant, locomotive and car fleets, and personnel are worthless. Moreover, SunBelt's RTC simulation fails to model the movement of SBRR road and local trains completely and accurately; incorporates operating practices and assumptions that violate federal law, well-established industry safety practices, and the laws of physics; and does not properly account for events—including random outages, foreign train crossings and delays related to line maintenance—that would inevitably delay SBRR trains on a daily basis. In short, SunBelt's RTC simulation is utterly inconsistent with "the realities of real world railroading" (*WFA I*, STB Docket No. 42088, at 15), and its outputs are not supported by credible evidence. Accordingly, the Board should disregard them.

By contrast, NS witnesses Wheeler and Williams conducted an RTC simulation of the SBRR's Peak Year operations based upon an Operating Plan that includes (1) all of the road and local train services that the SBRR would have to provide; (2) a detailed car classification and blocking plan that provides for the transfer of general freight cars between trains as they move along the SBRR network; (3) a local train service plan based on realistic estimates of the time required to serve customer facilities; and (4) physical plant (including main line and secondary track, yards, and intermodal and automotive facilities) that are optimally sized to accommodate

the SBRR's operations. Unlike SunBelt's "automated" operating evidence, NS's Operating Plan and RTC simulation are supported by thorough, location-specific analyses of the SBRR's operating requirements. NS's operating and RTC evidence are well-documented, and are fully consistent with applicable laws, real-world operating practices and the requirements of the SBRR's customers. Based upon that evidence, NS presents accurate estimates of the time, facilities, locomotives, cars, crews, and support personnel that a least cost, most efficient railroad would need to serve SunBelt's selected traffic group.

Following is a description of the key operating inputs and assumptions that witnesses Wheeler and Williams utilized in conducting NS's RTC Model simulation.[287]

a. Train Size and Weight

In its RTC Model, SunBelt based the maximum length of SBRR trains on the longest train (by train symbol) shown in the historical train data furnished by NS in discovery. *See* SunBelt Opening III-C-9, n.6. As stated above (at III-C-163), NS accepts SunBelt's methodology as a reasonable approach to determining maximum train sizes. Accordingly, NS applied the same trains and train profiles (including train length, number of loaded and empty cars, total feet, total tons and trailing tons) that SunBelt used in its RTC simulation. However, as described above (at III-C-91), SunBelt's RTC analysis did not include 50 peak period road and local trains that NS used to transport the selected traffic. NS's RTC Model corrects that error by adding to the list of trains in SunBelt's RTC simulation additional trains as necessary to provide complete train service for all of the SBRR's selected traffic. NS also added those work events for SBRR trains that were not modeled accurately by SunBelt. A complete list of the SBRR

---

[287] The methodologies and processes employed by NS witnesses Wheeler and Williams in conducting NS's RTC simulation are documented in detail in the electronic workpapers set forth in NS Reply WP Folder "RTC."

trains input into NS's RTC Model is set forth in NS Reply WP "NS REPLY SBRR TRAIN IDS.xls."

b. Maximum Train Speeds

SunBelt's Operating Plan and RTC Model simulation assume that all SBRR non-coal trains would operate at a maximum speed of 60 MPH on main line segments, "conditions (including gradient and curvature) permitting." SunBelt Opening III-C-5; Ex III-C-2 at 3-4. NS's accepts a maximum train operating speed of 60 MPH for non-coal trains, other than for "Key Trains" carrying TIH shipments. In order to comply with federal regulations (and industry-wide practice for handling TIH shipments safely), NS's RTC Model restricts "Key Trains" to a maximum speed of 50 MPH. NS accepts SunBelt's maximum train speed of 50 MPH for coal unit trains.[288] *See* NS Reply WP "Maximum Train Speed for NS Reply RTC.xlsx."

c. Road Locomotive Consists

NS accepts SunBelt's specification of ES44AC model locomotives for SBRR road trains. *See* SunBelt Opening III-C-9. NS's RTC Model adopts the locomotive consists for SBRR general freight and intermodal trains indicated in SunBelt's RTC Model. However, witness Wheeler was required to add a third locomotive unit to certain SBRR trains that "stalled" during the simulation (due to NS's adjustment of the incorrect grade information used in SunBelt's RTC Model), and also added a third locomotive to certain premium intermodal trains to ensure they would meet NS's time-sensitive service commitments, as described in Part III-D.[289]

---

[288] SunBelt Opening Ex. III-C-2 at 3.

[289] A list of the trains that required additional locomotives in NS's RTC simulation is set forth in NS Reply WP "SBRR RTC Trains Requiring Additional Locomotives.docx."

As stated above (at III-C-167), NS also accepted (for purposes of this case only) SunBelt's assumption that all SBRR road trains (and certain local trains) would operate with their locomotives in a 1/1 DP configuration. The trains that operate with locomotives in DP configuration in NS's RTC Model are identified in NS Reply WP "NS REPLY SBRR TRAINS IN DP.xlsx."

d. Dwell Times at Origins and Destinations

Among many glaring deficiencies in SunBelt's Operating Plan and RTC simulation is the failure to make adequate provision for the time required to serve customers at origin and destination stations along the SBRR network. As discussed above (at III-C-98 to III-C-104), SunBelt's RTC simulation applies "generic" dwell times at both general freight customer facilities and coal destinations. The dwell times assumed by SunBelt consistently understate the time actually required to provide local service. NS's Operating Plan and RTC Model correct this major deficiency in SunBelt's RTC simulation by applying location-specific dwell times developed by NS witnesses Johnson, Smith, and Benton Fisher, based upon NS's real world experience.

i. General Freight Traffic

SunBelt's Opening Evidence does not articulate an explicit assumption regarding the time required to provide local service at "carload" customer facilities. However, as NS demonstrates above (at III-C-98 to III-C-104), SunBelt's RTC Model allocates 30 minutes of dwell time to complete any "work events" that involve picking up or setting cars off a train at a customer facility or intermediate yard. SunBelt's 30-minute dwell time assumption for pick ups and setoffs of general freight cars significantly understates the time required to serve "carload"

customers or to switch cars (or blocks of cars) into and out of trains at intermediate yards.[290] As NS has demonstrated (at III-C-41 to III-C-52), local trains do not simply "drop off" or "pick up" cars at the operating stations they serve. Rather, they must perform a variety of tasks, including "spotting" cars on a particular track or in a particular order (as specified by the customer), sorting loaded and/or empty inbound and outbound cars, and setting off or picking up cars on interchange tracks. Indeed, the local service provided by NS twice daily to SunBelt at McIntosh involves a complicated (and time-consuming) process of classifying and switching both inbound and outbound cars, and performing numerous safety-related actions that are required to comply with applicable laws and both SunBelt's and NS's operating procedures. Where multiple customers are served at the same operating station, the local train may be required to repeat those tasks at each customer's facility. The particular "work events" required varies from station to station, and from day to day. For those reasons, the generic 30-minute dwell time applied by SunBelt's RTC Model does not accurately reflect the time and resources necessary to provide "carload" rail service to the SBRR's diverse customer group.

SunBelt's allocation of a single dwell time increment of 45 minutes to all SBRR local trains operating in "turn service" is especially illogical. SunBelt posits that the allotted 45 minutes is sufficient to account both for any switching that such trains are required to perform, and for the train to reverse direction. In connection with the latter action, SunBelt asserts that

---

[290] SunBelt's Operating Plan provides a single yard crew (working one shift per day) and one yard locomotive at three of the SBRR's yards (Birmingham, McIntosh, and New Orleans). *See* SunBelt Opening WP "SBRR Yard Assignments_Open.xlsx," Tab "Crews." SunBelt posits that, at other yard locations, "SBRR local crews are not limited to operating local trains, but instead are flexible enough to operate road trains over routes on which they are certified, as well as to perform any switching operations that may be required in yards." SunBelt Opening III-C-7 (emphasis added). However, SunBelt's RTC simulation does not reflect any dwell time for local trains that would indicate switching activity performed by the local train's locomotive(s) or crew.

reversal of direction would be "facilitated" by the fact that SBRR trains operate with their locomotives in DP configuration. SunBelt Opening Ex. III-C-2 at 7. However, NS's review of the local trains in SunBelt's RTC simulation indicates that 97 of 145 local trains (or 67%) operate with only one locomotive, consistent with SunBelt's assumption that local trains would operate with one unit "wherever possible."[291] Such trains could not possibly complete all of their assigned work at customer facilities and reverse direction (which would require detaching the locomotive, running it around the train, and reattaching it on the opposite end of the train) within the 45 minutes allotted by SunBelt. NS's RTC simulation corrects this error by incorporating 45 minutes for local trains operating in "turn service" with a single locomotive to reverse direction, in addition to the time required to perform any required work events along their route of movement.

NS's RTC Model addresses the fundamental deficiencies in SunBelt's RTC simulation by applying location-specific dwell times for SBRR general freight origins and destinations. Those dwell times were developed by witnesses Johnson and Smith based upon their analysis of NS's real world local train operations at stations replicated by the SBRR. The location-specific dwell times applied by witnesses Wheeler and Williams in conducting NS's RTC simulation are set forth in NS Reply Exhibit III-C-13, which includes the reasons (such as the need to serve multiple customers at a single station, or to perform multiple tasks to meet customer-specific requirements) for the specified dwell time for each location. For SunBelt's McIntosh plant, NS's RTC model conservatively incorporates two four-hour time periods each day during which the SBRR main line would be occupied by SBRR yard assignments serving the facility. In the real world, local service to the SunBelt facility ties up the main line for even longer periods of time

---

[291] *See* NS Reply WP "SBRR Local Trains in SunBelt RTC Simulation.xlsx."

each day. *See* III-C-54 to III-C-55 above.[292] Based upon the realistic, location-specific dwell time estimates developed by NS witnesses Johnson and Smith, NS's RTC simulation presents a more accurate estimate of the time required to provide local freight service, and of the equipment and crews that the SBRR would need to conduct its local freight operations.

ii. Unit Train Coal Traffic

The dwell times that SunBelt assumes the SBRR would experience at local coal destinations are significantly understated. NS's analysis of SunBelt's RTC Model reveals that SunBelt assigned a destination dwell of four hours at { } at Richburg, MS, and eight hours at { } at Carson, AL.[293] In reality, NS coal trains experience much longer dwell times in serving those coal receivers. Specifically, the average dwell time for NS coal trains serving Richburg is 16 hours, and for coal trains serving Carson, it is 27 hours. NS calculated these actual dwell times from the NS locomotive event records that were provided to SunBelt in discovery.

The Board's prior SAC decisions establish that the "best evidence" of the dwell time that a SARR would incur in providing service to coal shippers is the incumbent carrier's real world experience. *See, e.g., AEPCO 2011*, STB Docket No. 42113, at 29 ("defendants' operating plan better reflects dwell times by generally relying on real-world data at the origins and destinations that would be served by the SARR"); *WFA I*, STB Docket No. 42088, at 17 ("We use BNSF's dwell time as the best evidence of record because it is based on real world experience and WFA has failed to adequately explain how the LRR would shorten that dwell time."); *TMPA I*, 6

---

[292] *See also* NS Reply Figure III-C-9 (showing that NS local trains serving SunBelt and other customers at McIntosh require, on average, between 10.09 and 11.61 hours to complete all of its work events).

[293] *See* SunBelt Opening WP "Sunbelt RR Final.TRAIN;" *see also* NS Reply WP "SunBelt's RTC trains for SMEPA and Powersouth.xlsx."

S.T.B. at 656 ("TMPA has failed to show that trains could be expected to be unloaded within the free time provided, in light of BNSF's experience."). NS's RTC Model assigns dwell time to SBRR coal trains based upon NS's real world experience at the two SBRR local destinations.[294]

e. Dwell Times at Yards

SunBelt's Operating Plan and RTC simulation incorporate the following dwell time assumptions for trains at SBRR yards:

- 5 hours for coal trains requiring a 1,500-mile inspection;
- 3 hours for non-coal trains requiring a 1,000-mile inspection;
- 30 minutes for switching cars into or out of trains.[295]

The duration of the dwell times assumed by SunBelt for coal and non-coal trains requiring inspection are reasonable. NS accepts those dwell time assumptions, and NS witness Wheeler incorporates them into NS's RTC Model. However, as discussed above, SunBelt's Operating Plan and RTC Model do not assign appropriate dwell time for other yard activities. As discussed above, SunBelt failed to account for the fact that blocks of general freight cars would need to be removed from inbound road trains, classified and re-blocked for further movement by other SBRR trains, including local trains. SunBelt's assignment of 30 minutes of dwell time to all road trains for "work events" at intermediate locations is not sufficient to enable the SBRR to "swap" blocks of cars into and out of trains at SBRR yards. Moreover, SunBelt's RTC simulation does not even account for all of the intermediate stops that SBRR road trains and "straightaway" local trains would be required to make as they traversed the SBRR network.

---

[294] NS Reply WP "SBRR Coal Destination Dwell.xlsx."

[295] SunBelt Opening Ex. III-C-5 at 5-7.

By contrast, NS's Operating Plan takes into account the time required for cars to move between trains, and for trains to pick up and/or set off blocks of cars, at intermediate yard locations.

f. Time Required to Interchange Trains With Other Railroads.

SunBelt's Operating Plan and RTC simulation assign 30 minutes of dwell time to complete the receipt of a train in interchange from a foreign railroad. *See* SunBelt Opening Ex. III-C-2 at 5. NS accepts this dwell time, and uses a 30-minute dwell time for interchanges in its RTC simulation.

g. Crew Change Locations/Times

SunBelt's Operating Plan and RTC simulation assign 15 minutes of dwell time to complete crew changes. *See* SunBelt Opening Ex. III-C-2 at 6. NS accepts this dwell time, and uses a 15-minute dwell time for crew changes in its RTC simulation.[296]

h. Track Inspections/Maintenance Windows

SunBelt's RTC Model greatly understates the impact of line maintenance activities on the SBRR's train operations. SunBelt's RTC Model accounts for only one delay event reflecting a conflict between a train movement and an SBRR maintenance of way gang.[297] Thus, SunBelt's RTC Model assumes that the SBRR would experience only one maintenance-related train delay across its 580-mile rail network during the entire 10-day simulation period. As NS demonstrated above (at III-C-111 to III-C-112), SunBelt's assumption that required maintenance activities would have such a *de minimis* impact on SBRR trains does not comport with the realities of real

---

[296] This assumption has relatively less impact on this SAC case, as most SBRR trains traverse only one crew district between interchanges with either the residual NS or other railroads, as explained in Part III-D.

[297] *See* SunBelt Opening WP "Delay_2009(on-sarr).xlsx."

world railroading. In order to reflect realistically the impact of program maintenance activity on the SBRR's train operations, witness Baranowski developed four "maintenance windows." Each maintenance window is designated as an eight-hour window, split into two four-hour segments, separated by a two hour off-track break to allow trains to pass. Scheduling maintenance windows in that manner is consistent with real-world practices. Figure III-C-24 illustrates the location and date of each of the four maintenance windows specified by witness Baranowski.

Figure III-C-24
Maintenance Windows

SEGMENT	FROM	TO	Date	
Burstall - Meridian	218.4	219.3	5/24/2021	Two four hour windows separated by 2 hours
Burstall - Meridian	217.45	218.4	5/25/2021	Two four hour windows separated by 2 hours
McIntosh - Burstall	25.2	26	5/23/2021	Two four hour windows separated by 2 hours
Burstall - Birmingham	145.05	146.1	5/26/2021	Two four hour windows separated by 2 hours

Witness Wheeler incorporated the maintenance windows specified by witness Baranowski into NS's Reply RTC Model. [298] *See AEPCO 2011*, STB Docket No. 42113, at 28 ("First, defendants' operating plan models the impact of program maintenance on the operation of the SARR."). The specific "maintenance windows" incorporated into NS's Model are set forth in NS Reply workpaper "NS Reply RTC MOW and Failures.xlsx."

i. Time for Random Failures/Line Outages

As NS demonstrated above, SunBelt's list of "selected" random outages excluded entire categories of delay events (such as locomotive failures, other mechanical failures, and delays attributable to FRA inspections and drug testing) that NS and other carriers experience on a daily basis. The result of SunBelt's flawed methodology for estimating the effects of random failures was an RTC simulation that fails to give adequate consideration to the impact of unanticipated events on the SBRR's operations. *See supra* III-C-111 to III-C-112.

---

[298] *See* NS Reply WP "NS Reply MAINTENANCE WINDOWS.xlsx."

NS's Operating Plan and RTC Model correct this serious deficiency in SunBelt's analysis by incorporating 45 of the { } random outage events that occurred on the NS lines replicated by the SBRR during the time period in 2011 that corresponds to the SBRR's peak period.[299] Based upon the assumption that the SBRR would have in place a PTC-type train control system in the Peak Year, NS excluded any signal-related failures from the list of random outages input to NS's RTC Model.[300] Certain other categories of random outages set forth in the data provided to SunBelt in discovery were addressed by other aspects of NS's Operating Plan and RTC simulation, and therefore were not included in NS's Reply RTC simulation. For example, delays resulting from trains having to wait for the arrival of crews or locomotive power were not included because NS's Operating Plan provides a sufficient number of crews and locomotives to avoid such occurrences. The result is a realistic—indeed, conservative—estimate of the effects of unanticipated delay events on the SBRR's train operations.

---

[299] A list of those random outages, which were provided to SunBelt in discovery, is set forth in "NS Reply SBRR – Delays.xlsx."

[300] For purposes of this case, NS adopted SunBelt's assumption that simulation of the operation of a railroad with a PTC system in place can be accomplished by running the RTC Model with the signals turned off. However, NS does not believe that doing so is the most accurate way to simulate the operation of a PTC-equipped railroad.

Table of Contents

Page

III. STAND-ALONE COST III-D-1

D. OPERATING EXPENSES III-D-1

1. Locomotives III-D-6

a. Locomotive Acquisition III-D-7

i. SunBelt Understates the Number of Locomotives III-D-7
ii. SunBelt Understates the Locomotive Lease Cost III-D-15

b. Locomotive Maintenance III-D-19
c. Locomotive Servicing (Fuel, Sand, and Lubrication) III-D-20

i. Fuel Cost III-D-20
ii. Fuel Consumption III-D-20
iii. Locomotive Servicing III-D-23

2. Railcars III-D-23

a. Acquisition III-D-23
b. Maintenance III-D-28
c. Private Car Allowances III-D-29

3. Operating Personnel III-D-29

a. Train/Switch Crew Personnel III-D-29

i. Compensation III-D-36
ii. Fringe Benefits III-D-38
iii. Taxi and Hotel Expense III-D-41

b. Non-Train Operating Personnel III-D-42
c. General and Administrative III-D-42

i. SunBelt's Justifications For Its Extraordinarily Low G&A Staffing and Spending Levels Are Meritless. III-D-48

(a) SunBelt's Evidence is Not "Consistent With" G&A Levels Approved in Previous SAC Cases. III-D-48

(b) SunBelt's Other Claimed Reasons For the SBRR's Low G&A Spending and Staffing Are Not Credible. III-D-50

(i) The SBRR's IT Systems Are Unexceptional and Do Not Offer Substantial Savings. III-D-51

(ii) The SBRR's Reliance on Outsourcing. III-D-55

(iii) The SBRR's Reliance on Cross-Over Traffic Does Not Justify Inadequate G&A Spending III-D-57

(iv) SBRR's Use of Non-Union Personnel Has a Minimal Impact on G&A Spending. III-D-58

(v) Being a Privately Held Company Has A Minor Impact on G&A Needs III-D-59

ii. Staffing Requirements III-D-60

(a) Executive Department III-D-64
(b) Board of Directors III-D-66
(c) Marketing & Sales Department III-D-68
(d) Finance and Accounting Department III-D-72

(i) Vice President and Chief Financial Officer. III-D-74

(ii) Treasury. III-D-75

(iii) Audit. III-D-77

(iv) Revenue Accounting. III-D-79

(v) Disbursements. III-D-83

(vi) Tax. III-D-85

(vii) Financial Reporting. III-D-86

(viii) Purchasing. III-D-88

(e) Administration Department III-D-90

(i) Law. III-D-90

(ii) Casualty Claims. III-D-92

(iii) Human Resources. III-D-93

(iv) IT III-D-98

(v) Asset Protection. III-D-100

(1) Environmental Staffing III-D-100
(2) Police III-D-108

(vi) Real Estate. III-D-113

iii. Compensation III-D-114

(a) Salaries for Non-Executives III-D-114
(b) Executive Compensation III-D-114
(c) Outside Director Compensation III-D-118
(d) Fringe Benefits III-D-118

iv. Materials, Supplies and Equipment III-D-118
v. Other III-D-119

(a) IT III-D-119
(b) Other Outsourced Functions III-D-121

(i) Tax Preparation. III-D-122

(ii) Payroll Processing. III-D-122

(iii) Audit and Internal Review. III-D-122

(iv) Claims Handling. III-D-123

(v) Outside Counsel. III-D-123

(c) Start-up and Training Costs III-D-124

(i) Training. III-D-124

(ii) Recruitment. III-D-125

(d) Travel III-D-127
(e) Bad Debt III-D-129

vi. Benchmarking to Other Railroads Shows that NS's Proposed G&A Staffing Would Make the SBRR A Best-in-Class Efficient Railroad III-D-130

4. Maintenance-of-Way III-D-135

a. SBRR Operating Staff III-D-140
b. General Office Organization III-D-142
c. Track Department III-D-146

i. General Office Staff III-D-148
ii. Field Staff III-D-148

(a) Roadmasters and Assistant Roadmasters III-D-148
(b) Track Crews III-D-150
(c) Roadway Machine Operators III-D-154
(d) Welder/Helper/Grinders III-D-156
(e) Rail Lubricator Repairmen III-D-157
(f) Roadway Equipment Mechanics III-D-158
(g) Ditching Crews III-D-158
(h) Smoothing Crews III-D-161

d. Signals and Communications III-D-162

i. General Office Staff III-D-165
ii. Field Staff III-D-167
iii. Signal Maintainers, Inspectors and Technicians III-D-167
iv. Norris Hump Yard III-D-171
v. Dispatch Center III-D-172
vi. Communications Technicians III-D-173

e. Bridge & Building Department III-D-173

i. General Office Staff III-D-175
ii. Field Staff III-D-175

(a) B&B Supervisors III-D-175
(b) Bridge Inspectors and Other Field B&B Employees III-D-175

f. Misc. Administrative/Support Personnel III-D-177

i. Engineer of Programs and Contracts III-D-178
ii. Public Project Engineers III-D-179
iii. Manager of Administration & Budgets III-D-180
iv. Managers Environmental/Safety/Training III-D-180

v. Manager Mechanical Operations III-D-181
vi. Water Plant and Fuel Technicians III-D-181
vii. Allocation of MOW Personnel to Operations and Maintenance Expense III-D-182

g. Non-Program MOW Work Performed by Contractors..... III-D-183
h. Planned Contract Maintenance III-D-184

i. Track Geometry Testing III-D-184
ii. Ultrasonic Rail Testing III-D-185
iii. Rail Grinding III-D-186
iv. Yard Cleaning III-D-187
v. Vegetation Control..... III-D-189
vi. Crossing Repaving III-D-190
vii. Shoulder Ballast Cleaning..... III-D-190
viii. Equipment Maintenance III-D-192
ix. Communications System Inspection and Repair..... III-D-193
x. Bridge Inspections III-D-193
xi. Building Maintenance..... III-D-193

i. Unplanned Contracted Maintenance..... III-D-193

i. Snow Removal..... III-D-193
ii. Storm Debris Removal..... III-D-193
iii. Building Repairs III-D-194

j. Large Magnitude Unplanned Maintenance..... III-D-194

i. Derailments..... III-D-194
ii. Washouts..... III-D-196
iii. Environmental Cleanups..... III-D-197

k. Program Maintenance III-D-197

i. Rail Grinding III-D-198
ii. Bridge Substructure and Superstructure Repair..... III-D-198

l. Vehicles and Equipment III-D-198

i. Vehicle Inventory..... III-D-198
ii. Equipment and Vehicle Monthly Rental Rates..... III-D-201

5. Leased Facilities..... III-D-204
6. Loss and Damage..... III-D-204
7. Insurance..... III-D-204

8. Ad Valorem Tax III-D-210

a. Unit Valuation Is the Basis for Ad Valorem Taxation In Each of the SBRR States..... III-D-212
b. Railroad Income Value Is the Primary Factor Considered By the SBRR Unit Value States..... III-D-215
c. A NROI Adjustment Should Be Made to Account for the SBRR's Relative Income Value..... III-D-217

9. Other III-D-219

a. Intermodal Lift and Ramp Cost III-D-219
b. Automotive Handling Cost III-D-220
c. Costs Incurred By Residual NS For New SBRR-NS Interchanges III-D-221
d. Calculation of Annual Operating Expenses..... III-D-223
e. Excess Risk III-D-224

i. The Risk of A Catastrophic TIH Release That Exceeds The Limits of Reasonably Obtainable Insurance Cannot Be Eliminated Entirely.....225
ii. Quantification of Cost of Excess Risk III-D-233

III. STAND-ALONE COST

D. OPERATING EXPENSES

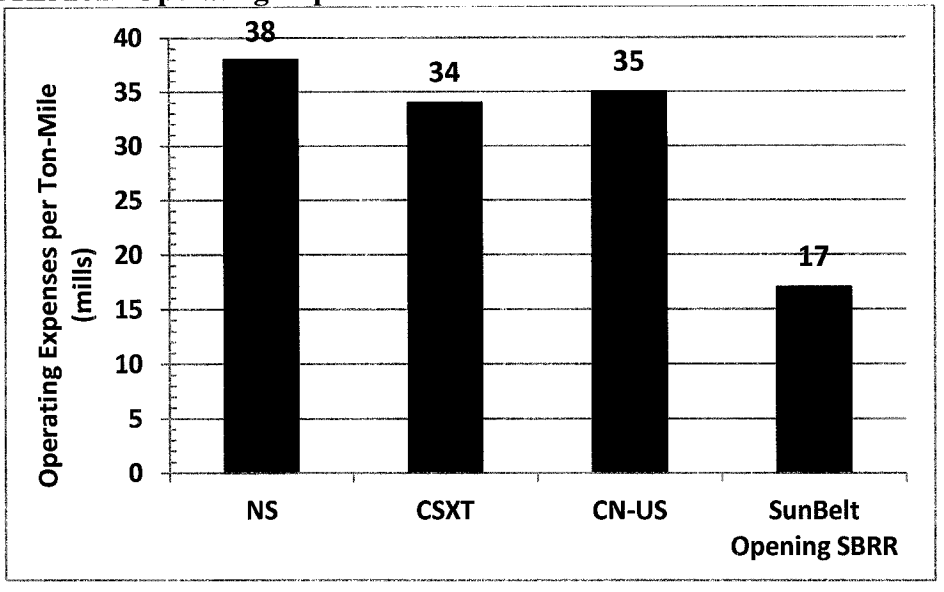
In Part III-D of its Opening Evidence, SunBelt presents its estimate of the annual operating expenses for the SBRR, based on the traffic group and operating plan posited in Parts III-A and III-C, respectively. As shown in SunBelt's Table III-D-1, SunBelt estimates that the SBRR's Base Year operating expenses would total $128 million,[1] based on 3Q 2011 cost levels. As NS demonstrates below, SunBelt's estimate understates by more than $100 million annually the cost of providing the service and functions necessary to handle the traffic that SunBelt selected for the SBRR.

To put SunBelt's operating cost estimate in perspective, SunBelt takes the position that the SBRR's operating cost per net ton-mile would be less than one-half of the expense per net ton-mile incurred today by NS and the other two Class I railroads operating in the eastern United States (CSXT and CN). Figure III-D-1 below compares SunBelt's SBRR results for 2011 with the reported operating expenses, excluding depreciation, per net ton-mile for those other railroads.[2]

[1] SunBelt Opening at III-D-2.

[2] *See* NS Reply WP "2011 RR Operating Expenses.xlsx."

Figure III-D-1
SBRR 2011 Operating Expenses Are One-Half of Eastern Class I Railroads



The notion that a railroad could serve NS's broad mix of traffic over a 580-mile network for only 17 mills per ton-mile in 2011 is utterly unrealistic. While the STB has adopted operating expenses in the range of 17 mills per ton-mile in certain other SAC cases, the SARRs in those cases involved traffic groups that were largely—if not entirely—based on coal unit trains and other "trainload" traffic moving in "bridge" service, or involved networks that were longer and had higher densities than the SBRR's. Notwithstanding SunBelt's assertion that the SBRR is "conceived" as a "trainload" railroad (SunBelt Opening I-53), the reality is that 44% of the SBRR's traffic group is general freight traffic that moves in "carload" shipments between dozens of different SBRR-served origins (or on-SARR junctions) and destinations (or off-SARR junctions). While much of the SBRR's traffic would be handled in overhead service between interchanges with the residual NS or other railroads, the SBRR would originate or terminate one-third of its carload shipments (*i.e.*, excluding intermodal).[3]

[3] *See* NS Reply WP "SBRR 2011 Revenue Traffic.xls."

As NS demonstrated in Part III-C above, the operations required to support the SBRR's general freight traffic (including car classification and switching, and providing local service to 366 customer facilities) are far more complex and time-consuming than "trainload" operations. It also merits noting that coal traffic comprises less than 2% of total SBRR shipments.[4] The fact that coal unit-train traffic accounts for such a small percentage of SBRR's traffic base—as compared to NS's real world traffic, of which coal comprises 20%—further underscores the implausibility of SunBelt's operating expense evidence. Table III-D-2 below summarizes the SBRR trains that SunBelt identified by train type, indicating that local trains account for more than one-third of the total, and nearly three-quarters of all SBRR trains are either general merchandise trains or local trains.[5]

Table III-D-2
General Merchandise or Local Trains Comprise Nearly Three-Quarters of SBRR Total

Train Type	Base Year Trains	% of Total
General Merchandise	5,227	39%
Local	4,697	35%
Intermodal	2,027	15%
Multilevel	499	4%
Coal	472	4%
Unit Bulk	273	2%
Grain	187	1%
Special	18	0%
Total	13,400	

[4] *Id.*

[5] *See* SunBelt WP "Base Year Train List_Statistics_Open.xlsx," Tab "Trains-On-SARR." The train counts in Table III-D-1 do not include the more than 1,600 trains that handled SBRR traffic in the Base Year that SunBelt erroneously excluded from its operating plan. Including those trains—which, as explained in Section III-C, were predominately local trains—would make local trains the most common train type on the SBRR, accounting for more than 40% of the total.

Before describing the specific errors and omissions that result in SunBelt's significant understatement of SBRR operating expenses, one more element of the SBRR operations bears noting: more than one-half of the SBRR trains would travel on-SARR for only one crew district.[6] Even setting aside that local trains account for more than one-third of all trains, 60% of the SBRR's road trains traverse a single crew district. This fact limits considerably the opportunity for the SBRR to achieve efficiencies—most SBRR trains will have only one "run" between terminal handlings, requiring that any the costs of switching, yard dwell, and other activities that do not vary with length of haul (*e.g.*, waybilling, for local shipments) be recovered over shorter hauls than in NS's real-world experience. For SunBelt to posit this mix of traffic on this network and conclude that the operating expenses per ton-mile would be less than one-half NS's actual levels seriously undermines the credibility of complainant's SBRR operating plan evidence and associated expenses.

SunBelt's operating expense estimates are based directly on its ill-conceived operating plan and RTC simulation.[7] As NS demonstrated in Part III-C above, both SunBelt's operating plan and its RTC simulation are fatally flawed and must be rejected. Accordingly, SunBelt has failed to present credible evidence to support its proposed SBRR operating expenses, and those estimates must be rejected as well.

In this Part III-D, NS identifies the numerous reasons SunBelt understates the expenses that would actually be incurred in operating the SBRR. The most fundamental reason is that SunBelt's operating plan and RTC simulation failed to account for all of the train services, yard

---

[6] *See* SunBelt WP "Base Year Train List_Statistics_Open.xlsx," Tab "Trains-On-SARR."

[7] *See* SunBelt Opening at III-C-1 ("[t]he operating plan and the RTC Model .... provide the basis for many of the SBRR's annual operating expenses shown in Part III-D"); III-D-1 ("[t]he RTC output was directly used to calculate the SBRR's locomotive hours and car hours for the peak week . . . [t]he resulting statistics were utilized to determine overall locomotive requirements and car ownership requirements.").

operations and facilities necessary to serve the traffic that SunBelt chose for the SBRR. *See* NS Reply III-C. In addition to understating the operations, SunBelt also assumed unit costs for equipment, personnel, and facilities that do not reflect the full costs that a railroad would incur in providing the required services to the SBRR's customers. In the areas of Operating Managers, Maintenance of Way, and General & Administrative, SunBelt's Opening Evidence reflects highly skeletal staffing that would not be adequate to manage safe operations, maintain the SBRR's right of way and facilities, or properly account for the myriad functions required to be performed by a railroad with $6 billion in annual revenues. By undersizing many aspects of its operation and omitting others entirely, SunBelt's operating plan and operating expense evidence fail to account for activities, equipment, facilities, and personnel (and the corresponding costs) required to operate the SBRR.

Table III-D-3 below summarizes the parties' SBRR annual operating expenses, at 3Q 2011 levels.

Table III-D-3
SBRR 2011 Operating Expenses
($ in Millions)

	SunBelt	NS	Difference
Train & Engine Personnel	$14.1	$34.4	$20.3
Locomotive Lease Expense	4.0	7.2	3.2
Locomotive Maintenance Expense	8.9	11.6	2.7
Locomotive Operating Expense	43.6	56.1	12.5
Railcar Lease Expense	11.7	14.4	2.7
Material & Supply Operating	0.7	1.2	0.5
Ad Valorem Tax	5.1	4.5	(0.6)
Operating Managers	6.2	12.5	6.2
General & Administration	6.1	18.5	12.5
Loss and Damage	0.6	0.6	0.0
Trackage Rights	0.0	0.0	0.0
Intermodal & Automotive Facilities	1.5	2.3	0.8
Insurance	4.8	13.3	8.5
Excess Risk Costs	0.0	11.7	11.7
Maintenance of Way	15.6	36.3	20.7
Residual NS Costs	0.0	0.7	0.7
Startup and Training	5.3	11.9	6.5
Total Annual Costs	**$128.2**	**$237.0**	**$108.8**

1. Locomotives

SunBelt posits that the SBRR would use three classes of locomotives: high-horsepower General Electric ES44AC units ("ES44's") for road service; GP38 units for local service and work trains, and EMD SW1500 units for yard switching.[8] As explained in Part III-C above, SunBelt made numerous errors in its operating plan and RTC Model evidence that led it to understate the number of locomotives required to handle the SBRR's selected traffic. Those errors, as well as others that lead SunBelt to understate the SBRR's locomotive acquisition, maintenance, and fueling costs are discussed in detail below.

[8] SunBelt Opening at III-D-3.

a. Locomotive Acquisition

i. SunBelt Understates the Number of Locomotives

SunBelt asserts that the SBRR would require only 46 road locomotives to handle its Base Year traffic volume.[9] This result reveals that SunBelt vastly overstated the utilization that SBRR units would be able to achieve. That overstatement is driven predominately by a significant understatement of the locomotive time that SunBelt derived from its faulty RTC simulation and incorporated in its operating expense analysis. As an illustration, SunBelt's "SBRR Operating Statistics.xls" workpaper indicates that SunBelt concluded that the SBRR's road train requirements would be covered by 26 ES44 units. This same workpaper indicates that these ES44's would generate 4.84 million annual locomotive unit-miles ("LUMs"). That would represent an average utilization of 186,000 LUMs annually! In order to achieve such a high level of utilization, every SBRR road locomotive would have to travel more than 510 miles daily, and be moving at an average of 22 miles per hour every minute it was not in the shop.[10] The level of utilization implied by SunBelt's locomotive cost estimate is three-to-four times the level of utilization achieved by either NS or CSXT in their real world operations,[11] casting further doubt on the credibility of SunBelt's estimate.

SunBelt's massive understatement of the locomotive time required to serve the SBRR's traffic group is attributable to a number of errors and omissions in SunBelt's operating plan and RTC simulation:

---

[9] SunBelt Opening at III-C-9 to III-C-10 and III-D-3.

[10] 4.84 million miles / 26 units = 186,000 miles per year. 186,000 miles / 365 days = 510 miles per day. 510 miles / { }% out-of-service factor = approximately 22 miles per hour.

[11] NS's and CSXT's locomotives average 47,000 miles and 54,000 miles, respectively, based on dividing total running locomotive unit-miles reported in Schedule 755 by the number of diesel-freight locomotives reported in Schedule 710. *See* NS Reply WP "R1 Loco Miles.xlsx."

1. SunBelt's Operating Plan failed to include more than 1,600 road and local trains that are necessary for the SBRR to provide uninterrupted train service for the issue traffic and other shipments in the SBRR's selected traffic group.

2. SunBelt's RTC Model failed to account properly for random outages, maintenance windows, and speed restrictions for "Key Trains" that would affect the transit times that SBRR trains would incur moving across the SBRR network. As a result, the transit times posited by SunBelt are meaningless. *See* NS Reply III-C-89 through III-C-118.

3. SunBelt failed to account properly for dwell time associated with performing pickups and setoffs of carload shipments at SBRR customer locations. SunBelt also understated the dwell time at coal traffic destinations served by the SBRR. *See* NS Reply III-C-98 to III-C-104, III-C-187 to III-C-188.

4. SunBelt failed to account for the imbalances in train flows and locomotive flows that occur on the SBRR. *See infra* III-D-15 to III-D-17.

5. SunBelt failed to account for yard dwell time for locomotives on trains that originate or terminate on the SBRR, or for the time required to add blocks of cars to (or remove blocks of cars from) SBRR trains. *See* NS Reply III-C-99 to III-C-103.

SunBelt failed to include all the trains required to handle the SBRR traffic: As NS demonstrates at III-C-13 through III-C-30 above, SunBelt's "automated" methodology for developing the SBRR's train service plan failed to capture more than 1,600 road and local trains that would be required for the SBRR to provide complete train service from origin (or on-SARR junction) to destination (or off-SARR junction) for the SBRR's selected general freight traffic—including more than 90% of the issue traffic! Correcting this fatal deficiency in SunBelt's operating plan adds trains to the SBRR's operations, with a corresponding increase in the number of locomotives that the SBRR would need to power its trains.

For example, SunBelt determined that the SBRR's 4,697 base year local trains would require 16 GP38 locomotives.[12] NS's Reply Evidence shows that SunBelt's flawed train selection process missed 1,593 other local trains, or 25% of the 6,290 local trains that would be

[12] *See* SunBelt WP "SBRR Operating Statistics.xls."

required to handle SBRR revenue shipments on SBRR segments.[13] Accounting for those necessary trains would increase the SBRR's GP38 locomotive requirement by six units.

SunBelt's RTC Model does not generate accurate SBRR train transit times: As discussed in detail in Part III-C above,[14] SunBelt's RTC simulation suffers from numerous omissions and errors that render its results meaningless as a credible measurement of transit times that SBRR trains would experience on SBRR's lines. The factors contributing to SunBelt's underestimation of transit time include incorrect grades in the SBRR configuration, the failure of SunBelt's RTC Model to account properly for random outages and maintenance windows, its failure to incorporate a 50 MPH speed limit for "Key Trains" as required by federal law, and its failure to consider the effects of foreign train movements on SBRR's operations. *See* NS Reply III-C-108 to III-C-122. When SunBelt's RTC analysis is corrected to address these shortcomings, the amount of SBRR locomotive time increases significantly.

SunBelt failed to account properly for dwell at customer locations: NS also demonstrated (at III-C-58 to III-C-59, III-C-90 to III-C-104 and III-C-183 to III-C-188 above) that SunBelt's Operating Plan and RTC simulation do not account properly for the time required to perform "work events" including picking up and setting off cars at customer facilities, or adding and removing blocks of cars from road trains at SBRR yards. The STB has consistently held that a SARR cannot expect to reduce the customer dwell time that the incumbent experiences in the real world.[15] Incorporating realistic dwell times for train "work events" into the RTC simulation process results in greater SBRR locomotive time.

---

[13] *See* NS Reply III-C-16, Figure III-C-1.

[14] *See* NS Reply III-C-89 through III-C-119.

[15] *See, e.g., WFA I*, STB Docket No. 42088, at 17 ("We use BNSF's dwell time as the best evidence of record because it is based on real world experience and WFA has failed to adequately explain how the LRR would shorten that dwell time.").

SunBelt fails to account for imbalances in train flows and locomotive flows: SunBelt did not address the imbalance in train (and locomotive) flows that would inevitably occur across the SBRR's network. SunBelt selected a diverse traffic base, and "adopted" as SBRR trains the trains that NS used to move that traffic.[16] In real-world railroading, non-unit train traffic is frequently characterized by directional flows that are not perfectly balanced. Indeed, analysis of the SBRR's train list reveals significant directional imbalances—imbalances that SunBelt incorrectly assumed would impose no costs on the SBRR.[17] Table III-D-4 below summarizes the train counts and locomotive counts at the on-SARR point ("outbound" for movement over the SARR) and at the off-SARR point ("inbound" from movement over the SARR) from SunBelt's Base Year train list for the SBRR.[18]

Table III-D-4
Imbalance of SunBelt's SBRR Base Year Train and Locomotive Flows

SBRR Train On/Off Point	Trains			Locomotives		
	On-SARR	Off-SARR	Imbalance	On-SARR	Off-SARR	Imbalance
Birmingham	3,759	4,011	7%	7,770	8,927	15%
New Orleans	1,672	1,558	7%	3,837	3,269	17%
Meridian	1,345	1,103	22%	2,897	2,305	26%
McIntosh	656	600	9%	1,483	1,200	24%
Selma	335	346	3%	704	692	2%
Vance/Mercedes	4	152	3700%	8	304	3700%
Simple Average (excluding Vance)			**10%**			**17%**

For example, SunBelt adopted for the SBRR thousands of NS's trains that would enter and exit the SARR at Meridian, MS. Specifically, SunBelt's SBRR operating expense

[16] *See* SunBelt WP "Base Year Train List_Statistics_Open.xlsx," Tab "Trains-On-SARR."

[17] *Id.*

[18] *Id.* These totals include merchandise, intermodal, and multilevel trains, but do not include either unit trains (which are assumed to have balanced flows in each direction) or local trains (which are powered by a different class of locomotive).

calculations include 1,345 SBRR road trains that came on-SARR at Meridian in the Base Year, but only 1,103 SBRR road trains that went off-SARR there.[19] This directional imbalance—which amounts to an average of one train each weekday—is exacerbated when SunBelt's locomotive assumptions are considered. As the eastbound trains (On-SARR at Meridian) have more locomotives, on average, the disparity between outbound and inbound locomotive flows increases to 26%. Based on SunBelt's operating plan, on average 8 locomotives are needed to power eastbound trains departing Meridian each day, but only 6 locomotives return in the westbound direction. Accordingly, the SBRR would obviously be required to reposition locomotives to Meridian from other terminals that had an excess of inbound locomotives. The time and expense associated with such repositioning movements must be included in the SBRR's operating costs. By not accounting at all for the repositioning of locomotives required to address directional imbalances on the SBRR network, SunBelt submitted an infeasible operating plan that would bring the railroad to a halt—some terminals would never get the additional engines that they need for departing trains, while locomotives piled up at other terminals that did not need them.

The need to account for imbalances is not eliminated simply by assuming that the power runs-through at the on-SARR or off-SARR point. The SBRR also shares in the imbalances of locomotive flows on trains that are interchanged in run-through service, as is the case with many SBRR trains operating between Meridian and Birmingham. While SunBelt claims that its SBRR road locomotive requirements "take into account the need to equalize the locomotive power used in run-through service for the NS and other interchange trains,"[20] SunBelt's operating expense calculations make no adjustment to account for the fact that the interchange trains are also not

[19] *Id.*

[20] SunBelt Opening at III-C-9.

perfectly balanced. The imbalances shown in Table III-D-3 indicate a greater flow of eastbound trains that bring an average of two extra locomotives per day onto the SARR than the SBRR's westbound trains return to KCS and UP. This imbalance of nearly 600 locomotives over the course of the year must be accounted for, in order to ensure that eastbound trains can continue to get the necessary power.

On Reply, NS designed an operating plan that serves the traffic selected completely and efficiently. Not surprisingly, that plan has imbalances in train flows and in locomotive flows, just as railroads incur in the real world. NS examined the results of its train plan and locomotive flows by direction for merchandise, intermodal, and multilevel trains, and increased SBRR locomotive run-times for these train types to account for the need to reposition units to where they are needed to sustain the operations.[21]

The above errors and omissions identify the many ways in which SunBelt considerably understated the amount of locomotive time, and thereby the number of locomotives, for which the SBRR is responsible. There are three other aspects of SunBelt's locomotive estimates that also serve to understate the motive power required to handle the SBRR's traffic: (1) Intermodal trains with 3 units, (2) Yard switching assignments, and (3) Spare margin.

Intermodal Trains: The SBRR's selected traffic (and associated trains) include "premium" intermodal and intermodal train assignments that regularly operate with three or more locomotives in order to ensure that they meet their service requirements and transit time commitments. These are time-sensitive trains for which it is critical to maintain train schedules and make cut-off times to meet customer commitments. The additional locomotive allows the train to operate at maximum allowable track speeds on a consistent basis, maintain speed without

[21] *See* NS Reply WP "Locomotive Fleet Sizing for NonUnit NonLocal Trains.xlsx."

requiring helper units, and accelerate to maximum track speed quickly after stopping or slowing. The NS locomotive event records produced to SunBelt in discovery showed that more than 900 intermodal trains that were used to handle the revenue shipments selected by SunBelt operated with three or more locomotives in the first three quarters of 2011.[22] {{

}} SunBelt failed to explain how it could operate the same trains as NS with the same level of service required by the subject shippers, with nearly 25% fewer horsepower than was used to power them in the real world. For these specific "premium" intermodal and intermodal trains that operate with three or more locomotives, NS adjusts the SBRR's locomotive requirements to ensure that the total HP for these trains is consistent with how they operate in the real world, in order for the SBRR to provide at least the same level of service that NS does.[23]

Yard switching assignments: Failing to provide sufficient yard power represents another major shortcoming in SunBelt's locomotive requirements for the SBRR. As described in Part III-C (at III-C-30 through III-C-41), SunBelt did not present a credible yard operating plan,

[22] NS Reply WP "Documents Produced in Discovery III-D," Tab "Locomotive Event."

[23] *See* NS Reply WP "Locomotive Consist Adjustment for IM Trains.xlsx." NS operating witness Johnson determined that this approach represents the absolute minimum number of locomotives, as there are many situations where a consist of fewer ES44 units will not be able to replace adequately 3+ lower HP units, and the SBRR will require as many, higher horsepower units. Nevertheless, NS incorporates this horsepower-based adjustment for these trains, in order to provide a consistent basis for its correction to SunBelt's assumed fuel consumption rate, discussed below.

ignoring completely the activities that would be required to classify and switch the single-car and multi-carload shipments of general freight traffic that SunBelt selected for the SBRR. SunBelt compounded the problem by specifying a locomotive type (the SW 1500) that cannot handle switching, even at flat yards, without being doubled. As a result, SunBelt failed to provide anywhere near the number of switch engines required to perform the necessary work at SBRR yards. By contrast, NS witness Johnson developed an operating plan that considered the location-specific volumes that the SBRR would classify at individual yards, and determined the switch assignments—and corresponding locomotives—that would be required.[24]

Spare margin: SunBelt's locomotive estimates include spare margins of { }% for ES44's and { }% for GP38's, based on information that NS provided to SunBelt in discovery regarding the amount of time that units are out-of-service.[25] NS accepts SunBelt's percentages for the purpose of accounting for the SBRR's out-of-service time, but corrects the erroneous manner in which SunBelt applied them. The figures that SunBelt calculated represent proportions of total time; the actual spare-margin additives to be applied to SunBelt's time estimates must be adjusted upward slightly. As an illustrative example, assume that SunBelt had determined that out-of-service time represented 10% of the total. If the out-of-service factor of 10% is applied to the amount of locomotive time in service (as SunBelt applies the spare margin)—and not the total time—the result suggests that out-of-service time is only 9% of the total, and not 10% (as 10% times 90% equals 9%). In order to avoid understating the out-of-service time, SunBelt's spare margins should be adjusted by the proportion of time that locomotives are in service, or 100% minus the spare margin. To account for total locomotive

[24] *See* NS Reply WP "SBRR Yard Assignments_Reply.xlsx."

[25] SunBelt Opening at III-D-4.

time, NS makes this correction and applies spare margins of { }% for SBRR's ES44 units and { }% for SBRR's GP38's.[26]

Table III-D-5 below summarizes the parties' Base Year locomotive requirements for the SBRR.

Table III-D-5
SBRR Would Require Significantly More Locomotives Than SunBelt Estimated for the Base Year

	Road Engines	Local Engines	Yard Engines	**Total**
SunBelt	26	16	4	**46**
NS	38	21	18	**77**
Difference	**12**	**5**	**14**	**31**

ii. SunBelt Understates the Locomotive Lease Cost

ES44AC: In calculating the cost of acquiring high-horsepower ES44AC locomotives for the SBRR, SunBelt claimed to develop a figure based on materials from the *AEPCO* case, a western coal case involving defendants BNSF and Union Pacific.[27] Specifically, SunBelt relied upon information from the STB's decision and public versions of the parties' filings in that case to posit an annual lease expense of $97,419 per unit. SunBelt did not explain why this number would be relevant either for the SBRR or for evaluating the reasonableness of NS's rates, let alone present any rationale or supporting evidence for its use of that expense figure. Instead, SunBelt merely presents an estimate of UP's cost of acquiring locomotives, and seeks to validate that figure by referencing a lease-cost input from the *IPA* case, another western coal case in which UP was the defendant. Even if SunBelt's calculations are correct, its evidence establishes only that the locomotive lease costs have been close in two western coal rates cases in which UP

[26] { }

[27] SunBelt Opening at III-D-3.

(not NS) was the carrier party. SunBelt has not demonstrated why those costs are an appropriate basis for estimating the SBRR's cost to acquire locomotives.

SunBelt's proffer of UP's lease costs should be rejected, for at least two reasons. First, NS should not be bound by the litigation decisions made by other parties in other cases. The lease costs used in *AEPCO* were not adopted by the STB based on an evaluation of contested evidence and arguments—the BNSF/UP reply filing indicates that the railroad defendants simply chose to adopt the lease-cost figure that AEPCO submitted on opening.[28] Neither SunBelt nor NS has had access to the UP lease to evaluate its other terms, nor can the parties in this case evaluate the calculations by which the complainant applied those terms and converted UP's lease payments to figures compatible with the STB's DCF analysis. Simply put, the number "adopted" by SunBelt cannot be tested, let alone validated, based on the information available to SunBelt and NS in this record. NS should not be bound by other carrier defendants' strategic decisions to challenge or not to challenge assumptions made in other cases, nor should it be foreclosed from providing a full critique of the appropriateness of an assumption that will be used as the basis for evaluating NS's rates.

Second, while the basis for the lease costs to which the parties agreed in the *AEPCO* case is opaque, it is clear that an adjustment would be necessary before the UP figures could be used in this case. SunBelt has made no showing as to how the SBRR—which SunBelt assumed would step into NS's shoes and replicate NS's network and traffic base—would be able to side-step NS's locomotive acquisition costs in favor of another carrier's more favorable experience. While SunBelt observed that NS did not provide any "current locomotive capital leases" in

[28] *See* Joint Reply Evidence and Argument of Defendants, *AEPCO 2011*, at III-D-3, Public version (May 7, 2010) ("Defendants accept the lower figure . . .").

discovery, it did not argue that NS's experience is inefficient or not applicable.[29] In fact, review of the NS and UP R-1 Annual Reports indicates that each railroad has acquired ES44 locomotives[30] over the last four years, and that NS has consistently incurred a higher cost than UP. Table III-D-6 below summarizes the costs and number of new ES44 locomotives acquired by NS and UP in each of the years 2008-2011.

Table III-D-6
NS's Costs of Acquiring ES44 Locomotives is Higher than UP's

	Cost per Unit ($MM)			# of Units Acquired	
	UP	NS	Difference	UP	NS
2008	$2.11	$2.44	16%	75	24
2009	$2.28	---	---	125	0
2010	---	$2.44	---	0	42
2011	$2.23	$2.45	10%	60	25

UP's cost per locomotive was lower than NS's throughout the period, and in the two years that NS and UP both acquired new units, NS's cost per unit was 16% and 10%, respectively, higher than UP's cost. Based on the comparison set forth in Table III-D-6, NS adjusts the UP lease cost upward by 13% as a more reliable estimate of the costs that the SBRR would be expected to incur.[31]

GP38: SunBelt relied upon two price quotes from a 2008 *Railway Age* article as the basis for SBRR's lease cost for GP38 locomotives. The article indicates nothing about the terms or provisions of the leases other than a daily rate, or the number that would be available at that price.[32] Unlike the situation with ES44's, NS did provide to SunBelt in discovery many leases

[29] SunBelt Opening at III-D-3.

[30] The UP R-1 Annual Report identifies "C45AC" and "C45ACCTE" units, which reflects UP's classification of ES44's.

[31] *See* NS Reply WP "Locomotive Lease SBRR.xlsx."

[32] SunBelt WP "III-D-1 Loco Cost.pdf."

for GP38 units. NS's actual leases better reflect the type of transaction the SBRR would enter into than a classified ad. Accordingly, the costs that SBRR would incur for GP38 units should be determined from the actual leases. NS calculates an average daily rate of ${{ }} from four GP38 leases produced in discovery, and uses this figure to determine the SBRR's lease cost for locomotives on local trains.[33]

SW1500: SunBelt used the same 2008 *Railway Age* article as the basis for its estimated lease costs for the SW1500 locomotives assigned to fulfill SBRR's yard switching requirements. As explained in Part III-C, SunBelt's selection of SW1500 units for yard service is nonsensical, and should be rejected. First, the functionality of the SW1500 is severely limited. A Class I railroad would not propose today to rely on a fleet of antiquated SW1500's to perform its yard work for the next decade. NS operating witness Johnson described that the SW1500's are old units, and need to be doubled-up with another SW1500 or other engine to perform switching work, given their limited tractive power.[34] Second, the SW1500 is of limited availability as well. These units are constantly being retired, and SunBelt has not shown that the SBRR would be able to obtain a sufficient number of SW1500 units for the SBRR's yard fleet at any price, much less the price quoted in the *Railway Age* article upon which it relies.[35]

NS witness Johnson concluded that the SBRR's yard power needs would be better met by SD40-2 engines. NS calculates an average daily rate of ${{ }} from 11 SD40-2 leases that

[33] *See* NS Reply WP "Locomotive Lease SBRR.xlsx."

[34] *See* NS Reply III-C-169. This situation is particularly prevalent when the yard assignments require working on grades.

[35] *See* NS Reply III-C-169 to III-C-172.

NS produced to SunBelt in discovery, and uses that figure to determine the SBRR's lease cost for locomotives for yard switching.[36]

b. Locomotive Maintenance

SunBelt did not develop a detailed plan for the locomotive maintenance functions that the SBRR would need to perform to sustain the railroad's operations. Rather than build up the activities that would be required and determine the associated costs, SunBelt used NS's average maintenance expense per locomotive unit-mile, which SunBelt calculated from NS's 2011 R-1 Annual Report.[37] Review of the underlying calculations indicates that SunBelt included NS's operating expenses from Schedule 410. NS generally accepts SunBelt's approach for estimating the SBRR's locomotive maintenance costs, but corrects one omission. SunBelt included only certain maintenance expenses—including $102 million in salary and wages—and failed to include fringe benefits.[38] As SunBelt posits that this cost would serve as the entirety of SBRR's maintenance expense—and fringe benefits would not be added in a separate step[39]—the cost per unit-mile must account for fringe benefits. NS allocates a pro-rata share of the fringe benefits reported to a separate account in Schedule 410 to develop a proper basis for estimating the full locomotive maintenance expense that would be incurred by the SBRR.[40]

---

[36] *See* NS Reply WP "Locomotive Lease.xlsx." NS observes that as the SD40-2 lease cost is less than two times SunBelt's assumed cost for SW1500s, NS's selection of SD40-2 yard engines is less costly for the SBRR than using two SW1500s to perform the same work.

[37] SunBelt Opening III-D-5.

[38] SunBelt WP "Loco Servicing and Maintenance Cost.xls" indicates that SBRR costs are based solely on costs reported to Line 202, "Repair and Maintenance."

[39] For other cost components like train and engine crews, a fringe benefit ratio is applied to the total compensation to develop the total personnel expense. *See* SunBelt WP "SBRR Operating Expense NS Reply.xls" By contrast, SunBelt's total personnel expense for locomotive maintenance consists solely of the cost per locomotive-unit mile derived from NS's R-1 Annual Report.

[40] *See* NS Reply WP "Loco Servicing and Maintenance Cost Reply.xlsx."

In addition, as these costs account only for operating expenses, it bears noting that the SBRR would also require capital investments to provide for the SBRR's maintenance needs. NS accepts SunBelt's conclusion that the SBRR would be responsible for constructing a locomotive repair facility.

c. Locomotive Servicing (Fuel, Sand, and Lubrication)

i. Fuel Cost

SunBelt estimated the SBRR's fuel costs based on NS's cost of $3.097 per gallon from the third quarter of 2011, the period in which the SBRR commenced operations. Once the fuel costs have been estimated for the first period of a SARR's operations, any subsequent increases (or decreases) are captured only to the extent they are accounted for in the hybrid RCAF index by which all SARR operating expenses are inflated.[41] NS accepts the 3Q11 fuel cost selected by SunBelt as the starting point for the SAC analysis.[42]

ii. Fuel Consumption

SunBelt posits that the SBRR's locomotives would consume fuel at the same rate per unit mile that NS's fleet does in the real world.[43] Specifically, SunBelt used the NS 2011 R-1 Annual Report to calculate a rate of 2.48 gallons per unit-mile for road locomotives and 2.40 for switch locomotives. SunBelt's use of NS's historical rate understates considerably the total amount of fuel that the locomotives operating on SBRR would consume, for two reasons.

First, the ES44's units that SunBelt selected to power the SBRR's road trains consume more fuel per unit-mile than the "average" NS locomotive. Materials produced in discovery

---

[41] *See* SunBelt WP "Exhibit III-H-1.xls," Tab "Operating SAC."

[42] The parties' use of the hybrid RCAF escalation to project SBRR operating expenses provides further validation of the critical need to correct SunBelt's projections of the fuel surcharge revenues that SBRR would collect, and make them consistent with the costs that the SBRR is assumed to incur, as explained in Part III-A above.

[43] SunBelt Opening at III-D-6.

indicate that in 2011 NS had 87 ES44's, only 2% of its road fleet.[44] Most of NS's highest horsepower engines were 4,000 HP units of the D9-40CW, ES40DC, D8-40CW, and SD70M-2 classes, or 3,800-HP SD 60's. By using higher-horsepower ES44's, SunBelt would power SBRR trains with fewer locomotives on average than NS does. This is confirmed by the SBRR's average consist size of 2.04, 13% lower than NS's 2011 system-average of 2.35.[45] However, it is incorrect to assume that the SBRR's fleet of higher-horsepower ES44 locomotives would consume fuel at the same per unit-mile rate as different locomotive types working in larger consists.

A higher horsepower locomotive consumes more fuel per mile than a lower horsepower engine. Consider a hypothetical train that is powered by three 3,000 HP units. In certain circumstances, it would be possible for that train to be powered by two 4,400 HP units, as the 8,800 total horsepower nearly replaces the 9,000 provided by the three-unit consist. It could be expected that each locomotive consist would consume similar amounts of fuel in total. Each of the two 4,400-HP units, however, would consume more fuel per unit than the three lower-HP units would. Using the same rate per unit without recognizing the horsepower difference leads to the incorrect conclusion that the total amount of fuel consumed by the second train would be one-third lower than the first.[46] SunBelt's approach ignores the fact that the smaller locomotive consists on SBRR trains would have to perform the same work as the larger consists on NS's real

---

[44] NS Reply WP "ES44AC Locomotive Fuel Consumption.xlsx" summarizes the NS locomotive roster information produced to SunBelt in discovery at DVD-007.

[45] *See* SunBelt WP "Base Year Train List_Statistics_Open.xlsx," Tab "Trains-On-SARR" and NS 2011 R-1 Annual Report, Schedule 755.

[46] SunBelt's calculations are strictly based on locomotive unit-miles, and do not consider the number of locomotives that are in the consist.

world trains—and therefore consume as much fuel in aggregate. Thus, each individual SBRR unit would consume more fuel per unit-mile than NS's.

Moreover, the SBRR's smaller locomotive consists would actually have to perform more work than NS's consists, because SunBelt posits that SBRR trains would operate at faster speeds than NS trains do today. NS's operating practices specify lower maximum speeds than SunBelt assumed for the SBRR lines in many locations. NS designs its train schedules and train make-up based upon operating rules that promote the safe and efficient movement of trains. Further, NS's train speeds and train handling practices emphasize fuel conservation.[47] As a result, NS elects to operate unit bulk and other heavy freight trains with lower maximum speeds. Further, NS employs lower speed limits through curves, in accordance with its internal track-maintenance requirements.

As SunBelt chose not to employ all of NS's operating practices on the SBRR, and would allow the SARR's trains to operate at higher maximum speeds, the SBRR's locomotives would consume more fuel per unit-mile than NS's do. Thus, SunBelt's use of the NS historical fuel consumption rate understates the amount of fuel that locomotives on SBRR's trains would consume. To correct that understatement, NS adjusted the historical consumption rate that SunBelt used for road engines by the relative horsepower differences between the NS and SBRR road fleets. This represents a 10% increase to the NS average consumption rate per unit-mile, as the 4,400 horsepower SBRR's ES44's exceed NS's average horsepower for road units—3,997—by 10%.[48]

---

[47] *See* NS Reply WP "fuel conservation.pdf."

[48] *See* NS Reply WP "ES44AC Locomotive Fuel Consumption.xlsx." Unlike the ES44, the GP38 model that SunBelt selected to power the SBRR's local trains is well represented in NS's fleet, accounting for the second most locomotives, after the D9-40CW. Therefore, NS is willing

iii. Locomotive Servicing

SunBelt used figures in NS's 2011 R-1 Annual Report to estimate the SBRR's locomotive servicing costs. As it did for the SBRR's locomotive maintenance responsibility, NS corrects SunBelt's unit cost to include fringe benefits, as these costs are not accounted for elsewhere.[49] NS also identifies an area where SunBelt's capital investments fail to cover the SBRR's locomotive fueling and servicing needs. SunBelt failed to account for the cost of providing Locomotive Servicing Trucks to perform maintenance services on locomotives at locations where construction of fixed locomotive servicing facilities is not cost effective, and to serve locomotives at outlying locations that do not require servicing on a daily basis. NS's Reply Evidence provides four such trucks to perform those functions.[50]

2. Railcars

a. Acquisition

SunBelt calculated the SBRR's freight car acquisition expense based on a combination of car rental data from NS's R-1 Annual Report and publicly available lease cost information.[51] While NS generally accepts SunBelt's methodological approach to estimating car costs, there are three errors in SunBelt's calculations that NS corrects.

1. SunBelt failed to calculate the proper transit times for SBRR equipment;
2. SunBelt failed to account for time that SBRR equipment spends dwelling in yards between train assignments; and

---

to accept use of the historical NS average rate as more representative of these engines' consumption, despite the SBRR's higher speeds.

[49] In addition to NS's inclusion of fringe benefits, the parties' locomotive servicing expenses differ due to differences in the number of locomotive unit-miles.

[50] NS Reply WP "SBB Reply Yard Operations.xlsx."

[51] SunBelt Opening III-D-6 to III-D-9.

3. SunBelt erroneously calculated the cost of intermodal flat-car and container/trailer equipment.

SunBelt's car costs are based on transit time estimates that are understated. As described in detail in Part III-C, SunBelt's RTC simulation failed to simulate properly the transit times that SBRR trains would experience moving across the SARR lines.[52] NS's RTC simulation, which corrects the numerous errors and omissions in SunBelt's RTC evidence, produces more realistic estimates of SBRR train transit times.

SunBelt's car costs also fail to include yard dwell time between train assignments. As described in Parts III-C and III-D-1 above, the time factors that SunBelt uses for sizing the SBRR's equipment fleets fail to account for the significant amount of time that cars spend in yards. SunBelt explicitly acknowledges that omission when it explains that "The car hour requirements for these [non-coal traffic moving in NS equipment] cars are based on RTC transit times, plus free time at shipper origin and destination."[53] This statement is yet another reflection of SunBelt's failure to account for the realities of operating a merchandise network, where carload traffic is handled by a series of trains operating between yards, and is classified and switched one or more times between train movements. SunBelt's RTC transit times are associated with individual train runs between terminals, and do not account for the time that cars spend in yards after the arrival of an inbound train, and before their subsequent departure on an outbound train.

Yard dwell times are regularly measured by the Class 1 railroads, published weekly, and available through the Association of American Railroads' website.[54] In the 53 weeks from

---

[52] *See* NS Reply III-C-117 through III-C-152.

[53] SunBelt Opening III-D-7.

[54] *See* http://www.railroadpm.org/home/RPM/Performance%20Reports/NS.aspx.

November 2011 through November 2012, the average yard dwell (labeled "Terminal Dwell") for the entire NS system ranged each week from 20.6 to 31.2 hours, for a simple average of 22 hours. Dwell times are published for 14 individual NS terminals—including Birmingham and New Orleans on the SBRR. The times are relatively consistent across terminals, and consistently exceed 20 hours, as only one terminal averaged less than 20 hours over the last year.

NS's SBRR analyses assume that the SARR would incur even less yard dwell. NS conservatively assigned 10 hours of yard dwell time between trains at SBRR's hump yards, 8 hours at SBRR's flat switching yards, and 20 hours between arrival and departure on local trains.[55] To account for the time that rail cars spend in yards between local train and road train movements, NS adds 20 hours per car to the RTC run-times only for general freight cars that are handled by SBRR local trains.[56]

SunBelt significantly understated the cost of providing intermodal equipment. In 2011, NS paid $130 million in car hire costs for intermodal flat cars and containers.[57] This equated to an average equipment cost of $40 per shipment, based on NS's 3.2 million intermodal shipments system-wide. By contrast, SunBelt posited that the SBRR would handle 281,000 intermodal shipments – 9% of NS's system-wide total – yet calculated total intermodal equipment costs of $485,000.[58] Notwithstanding NS's actual average equipment cost of $40 per shipment, SunBelt concluded the SBRR could incur less than $2.

---

[55] *See* NS Reply III-C-165, n. 256.

[56] *See* NS Reply WP "Reply SBRR Train Statistics MultiRail 2011.xlsx," Tab "Locals" and "SBRR Car Costs_Reply.xlsx."

[57] *See* NS 2011 R-1 Annual Report, Schedule 414, Lines 11 (intermodal flat cars) and 23 (containers), columns (e), (f), and (g).

[58] SunBelt WP "SBRR Car Costs.xls."

The primary source of SunBelt's understatement is an improper conversion of the car owner. Despite claiming that "SunBelt's experts have included a private car charge per car-mile by car type which is applied to all private car-miles on the SBRR,"[59] SunBelt assumed away the private car charges that NS pays for the majority of its intermodal shipments. Instead, SunBelt posits that the SBRR would lease and provide the intermodal flat cars—and do so with less than 1% of the number of cars that NS actually used in serving its intermodal business.[60]

Three-quarters of NS's real-world intermodal flat-car miles are in private equipment, a fact confirmed by SunBelt's own workpaper.[61] Review of the traffic records also indicates that roughly three-quarters of the SBRR's intermodal shipments moved on private equipment, consisting of more than 12,600 different flat cars. SunBelt assumed that it could replace this private equipment by leasing only 51 flat cars.[62] Rather than include the costs that NS actually incurs to use private equipment—17 cents per mile—SunBelt posits that the SBRR could serve the same intermodal traffic for a car cost of less than three cents per mile.[63]

As the vast majority of the SBRR's intermodal trains are received in run-through service, the SBRR cannot dictate the ownership of the flat cars upon which those intermodal shipments are loaded. The SBRR will interchange significant intermodal volumes with NS and with other Class I railroads, and will be required to pay for the use of the equipment it receives in

---

[59] SunBelt Opening III-D-8.

[60] SunBelt WP "SBRR Car Costs.xls" indicates that the SBRR would provide the intermodal equipment for 99.3% of the car-miles, and pay private car owners for only 0.7%.

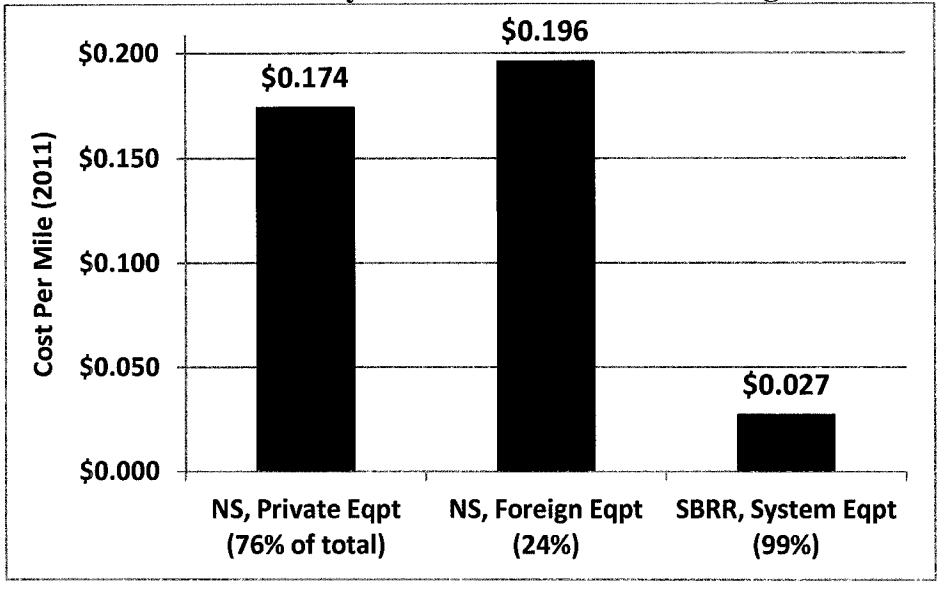
[61] SunBelt WP "SBRR Car Costs.xls" identifies the mileage totals from Schedule 755 to the NS 2011 R-1 Annual Report of 450 million in private flat cars and 145 million in railroad-provided equipment.

[62] *Id.*

[63] SunBelt WP "SBRR Car Costs.xls" indicates $380,000 in flat-car lease costs to cover 14.3 million miles.

interchange. Figure III-D-7 below compares NS's actual cost per mile for payments to private-car owners and foreign-car owners for use of intermodal flat cars, with the cost per mile posited by SunBelt.

Figure III-D-7
SBRR's Assumed Cost Per Mile For Intermodal Flat Cars Is Significantly Lower Than NS's Actual Payments To Private Car or Foreign Car Owners



There are two other sources of SunBelt's understatement of SBRR costs for intermodal equipment. First, SunBelt's costs are based on its incorrect and incomplete estimates of the time for which SBRR would be responsible. Under SunBelt's assumptions, intermodal flat cars would achieve an extraordinary level of utilization—280,000 miles annually.[64] As explained in Section III-D-1, SunBelt's Opening Evidence fails to reflect accurately the SBRR's transit times, due to numerous flaws in its RTC Model and simulation. Second, SunBelt included a portion of the flat-car lease cost, but failed to apply the correct costs for equipment that is highly utilized. SunBelt based the SBRR's intermodal flat car costs on an NS lease {

[64] *Id.*

}[65] Applying all of the terms of the lease upon which SunBelt chose to rely to the SBRR's assumed utilization would have resulted in an additional charge, which SunBelt did not account for in its operating expense estimate.

To correct these errors, NS (1) applies the actual private car charge—not SunBelt's substituted lease cost—for 76% of the SBRR's intermodal flat-car miles, to reflect NS's real world experience; (2) uses the results of NS's RTC simulation to determine the time for which the SBRR would be responsible; and (3) increases SunBelt's costs for railroad-provided flat cars to account for the additional charge for excess miles, as set forth in the lease on which SunBelt's costs are explicitly based.

b. Maintenance

SunBelt failed to have the SBRR perform any maintenance functions, nor did it provide facilities for car repair activities. *See* III-C-73 through III-C-77. NS's Reply Evidence corrects this glaring omission by providing the facilities and equipment that would be necessary to support the inspection and repair activities that SBRR would need to perform. Even under SunBelt's assumption that all of the SBRR's system equipment would be acquired under full-service leases (and that the lessor would be responsible for maintenance of such equipment) the SBRR would still handle hundreds of thousands of shipments in foreign and private equipment owned by other railroads and entities. The SBRR simply cannot assume away any and all responsibility to perform running repairs to foreign equipment. Rather, the SBRR would be required to support the repair function in a number of ways, by providing a car repair shop, facilities for conducting minor repair operations in SBRR yards to get equipment back in service without sending off-line to a lessor, performing line of road inspections and repairs and

[65] SunBelt WP "III-D-2 Car Cost.pdf," at page 10.

addressing failures that happen on line, and coordinating with the various lessors and owners for equipment that is bad-ordered while on the SBRR. All of these functions are necessary to maintain the same level of service that NS provides, to comply with the SBRR's obligations under the AAR Interchange Rules and the terms of intercarrier agreements it purports to adopt, and to ensure that equipment can be utilized as efficiently as possible. At a minimum, the SBRR would require a car shop at Birmingham, "rip" tracks at 4 locations, and 4 wheel-change trucks to facilitate the line of road function.[66]

c. Private Car Allowances

As discussed in Section 2.a. immediately above, SunBelt did not apply NS's actual private car charge "to all private car-miles on the SBRR" as it claimed, but instead improperly substituted a lease rate for intermodal flat cars that did not account for the extraordinarily high number of miles that SunBelt assumed the SBRR's cars would incur. Otherwise, NS accepts SunBelt's approach to calculating the cost that the SBRR would incur for the use of private cars.

3. Operating Personnel

a. Train/Switch Crew Personnel

SunBelt posits that the SBRR would need a total of 140 train and engine ("T&E") crew members to handle all of the SBRR's road and switch crews.[67] This number understates considerably the crews that the SBRR would actually require, in all three categories.

There are five main sources of SunBelt's understated crew requirements for the SBRR.

1. SunBelt failed to account for more than 1,600 trains that the SBRR would need to operate in order to handle the issue traffic and the other shipments selected for the SBRR traffic group;

---

[66] *See* NS Reply WPs "SBRR Yard List Reply.xls" and "SBRR Loco and Car Repair Equipment.xlsx."

[67] SunBelt Opening III-D-9.

2. SunBelt failed to account for directional imbalances in train flows that occur on the SBRR;

3. SunBelt failed to provide 3-person crews that are required in order for certain local trains to perform their work serving customers within the maximum Hours or Service;

4. SunBelt failed to incorporate an appropriate level of re-crews that occur on the SBRR;

5. SunBelt failed to present a yard operating plan, or to determine the car classification and switching requirements for individual yards and terminals.

Missing Trains: SunBelt's failure to present a credible operating plan that accounts for all the trains that transport the SBRR's traffic resulted in the omission of necessary road crews. In Part III-C (at III-C-13 to III-C-30), NS demonstrated that SunBelt's "automated" train selection process resulted in the exclusion of 1,622 trains that handled SBRR revenue shipments on SBRR lines. Those trains alone would require at least 12 T&E crewmembers, representing more than $1.1 million in expenses annually, under SunBelt's assumptions.[68]

Directional Imbalances in Traffic Flows (Deadheading): In addition to crews for the missing trains, SunBelt failed to address the imbalances in road crews, as train flows differ by direction. In the locomotive discussion in Part III-D-1 above, NS demonstrated that SunBelt's selected road train flows are not balanced by direction, and that adjustments would be necessary to reposition locomotives. A similar situation exists with respect to SBRR crews on road trains, as the shortfall of trains inbound to Meridian, MS (re-visiting the example described in III-D-1 above) would require the SBRR to provide an average of one additional crew each weekday to work outbound trains at Meridian. As a result, SBRR road crews would have to be deadheaded from terminals with an excess of inbound train crews (such as Birmingham) to meet demand at yards and terminals that require more outbound crews than are available on arriving trains.

[68] 1,622 trains x 2 crews / 270 days per year = 12 crew members. *See* SunBelt WP "SBRR Operating Expense NS Reply.xls."

SunBelt, however, assumes that the SBRR would not incur any time or costs associated with deadheading road crews. This is a particularly egregious assumption given that the SBRR network is effectively one long route between McIntosh and New Orleans, allowing crews to work only three end-to-end segments. SunBelt's calculations simply divide the total number of annual crew starts across the entire network by an assumed utilization of 270 days per year.[69] This approach effectively assumes that road crews are completely fungible, and can be available at any time anywhere they are needed, at no cost. As shown in Table III-D-3, however, the SBRR has an excess of train movements in the eastbound direction, as more trains come on-SARR at each of New Orleans and Meridian to travel towards Birmingham. Although crews will accumulate on the eastern end of the network (Birmingham), and the western end will have a shortfall, SunBelt's arithmetic simply assumes that the needs on the western end will somehow be met, and that all imbalances will be smoothed out. As discussed below, SunBelt's assumption that SBRR road crews will work 270 days per year already posits a level of utilization achieved by very few NS crew members in the real world. It is wholly incorrect for SunBelt to assume that the formula for determining the SBRR's crew requirements should not take into account deadheading. By contrast, NS evaluated the SBRR road train flows and crew districts, and determined that directional imbalances would require an additional 10 road crew members in the Base Year to cover the deadheading trips required to position sufficient numbers of crews where they are needed.[70]

3-Person Crews for Local Trains: As described above, SunBelt failed to identify one-quarter of the NS local trains that handled shipments in the selected SARR traffic group at SBRR

---

[69] SunBelt Opening at III-D-10 and SunBelt WP "Base Year Train List_Statistics_Open.xlsx," Tab "Trains-On-SARR."

[70] *See* NS Reply WP "MultiRail 2011 Deadhead Crew.xlsx."

stations. To correct this omission, NS developed an operating plan that included reviewing the shipment details and identifying the specific local train assignments that perform pickups and setoffs at stations along the SBRR network. In determining how to serve the SBRR's customers efficiently, NS determined that many local trains in the Alabama Division operate with three crew members—including a brakeman—in order to complete their work within the Hours or Service limits. As explained in Section III-C, the particular aspects of working local customers—setting hand-brakes, making setouts and pickups, spotting and/or repositioning cars on multiple tracks, checking air hoses, performing inspections, complying with safety-related regulations, considering special equipment needs (tank cars, valves, etc.)—are very labor intensive. When this is combined with physical constraints at customer locations, limited mainline access, and the need to work multiple industries during a shift, a decision is made whether to add a third crewperson, or to split the work into two assignments. In general, it is more cost-effective to work with a three-person crew, rather than add a second, two-person crew and locomotive assignments (which represents a net increase of 1 person and 1+ engine, all other things being equal).

NS produced to SunBelt in discovery detailed information regarding its local trains, by assignment (symbol). That information included the average number of crewpersons and the average on-duty time. Table III-D-8 presents an extract of that information for NS's Alabama Division local trains that averaged 3 people (or more) over the first 9 months of 2011.[71]

[71] *See* NS discovery file "Yard and Local Crew 2011 ytd.xls," Tab "Locals" produced to SunBelt at C-DVD-004 and included with NS's Reply workpapers.

Table III-D-8
SBRR Local Train Assignments that NS Operated with 3-Person Crews, 1Q-3Q 2011

Train	Desc	AvgOfEmps	AvgOf DutyHours	AvgOfMiles	CountOfTrains
A30A3	PAPER MILL	3.10	7.0	165	184
A32A4	MCNTSH SWT	3.23	11.5	106	164
A37A7	TUSC SWIT	3.70	9.9	105	188
A38A7	A55 / A38	3.52	11.7	184	95
A38A7	TUSC SWIT	3.37	11.0	152	101
A39A7	A39 BESS	3.23	9.8	105	190
A47A8	HATBG RD S	4.13	9.0	154	183
A49A8	HATBG RD S	3.99	9.9	103	188
A51A8	HATBG RD S	3.91	8.6	33	180
A58A7	MERID LOCL	3.19	7.8	163	178
A86A3	PAPER MILL	3.13	10.3	101	183

These data show that even with a third crew-member, the average on-duty times for most of these crews exceeded 9 hours, with a couple jobs —including those serving SunBelt's McIntosh facility—fully butting up against the 12-hour limit. For these 10 local train assignments, NS calculated the SBRR crew requirements based on 3-person crews.

Re-crews: SunBelt based its SBRR crew requirements on the assumption that only 3 out of 1,000 crews would exceed the Hours of Service limit and necessitate a relief crew during their shift.[72] A re-crew rate of 0.3% is absurdly low for the varied operations that the SBRR would perform. The SBRR would operate a mix of trains at different speeds—such as "premium" intermodal trains, multilevel trains, "Key Trains" carrying TIH and other shipments that require special handling, coal unit-trains, and local trains that stop multiple times to serve customers (and represent more than one-third of all SBRR trains). The SBRR would have planned maintenance windows, random track outages, and other delays and interference that are beyond its control. This railroad—like all railroads—would be expected to have crews outlaw, on

[72] SunBelt Opening at III-D-10.

occasion. However, SunBelt posits that for more than 300 crew starts each week, only one (1) would require re-crewing.[73] This virtually perfect record simply could not be achieved throughout the year. There are day-to-day vagaries of railroad operations, including challenges in coordinating with foreign railroads, train crews, or maintenance schedules. There is weather. There is the "positive hand-off" law for TIH shipments, requiring crews to remain with trains at interchanges. In addition to these potential sources of delay, SunBelt's crew calculations reveal that it proposed a very long crew districts for the SBRR, including 236 miles between McIntosh and Birmingham. Indeed, under SunBelt's assumptions, more than one-half of the crew starts for SBRR road trains are on districts of more than 200 miles.[74] Given these circumstances, it is clear that more than one SBRR crew is likely to outlaw each week. SunBelt's 0.3% re-crew rate is simply notconsistent with the realities of real world railroading. NS analyzed the actual re-crew experience for trains on the Alabama Division. In the first 11 months of 2011, NS averaged 40 re-crews per week on the Alabama Division, 3.7% of all trains.[75] Based on NS's recent experience and the longer SBRR crew districts, NS conservatively applies a 3% re-crew rate for the SBRR's road trains, and no re-crews for any of the SBRR's local trains, given the addition of a third crew-member for approximately one-half of the trains.[76]

Yard crews: Because SunBelt failed even to consider car classification and switching needs at individual yards and terminals, the resulting switch assignments for SBRR bear no resemblance to the work that would be required. SunBelt proposed that the SBRR would handle more than 200,000 Base Year carloads of general freight traffic—one-third of which is

---

[73] SunBelt WP "Base Year Train List_Statistics_Open.xlsx," Tab "Trains-On-SARR."

[74] *Id.*

[75] NS Reply WP "NS Recrews 2011 2012.xlsx."

[76] *See* NS Reply WP "MultiRail 2011 Train Statistics.xlsx."

originated or terminated on-SARR—at 13 yards. SunBelt presented no evidence, however, that it even considered the specific car volumes that would be classified, switched or "swapped" between trains in blocks at individual yards in determining the SBRR's yard switch crew assignments. SunBelt concluded that the SBRR's yard needs could be met by only one switch crew, working only one shift per day, at only three locations. There would be no yard crews at the other 10 locations identified as yards.[77] As explained above (at III-C-30 to III-C-41), SunBelt's assumptions are unsupported, and fail to provide a workforce sufficient to meet the SBRR's yard requirements. Any railroad that handles significant volumes of carload merchandise traffic—including local originations and terminations—will be wholly dependent on the efficiency of its yard operations, and the SBRR is no exception. NS operating witness Johnson developed the SBRR's yard personnel requirements by evaluating the SBRR train service plan by terminal, and determining the staffing levels necessary to meet the needs of this critical element of the SBRR's operations.

Witness Johnson determined that the SBRR would need switch crews at 8 yards, including 5 locations at which SunBelt failed to provide any such assignments. In addition, witness Johnson determined that SBRR's hump and medium flat classification yards would require utility crews to expedite work in the yards and keep the cars moving to their next block and train assignment. Such work includes coupling tracks, handling switches, protecting shove movements, lacing air hoses, and applying and releasing hand brakes. Table III-D-9 below summarizes the parties' daily yard crew assignments for the SBRR.[78]

---

[77] *See* SunBelt WP "SBRR Yard Assignments_Open.xlsx," Tab "Crews."

[78] NS Reply WP "SBRR Yard Assignments_Reply.xlsx."

Table III-D-9
SBRR Daily Yard Crew Assignments

Location	Yard Type	SunBelt Yard Crews	NS Yard Crews	NS Utility Crews	Difference
Birmingham	Hump	1	9	3	11
McIntosh	Medium	1	2	2	3
Meridian	Medium	None	2	2	4
New Orleans	Medium	1	4	3	6
Hattiesburg	Small	None	1	None	1
Selma	Small	None	1	None	1
Wilton	Small	None	1	None	1
Vance	Other	None	1	None	1
Total		**3**	**21**	**10**	**28**

Based on this analysis, NS calculates that the SBRR would need a total of 86 yard crew members, including utility crewpersons.[79]

Table III-D-10 below summarizes the parties' base-year crew requirements for the SBRR.

Table III-D-10
SBRR Would Require Significantly More Crewpersons Than SunBelt Estimated for the Base Year

	Road Crews	Local Crews	Yard Crews	**Total**
SunBelt	95	37	8	**140**
NS	123	52	86	**261**
Difference	**28**	**15**	**78**	**121**

i. Compensation

Train and Engine Salary: SunBelt calculated the compensation costs for SBRR operating personnel based on NS's Wage Forms A&B, and asserts that the SBRR's compensation "is

[79] *See* NS Reply WP "SBRR Yard Assignments_Reply.xlsx."

established at the same levels as those paid by NS for comparable positions."[80] While NS accepts the use of NS's average historical compensation for non-train operating personnel, it rejects the use of the average for SBRR crews. Simply put, SunBelt's operating assumptions result in SBRR crews that are not "comparable positions" to NS's real world crew positions. Specifically, SunBelt assumes that every SBRR crew would work 270 days per year—an extremely high level of utilization for railroad crews. NS produced crew payroll records to SunBelt in discovery that indicate that in 2010, NS crews worked an average of { } days.[81] SunBelt's "comparability" claim rings particularly hollow, as it would require SBRR's crews to work { }% more, yet be compensated at only the "average" level for NS crews. Such an assumption is not realistic, as the SBRR would be unable to recruit the workforce necessary to perform their crew functions.

Not surprisingly, the STB has previously rejected arguments along the lines of SunBelt's, and recognized that crew members must be compensated more for working more shifts.[82] NS follows the approach that has been adopted in past SAC cases, by performing an analysis of NS payroll records to identify the proportion of crew members that worked 270 shifts and the average compensation that they received. That analysis indicates that only { }, or 0.1%—of NS crewpersons achieved 270 shifts in 2010. To provide a broader sample of crew compensation, NS calculated the average compensation for crewpersons who worked between 255 and 285 shifts.[83] NS follows STB precedent and incorporates the

---

[80] SunBelt Opening at III-D-11.

[81] NS Reply WP "T&E Crew Salary.xlsx" summarizes NS T&E payroll records that were produced to SunBelt at DVD-005.

[82] *See, e.g., WFA I*, STB Docket No. 42088, at 47 ("employees working more hours would command more compensation").

[83] *See* NS Reply WP "T&E Crew Salary.xlsx."

compensation level for extraordinarily highly-utilized NS crews—${ }—as more representative of the wage expense that the SBRR would incur in attracting and retaining crew members expected to work 270 shifts.

ii. Fringe Benefits

SunBelt proposes in its Opening Evidence to use a fringe benefit ratio of 37.5% of wages for SBRR employees. *See* SunBelt Opening at III-D-14. The number is drawn from an AAR report on the average railroad fringe benefit in 2009. *See* SunBelt Opening WP "III-D-4 Salaries.pdf" at 25. NS agrees that an average of other railroad fringe benefit ratios is an acceptable approach for determining SBRR fringe benefit costs, but corrects two flaws in SunBelt's proposal. *First*, SunBelt's proposal is based on 2009 data, a year when the SBRR would not be operating and that was the low of the recent economic downturn. *Second,* a cursory examination of the fringe benefit ratio used by SunBelt demonstrates that its number is impossibly low—quite literally, it is impossible to reconcile the reported fringe benefit ratios of Class I railroads with the "average" SunBelt uses because the math does not add up. NS corrects SunBelt's approach by correctly calculating SBRR fringe benefits based on the average 2011 fringe benefit ratio for all Class I carriers.

The 37.5% fringe benefit ratio proposed by SunBelt is immediately suspect because it is significantly lower than reported fringe benefit ratios for most Class I railroads. As shown in Table III-D-11, between 2009 and 2011, only two Class I railroads had fringe benefit ratios below 37.5%. In the case of BNSF, this occurred in 2010. For KCS, this occurred in 2009 and 2010.

Table III-D-11
Class I Fringe Benefit Ratios, 2009-2011[84]

Year	NS	CSXT	CN GTW	CP SOO	BNSF	UP	KCS
2009	43.7%	49.8%	45.7%	45.3%	38.8%	42.7%	35.4%
2010	45.3%	53.8%	47.7%	41.1%	36.2%	43.3%	36.4%
2011	48.0%	54.3%	45.5%	44.5%	39.6%	48.5%	38.6%

Even if NS were simply to use SunBelt's flawed number in the correct year, it would likely be higher. SunBelt uses a 2009 AAR "Description of Data and Sources" as its source for the 37.5% number. *See* SunBelt Opening WP "III-D-4 Salaries.pdf" at 25. The same document from 2010, the most recent year available, shows a fringe benefit ratio of 41.3%. *See* NS Reply WP "AAR Description of Data and Sources 2010."

Further, the 37.5% AAR "estimate" that SunBelt cites for its fringe benefit ratio is irreconcilable with more detailed data published by AAR itself. In 2009, AAR calculated average compensation including benefits for all railroads as $97,310 and average wages of $70,750, suggesting a benefit ratio of 37.5%, the number SunBelt uses.[85] However, the very same AAR document shows average total compensation for Class I railroads of $103,214 and average wages of $72,153, suggesting a fringe benefit ratio of 43%.[86] The presence of non-Class I railroad employees in the first calculation, but not the second, cannot mathematically explain the reduction in the fringe benefit ratio from 43% to 37.5%. Table III-D-12 sets forth the employees, wages, and total compensation AAR listed for all railroads and for Class I railroads only. The table demonstrates that the AAR numbers cannot add up unless non-Class I

[84] *See* NS Reply WP "Class I Railroad Fringe Benefits.xls."

[85] *See* NS Reply WP "AAR Class I Railroad Statistics" at 4.

[86] *Id.* at 1.

employees had a negative fringe benefit ratio (*i.e.*, total compensation that amounted to less than their wages). That is plainly impossible.

Table III-D-12
2009 RR Compensation from AAR Documents

	Total	Class I	Non-Class I
Employees	169,891	151,906	17,985
Wages	$70,750	$72,153	$58,900
Total Compensation	$97,310	$103,214	$47,443
Fringe	37.5%	43.0%	**-19.5%**
Source	"AAR Class I Railroad Statistics," page 4	"AAR Class I Railroad Statistics," page 1	Calculated By Subtracting Class I Column from Total

It is not clear why the AAR document SunBelt relied upon misstated the average fringe benefit ratio. What is clear, however, is that SunBelt applied a demonstrably incorrect number. One possible explanation for the disconnect in these numbers is the fact that Class I data is based on filed reports—namely Wage Forms A and B and R-1 Annual Reports that only Class I railroads file—while data for other railroads are estimates based on the Railroad Retirement Board's One Percent Sample. The actual Class I data is plainly more reliable than an estimate based on a limited sample for other carriers. Moreover, the cost of wages and fringe benefits actually incurred by Class I carriers is clearly more relevant to the SBRR, which would be approaching Class I status even in the Base Year (and would become a Class I carrier during the DCF period).

NS uses a fringe benefit average similar to SunBelt, but corrects SunBelt's methodological errors by applying the average fringe benefit ratio for all Class I carriers in 2011, the first year of the SBRR's operation. The numbers for Class I railroads, whose ranks the SBRR would join in 2015, are publicly accessible. The calculation yields a fringe benefit ratio of 45.6%. NS's approach of using an average of all Class I railroads is conservative, because an

average of the fringe benefit ratios of the four Class I railroads that operate in the SBRR states (BNSF, CN, CSXT, and NS) produces a higher ratio of 46.9%.

Table III-D-13
Class I Fringe Benefit Ratios, 2011
($ in Millions)

	NS	CSXT	CN GTW	CP SOO	BNSF	UP	KCS	Avg. All Class I Carriers
Salaries and Wages	$1,512	$1,852	$509	$257	$2,902	$3,032	$199	
Benefits	$726	$1,006	$232	$115	$1,149	$1,470	$77	
Ratio	48.0%	54.3%	45.5%	44.5%	39.6%	48.5%	38.6%	**45.6%**

iii. Taxi and Hotel Expense

In addition to the costs of compensation and fringe benefits, SunBelt includes taxi and hotel expenses for T&E crews.[87] NS accepts SunBelt's methodology and unit costs for those items, increases them to include the additional train crew members that SunBelt failed to account for, and produces a total expense of $1.1 million for SBRR.[88] In addition, NS corrects SunBelt's omission of another crew cost component that would be incurred by SBRR: meal expenses. Meal expenses have previously been adopted by the STB as a necessary component of T&E crew expense.[89] NS determined that in 2009 its hotel expense for crews was ${ } million, and its meal expense for crews was ${ } million. NS applies that ratio of meal expense to hotel expense—19%—to the calculated SBRR hotel expense to estimate meal expenses for SBRR crews of $175,000.[90]

[87] SunBelt Opening Ex. III-D-1 at 12.

[88] *See* NS Reply WP "SBRR_Overnight Hotel and Taxi Costs_Reply.xlsx."

[89] *FMC*, 4 S.T.B. at 842-43 (accepting fringe benefits, including meal expenses as "reasonable").

[90] *See* NS Reply WP "Meals Additive.xlsx."

b. Non-Train Operating Personnel

NS presents its critique of SunBelt's proposed Non-Train Operating Personnel and its own development of the SBRR's staffing requirements for these positions in Exhibit III-D-1. Table III-D-14 below summarizes the parties' differences.

Table III-D-14
SBRR Would Require Significantly More
Non-Train Operating Personnel

Position	SunBelt Opening	NS Reply	Difference
Operations Support	10	27	17
Transportation	27	46	19
Mechanical	23	42	19
Engineering	1	1	0
Non-Train Operating Personnel	**61**	**116**	**55**

c. General and Administrative

SunBelt has significantly underestimated the General & Administrative ("G&A") staffing and expenses that the SBRR actually would incur in order to serve SunBelt's selected traffic group.[91] SunBelt proposes a G&A staff of only 20 paid employees[92]—a staff that is vastly smaller than any G&A staff ever approved by the Board, even for SARRs significantly smaller and less complex than the SBRR. SunBelt's blithe assertion that "[t]he SBRR's G&A staff is

[91] NS's evidence of G&A expense requirements for the SBRR was developed by NS witness Richard W. Brown. Mr. Brown, a Director with FTI Consulting, has 28 years experience working in the North American railroad industry for BNSF and its predecessor carriers. While at BNSF, Mr. Brown gained significant experience managing functional reorganizations and implementing technological solutions to streamline administrative functions. For the last twelve years, he has managed rail carrier strategic planning and merger and acquisition studies. Mr. Brown's qualifications are further detailed in Section IV.

[92] This count does not include the two outside directors whom SunBelt claims would work for free. As demonstrated below, it is not reasonable to assume that a $387 million railroad could obtain qualified individuals who would be willing to take on the substantial responsibilities of outside directors without any compensation. *See infra* at III-D-118.

consistent with the G&A staffing for the SARRs approved by the Board in recent SAC cases" is patently untrue, as is shown by Table III-D-15.

Table III-D-15
Comparison of SunBelt G&A Staffing to Board-Approved Staffing In Past Cases

Case	G&A Staff[93]	Revenue (in millions)[94]	G&A Staff Per $10M Revenue
Duke/NS	63	$487.1	1.29
CP&L	63	$453.7	1.39
Duke/CSXT	59	$496.8	1.19
Xcel	51	$341.5	1.49
Otter Tail	55	$581.7	0.95
AEP Texas	66	$384.2	1.72
WFA	39	$218.4	1.78
AEPCO	225	$2,075.8	1.08
SunBelt Opening	**22**	**$429.5[95]**	**.51**

Table III-D-15 shows that SunBelt has proposed SBRR G&A staffing that is significantly lower than staffing levels the Board has approved in past cases, whether staffing levels are measured by a simple employee count or by an employee-to-revenue ratio that approximates the

[93] SBRR data is located at Table III-D-3 on page III-D-13 of SunBelt's Opening Evidence. Data on prior SAC cases was derived as follows: *Duke/NS:* (*Duke/NS*, 7 S.T.B. at 156); *CP&L*: (*CP&L*, 7 S.T.B. at 294); *Duke/CSXT*: (*Duke/CSXT*, 7 S.T.B. at 460); *Xcel*: (*Xcel*, 7 S.T.B. at 648); *Otter Tail*: (*Otter Tail*, STB Docket No. 42071, at C-8); *AEP Texas*: (*AEP Texas*, STB Docket No. 41191, (Sub-No. 1), at 53); *Western Fuels*: (*WFA I*, STB Docket No. 42088, at 43); *AEPCO*: (*AEPCO 2011*, STB Docket No. 42113, at 55).

[94] SBRR data is located at Table III-A-8 of page III-A-15 of SunBelt's Opening Evidence. Data on prior SAC cases was derived as follows: *Duke/NS:* (*Duke/NS*, 7 S.T.B. at 147); *CP&L*: (*CP&L*, 7 S.T.B. at 287); *Duke/CSXT*: (*Duke/CSXT*, 7 S.T.B. at 451); *Xcel*: (*Xcel*, 7 S.T.B. at 640); *Otter Tail*: (*Otter Tail*, STB Docket No. 42071, at E-6); *AEP Texas*: (*AEP Texas*, STB Docket No. 41191, (Sub-No. 1), at 112); *Western Fuels*: (*WFA I*, STB Docket No. 42088, at 31); *AEPCO*: (AEPCO Rebuttal, *AEPCO 2011*, STB Docket No. 42113, III-A-113 (July 1, 2010); *AEPCO 2011*, STB Docket No. 42113, at 26).

[95] Table III-D-15 replicates the 2011 revenue SunBelt asserted on Opening. As demonstrated in Section III-A, the SBRR's actual 2011 revenues would be $387 million. Comparing SunBelt's proposed G&A staffing to this corrected revenue figure still results in a staff-to-revenue ratio of 0.57 staff per $10 million of revenue, far below any level that the Board has ever accepted.

relative size of the SARR.[96] The preposterousness of SunBelt's proposal is underscored by the fact that most of the SARRs in past cases were coal-only unit train networks whose simplified operations were cited as justification for below-average G&A expenses.[97] Here, SunBelt is proposing to construct a significantly more complex carload railroad that would require more G&A staff than prior coal-only SARRs, not less.

When compared to the real-world of railroading, the insufficiency of SunBelt's G&A staffing and spending is plain. Specifically, SunBelt claims that the SBRR would spend just 1.4% of revenues on G&A, which would make this regional railroad over five times more efficient than the average Class I railroad, which spends over 8% of revenues on G&A. No Class I railroad spends less than 4.5% of revenues on G&A. *See* NS Reply WP "G&A Benchmarking.pdf." An assumption that a regional SARR can operate five times more efficiently than the average Class I railroad is not "consistent with real-world railroading,"[98] particularly because SunBelt has not provided any evidence explaining how the SBRR could achieve such massive efficiency gains. SunBelt's evidence contains no references to neutral third-party benchmarks; no detailed explanations of job functions; and no concrete evidence of any kind explaining why the SBRR would be more efficient than a real-world railroad.

---

[96] A SARR's total revenue is a rough approximation of the size of the SARR and the G&A needs of the SARR. Some G&A functions like marketing or revenue accounting have a direct relationship to revenue, and others have a more indirect relationship. *See, e.g., AEPCO 2011*, STB Docket No. 42113, at 56-57 (accepting sales and marketing staff using a scale based on revenue); *WFA I*, STB Docket No. 42088, at 44 (accepting Treasurer's office staff "given the substantial revenues" of the SARR).

[97] *See, e.g., Otter Tail*, STB Docket No. 42071, at C-9 (citing SARR's "limited complexity" and "relatively simple operations"); *TMPA I*, 6 S.T.B. at 679 (SARR "would have a single commodity and a stable customer base").

[98] *WFA I*, STB Docket No. 42088, at 15.

SunBelt's G&A presentation is therefore patently deficient under the Board's rules. The Board has made clear that G&A evidence must be developed and supported just like any other form of operating expense evidence. In particular, the Board has emphasized the need for parties to explain why the G&A staffing proposed would be sufficient to carry out all necessary G&A functions, and it has urged parties to benchmark G&A staffing against staffing levels of comparable real-world railroads. *See, e.g., AEPCO 2011*, STB Docket No. 42113, at 58 (criticizing parties for not providing benchmark analyses or any other sufficient explanation for staffing levels chosen); *FMC*, 4 S.T.B. at 835-36 (rejecting complainant's G&A evidence because it "made no attempt to show that [its proposed G&A] staff could feasibly perform the required work, by either explaining the amount and type of G&A work that the [SARR] staff would need to perform or relating the size of the staff to operations of existing firms"). In short, parties have to do more than simply assert that a particular staffing level is feasible; they must prove the feasibility of proposed G&A staffing and spending levels with the best evidence available.

SAC theory requires that the SARR have G&A staffing that would be sufficient for a real-world railroad to perform all required G&A functions. Railroads need customer service operators, accounting clerks, police officers, and IT analysts just as much as they need train and engine personnel. This, too, is "real-world railroading," and assumptions about G&A spending must be consistent with real-world experience. *WFA I*, STB Docket No. 42088, at 15 ("assumptions used in the SAC analysis . . . must be realistic, *i.e.*, consistent with the underlying realities of real-world railroading"). Just as a SAC complainant cannot assume that its maintenance-of-way track crews could adequately maintain five times the territory of a real-world track crew, a complainant cannot assume that its accountants, its lawyers, or its claims

agents could handle five times the workload of a real-world employee. Neither assumption is consistent with real-world railroading.

As a result, SunBelt was required in opening evidence to either explain why its G&A expenses were consistent with real-world experience or, if the proposed expenses were lower, to explain why those spending levels are nonetheless realistic for a least-cost, most-efficient SARR. It did neither. Instead, SunBelt's primary justification for its G&A evidence is the false claim that it is "consistent with" G&A evidence from past cases. *E.g.*, SunBelt Opening III-D-13. As Table III-D-15 explains, that is plainly untrue. And even if SunBelt were right that its G&A staffing and spending were "consistent with" past cases, that fact would not suffice to carry SunBelt's burden of proof. *See AEPCO 2011*, STB Docket No. 42133, at 58-59 (emphasizing that parties cannot simply rely on staffing levels accepted in a past case as adequate justification for their G&A evidence). Nowhere in SunBelt's opening evidence does it refer to any benchmarking analysis or other factual support for its staffing assumptions—perhaps because it would be impossible to find a credible neutral benchmark to support its ludicrously low G&A expense assumptions. And, Sunbelt is prohibited from providing such evidence on Rebuttal. *See, e.g.*, *SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2 (served Apr. 4, 2003).

By contrast, NS's evidence is firmly grounded on real-world experience and industry standards, which demonstrate that a least-cost estimate of G&A expenses for the SBRR would be $18.5 million annually for 100 G&A employees, or approximately 5.1%[99] of the SBRR's gross revenue. These figures assume that the SBRR is optimally efficient and capable of achieving high levels of economic efficiency in every area. But these figures also assume that the SBRR

[99] *See* NS Reply WP "G&A Benchmarking.pdf." For purposes of this workpaper, the 3rd Quarter 2011 spending level used is indexed to rest of 2011.

will comply with the minimum legal, regulatory, commercial, and administrative requirements that would apply to it. Just like any real-world railroad, the SBRR must comply with applicable federal and state laws and regulations in the various jurisdictions in which it operates, and it must perform standard G&A functions like billing, collecting, and responding to customer requests. Ensuring that the SBRR has the resources necessary to satisfy these requirements is an essential element of demonstrating its feasibility. SunBelt's evidence fails this test because its inadequate G&A staff is not capable of performing the functions that the SBRR would have to perform in the real world. NS's evidence corrects those deficiencies by assigning the minimum G&A expenses that would be necessary for the SBRR to operate given its network's complexity.

Section i responds to SunBelt's primary justification for its low G&A expenses: its misleading and insufficient claim that SunBelt's staffing is "consistent with" G&A staffing for past SARRs. Section i also rebuts SunBelt's other arguments asserting that the SBRR could operate much more efficiently than a real-world railroad, including its claims that the SBRR could realize vast efficiencies from relying on information technology, from handling mostly crossover traffic, and from being nonunionized and privately held. Section ii discusses the staffing requirements for the SBRR. Section iii describes compensation for G&A staff. Section iv describes materials, supplies, and equipment costs. Section v discusses other SBRR G&A costs. Section vi compares SunBelt's and NS's G&A cost evidence to real-world G&A expenses of other, comparable railroads. This benchmarking analysis demonstrates convincingly that NS's estimate is reasonable and supported and that SunBelt's is grossly understated.[100]

[100] In the interest of clarity, NS has slightly departed from the organizational structure for G&A evidence set forth in *SAC Procedures,* 5 S.T.B. at 449, by adding two additional subsections to its G&A evidence. Specifically, NS has added a general rebuttal to SunBelt's theories for reduced G&A staffing and spending as subsection i and a detailed benchmarking analysis as subsection vi.

i. SunBelt's Justifications For Its Extraordinarily Low G&A Staffing and Spending Levels Are Meritless.

(a) SunBelt's Evidence is Not "Consistent With" G&A Levels Approved in Previous SAC Cases.

SunBelt's claims that its G&A spending is "consistent with" G&A evidence from past cases are misguided and demonstrably untrue. SunBelt Opening III-D-13. In the first place, SunBelt is dead wrong as a factual matter. As demonstrated above, SunBelt's proposed staffing is far below the levels accepted in past cases. The four cases with which SunBelt claims its evidence is "consistent"—*Xcel, AEP Texas, WFA I, and AEPCO 2011*—all had markedly higher levels of G&A staffing and spending. SunBelt's G&A staff of 22 is anything but consistent with the 51 G&A staff in *Xcel*, the 66 in *AEP Texas*, the 39 in *WFA*, or the 225 in *AEPCO 2011*.[101] And SunBelt's proposed spending of a mere $6.1 million on G&A is plainly inconsistent with the $10.4 million G&A budget in *Xcel*, the $12.5 million budget in *AEP Texas*, the $11 million budget in *WFA*, and the $58.3 million budget in *AEPCO 2011*.[102] The comparison is even more stark in light of the facts that (1) the *Xcel* and *WFA* SARRs were each markedly smaller on a revenue basis then the SBRR[103]; and (2) the SBRR's carload traffic network and diverse traffic base creates complexities that will require greater G&A spending than the unit-train networks at issue in all of these prior cases.

Moreover, the Board has made clear that a SAC complainant cannot meet its burden to justify its G&A evidence by simply repeating staffing assumptions from past cases. *See AEPCO*

---

[101] *Xcel*, 7 S.T.B. at 648; *AEP Texas*, STB Docket No. 41191, (Sub-No. 1), at 53; *WFA I*, STB Docket No. 42088, at 43; *AEPCO 2011*, STB Docket No. 42113, at 55.

[102] *Xcel*, 7 S.T.B. at 641; *AEP Texas*, STB Docket No. 41191, (Sub-No. 1), at 40; *WFA II*, STB Docket No. 42088, at 35; *AEPCO 2011*, STB Docket No. 42113, at 40.

[103] Specifically, the *Xcel* SARR had base year revenues of $341.5 million, and the *WFA* SARR had base year revenues of $218.4 million. *See Xcel*, 7 S.T.B. at 640; *WFA I*, STB Docket No. 42088, at 31.

2011, STB Docket No. 42113, at 558-59. Rather, a SAC complainant is required to show that its G&A staff "could feasibly perform the required work, by either explaining the amount and type of G&A work that the [SARR] staff would need to perform or relating the size of the staff to operations of existing firms." *FMC*, 4 S.T.B. at 835-36. Citations to past staffing levels, standing alone, are thus utterly insufficient.

More importantly, however, SunBelt's assertion that its proposed G&A staffing is "consistent with" G&A staffing from prior cases ignores the fact that the SBRR is not at all consistent with SARRs from past cases. While many previous SAC complainants have posited coal-only SARRs with limited customers and simplified operations that conceivably could function with much less G&A staff than a real-world railroad, SunBelt has not chosen to construct such a specialized SARR. Instead, SunBelt selected a traffic group for the SBRR with a more complicated commodity mix, very much like one a real-world railroad might have. The SBRR would carry hundreds of thousands of carloads of intermodal, general freight, and automotive traffic. Indeed, just 1.88% of the SBRR's carloads would be coal. *See* SunBelt Opening at III-A-5.

SunBelt's selection of a traffic group with large amounts of carload and intermodal traffic has significant effects on the SBRR's G&A spending. The Board has approved relatively low G&A staffing for coal-only SARRs in part because of the simplified nature of operations on such hypothetical railroads. *See, e.g., Otter Tail*, STB Docket No. 42071, at C-9 (citing SARR's "limited complexity" and "relatively simple operations"); *TMPA I*, 6 S.T.B. at 679 (SARR "would have a single commodity and a stable customer base"). But in this case, the SBRR handles significant volumes of intermodal, general freight, and automotive traffic for almost one

thousand customers. As Table III-D-16 illustrates, the SBRR has far more non-coal traffic than any prior SARR.

Table III-D-16
Comparison of SBRR Traffic Mix to Traffic Mix In Past Cases by Tonnage[104]

	SunBelt	*AEPCO*	*AEP Texas*	*WFA*	*Otter Tail*	*Xcel*	*CP&L*	*Duke/ CSXT*	*Duke/ NS*	*TMPA*
Coal	**1.9%**	53.3%	95.6%	100%	90.3%	100%	95%	98%	95%	100%
Non-Coal[105]	**98.1%**	46.7%	4.4%	0%	9.7%	0%	5%	2%	5%	0%
Total	**100%**	100%	100%	100%	100%	100%	100%	100%	100%	100%

As demonstrated below, SunBelt's choice to propose a SARR that almost exclusively transports non-coal traffic—and that handles significant amounts of hazmat and TIH shipments—has significant consequences for the SBRR's G&A needs.

(b) SunBelt's Other Claimed Reasons For the SBRR's Low G&A Spending and Staffing Are Not Credible.

SunBelt's opening evidence provides virtually no explanation for why the SBRR could effectively operate with G&A spending at a fraction of real-world railroads and just one-third to one-half the spending of prior—and simpler—SARRs. SunBelt's evidence is entirely devoid of the benchmarking analyses and real-world metrics that the Board has urged parties to present to support G&A evidence. And nowhere in its G&A staffing evidence does SunBelt attempt to relate its proposed SBRR staff to staffing levels at any real-world railroad or provide any other

---

[104] SBRR data is drawn from Table III-A-2 on page III-A-5 of SunBelt's Opening Evidence. Data on prior SAC cases was derived as follows: *AEPCO*: (AEPCO Rebuttal, *AEPCO 2011*, STB Docket No. 42113, III-A-85 (July 1, 2010)); *AEPCO 2011*, STB Docket No. 42113, at 67); *WFA: (WFA I*, STB Docket No. 42088, at 9); *AEP Texas* (AEP Texas Opening, *AEP Texas*, STB Docket No. 41191, (Sub-No. 1), III-A-8; BNSF Reply, *AEP Texas*, STB Docket No. 41191, (Sub-No. 1), III-A-71 to III-A-72); *Otter Tail*: (Otter Tail Rebuttal, *Otter Tail*, STB Docket No. 42071, III-A-58 (April 29, 2004); *Otter Tail*, STB Docket No. 42071, at B-3); *Xcel*: (*Xcel*, 7 S.T.B. at 600); *Duke/CSXT*: (*Duke/CSXT*, 7 S.T.B. at 424, 444); *Duke/NS*: (*Duke/NS*, 7 S.T.B. at 15, 43); *CP&L*: (*CP&L*, 7 S.T.B. at 248); *TMPA*: (*TMPA I*, 6 S.T.B. at 588).

[105] Including intermodal.

justification for its low staffing proposal. This falls far short of the Board's admonition that "parties must provide appropriate documentation to support their estimates." *Rate Regulation Reforms*, STB Ex Parte No. 715, at 6 (served July 25, 2012); *see also AEPCO 2011*, STB Docket No. 42113, at 58 (criticizing parties for not providing benchmark analyses or any other sufficient explanation for staffing levels chosen).

Instead of the documentation that the Board has instructed parties to provide, SunBelt offers a few scattered arguments claiming that certain characteristics of the SBRR would allow it to have lower G&A spending than NS or other real-world railroads. Specifically, SunBellt suggests that the SBRR could have lower staffing because (1) the SBRR would rely on information technology; (2) the SBRR would use outsourcing; (3) the SBRR primarily would carry crossover traffic; (4) the SBRR would not be unionized; and (5) the SBRR would be privately held. In addition to being unsupported, none of these claims have any substantial effect on the G&A staffing and spending that the SBRR would need to operate in the real world.

(i) The SBRR's IT Systems are Unexceptional and Do Not Offer Substantial Savings.

SunBelt implies that the SBRR will realize significant savings by relying on its information technology systems to allow "optimum staffing." SunBelt Opening Ex. III-D-2 at 10. But SunBelt provides no evidence that the SBRR's IT systems would allow it to employ less G&A staff than real-world railroads, which use technology equal or superior to that of the SBRR. For instance, every Class I railroad has made substantial investments in IT systems and applications that reduce manpower needs, and most railroads have customized technology that is at least as sophisticated as the off-the-shelf products that SunBelt proposes for the SBRR, and often much more sophisticated. *See, e.g.*, NS Reply WP "Progressive Railroading Article" at 1 ("[I]nformation technology (IT) is embedded in the soul of today's railroads."). But having

sophisticated IT systems does not eliminate the need to employ human beings to operate, maintain, correct, and use these applications and to address the many complex issues that a computer program cannot solve. Even if one generously assumes that the SBRR would have IT applications with functionality equivalent to the functionality of IT applications used by real-world railroads, that cannot be grounds for SunBelt to argue for less SBRR staffing than real-world railroads that have equivalent technology.

SunBelt identifies seven software packages that the SBRR would use. However, all major railroads use IT applications that are better than or equivalent to each of the IT applications that SunBelt posits for the SBRR, which undermines the assertion that the SBRR is especially efficient because of IT.

Transportation System. The centerpiece of SunBelt's proposed SBRR technology package is the RMI Transportation Management Services ("TMS") package, which SunBelt proposes to use for a variety of transportation-related purposes, including inventory control, waybilling, and switch instructions. *See* SunBelt Opening Ex. III-D-2 at 11. But all major real-world railroads have technology with similar functionality.[106] Indeed, RMI's TMS package is being used by "[n]early 400 railroads across North America." NS Reply WP "RMI Solutions.pdf." SunBelt cannot credibly claim that the SBRR would become more efficient than real-world railroads by purchasing technology that is already being broadly used throughout the industry.

---

[106] For example, NS uses the Thoroughbred Yard Enterprise System ("TYES") and Integrated Transportation Management System ("ITMS"). TYES is a proprietary system developed in-house at NS. It is being enhanced regularly to provide increased operational efficiencies. ITMS is made up of several transportation sub-systems, integrating them so that changes in one system populate in all of the systems including train movements, waybills, equipment status, and operating plans. Automated integration reduces the need for railroad employees to manually input changes.

Crew Management System. SunBelt also proposes that the SBRR would use PS Technology's SCAT Client Service system and Oracle for crew management in order to "efficiently manage the SBRR train crews and equipment." SunBelt Opening Ex. III-D-2 at 12. Numerous railroads from Class I carriers such as CSXT and UP to shortlines, such as the Fort Worth & Western Railroad use similar technology to call, pay, and manage road and yard assignments and employees efficiently.[107] Use of this system would not allow the SBRR to operate more efficiently than other railroads using an identical system or other programs with similar functionality.

Dispatching System. SunBelt says the SBRR will use a "computerized dispatching system" to monitor "the movement of trains and other equipment at all times" and "distribute[] traffic efficiently across the railroad." SunBelt Opening Ex. III-D-2 at 12. But computerized dispatching is now common among railroads. For example, the Alstom Personal Traffic Master, the dispatching system SunBelt proposes to use, is also used by the Providence and Worcester Railroad ("P&W").[108] NS itself uses a computerized dispatching system and is in the process of upgrading to the Unified Train Control System, a networked computer-aided dispatching system that allows it to manage its rail network efficiently. Further, SunBelt also says that the SBRR would "purchase and implement a PTC system for train control and communications." *Id.* But SunBelt is merely proposing to use a system for which much of the technology does not yet exist and that all Class I railroads are in the process of implementing as required by law.[109] *See infra* at III-F-6-b.

---

[107] *See* NS Reply WP "PS Technology Crew Management Systems.pdf" (lists existing customers).

[108] SunBelt Opening Ex. III-D-2 at 25; NS Reply WP "P&W Alstom.pdf."

[109] 49 U.S.C. § 20157.

Revenue Accounting. As with its Transportation System, SunBelt proposes to rely on RMI for its revenue accounting functions, specifically RMI's Revenue Management Services. *See* SunBelt Opening Ex. III-D-2 at 12. Other railroads also have IT solutions to assist with revenue accounting needs. As explained above, RMI solutions are used by "[n]early 400 railroads across North America." NS Reply WP "RMI Solutions.pdf." But that does not eliminate the need for revenue accounting staff. Most of the work done by Revenue Accounting staff at real-world railroads is dedicated to addressing the exceptions to the automatic processes that the IT solutions handle best. The SBRR similarly would need staff to do this work (as detailed below). *See infra* at III-D-79 to III-D-82.

Car Accounting. Once again, SunBelt relies on RMI for "a car hire system for receipts and payables." SunBelt Opening Ex. III-D-2 at 13. Many other railroads also use RMI's car hire system or an equivalent technological solution.[110] For example, NS has a suite of IT applications for Car Accounting.[111]

General Accounting. The SBRR plans to use Sage MAS 200 for its general accounting system. *See* SunBelt Opening Ex. III-D-2 at 20. SunBelt claims that use of this system would allow it to slash staffing because it has "solutions to support the complete Financial Control and Reporting process." *Id.* The fallacy of this argument is that the SBRR, when it becomes a Class I railroad in 2015,[112] would be required to file numerous Federal Railroad Administration ("FRA"), Railroad Retirement Board ("RRB"), and STB reports for which this general purpose accounting software cannot possibly provide a "complete" solution. Every major railroad (and

---

[110] NS Reply WP "RMI Solutions.pdf" ("nearly 400 railroads across North America have harnessed the power of" RMI solutions).

[111] *See* NS Reply WP "NS IT Applications List.xlsx."

[112] *See* NS Reply WP "Class 1 Threshold.xls."

nearly every short line railroad) has accounting software to assist its finance and accounting personnel. But a computer program is not a "complete" solution to accounting needs for any railroad—accounting programs are just tools to be used by the human beings who are ultimately responsible for accurate and reliable accounting and reporting. No software can be a full replacement for an accounting staff necessary to determine property or income taxes in multiple states, designate projects for capitalization or expense, and answer other difficult tax questions that require a degree of complexity and judgment that computer applications do not provide.

Human Resource Management. The SBRR plans to use Optimum Solutions for its Human Resources function. *See* SunBelt Opening Ex. III-D-2 at 14. Again, all major railroads (and indeed, nearly every sizable company) use software to improve HR efficiency and functionality. But SunBelt fails to explain why use of this off-the-shelf software would possibly justify such a low level of G&A staffing. Indeed, no software can evaluate Family and Medical Leave Act ("FMLA") requests,[113] pursue Railroad Retirement Board ("RRB") benefits questions, or explain how maternity or paternity leave will work to employees. *See infra* at III-D-93.

In short, every software package that SunBelt proposes to use for the SBRR is broadly used in the industry. SunBelt does not explain how its use of the same software would lead to more efficient administrative results.

(ii) The SBRR's Reliance on Outsourcing.

Another theme of SunBelt's G&A evidence is that the SBRR can somehow gain large savings in costs and manpower by "outsourcing" its functions.[114] But the SBRR outsources only

[113] Optimum Solutions' website discusses FMLA issues and demonstrates why a human eye is required to avoid abuse. *See* NS Reply WP "Optimum Solutions FMLA.pdf."

[114] *See, e.g.*, SunBelt Opening III-D-16 ("several functions customarily provided in-house by large Class I railroads can be efficiently out-sourced by the SBRR"); SunBelt Opening Ex. III-D-2 at 7 ("The SBRR's start-up and training needs are met largely by out-sourcing."); SunBelt

a handful of its functions, so reliance on outsourcing is no justification for the SBRR's absurdly low staffing levels. In several instances, SunBelt's Narrative claims to rely on "outsourcing," but no outsourcing costs are provided in its workpapers.[115] *See, e.g.*, SunBelt Opening Ex. III-D-2 at 7 ("The concept of out-sourcing part of a SARR's marketing function with supervision /supplementation by a small in-house marketing staff was accepted by the Board in *WFA/Basin*"); *Id.* ("Human Resources lends itself well to out-sourcing, and plenty of external resources exist that could support a small operation like the SBRR."). Moreover, many of the outsourcing efficiencies that SunBelt proposes are based on utterly unrealistic and unsupported underestimates of what outsourcing would cost. While a SAC complainant is free to propose that the SARR would outsource certain functions, it is incumbent on the SAC complainant to prove both that the proposed outsourcing is feasible and that its estimates of outsourcing costs are reasonable. *See Xcel*, 7 S.T.B. at 650.

NS's Reply Evidence accepts SunBelt's proposals to use outsourcing where outsourcing is feasible and realistic. But NS does not accept SunBelt's unreasonably low estimates of outsourcing costs, and NS has corrected those estimates to levels that approximate the expenses that the SBRR would incur for outsourcing in the real world. *See infra* at III-D-121 to III-D-124. Moreover, having failed to support its unsubstantiated evidence for outsourcing costs in its Opening Evidence, SunBelt is foreclosed from offering any such evidence on Rebuttal.[116]

Opening Ex. III-D-11 at 12 ("[SCAT Client service] minimizes the need for a large staff of crew callers or other crew management personnel.").

[115] *See, e.g., SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2 (served Apr. 4, 2003).

[116] *See, e.g., SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2 (served Apr. 4, 2003).

(iii) The SBRR's Reliance on Cross-Over Traffic Does Not Justify Inadequate G&A Spending.

Asserting a theory explicitly rejected by the Board in *AEPCO 2011*, SunBelt claims that the SBRR would enjoy below-average G&A spending because it can expect other railroads to perform marketing and customer service functions for its overhead traffic. *See* SunBelt Opening Ex. III-D-2 at 7 (arguing that because "[t]he great majority of SBRR's traffic . . . is interchange received or forwarded from or to other carriers in interchange operations," "the SBRR has minimal direct customer contacts."). According to SunBelt, therefore, it need not develop the full costs for marketing and customer service on the traffic it selected, because the connecting carriers, including residual NS, would perform these functions for the SBRR. *See id.* SunBelt's theory that the SBRR could rely on other carriers to provide essential services to SBRR customers violates the fundamental SAC principle that a SARR must account for all of the costs associated with serving its selected traffic. *See, e.g.*, *Duke/CSXT*, 7 S.T.B. at 464 ("[I]t is inconsistent with the purpose of the SAC test to assume that the existence of the defendant railroad would limit the costs the [SARR] would incur.").

In *AEPCO 2011*, the Board specifically and unequivocally rejected the exact same theory that SunBelt asserts now. There, the complainant argued that its "large amount of overhead traffic" allowed it to reduce SARR marketing staffing because the SARR supposedly would have "far fewer customer interactions" than a real-world railroad. *AEPCO 2011*, STB Docket No. 42113, at 56-57. The Board strongly disagreed:

> We reject the proposition that the [SARR] will have fewer customer service needs due to its large amount of overhead traffic. Overhead traffic still requires customer service support. Also, the [SARR] will still be required to charge rates on these movements – a complex task done by the marketing staff. The fact that the [SARR] would carry a large amount of cross-over traffic does not

> mean that the complainant should be permitted to shield the SARR from expenses such as billing, rate setting, and customer service.

Id. Here, SunBelt has raised the same argument that the Board dismissed in *AEPCO 2011*, but has provided no reason for the Board to revisit its decision. The Board should therefore reject this argument out of hand. *See SAC Procedures*, 5 S.T.B. at 446 ("[T]he parties to SAC cases are cautioned not to attempt to relitigate issues that have been resolved in prior cases. Unless new evidence or different arguments are presented, we will adhere to precedent established in prior cases.").

(iv) SBRR's Use of Non-Union Personnel Has a Minimal Impact on G&A Spending.

SunBelt justifies its low operating expenses in part on the theory that the SBRR would have "non-union personnel." SunBelt Opening I-53. But the fact that the SBRR's workforce would not be unionized has little impact on its G&A expenses, for whether or not a railroad is unionized does not affect the amount of work that has to be performed. The HR department will still need to handle change of benefits forms for employees, the accounting department will still need to account for capital spending and administer the payroll, and the purchasing department will still need to buy tracks and ties. None of the SBRR's core G&A responsibilities disappear or change because SunBelt posits that the SBRR will not be unionized. Likewise, SunBelt cannot reasonably assume that nonunionized SBRR employees would inherently be more efficient than unionized employees of real-world railroads.

The primary exception to this rule is that a nonunionized SARR would have no need for a Labor Relations Department. NS does not propose that the SBRR would need any labor relations employees. This assumption is quite conservative, for labor relations deals with a number of issues that arise regardless of whether a railroad is unionized. For example, a unionized railroad has formalized grievance and employee discipline procedures that are

governed by its agreements with unions such as the Brotherhood of Locomotive Engineers and Trainmen, Brotherhood of Maintenance of Way Employes, and the United Transportation Union. But a non-union railroad would still need processes to handle employee discipline and complaints. In short, SunBelt's low G&A staff cannot be justified by the fact that it is not a unionized railroad.

(v) Being a Privately Held Company Has a Minor Impact on G&A Needs.

Finally, SunBelt posits that the SBRR would be a privately held company that is "not publicly-owned/traded." SunBelt Opening Ex. III-D-2 at 3. But being privately held would have a minimal impact on overall G&A staffing or functionality. The single efficiency that the SBRR could realize from private ownership is the fact that it would not need to prepare public filings with the Securities and Exchange Commission ("SEC"). But that does not eliminate the need for the SBRR to maintain a robust accounting and financial reporting function. Private companies still need to maintain basic financial controls, particularly private companies like the SBRR that would have to answer to the investors and lenders that provided it with the over $3 billion[117] necessary to construct its infrastructure.[118] A private company the size of the SBRR will have many investors and require funding from multiple sources. The SBRR will need to prepare regular financial statements and maintain financial controls adequate to satisfy those investors. And by 2015 the SBRR would become a Class I railroad required to prepare dozens of filings each year for the STB, the RRB, and FRA. *See infra* III-D-86 to III-D-88. Many states similarly

---

[117] *See infra* III-F.

[118] The need for private companies to maintain financial controls is demonstrated by the establishment of the Private Company Council, part of the Financial Accounting Foundation Board, charged with improving the process of setting accounting standards for private companies. *See* NS Reply WP "Financial Accounting Foundation Board of Trustees Establishment of the Private Company Council.pdf."

require reporting; for example, tax authorities with which the SBRR would need to interact require annual reports on railroad finance and assets for use in preparing ad valorem tax assessments *See, e.g.*, NS Reply WP "Alabama Railroad Annual Property Tax Data Report.pdf." Thus, being a private company would not have a significant impact on G&A spending for the SBRR.

* * *

In short, none of the grounds that SunBelt cites for the SBRR's efficiency have any significant impact on the actual G&A spending and staffing it would require. Collectively these grounds do not even come close to justifying SunBelt's proposal that the SBRR would have the smallest G&A department of any prior Board-decided SAC case.

ii. Staffing Requirements

NS's expert Richard Brown developed G&A staffing evidence for the SBRR based on his extensive experience in the railroad industry, a review of relevant benchmarks from other railroads and independent studies, and an analysis of the G&A functions the SBRR would need to perform. Mr. Brown has substantial real-world experience in optimizing G&A expenses through technological solutions and functional reorganizations. *See infra* Section IV. Here, Mr. Brown identified the fundamental G&A functions necessary for the SBRR and the minimum spending levels and staffing necessary to perform those functions. Mr. Brown considered information on staffing levels at multiple railroads including the P&W, the Wheeling & Lake Erie Railway ("W&LE"), the Reading Blue Mountain and Northern Railroad Company ("RBMN"), Montana Rail Link ("MRL"), Montreal, Maine, & Atlantic ("MM&A"), and the Iowa Interstate Railroad. He also conducted interviews with NS G&A managers to develop an

appropriate understanding of the tasks the SBRR would need to perform as a least-cost, most-efficient railroad and appropriate metrics to identify the cost and staff demands of those tasks.[119]

Mr. Brown based his G&A plan for the SBRR on three fundamental principles, all of which are well-grounded in the Board's precedents. First, the SBRR must perform all commercial, administrative, and legal functions that are necessary for a real-world railroad to feasibly serve SunBelt's selected traffic group.[120] Some of these functions are driven by legal requirements: *e.g.*, the SBRR must have sufficient staff to fulfill legal requirements for developing a TIH routing plan and for STB, FRA, and RRB reporting. Others are driven by the need to serve SunBelt's selected traffic group: *e.g.*, the SBRR must provide its selected customers with satisfactory car tracking or billing services. And others are driven by the practical business realities of operating a major business: *e.g.*, the SBRR must have enough accounting staff to pay its taxes and balance its books, enough HR personnel to process new employees, and enough IT analysts to keep its IT systems functioning on a 24/7-basis. These are all "real-world railroading" needs that cannot be ignored or short-staffed. Second, for each necessary G&A function, Mr. Brown assumed that the SBRR would be a least-cost, most-efficient railroad that would operate at maximum efficiency. In keeping with the SAC principle that the SARR is optimally efficient, Mr. Brown conservatively assumed that the SBRR could realize substantial G&A efficiencies over real-world railroads. But even with that conservative assumption, G&A staffing and spending levels must be increased over SunBelt's unsupported proposal in order to even approach realistic levels. And third, unlike SunBelt, Mr. Brown

---

[119] NS Reply WP "G&A Interviews.pdf" lists the interviews with NS personnel that Mr. Brown conducted while developing his evidence.

[120] *See WFA I*, STB Docket No. 42088, at 15 ("assumptions used in the SAC analysis . . . must be realistic, *i.e.*, consistent with the underlying realities of real-world railroading").

provided extensive documentation to support the staffing levels he presents. Mr. Brown's enclosed workpapers include detailed explanations of staff functions, third party benchmarks where available, and well-reasoned metrics for estimating reasonable SBRR spending levels.

For instance, Mr. Brown's analysis and proposed staffing levels also take into account management principles and best practices. A least-cost, most-efficient SARR must be designed in accordance with important principles like optimizing span of control and ensuring an efficient division of labor. "Span of control" is a management concept used to describe the number of people that a manager can supervise efficiently.[121] If an individual's span of control is too wide (*i.e.*, she oversees too many individuals and areas), then effective management becomes impossible. Mr. Brown's analysis incorporates span of control principles to optimally size the SBRR's staff.

SunBelt proposes a railroad without any vice-president-level executive officers for G&A functions. Such a structure would require the President to manage an impossibly large and diverse array of responsibilities singlehandedly, an impossibility that defies span of control principles. Indeed, SunBelt cites no instance of a real-world Class I or Class II railroad that operates without any vice-president-level executive officers for G&A functions. The W&LE has, at a minimum, a Chairman and CEO, a President, and two functional G&A Vice Presidents of Finance and Marketing all to manage the G&A duties.[122] The RBMN has a Chairman and CEO, a President, an Executive Vice President of Special Projects, and multiple functional G&A

[121] "Span of control" is a management concept meaning "the number of subordinates that a manger or supervisor can directly control." http://www.businessdictionary.com/definition/span-of-control.html.

[122] *See* NS Reply WP "Wheeling & Lake Erie Railway Staff List.pdf" at 1, 3.

Vice Presidents of Finance, Administration, Marketing & Sales, and others.[123] These are privately owned railroads that are significantly smaller than the SBRR. The W&LE is approximately the same mileage, but moves approximately one quarter the carloads. The RBMN is approximately half the mileage and moves less than four percent of the carloads.[124] Yet they require sufficient senior executives to assist the CEO in managing those railroad's necessary G&A functions. A single President cannot effectively manage the complex functions of a railroad approaching Class I status without the assistance of vice presidents in important functional areas.

Indeed, the Board has never before accepted a SARR without a single Vice-President in G&A areas—even in SAC cases presenting SARRs much less complex than the SFRR. *See, e.g., WFA I* at 43 (accepting VP-Finance and VP-Law for SARR with $218 in revenues); *AEP Texas* at 51-53 (accepting VP-Finance, VP-Law, and VP-Engineering/Mechanical for SARR with $384.2 million in revenues); *Otter Tail* at C-8 (accepting VP-Finance, VP-Law, VP-Human Resources, and VP-Marketing for SARR with $581.7 million in revenues).

In this case, to create appropriate managerial oversight NS proposes that the President of the SBRR be assisted by three functional Vice Presidents: a Vice President of Marketing & Sales; a Vice President of Finance and Chief Financial Officer; and a Vice President of Administration to manage all of the remaining non-operating functions. These positions, with the President, will head the Departments described below.

---

[123] *See* NS Reply WP "Reading and Northern Railroad Company Staff List.pdf"

[124] The W&LE has 576 miles of track and handles over 150,000 carloads per year. *See* NS Reply WP "Wheeling & Lake Erie Railway History.pdf." The RBMN is over 300 miles and moves approximately 24,000 carloads. *See* NS Reply WP "Reading and Northern Railroad History.pdf"; NS Reply WP "Reading and Northern Railroad Records Successful 2011.pdf."

(a) Executive Department

SunBelt proposes that the SBRR Executive Department would consist of only a President and an Administrative Assistant. SunBelt Opening Ex. III-D-2 at 3. Such a small executive staff is completely insufficient for a $387 million business of the complexity of the SBRR. The duties SunBelt charges to the President and CEO, plus an Administrative Assistant, would be completely overwhelming for such a small staff. One person and an assistant could not possibly be responsible for all community and government relations, legal work, and financial matters of a three-state railroad that would have revenues approaching those of a Class I carrier.

According to SunBelt, such a small executive staff is possible for two reasons. First, because the company is not "publicly-owned/traded." SunBelt Opening Ex. III-D-2 at 3. But privately owned railroads must carry out many of the same responsibilities from their Executive Departments as publicly-owned and traded businesses. The SBRR will still need to interact with governments at all levels, the community, and its lenders and investors. These basic corporate functions cannot be avoided simply because the SBRR is not publicly traded.

Second, SunBelt alleges that the SBRR does not need a large Executive Department because the railroad "does not have to compete for business with other railroads or modes of transportation." SunBelt Opening Ex. III-D-2 at 3. But that assertion is wrong and SunBelt cites no support for the proposition that the SBRR would never face competition. The SBRR must be designed to function based on "real-world-railroading," and real-world railroading entails competition from other railroads and alternative modes of traffic. *See WFA II*, STB Docket No. 42088, at 15.

In addition to the functional Vice Presidents NS has proposed above, NS proposes the addition of a Director of Corporate Relations to help carry out the activities of the Executive Department. The Director of Corporate Relations would head corporate relations and

communications, public relations, and government relations. Each of these functions is critical to a business entity the size of the SBRR.

Corporate Communications: The Corporate Relations function primarily entails communication with, and management of, the major investors and lenders of the SBRR. The financial institutions providing capital to the SBRR will have a continuing interest in the short and long-term outlook for the railroad. The Director of Corporate Relations would need to manage two-way communications with these investors and lenders, including providing regular reports and performance and outlook updates.

Public Relations: The Public Relations function requires management of all interaction between the SBRR and the media. For example, if any derailment, grade crossing accident, or other issue of community concern arises, the Director of Corporate Relations will act as point person for the media.

Government Relations: Government relations is necessary so the SBRR can promote and protect its position at the state, regional, and individual community level including meetings with elected officials and the public in Washington, DC and all three states in which the SBRR operates. All Class I railroads have a lobbying presence, but this activity is common among smaller railroads as well. For example, documents filed by the W&LE with the state of Ohio demonstrate that between January and April of 2012, the railroad lobbied the legislature about a bill related to road signals, advocated on budgetary issues, met with the Ohio Rail Development Commission regarding a lease, and met with the Department of Commerce about the prevailing

wage and other rail-related issues.[125] Other regional railroads similarly have government relations staff to advocate their positions.[126]

NS conservatively proposes that the single Director of Corporate Relations, reporting to the President, would be able to handle all of these duties. The Director would be responsible for coordinating all messaging of the SBRR, overseeing all government relations, and acting on behalf of the SBRR's President whenever it is required. Considering the SBRR's presence in three states, its revenues, and its need for investors to fund its capital costs, this is a conservative proposal. Directors of Corporate Relations have been approved by the Board in multiple past SAC cases. *See, e.g.*, *WFA I*, STB Docket No. 42088, at 43; *AEP Texas*, STB Docket No. 41191 (Sub-No. 1), at 51; *Otter Tail*, STB Docket No. 42071, at C-8; *Xcel*, 7 S.T.B. at 669; *TMPA*, 6 S.T.B. at 676.

Table III-D-17
Executive Department Staff Comparison

SunBelt Opening	NS Reply	Difference
2	3	1

(b) Board of Directors

SunBelt proposes a Board of Directors with four members, including just two outside Directors. SunBelt Opening Ex. III-D-2 at 2. The Board has never approved so few outside directors, as demonstrated in Table III-D-18.

---

[125] *See* NS Reply WP "Ohio Wheeling & Lake Erie Railway Executive Lobbying Disclosure.pdf"; NS Reply WP "Ohio Wheeling & Lake Erie Railway Legislative Lobbying Disclosure.pdf." Ohio requires companies lobbying to file Activity and Expenditure Reports three times during the year. *See* NS Reply WP "Ohio Lobbying 101 Registration and Filing Requirements" at 2.

[126] *See, e.g.*, NS Reply WP "Reading Blue Mountain and Northern Railroad Pennsylvania Lobbying Registration Statement."

Table III-D-18
Comparison of SunBelt G&A Proposed Outside Directors to Past Cases

Case	Outside Directors
Duke/NS	5
CP&L	5
Duke/CSXT	5
Xcel	3
Otter Tail	4
AEP Texas	3
WFA	3
AEPCO	3
SunBelt Opening	**2**
NS Reply	**4**

Directors have important duties and a governance role at their companies. Outside independent directors must provide oversight and guidance on many issues including auditing, executive compensation, and corporate governance where it is important for the Board of Directors to serve as a check on SBRR management. It is unrealistic to think that just two independent directors could adequately perform this oversight for a railroad with $387 million in Base Year revenue. NS proposes two additional independent directors to perform the necessary oversight role of a robust Board of Directors. NS's proposal is consistent with other real-world railroads. The P&W lists seven independent directors.[127] The Genessee and Wyoming ("G&W") has nine independent directors.[128] Moreover, as discussed below, independent directors cannot be expected to work for free, and NS has provided reasonable market-based compensation for SBRR outside directors. *See infra* III-D-118.

[127] *See* NS Reply WP "P&W Board of Directors.pdf."

[128] *See* NS Reply WP "Genesee and Wyoming Board of Directors.pdf."

Table III-D-19
Independent Directors Comparison

SunBelt Opening	NS Reply	Difference
2	4	2

(c) Marketing & Sales Department

One of the most unreasonable G&A proposals made by SunBelt is its claim that the SBRR would need only a single Director of Sales & Marketing with no support staff. SunBelt claims that the "great majority of SBRR's traffic does not originate or terminate on the SBRR" and "[t]herefore the SBRR has minimal direct customer contacts, as these are customers of SBRR's connecting carriers." SunBelt Opening Ex. III-D-2 at 7. In other words, SunBelt claims that the SBRR could rely on other railroads to market its traffic. *AEPCO 2011* unambiguously rejected an identical argument made in that case, holding that SAC complainants could not "shield the SARR from expenses such as billing, rate setting, and customer service" simply because the SARR handled "large amounts of cross-over traffic." *AEPCO 2011*, STB Docket No. 42113, at 57. SunBelt provides no reason for the Board to depart from that precedent.

Moreover, SunBelt's assumption that the SBRR would not need significant marketing staff for overhead traffic is incorrect. Much of the interline traffic that SunBelt selected for its traffic group is actually Rule 11 traffic, for which the SBRR will have an obligation to negotiate and publish rates. Table III-D-20 illustrates the amount of Rule 11 traffic in the SBRR's traffic group.

Table III-D-20
SBRR Traffic Mix by Carloads

	Summary				
	Auto	**Intermodal**	**General Freight**	**Total**	**Percentage of Total Carloads**
Local	94	873	3,973	4,940	1.2%
Forwarded	7,594	17,449	41,790	66,833	15.7%
Received	2,714	25,700	41,441	69,855	16.5%
Bridge	1,826	163,666	117,396	282,887	66.6%
Total	12,227	207,689	204,599	424,515	

SunBelt has also opted to have the SBRR's share of interline traffic revenue calculated using the Interline Settlement System ("ISS"). *See* SunBelt Opening Ex. III-D-2 at 12-13. The SBRR therefore will have to establish and maintain rates for virtually all of their shipments. SunBelt will also have to review, analyze, and/or manage 3485 price authorities. Typical industry practice is for the originating carrier to handle rate negotiations and rate publications (approximately 71,000 carloads and 17% of SBRR traffic), but even for rate authorities where the SBRR is not the originating carrier, it will still have to review and analyze price authorities. SunBelt also assumes that the SBRR would be the overhead carrier connecting traffic between the residual NS at both the origin and destination for said traffic. In many of these circumstances, the SBRR will have a significant role in moving the traffic and customers will expect to maintain a personal relationship with the SBRR and not rely wholly on the residual NS.

SunBelt's citation of cases where the Board accepted proposals to outsource a SARR's marketing costs is irrelevant, for SunBelt provides neither a specific proposal for SBRR marketing outsourcing nor money to fund such outsourcing. SunBelt Opening Ex. III-D-2 at 7 n.2. Having omitted any support for its position in its Opening Evidence, SunBelt is precluded

from offering it on Rebuttal.[129] And even if SunBelt had provided that necessary evidence, marketing outsourcing is not feasible for a railroad that would predominantly transport non-coal traffic for hundreds of customers. The Board only accepted marketing outsourcing in *WFA* and *AEP Texas* because those SARRs exclusively or predominantly transported coal for small and well-defined customer groups.[130]

Mr. Brown developed a least-cost marketing department for the SBRR consisting of nine employees. The SBRR marketing department is headed by a Vice President of Marketing & Sales, also known as a Chief Marketing Officer, assisted by a staff of eight, including an Administrative Assistant. The Administrative Assistant will provide support to the group, including taking responsibility for travel and expense reporting. SunBelt provides no technology programs to support either travel or expense reporting, meaning significant work will fall to Administrative Assistants across the SBRR.

Mr. Brown proposes a Director – Accounts, a high-level position who would assist the Vice President of Marketing in dealing with major accounts. Mr. Brown's proposed Department also includes four Market Managers responsible for the day to day activities of the Marketing Department including reviewing and analyzing new traffic requests from connecting carriers, reviewing rate authority renewals, and providing market analysis and forecasting. One Marketing Manager would be responsible for chemicals, one for intermodal, and one for all

---

[129] *See, e.g., SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2 (served Apr. 4, 2003).

[130] For example, in *AEP Texas* the Board accepted a partially outsourced marketing department because the SARR "would have a limited and repetitive traffic group consisting primarily of originated unit-train coal traffic moving to a known set of power plants, a relatively modest volume of overhead non-coal traffic that the residual incumbent would originate and terminate, and a stable customer base with a consistent and regular traffic volume." *AEP Texas,* STB Docket No. 41191 (Sub-No. 1), at 54. Similarly, in *WFA I*, the marketing department in question was one where "[m]ost of the shippers in the [SARR] traffic group would ship coal under transportation contracts." *WFA I*, STB Docket No. 42088, at 45.

remaining commodities. Each of these Marketing Managers will need to understand his or her particular market as a whole, so that the rates set are appropriate for a competitive market. The fourth Marketing Manager would be responsible for market analysis, providing information to support the other three Marketing Managers with their day-to-day activities.

Other critical marketing functions are performed by a Manager of Marketing Services and a Manager of E-Commerce and Systems. The Manager of Marketing Services would have responsibility for managing and monitoring SBRR publications for accessorial charges such as diversions, demurrage, or storage, and for communicating with customers about these publications and any changes to them. The Manager of E-Commerce and Systems would be responsible for working with customers to establish electronic bills of lading profiles, developing and managing internet-based tools for customers to use and access, developing and managing technology tools for marketing, and managing the SBRR's website.

Mr. Brown's proposed marketing staff is quite conservative when compared to the marketing departments of Class II railroads. The W&LE—which handles approximately 150,000 annual carloads (or one quarter the number SBRR would handle)—lists seven marketing employees on its website.[131] The MM&A, with just 15 trains daily, has five marketing employees listed.[132] The P&W, with just 36,000 carloads of freight annually, lists three people in its marketing and sales department.[133] These staff lists are website contact lists that likely do not represent full staffing, so the total staff at these railroads is likely much larger. A nine-

[131] *See* NS Reply WP "Wheeling & Lake Erie Railway Staff List.pdf" at 3.

[132] *See* NS Reply WP "Montreal, Maine, & Atlantic Railway Staff List.pdf"; NS Reply WP "Montreal, Maine, & Atlantic Railway Profile.pdf."

[133] *See* NS Reply WP "P&W 2011 10-K" at I-1"; NS Reply WP "P&W Staff List.pdf."

person marketing department for a SARR that would handle six times the carloads of the W&LE and eighteen times the carloads of the P&W is very conservative.

Table III-D-21
Marketing Department Staff Comparison

SunBelt Opening	NS Reply	Difference
1	9	8

(d) Finance and Accounting Department

SunBelt proposes a SBRR Finance and Accounting Department consisting of just 6 employees, who would be responsible for a wide range of functions including cash management, revenue accounting, disbursement accounting, taxation, financial reporting, budgeting, purchasing, and internal audit. A railroad with over $387 million in revenue in the Base Year cannot possibly function in the real world with such a scanty accounting staff. Indeed, SunBelt's proposed finance staffing levels are significantly lower than those that the Board has approved for other small SARRs with far less daunting accounting needs, as shown by Table III-D-22.

Table III-D-22
Comparison of SunBelt Finance Staffing to Board-Approved Staffing In Past Cases

Case	G&A Finance Staff[134]	Revenue (in millions)[135]	Finance Staff Per $100M Revenue
Duke/NS	24	$487.1	4.93
CP&L	24	$453.7	5.29
Duke/CSXT	21	$496.8	4.23
Xcel	16	$341.5	4.69
Otter Tail	25	$581.7	4.30
AEP Texas	21	$384.2	5.46
WFA	15	$218.4	6.87
SunBelt Opening	**6**	**$429**	**1.40**

As Table III-D-22 demonstrates, the 6-person Finance and Accounting Department proposed by SunBelt is significantly smaller than the departments accepted by the Board in three cases where SARRs had less revenue than the SBRR (*i.e.*, *WFA*, *AEP Texas*, and *Xcel*) and is one-third to one-quarter the size of several SARRs with revenues only slightly higher than the SBRR's.[136] SunBelt does not present any evidence to justify its sharp departure from these precedents or to explain how a $387 million railroad could possibly function with only six finance employees. Indeed, the SBRR will require a significantly higher number of finance

[134] SBRR data is located at page 2 of SunBelt Opening Exhibit III-D-2. Data on prior SAC cases was derived as follows: *Duke/NS:* (*Duke/NS*, 7 S.T.B. at 156); *CP&L*: (*CP&L*, 7 S.T.B. at 294); *Duke/CSXT*: (*Duke/CSXT*, 7 S.T.B. at 460); *Xcel*: (*Xcel*, 7 S.T.B. at 648); *Otter Tail*: (*Otter Tail*, STB Docket No. 42071, at C-8); *AEP Texas*: (*AEP Texas*, STB Docket No. 41191 (Sub-No. 1), at 53); *Western Fuels*: (*WFA I*, STB Docket No. 42088, at 43); *AEPCO*: (*AEPCO 2011*, STB Docket No. 42113, at 55).

[135] *See supra* sources cited at note 134.

[136] Indeed, SunBelt's finance staffing of 1.4 employees per $100 million in revenue is even less than the uncharacteristically low finance staffing that the Board reluctantly accepted in *AEPCO 2011*. In *AEPCO*, the Board criticized the complainant for failing to provide benchmark analysis or other comparable data to support its proposed staffing levels and only adopted the complainants' proposal because the defendants' evidence was "no better." *AEPCO 2011*, STB Docket No. 42113, at 58. Nevertheless, the 32-person finance staff in AEPCO still represents 1.54 finance staff employees per $100 million of revenue, which is higher than SunBelt's proposal on Opening.

employees than prior SARRs because a carload railroad has much more complex revenue accounting needs than a unit-train coal railroad.

Mr. Brown has crafted a reasonable Finance and Accounting Department staff that would realistically be able to accomplish the significant, varied tasks of this Department.

(i) Vice President and Chief Financial Officer.

SunBelt proposes that the SBRR's entire finance function be overseen by a Controller/Treasurer, and thus that the SBRR's President would be the only senior executive managing the SBRR's G&A functions. As described *supra* at III-D-64 to III-D-66, it is not reasonable to assume that the SBRR President could effectively oversee all the diverse G&A functions of a large regional railroad, including a 36-person Finance and Accounting Department. For these reasons Mr. Brown provides the SBRR with a Vice President of Finance and Chief Financial Officer. The finance function at large regional railroads is typically overseen by a Vice President of Finance and CFO. For example, the MRL and the W&LE each have a VP-Finance and CFO—despite being significantly smaller than the SBRR on a carload basis.[137] *See* NS Reply WPs "Montana Rail Link Staff List.pdf"; "Wheeling & Lake Erie Railway Staff List.pdf." Mr. Brown also adds an Administrative Assistant to help with the day-to-day operations of the Finance and Accounting Department. Because SunBelt has not provided any IT capability for travel expenses, the Administrative Assistant will handle the time-consuming task of all the expense reports for the Department's 13 traveling employees.

[137] MRL handles approximately 365,000 carloads a year and W&LE handles approximately 150,000 carloads a year – both well under the SBRR's 616,886 carloads in the Base Year. *See* NS Reply WPs "Montana Rail Link Facts.pdf"; "Wheeling & Lake Erie Facts.pdf."

(ii) Treasury.

SunBelt proposes a single Controller/Treasurer who singlehandedly would be "responsible for all accounting functions, including direction of all billing, vendor payment processing, payroll, budgeting, and auditing," in addition to "managing the company's cash and investments," "manag[ing] the receipt of funds from customers and the SBRR's connecting carriers," and "supervis[ing] debt payment requirements." SunBelt Opening Ex. III-D-2 at 3. The idea that a single individual could manage all those functions for a $387 million railroad is self-evidently ludicrous.

The unreasonableness of SunBelt's proposal is demonstrated by the fact that the SBRR will have an average weekly cash intake of over $7.5 million.[138] That cash flow will come from hundreds of different sources in an ever-fluctuating flow. On a day-to-day basis, it is extremely unlikely that cash outflow will perfectly match cash inflow. The SBRR will need to invest any inflow in excess of cash needs. Cash flow, therefore, needs to be forecast and managed based on season, business trends, and expenditure needs. The cash management process at the SBRR, like any major corporation, will have to be able to shift funds among various short and medium-term investment options as funds become available or are needed. The SBRR will also need to maintain lines of credit with several banks to guard against emergency funding needs, such as repair after a natural disaster or derailment. To manage capital programs and employee pensions, the SBRR will also need to have funds in long-term investment options.

A major issue that complicates the cash management process for the SBRR is its decision to use ISS as a means of collecting revenue for its non-local shipments, which is the vast majority of its traffic. *See* SunBelt Opening Ex. III-D-2 at 12. Direct billing of customers is

[138] For simplicity, Mr. Brown divided total revenue by 52 to approximate weekly cash intake.

typically a much simpler process than subjecting revenue to the interline settlement process. ISS billing requires a very precise recording of traffic at the time of billing. While most waybills will be electronically generated, they will need to be processed and verified to ensure that an appropriate record of the shipment is logged. The SBRR will want to recognize and book revenue at the time the shipment is handled, and it must have a near-perfect view of that shipment in order to accurately do that. Specifically, the SBRR needs accurate views of the customer, commodity, origin, destination and full route of each ISS shipment to create the proper accrual for booking revenue. This is much more difficult for overhead shipments than for local shipments because the SBRR will have less direct contact with the customer.

One person cannot possibly manage these enormous responsibilities for a major regional railroad that will reach Class I status in 2015. Mr. Brown has developed a much more feasible four-person treasury staff for the SBRR. The group would consist of a Treasurer and three managers responsible for Cash Management, Credit, and Budgeting and Planning.

Treasurer. The Treasurer would manage all of the functions assigned to Treasury and supervise the three Managers of Cash, Credit, and Budgeting. He or she would also assist the VP-Finance and Director of Corporate Relations with investor relations.

Cash Management. The Cash Manager will manage the short-term cash position, a task that will require continual review of traffic forecasts, traffic billed and collection status, ISS position, and expense budgets. The Cash Manager will also manage the medium-term cash position to ensure that funds are available for railroad operations and he or she will oversee the medium to long-term investment options of the SBRR (including 401(k) investments).

Credit. The Credit Manager will oversee credit extension to customers and will manage the collections process. The Credit Manager will also oversee bank relations. The SBRR would

need to manage multiple bank accounts and maintain relationships with multiple banks in order to facilitate collections and provide for emergency funding needs. The Credit Manager must also report on, and maintain the credit of, the SBRR.

Budget. The Budget Manager will be responsible for all operating and capital budgeting of the SBRR. The Budget Manager will work with the operating budget staff within Operations and the revenue forecasting staff within marketing to determine operating needs and resources, and he or she will also be responsible for the capital budget, which requires careful planning, review and monitoring of all capital spending including ongoing and future projects. In addition, the Budget Manager will be responsible for developing, maintaining, and managing an internal cost system. Budgeting for a $387 million railroad is a significant task, and it would fully occupy the time of the Budget Manager. SunBelt's proposal that one dual-hatted individual could both prepare all SBRR budgets and manage all of the SBRR's purchasing is not feasible, and Mr. Brown has provided two staff in the SBRR Purchasing Department to separate these very different functions. *See infra* at III-D-88 to III-D-89. That is consistent with the practice at other railroads. For example, the MM&A has separate managers of Budgeting and Purchasing, despite operating just 15 trains daily. *See* NS Reply WP "Montreal, Maine, & Atlantic Railway Staff List.pdf"; NS Reply WP "Montreal, Maine, & Atlantic Railway Profile.pdf."

(iii) Audit.

The Board has found "that sound business practice requires an internal auditor to oversee the various finance functions." *AEP Texas*, STB Docket No. 41191, (Sub-No. 1), at 56-57. SunBelt recognizes this need but provides only one employee who would simultaneously be responsible for internal auditing, claims, "government safety reporting," and "representing the SBRR in industry associations and safety forums." SunBelt Opening Ex. III-D-2 at 4. SunBelt also proposes an outsourcing cost of $125,000 for "[a]udit and internal review." SunBelt

Opening WP "SBRR GA Outsourcing.xls."[139] This employee and outsourcing cost devoted to "ensure adequate oversight of the company's various financial and accounting functions" appears to reference the financial audit function, an absolutely necessary function for a modern business. SunBelt Opening Ex. III-D-2 at 4.

While the financial audit function at SunBelt could conceivably be managed by one individual overseeing an outsourced function, that individual could not also manage the diverse responsibilities of overseeing claims and safety reporting. Financial auditing is a key business function that cannot be shortchanged. A rigorous financial audit function benefits the railroad's owners and investors, which in the case of the SBRR will be the investors, banks, or financial institutions providing billions of dollars in startup funds.[140]

A financial statement audit is thus critical for the SBRR. But another important audit function SunBelt fails to account for is an internal audit. The work of internal auditors is "comprehensive" and "serves the organization by helping it accomplish its objectives, and improving operations, risk management, internal controls, and governance processes."[141] The SBRR's executives and board members will also be protected by the presence of a rigorous review of processes and controls that would help ensure that the organization is acting in an appropriate, legally compliant manner. Although this function is typically called "internal audit," it is often outsourced.[142] NS provides for the outsourcing of this function below.

---

[139] NS addresses the outsourcing costs below. *See infra* III-D-121 to III-D-124.

[140] While it is not clear from SunBelt's evidence whether the SBRR's capital would be raised from investors or from bank loans, what is clear is that whoever provides the SBRR with over $2 billion dollars to construct its railroad will expect rigorous financial processes at the SBRR to ensure a return on that capital.

[141] *See* NS Reply WP "Internal and External Audit.pdf" (describing the difference between internal and external auditors). *See also* NS Reply WP "Auditing for Compliance.pdf"

[142] *See, e.g.*, NS Reply WP "Internal Audit Services Outsourcing.pdf."

Mr. Brown therefore provides one Director of Financial Audit who will be dedicated to both of these important functions. The Director of Financial Audit would monitor and control the outsourced auditing support for both the financial and internal audits, act as a liaison between the Board and outside auditors, set priorities and scheduling for regular work as well as ad hoc projects for the audit consultants, and help provide necessary data from the SBRR's IT systems and staff for the outside firm.

(iv) Revenue Accounting.

SunBelt completely ignores the need for SBRR revenue accounting staff. While SunBelt provides a revenue accounting software package from RMI for the SBRR, it does not provide any SBRR personnel to even operate that software—let alone to manage exceptions on the many occasions when the software rating of a waybill is erroneous or needs modification. This is an utterly unreasonable and inexplicable omission. The need for revenue accounting staff is well-established SAC precedent. *See, e.g.*, *WFA I*, STB Docket No. 42088, at 43; *AEP Texas*, STB Docket No. 41191 (Sub-No. 1), at 52; *Otter Tail*, STB Docket No. 42071, at C-8 & C-9.

The SBRR would need to devote significant resources to revenue accounting. Revenue Accounting has several responsibilities including managing both the freight billing and waybilling process. Freight billing will be the responsibility of the SBRR for many cars including all those in local service, most interline forwarded, and some interline received (depending on the contractual terms). The SBRR will need sufficient staff to process, correct, and collect freight bills for thousands of customers.[143] In addition to its direct freight billing,

[143] Revenue Accounting will need to work closely with the customer credit and collections function of the Treasury Group in the Finance and Accounting Department. The Treasury Group will have overall authority for collections, but Revenue Accounting will ensure billing is properly done and the Treasury Group, as well as the customer, have the information necessary for prompt payment.

revenue will also come through the Interline Settlement System and the SBRR will need personnel to resolve issues with interline settlements. Revenue Accounting will also be responsible for waybills, which must be processed by the SBRR for every carload handled. SBRR staff would be responsible for tasks including processing customer shipping documentation to create waybills; managing waybill exceptions; and properly rating waybills. The group will also need to oversee the submission of waybill data to the STB for the Carload Waybill Sample.[144] Finally, the group will need to guarantee the accurate and timely reporting of all operating revenue and to monitor and estimate all revenue-related and receivable reserves pursuant to Financial Accounting Standards ("FAS") guidelines.

SunBelt's use of a standard RMI software package does not affect the analysis, because having revenue accounting software does not eliminate the need for employees to use the software and to manage exceptions. {{

}} No computer can fix these errors, which require follow-up and human judgment.[147] The SBRR will similarly need human staff to correct errors. RMI boasts of a 90% accuracy level for automatic rating of waybills, meaning that 10% of waybills will need to be corrected by the SBRR annually.[148] With almost 617,000 carloads, that

---

[144] 49 C.F.R. § 1244.2.

[145] NS Reply WP "Billing Accuracy.pdf."

[146] SunBelt WP "Exhibit III-D-2 Information Technology" at 18.

[147] *See, e.g.*, NS Reply WP "Accounting Resolutions.xls."

[148] SunBelt WP "Exhibit III-D-2 Information Technology" at 18.

would amount to over 60,000 waybills requiring human intervention – an average of over 1154 every week.

Mr. Brown has developed a Revenue Accounting group for the SBRR headed by a Director and divided into two subgroups headed by Managers, with one devoted to Waybilling and one devoted to Cash & ISS. The Manager-Waybilling and a staff of seven supporting Waybilling Analysts would be responsible for correcting errors and omissions to waybills and making necessary waybill revisions. These tasks must be done timely and effectively, and the SBRR will need to have waybilling analysts on duty well beyond normal business hours because cars and intermodal trailers will be moving on a 24/7 basis. Cars need to have waybills to move on the SBRR, and accurate waybills are essential for the SBRR's compensation, particularly for ISS movements. The SBRR must identify at the outset for which shipments it will be receiving revenue from ISS so that it can ensure the accuracy of its accrual process for those shipments.[149]

The Manager-Cash & ISS and a staff of seven analysts would be responsible for producing freight bills and sending those bills to customers, and for reviewing ISS for concurrences and then matching back collections to accruals. As with the waybilling process, much of this should be handled electronically via EDI and the RMI system, but the exceptions will need to be processed manually and the reconciliations reviewed and analyzed for accuracy and completeness.[150]

Mr. Brown's proposed revenue accounting staff is reasonable and conservative. If revenue accounting were scaled proportionate to volume with NS, it would suggest a total of {{ }} staff. The SBRR has 9% of NS's actual carloads but, under NS's proposal, will only have {{ }} of the current NS's {{ }} revenue accounting staff. As another point of

[149] *See* NS Reply WP "Job Functions – Revenue – Waybilling.xlsx."

[150] *See* NS Reply WP "Job Functions – Revenue – Cash.xlsx."

comparison, P&W, a regional railroad with 5% of the volume of the SBRR shows two managers devoted to revenue issues on its contact list, which likely does not represent the full workforce. *See* NS Reply WP "P&W Staff List.pdf." Scaling that staffing up to the SBRR on a carload basis would suggest a staff of nearly 40—three times what Mr. Brown is proposing. Similarly, CP had a Revenue Accounting Group of {{ }} employees in 2007,[151] a year in which it had approximately 2.7 million carloads.[152] Scaled to the SBRR's 664,000 carloads, CP's staffing would suggest {{ }}revenue accounting employees.

Although Mr. Brown has proposed fewer SBRR revenue accounting employees than if he had scaled that staffing directly to NS based upon the number of carloads, there are at least two reasons to believe that the SBRR will actually be less efficient than NS, making Mr. Brown's assumptions particularly conservative. First, the SBRR's RMI system has a lower waybill accuracy rate than NS's system does. Because the majority of work is addressing errors, corrections and changes, the SBRR will actually generate more labor-intensive staff work on the same amount of traffic as NS. Second, NS has more local traffic than the SBRR. Interline traffic issues can be more complex to address due to the need to interface, through ISS, with another carrier so issues that arise cannot be solved solely by the SBRR. Nineteen percent of NS's freight bills are for interline traffic, but the staff that works on these issues comprises {{ }} of the Revenue Accounting work force. The SBRR will have much more interline traffic on a percentage basis, but NS is not proposing any staffing adjustment to account for this change in traffic mix.

---

[151] *See* NS Reply WP "Revenue Accounting Benchmarking Study.xls."

[152] *See* NS Reply WP "CP 2007 Annual Report" at 17.

(v) Disbursements.

SunBelt proposes a Disbursements function made up of a Manager of Payroll and two analysts. *See* SunBelt Opening Ex. III-D-2 at 3. According to SunBelt, these three individuals would be responsible for "overseeing all accounts payable and payroll processing, issuing vendor payments, advising the Controller/Treasurer on cash requirements, and reviewing all contracts with outside suppliers." *Id.* SunBelt's proposed staffing is too small to handle these diverse functions for a railroad on the cusp of Class I status. The SBRR will have hundreds of millions of dollars in operating expenses each year, and managing accounts payable for such a large entity requires significant staffing.

Mr. Brown has proposed a lean and highly efficient disbursements staff for the SBRR, consisting of one Director, one Accounts Payable Analyst, one Manager of Payroll, one Manager of Miscellaneous Billing, and three Staff Accountants. The Director will oversee Payroll and Miscellaneous Billing functions, but the Director's primary responsibility will be to manage the payables function. The Director will be assisted in this task by the Accounts Payable Analyst. Even if one assumes that the SBRR uses accounting software to assist with accounts payable processing and to issue electronic purchase orders, the SBRR still needs staff to perform tasks like confirming the receipt of purchases; managing purchase card programs for small purchases required in the general course of business; entering data for non-electronic purchase orders; coordinating with field personnel to assure the prompt payment of vendors; reviewing and reconciling statements on a monthly basis; and managing inventory to ensure that the tracked inventory value matches up to real-world stock on hand. Indeed, even a railroad the size of the W&LE—*i.e.*, one quarter the size of the SBRR on a carload basis—has a dedicated Manager of Accounts Payable. *See* NS Reply WP "Wheeling & Lake Erie Railway History.pdf"; NS Reply WP "Wheeling & Lake Erie Railway Staff List.pdf."

The Manager of Payroll will manage all aspects of Payroll and oversee the SBRR's relationship with its outside vendor Paychex. SBRR's use of Paychex does not eliminate the need for a full-time in-house employee responsible for Payroll, for three reasons.

- First, a service like Paychex can issue paychecks and perform simple tasks like calculating the required deductions and remissions for railroad retirement, state and local taxes, and 401(k) contributions. But Paychex can only do this if the SBRR is providing it with information about individual employees' compensation and what the required deductions are. Put simply, Paychex is a service that will do the math, but the in-house Manager of Payroll is required to tell Paychex what numbers to use in its calculations.

- Second, payroll is not simply a matter of preparing checks. Real-world payroll departments must handle a number of nonroutine tasks like responding to subpoenas and requests for earnings information tied to external lawsuits, addressing court orders for wage garnishment, child support, or tax liens, and responding to Railroad Retirement Board audits.[153] Paychex cannot assist with any nonministerial issues like this; the SBRR needs a full-time Manager of Payroll to handle them.

- Third, SunBelt provides no timekeeping function for SBRR field or headquarters personnel. In SunBelt's estimation, each employee will have an annual salary and be paid uniformly without overtime or any other adjustment to pay. Even if such an arrangement were possible, the Railroad Retirement Board still requires that rail carriers report who is working, who is sick or injured, and who is on vacation.[154] Some type of daily or weekly processing and reporting will need to be accomplished by a payroll staff in order to comply with these regulations.

These multiple functions mean that the Manager of Payroll will have a full-time job simply coordinating the SBRR's many payroll issues. Thus, SunBelt's assertion that the Manager of Payroll would also be able to manage non-payroll functions is not feasible.

The Manager of Miscellaneous Billing would be responsible for expenditure recovery, car accounting, joint facilities, expense report processing, and all other rail billing issues,

---

[153] *See* NS Reply WP "Payroll Functions.pdf."

[154] *See* NS Reply WP "RRB Reports.pdf" for examples of the kinds of forms that the SBRR would be required to complete.

including interline settlement costs for issues other than revenue. By comparison, even a railroad the size of the W&LE, which moves one quarter of the carloads of the SBRR, has a Director dedicated to the Car Accounting function alone.[155] Moreover, expense report processing will also require significant manpower, for SunBelt has provided no technology for the SBRR that could assist with expense reporting. As such, the Manager of Miscellaneous Billing will be assisted by three Staff Accountants, who will also provide assistance to the Payroll Manager and Director of Disbursements when needed.

(vi) Tax.

SunBelt fails to provide any in-house staff support for taxation, and instead proposes that taxation could be completely outsourced. *See* SunBelt Opening Ex. III-D-2 at 18. But even accepting that SunBelt could hire outside firms to prepare tax returns for it, SunBelt would still need internal resources to provide data, analysis, and oversight of outsourced tax work. Taxation for railroads is significantly more complex than for most other businesses. In part this is because the nature of a rail network is to traverse multiple jurisdictions and thus be subject to many different tax regimes. In part it is because of the unique and resource-intensive ways in which most states assess railroad ad valorem taxes. The SBRR's substantial taxation needs cannot be satisfied by providing no staff and allocating $150,000 to "outsourcing."

The SBRR will be responsible for preparing federal income taxes, state income taxes, and state property taxes. State property taxation is perhaps the most complex area, and the one least suited for "outsourcing." The SBRR operates in three states, each of which uses a unit valuation methodology for ad valorem taxation. The unit valuation process requires particularly intensive work from a railroad's in-house staff and typically involves significant information exchange and

[155] *See* NS Reply WP" Wheeling and Lake Erie Railway Staff List.pdf."

negotiation over appropriate methodologies. The negotiation process requires the involvement of an officer of the railroad who must build, nurture, and maintain relationships with state tax assessment offices to achieve the best possible valuation outcome for the railroad. This function cannot be effectively outsourced, and even if it could it surely could not be outsourced for a mere $50,000.[156] Moreover, unit valuation is just the beginning of the process. Valuation is typically done centrally by a state office, but tax billing is usually done at the local level, and the billing cycle differs from jurisdiction to jurisdiction. Paying the SBRR's property taxes in each of the many county jurisdictions in which the SBRR will operate requires year-round efforts to review and verify each tax bill and to follow up on mistakes and requested corrections. Because of the unique nature of railroad property taxation and the need for in-house expertise, it is more efficient for the SBRR to staff an adequate internal tax group to do the work necessary to keep total tax levels reasonable.

Mr. Brown has determined that the SBRR would require a two-person tax staff consisting of a Director of Tax and a Manager. The Director would have oversight over the entire tax process and would maintain relationships with property assessment officials in the three SBRR states. The Manager would coordinate with the outsourced income tax provider, manage the tax filing and payment process, and respond to all data requests and audit inquiries.[157]

(vii) Financial Reporting.

SunBelt also fails to provide any SBRR personnel responsible for financial reporting. While the SBRR would not be publicly traded and would not be a Class I railroad at the outset, it

---

[156] SunBelt Opening WP "SBRR GA Outsourcing.xls." SunBelt has provided no evidence as to the basis for its claimed $50,000 budget for property tax outsourcing and SunBelt may not introduce such evidence on rebuttal. *See, e.g., SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2 (STB served Apr. 4, 2003).

[157] NS accepts that the income tax function could largely be outsourced. *See infra* III-D-122.

nevertheless will require some basic financial reporting. Mr. Brown has proposed a single Manager of Financial Reporting who would be responsible for the following functions.

- Monthly Closing of Books. Each month, the process would include preparing, reviewing, approving and posting journal entries; maintaining the financial system and chart of accounts; preparing balance sheet account reconciliations; and preparing financial statements.

- Financial Audits. The Financial Reporting staff will be required to cooperate with both internal and outsourced auditors to prepare schedules and analyses, answer questions, provide documentation and draft financial statements and footnotes.

- Benefit Plan Reporting. IRS regulations require Form 5500 and audited plan financial statements to be filed for all Pension Benefit plans (including defined contribution 401(k) plans) that are covered by ERISA even if benefits no longer accrue, contributions were not made during that reporting period, or contributions have ceased entirely. An employer the size of the SBRR will have some type of pension plan requiring the Financial Reporting Group to maintain records, prepare analyses, and draft financial statements and footnotes in support of the Form 5500 filing and audited plan financial statements.

- Accounting Research. New accounting standards issued by standards-setting bodies need to be monitored and analyzed to ensure SBRR compliance.

- Internal and Investor Reporting. Even though the SBRR may not be required to publicly report its financial results, internal management, interested investors, and potential bank lenders will often require accurate and detailed financial reporting. The Manager of Financial Reporting will need to work with the Director of Corporate Relations and Treasurer to accomplish this function.

In addition, the SBRR would likely qualify as a Class I carrier beginning in 2015. At that time the SBRR would be subject to the same Class I railroad reporting requirements as NS and other Class I carriers. Board reporting includes at least thirty-two reports each year, as detailed in Table III-D-23.

Table III-D-23
Required STB Reports for Class I Carriers

Document	Due Date	Reports Per Year
Form R-1	March 31 of the Following Year	1
Form R-1 Sch. 250	April 30 of the Following Year	1
Quarterly Report of Fuel Cost, Consumption and Surcharge Revenue	30 Days After Close of Quarter	4
Quarterly Revenues, Expenses and Income	50 Days After Close of Quarter	4
Quarterly Condensed Balance Sheet	30 Days After Close of Quarter	4
Annual Freight Commodity Statistics	90 Days After End of Year	1
Quarterly Freight Commodity Statistics	60 Days After End of Quarter	4
Annual Wage Form A&B	45 Days After End of Year	1
Quarterly Wage Form A&B	30 Days After End of Quarter	4
M-350 Monthly Report of Employees	15 Days After End of Month	12
	TOTAL	36

In short, the SBRR would need a Manager of Financial Reporting to address all these various reporting needs.

(viii) Purchasing.

SunBelt's attempt to staff the SBRR's purchasing function with just one employee—and one who supposedly could perform double-duty as the SBRR's budget manager—understates the number of employees that would be necessary in the real world. By comparison, even a railroad the size of the MM&A, moving only 15 trains daily, has a Manager of Purchasing.[158] SunBelt argues that it can limit purchasing staff because the SBRR would be "a new railroad" whose purchases "should be limited during the first five years of its existence."[159] But the SAC test

[158] *See* NS Reply WP "Montreal, Maine, & Atlantic Railway Profile.pdf"; NS Reply WP "Montreal, Maine, & Atlantic Railway List.pdf."

[159] SunBelt Opening Ex. III-D-2 at 4.

requires SunBelt to staff the SBRR as an ongoing concern, and the SBRR must have sufficient purchasing staff to meet its ongoing needs. *WFA I*, STB Docket No. 42088, at 65.

Mr. Brown has designed a least-cost, most-efficient SBRR purchasing staff consisting of one Director of Purchasing and one Manager of Purchasing. The SBRR purchasing staff must also maintain relationships with hundreds of vendors of different materials and services, and they will be responsible for avoiding inventory shortfalls which could be far more expensive than adding purchasing personnel—if shortfalls were to cause the shutdown of a SBRR activity. As the Board has previously explained, purchasing staff is needed because "[n]ot all materials would be sent directly to the location where needed . . . supplies would sometimes need to be furnished for unplanned maintenance or emergencies . . . a detailed inventory of materials used [must be kept] so that materials would not run low and maintenance be delayed . . . [and a] purchasing and materials department would also need to keep abreast of and seek out the best suppliers from whom to obtain materials." *WFA I*, STB Docket No. 42088, at 65. To accomplish all these requirements, the SBRR needs an adequately sized purchasing staff.

TABLE III-D-24
Total Finance and Accounting Group Staff Comparison

Position	SunBelt Opening	NS Reply	Difference
VP of Finance	0	1	1
Administrative Assistant	0	1	1
Treasury	1	4	3
Revenue Accounting	0	17	17
Disbursements	3	7	4
Tax	0	2	2
Financial Reporting	0	1	1
Audit	1	1	0
Purchasing	1	2	1
Total	6	36	30

(e) Administration Department

For the remaining G&A functions, NS proposes a single Administration Group headed by a Vice President and supported by an Administrative Assistant. This single individual would have oversight over five functional areas: Law; Casualty Claims; Human Resources; IT; and Asset Protection.

(i) Law.

SunBelt proposes that the SBRR would have no in-house legal staff and would entirely outsource the function. Supposedly the SBRR's President would be responsible for all "legal and financial matters." SunBelt Opening Ex. III-D-2 at 3. But it is preposterous to think that the President would have time to singlehandedly manage and supervise the many small and large legal issues that the SBRR would face. Legal expenses are not something that can be avoided or ignored by an efficient railroad. They are a cost of doing business, and a large company must have an adequate staff of in-house counsel to work with outside counsel to handle issues such as property disputes, employment litigation, contract negotiation, and tax work. Railroads must also ensure compliance with FRA, TSA, environmental, and STB regulations.

Railroads face many costs not faced by other businesses. For example, railroads, and railroads alone, are subject to the Federal Employers Liability Act ("FELA"),[160] which supplants state workers compensation schemes with a fault-based liability mechanism. FELA requires that compensation for death or injury be obtained by individual litigation establishing the employer's fault. With very limited exceptions, all other major U.S. companies absorb employee injury costs through a no-fault workers compensation system that does not require the expenditure of significant litigation resources. The fault-based FELA system generates a large employee injury

[160] 45 U.S.C. § 51 et seq.

litigation docket for railroads that other companies do not face. The SBRR's legal expenses must reflect the high transaction and handling costs of processing employee injury claims in this litigious model.

Mr. Brown accepts SunBelt's proposal that legal spending will be largely outsourced to outside law firms, but some internal resources are necessary to manage legal spending and supervise outside lawyers. To be conservative, Mr. Brown assumes that the SBRR could function with only one General Attorney. Indeed, much smaller railroads than the SBRR have in-house legal staff. The P&W has, at a minimum, a Secretary and General Counsel on staff and has just $32 million in revenue and 36,000 carloads.[161] The W&LE has a Director of Law and Government Relations, although it only moves 150,000 carloads a year.[162]

If SBRR is to function with only one attorney, however, it must allocate significant funds for outside counsel. Mr. Brown calculates total legal spend for the SBRR based upon a third-party benchmark and then allocates those costs between the in-house General Attorney and outside counsel fees. According to ALM, a specialty business news and information provider focused on law and commercial real estate, the median company with revenue between $100 million and $999 million spends .4% of revenue on law departments.[163] Thus, applying the .4% of revenue to the SBRR would yield total legal costs for the SBRR of $1.5 million. Mr. Brown subtracts the cost of one General Attorney from this $1.5 million and allocates the remainder to outside counsel spending. *See infra* at III-D-123 to III-D-124.

---

[161] *See* NS Reply WP "P&W Staff List" at 3; NS Reply WP "P&W 2011 10-K.pdf" at II-4, I-1.

[162] *See* NS Reply WP "Wheeling & Lake Erie Railway Staff List.pdf" at 3; NS Reply WP "Wheeling & Lake Erie Railway History.pdf."

[163] *See* NS Reply WP "ALM Legal Benchmarking Study.pdf."

(ii) Casualty Claims.

SunBelt acknowledges the need for casualty claims management, but it only provides a part-time employee for the function—the dual-hatted Manager of Claims & Internal Auditing—and $125,000 in outsourcing costs, which SunBelt claims (with no substantiation) is the equivalent of six claims investigators.[164] SunBelt Opening Ex. III-D-2 at 4. SunBelt overstates the degree to which the SBRR could effectively outsource the claims function and therefore provides insufficient in-house claims staffing.

Railroads typically deal with two types of claims: (1) freight claims for physical damage to a freight car or a shipment; and (2) casualty claims for injuries to employees or injuries or third-party property damage other than to lading. SunBelt appears to conflate these two different types of claims into a single department, which is atypical and not reasonable. Freight claims are typically best handled in a railroad's Operations Department, and NS's evidence provides for Operations Department staffing to handle freight claims.

SunBelt's proposal to effectively outsource the entire claims function is not feasible, because claims investigation is a fact-intensive endeavor that requires detailed knowledge of a railroad's operations. Casualty claims for railroad employees are compensated in a unique fashion not typical of other industries. As discussed above, instead of no-fault workers' compensation, railroad employees are subject to FELA. FELA requires substantial internal investigations following any type of injury to establish fault. The investigations necessitate substantial knowledge of the railroad's operations as well as the rail industry as a whole.[165] The best way to minimize the SBRR's loss is to keep this function in-house.

---

[164] *See* SunBelt WP "SBRR GA Outsourcing.xlsx."

[165] As a basis of comparison, NS's Casualty Claims Group requires a thirteen-month training program, with half of that time devoted to intensive study of railroad operations.

NS proposes a claims staff based on real-world railroad claims costs. Mr. Brown reviewed data from NS's claims processing department and found that NS received {{ }} individual casualty claims in 2011, which amounted to {{ }} claims per employee based on the total NS workforce of {{ }}. The average NS claims investigator handled {{ }} of those claims.[166] Scaling to the SBRR, based upon the number of employees, implies that the SBRR would have approximately {{ }} claims which, based on the average workload of an NS Claims Agent, would require a minimum of two Claims Agents. NS adds a Manager of Claims to coordinate claims activity and provide additional support for addressing major claims.

(iii) Human Resources.

SunBelt proposes a single Director-Human Resources for the SBRR. SunBelt Opening Ex. III-D-2 at 7. It justifies this low staffing because "start-up and training needs are met largely by out-sourcing." *Id.* But SunBelt provides no money for ongoing HR outsourcing costs. Instead, it pretends that all HR functions for a railroad on the verge of Class I status could be performed by a single person. This is not reasonable or consistent with real-world railroading, in which many smaller railroads have more than a single HR employee despite being smaller than the SBRR. *See* NS Reply WP "Montana Rail Link Staff List.pdf" (three HR staff members); NS Reply WP "Iowa Interstate Railroad Staff List.pdf" at 6 (two HR staff members); NS Reply WP "Wheeling & Lake Erie Railway Staff List.pdf" at 4 (two HR staff members). These internet contact directories likely do not show the complete HR staff for these railroads.

SunBelt may also have based its bare-bones HR staff on an absurd attrition rate of 1.8%. *See* SunBelt Opening Ex. III-D-2 at 20; SunBelt WP "Attrition Rate.pdf." SunBelt has no credible support for this attrition rate, which is based on a willful misreading of a document of

---

[166] {{ }}

particular unions' quit rate.[167] The idea that less than one out of 13 SBRR employees would leave his or her job each year is ludicrous and should be rejected out of hand. Mr. Brown proposed a more realistic attrition rate by job type, based on the attrition rate of a real-world railroad, NS.[168] Assuming that attrition rate, the SBRR will hire approximately 52 new SBRR employees per year. While NS accepts that recruitment and hiring would be outsourced, each of these 52 new employees will need to be processed by in-house staff for benefits choices; included in Equal Employment Opportunity and other reporting; and oriented to the SBRR.

Churn within the SBRR organization also creates substantial HR work. Each opening created by attrition could result in two or three direct movements within the SBRR (as employees are promoted up into open spots and as others take their place). Employees do not stay in the same position their entire careers, but rather move around for their own professional development, personal reasons, or to meet the business needs of the organization. Each of these movements creates a need for HR involvement to manage the transition. {{

}}[169]

[167] The Bureau of Labor Statistics defines "quit" as "A separation of an employee from an establishment that is initiated by the employee; a voluntary separation; a resignation from a job or position." *See* http://www.bls.gov/bls/glossary.htm. It does not include retirement, internal movements, or other job changes.

[168] Actual attrition rates derived from NS's experience range from 5.5% to 12% a year for various job types. *See* NS Reply WP "2008-2011 Agreement Attrition.xlsx"; NS Reply WP "2009-2011 Nonagreement Attrition.xlsx."

[169] *See* NS Reply WP "Internal Moves Data.pdf."

NS agrees that recruitment and certain other functions, like basic payroll tasks, can be efficiently outsourced by the SBRR. But there are still many requirements that need to be done within the company:

Diversity: By law, the SBRR must file several diversity and inclusion reports, including the EEO-1 Report categorizing company employment data by race, ethnicity, and gender[170] and the Functional Affirmative Action Program.[171] The HR Group must compile and complete these reports. They must also monitor and respond to any complaints regarding diversity issues within the SBRR and generally work to foster a diverse and tolerant work place.

Drug and Alcohol Testing: The HR Group will need to manage the SBRR's compliance with Department of Transportation regulations requiring drug and alcohol testing in various situations, including (1) new hires; (2) following specified incidents; (3) based on reasonable cause; and (4) randomly on an ongoing basis.[172] These tests must be collected, maintained and professionally managed. Drug and alcohol abuse counseling should also be provided to ensure workers are free from substance abuse issues and fit for duty. Department of Transportation regulations require railroads to make such treatment available.[173] Railroads must also submit annual reports to the FRA quantifying the drug and alcohol tests administered during the year.[174] Similarly, the Federal Motor Carrier Safety Administration has drug and alcohol testing and treatment requirements for holders of commercial driver's licenses ("CDLs").[175] On a railroad, many employees operating cranes, back hoes, and other equipment are required to have CDLs.

---

[170] Section 709(c), Title VII, Civil Rights Act of 1967; 29 C.F.R. § 1602.7.

[171] 41 C.F.R. § 60-2.

[172] *See* 49 C.F.R. §§ 219.1 *et seq.*

[173] 49 C.F.R. § 219.401.

[174] 49 C.F.R. § 219.800; NS Reply WP "DOT Drug and Alcohol Testing Form.pdf."

[175] 49 C.F.R. § 382.101 et seq.

In addition to HR staff to oversee this process, NS proposes an outsourcing cost of $2,812 to pay for the cost of these tests. The cost is based on the $13 NS pays per test[176] multiplied by the amount of tests administered, a number based on federal requirements[177] and NS's real-world testing rate.[178]

Training: The HR Group will also oversee all training needs. This includes acquiring training programs and ensuring they are properly delivered for specific subjects, such as workplace harassment and ethics. The HR Group will also be responsible for a basic orientation program for new hires to become familiar with the SBRR's functions and policies. Federal law also requires training and certification programs for certain railroad employees, which this Group can coordinate.[179]

Ethics: Modern companies the size of the SBRR must have an aggressive program to foster ethics. Employees must have the ability to file grievances anonymously and have them responded to in a timely and effective manner. The HR Group will need to manage and resolve such issues as they arrive. The Network, Inc., a provider of corporate governance, responsibility and compliance solutions, publishes an annual report on incident reporting within corporations. According to the 2012 report, in 2011 there were { } incidents per one thousand employees

[176] *See* NS Reply WP "NEC 673 Budget 2011.pdf."

[177] *See, e.g.*, 49 C.F.R. § 219.602.

[178] *See* NS Reply WP "SBRR Drug Test Cost Estimation.xlsx"; NS Reply WP "SBRR Operating Expense NS Reply.xlsx," Tab "Outside Services."

[179] *See* NS Reply WP "Legally Required Reporting (HR).pdf."

reported for the Transportation, Communications & Utilities industry.[180] Only { } of cases were cleared or required no action.[181]

To perform all of these functions, NS proposes a Director and two HR Managers. For an organization of this size, this would be a very conservative staffing level. According to Bloomberg-BNA, the median company with less than 250 to 499 employees has { } HR employees for every 100 employees and companies with 500 to 999 employees has { } HR employee for every 100 employees.[182] SunBelt proposes just .31 HR employees for every 100 full time employees, compared to NS's proposal of .45 HR employees for every 100 full time employees. Further, the same study found that the median per capita HR expense for employers with 250 to 499 employees is { }, far more than SunBelt's proposal of $426 per employee.[183] NS proposes a more reasonable $606 per employee in HR spending.[184]

Table III-D-25
HR Staffing Benchmark Comparison

	Bloomberg-BNA Benchmark	SunBelt Proposal	NS Reply
HR employees per 100 employees	{ }	**.31**	**.45**
HR Expense per Employee	{ }	**$426**	**$604**

[180] NS Reply WP "Ethics and Compliance 2012 Corporate Governance and Compliance Hotline Benchmarking.pdf" at 12.

[181] *Id.* at 18.

[182] *See* NS Reply WP "BNA HR Benchmarks and Analysis 2011.pdf" at 19. The medians are based on 2010 numbers, the most recent year for which accurate information is available.

[183] NS Reply WP "BNA HR Benchmark and Analysis 2011.pdf" at 42, 43.

[184] NS's proposed workforce of 672 employees falls into a different BNA Benchmark category that has a median of { } in HR spending per capita, far above the level of HR spending that NS is proposing.

(iv) IT

SunBelt proposes an IT staff of one Manager and six IT Specialists. The six specialists would each have a different function: an RMI Technician; a Help Desk Technician; a Network Engineer; a Programmer Development Technician; an Exchange 2007 Engineer; and a Security Technician. SunBelt Opening Ex. III-D-2 at 6. This staffing is much too small for a railroad on the verge of Class I status. Indeed, SunBelt recognizes that IT is "mission-critical" for the SBRR, claiming that the "computer and IT communications systems have been designed to meet the company's mission-critical technology needs to achieve operating efficiencies, customer satisfaction, optimum staffing, maximum productivity, and safe train operations." SunBelt Opening Ex. III-D-2 at 10. Computer systems do not maintain, fix, and correct themselves, and a modern railroad simply cannot function without hiring enough IT personnel to manage, maintain, and optimize those systems.

There are two major deficiencies in SunBelt's IT staffing. First, SunBelt has proposed a hodgepodge of systems with little integration or connectivity. While SunBelt is purchasing several IT systems, it has not proposed to purchase a platform to integrate and coordinate these disparate programs. SunBelt can choose to work without an integrating platform, but to do so it must have systems in place to integrate the inputs and outputs of the various stand alone systems handling individual tasks so they work across the railroad. For example, SunBelt will need to do extra work to make sure its HR system, Optimum Solutions, knows what its crew management system, PC Technology, is doing so that work hours are properly tracked and compensated. Similar integration is required across all of the SBRR's systems, and that integration must be carefully managed and maintained.[185]

---

[185] The need for systems to be integrated is well documented in IT literature. *See, e.g.*, NS Reply WP "Information integration: A New Generation of Information Technology.pdf" ("The

Second, SunBelt does not provide sufficient IT staff and redundancy for a railroad that will be operating around the clock. As SunBelt explained, IT is "mission-critical" for the SBRR. SunBelt Opening Ex. III-D-2 at 10. IT staff needs to be on call to address any issue that arises at any time. A modern railroad, particularly one moving 7,300 carloads of TIH materials annually, will need to have IT staff on call in case any issue arises with any of the IT systems or applications its employees use.

To solve these deficiencies, NS proposes two alterations to the SBRR's IT staffing: additional IT specialists; and additional help desk technicians.

IT Specialists: SunBelt proposes an RMI specialist. But given the lack of integration between the SBRR's IT systems and the need for many of these systems to function smoothly on a 24/7 basis, NS proposes four additional IT specialists. Each of these specialists would be assigned to a functional area: Marketing; Operations; Finance; and Other. With these assigned specialists, each function within the SBRR would have a designated point of contact both to ensure systems are properly running and to address connectivity issues between non-integrated systems.

Help Desk Technicians: Because the SBRR will operate on a 24/7 basis and technology is so critical, IT support needs to operate on the same basis. SunBelt's proposal of a single Help

---

challenge facing businesses today is information integration. Enterprise applications must interact with databases, application servers, content management systems, data warehouses, workflow systems, search engines, message queues, Web crawlers, mining and analysis packages, and other enterprise integration applications. They must use a variety of programming interfaces and understand a variety of languages and formats. They must extract and combine data in multiple formats generated by multiple delivery mechanisms. Clearly, the boundaries that have traditionally existed between database management systems, content management systems, midtier caches, data warehouses, and other data management systems are blurring, and there is a great need for a platform that provides a unified view of all of these services and the data they deliver.").

Desk Technician to provide all support from a single location is not realistic. NS proposes the headquarters help desk be staffed with five Help Desk Technicians to provide the desk with full coverage. In addition, NS proposes two field Technicians to provide any necessary support that needs to be handled on a time-sensitive basis, but cannot be done remotely. The two IT field technicians would be based at two of the largest field locations: Meridian and Selma.

Third-party benchmarks support NS's IT staffing proposal. According to Gartner, a technology research company, IT employees represent an average of { } of full time employees in transportation industry companies.[186] SunBelt proposes that 2.2% of full time employees would be IT employees. NS's conservative proposal of 2.1% of full time employees, less than Sunbelt's proposal, compares favorably to a third party benchmark and shows that its increased staffing is reasonable.

(v) Asset Protection.

NS proposes to organize the SBRR's environmental and police staff under an Asset Protection Group.[187]

(1) Environmental Staffing

The Environmental Group at the SBRR would have two different areas of work. First, the SBRR needs sufficient personnel to ensure compliance with basic environmental regulations like the Clean Water Act, Clean Air Act, and the Resource Conservation and Recovery Act. These are core environmental functions that any railroad must perform. Second, the Environmental Group would be responsible for hazmat and TIH compliance. SunBelt proposes that the SBRR would collect $119.5 million in revenues in 2012 from transporting 63,600

[186] NS Reply WP "Gartner IT Key Metrics.pdf" at 54.

[187] For the Asset Protection Group, Mr. Brown consulted with NS expert Joseph Osborne, a former NS Vice President – Coal Transportation and Planning and Vice President – Chemicals. Mr. Osborne's qualifications are further described in Section IV.

carloads of hazardous materials traffic. 7,300 of those carloads and $40.4 million of that revenue is attributable to transporting TIH and PIH chemicals. But the SBRR claims this revenue without accounting for the full costs that a railroad incurs to transport it. SunBelt's proposed staffing does not include sufficient personnel to either (1) manage compliance with the host of regulations governing the transportation of hazmat and TIH/PIH traffic; or (2) respond to hazardous materials safety and security issues that might occur during the transportation of these materials. Meeting these requirements is essential for a railroad transporting TIH/PIH and hazmat traffic.[188]

SunBelt proposes minimal environmental staffing of just two individuals, which is completely insufficient for these two major functions. SunBelt proposes a single Manager - Testing and Environmental, who is "responsible for testing of materials and environmental compliance, including investigation of any problems involving cars containing hazardous commodities while on the SBRR (and related federal reporting requirements)." SunBelt Opening Ex. III-D-1 at 7. The second proposed employee is the Manager - Environmental/Safety/Training in the Maintenance of Way Department who "interfaces with federal and state environmental authorities on compliance, and monitors environmental compliance with respect to the SBRR's MOW activities . . . and is responsible for MOW employee training and compliance with hazmat practices and procedures." SunBelt Opening Ex. III-D-3 at 15. But the legal obligations of a railroad's Environmental Group far surpass the ability of two individuals to handle.

---

[188] SunBelt's failure to fully account for this important functionality is especially glaring given that plaintiff Sunbelt, through its parent company Olin, is one of the industry leaders in demanding safe handling of its hazardous material shipments, and compliance with all government rules and regulations, by its rail carriers. Olin demonstrates this through its membership in the American Chemistry Council's (ACC) Responsible Care program, as well as its active support for TRANSCAER and CHLOREP (CHLORine Emergency Plan) programs.

SunBelt's minimal environmental staffing is untethered from the reality of running a railroad with 7,300 carloads of TIH shipments and the basic environmental obligations under the law. SunBelt presents no plan for the SBRR to handle these requirements; instead, it virtually ignores them.[189] This indifference is particularly surprising because SunBelt knows full well the complexities of hazmat transportation and associated regulatory compliance. NS's experts, on the other hand, developed environmental staffing for the SBRR in light of real-world legal and practical requirements.

One of SunBelt's attempted justifications for its failure to provide adequate staff is the assumption that the SBRR would only require "infrequent" cleanups because "[d]erailments are less likely to occur on the SBRR than on a Class I railroad such as NS because the SBRR begins operations July 30, 2011 with a brand-new track structure that includes [continuous welded rail] on all of its main tracks."[190] In the first place, SunBelt ignores the enormous amounts of compliance and training work that the SBRR would be required to undertake regardless of derailments. Moreover, SunBelt's statement highlights a fundamental misunderstanding of the causes of derailments and hazardous materials releases. In 2011, less than 41% of derailments were track-related.[191] And SunBelt wrongly assumes derailments are the cause of all incidents involving the release of hazardous materials—completely ignoring non-accident releases

[189] Having failed to justify its evidence on Opening, SunBelt is foreclosed from providing any additional support in this case. *See, e.g.*, *SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2 (STB served Apr. 4, 2003).

[190] SunBelt Opening Ex. III-D-3 at 26-27.

[191] *See* NS Reply WP "Derailment Report.pdf." Other significant causes of derailments are human error (30%), equipment issues (12.4%) and signal problems (1%).

("NARS") caused by leaks, splashes, improperly secured or defective tank car valves, or other reasons.[192]

Below is a short summary of the major environmental rules with which the SBRR would be required to comply.

The federal government has long had specific hazmat transportation rules in place for railroads, such as minimum training requirements for those transporting hazmat shipments[193] and a 48 hour rule to keep shipments of hazmat from remaining on a rail line for extended periods.[194] But following the September 11, 2001 terrorist attacks, many agencies, the Transportation Security Administration ("TSA") and Pipeline and Hazardous Materials Safety Administration ("PHMSA") in particular, have sharply increased their focus on the safety and security of the transportation of TIH shipments by rail. Both agencies have released significant guidance and rulemakings that all railroads transporting TIH, regardless of size, are obligated to follow. These requirements include:

- TSA's Recommended Security Action Items.[195] TSA has issued three sets of Action Items for the rail transportation of TIH. The action items require the railroads to:
  - Designate a railroad employee with overall responsibility for hazmat transportation security planning;
  - Conduct audits to verify that security plans are being effectively implemented;
  - Restrict access to information about hazmat shipments and security measures;

---

[192] NARS means "the unintentional release of a hazardous material while in transportation, including loading and unloading while in railroad possession, that is not caused by a derailment, collision or other rail related accident." *See* http://nar.aar.com.

[193] 49 C.F.R. §§ 172.700 et seq.

[194] 49 C.F.R. § 174.14.

[195] *See Rail Transportation Security*, 73 Fed. Reg. 72130, 72154, n.50 (Nov. 26, 2008).

- Establish procedures for performing background checks on contractor employees;
- Develop site-specific security plans to address the risk posed by transportation of bulk TIH products in HTUAs;
- Reduce the number of hours TIH cars are held in yards, terminals and on railroad-controlled leased track in HTUAs; and
- Minimize the occurrence of unattended TIH rail cars in HTUAs.

- Rail Transportation Security Rule.[196] On November 26, 2008, TSA finalized this rule requiring railroads to, among other things:
  - Develop a system that allows them to provide location and shipping information for TIH rail cars under their physical custody within five minutes of a request by TSA[197]; and
  - Enact strict "chain of custody and control requirements" when transferring TIH cars to or from shippers or other carriers.[198]
- PHMSA Hazardous Materials Regulations I.[199] PHMSA enacted new rules on November 26, 2008. The rules require railroads to:
  - Compile data concerning hazmat shipments transported;[200]
  - Analyze the safety and security of the rail transportation route used as well as potential alternative routes;[201]
  - Use the rail transportation route analysis to determine the safest and most secure practicable route available;[202]
  - Retain the rail transportation route analysis for potential review by DOT or DHS officials[203]; and

---

[196] *Rail Transportation Security*, 73 Fed. Reg. 72130, 72154, n.50 (Nov. 26, 2008).

[197] 49 C.F.R. § 1580.103(d).

[198] 49 C.F.R. § 1580.107.

[199] *Hazardous Materials: Enhancing Rail Transportation Safety and Security for Hazardous Materials Shipments*, 73 Fed. Reg. 72182 (Nov. 26, 2008).

[200] 49 C.F.R. § 172.820(b).

[201] 49 C.F.R. § 172.820(c).

[202] 49 C.F.R. § 172.820(j).

- Coordinate with shippers to minimize the time a rail car containing hazmat is stored and prevent unauthorized access to the materials during storage or delays in transit, to mitigate risk to population centers associated with in-transit storage; and[204]

- PHMSA Hazardous Materials Regulations II.[205] PHMSA enacted additional rules in January of 2009. The rules require railroads to:

  - Enact commodity-specific improvements in safety features and design standards for new rail cars[206]; and

  - Set a 50 mile-per-hour speed limit on all trains transporting loaded TIH products.[207]

The industry has also established its own "Recommended Railroad Operating Practices for Transportation of Hazardous Materials," a result of collaboration between the railroads and chemical companies.[208] The recommendations define "key trains" as those with PIH, TIH, Spent Nuclear Fuel, or High Level Radioactive Waste, and provides several restrictions on these trains such as which siding or auxiliary track they can go on.

This complex and ever-changing regulatory landscape requires TIH rail carriers to maintain trained staff who are capable of monitoring regulatory changes and making certain that other SBRR personnel are properly complying with the rules. Real-world railroads have incurred, and will continue to incur, substantial costs to comply with this series of government measures. Violating any of these rules is not only a safety and security risk, but could also lead

---

[203] 49 C.F.R. § 172.820(i).

[204] 49 C.F.R. § 172.820(h). The FRA promulgated a related rule for reviewing the deficiency of a railroad carrier's route selection, analysis and documentation. 49 C.F.R. § 209.501.

[205] *Hazardous Materials: Enhancing Rail Transportation Safety and Security for Hazardous Materials Shipments*, 74 Fed. Reg. 1770 (Jan. 13, 2009).

[206] 49 C.F.R. Part 179.

[207] 49 C.F.R. § 174.86.

[208] *See* NS Reply WP "AAR Circulation No. OT-55-J."

to the imposition of civil penalties or other enforcement action.[209] The SBRR will be no different than any other real-world railroad in having to comply with these rules. Yet SunBelt has proposed almost no personnel to monitor and coordinate the SBRR's activities in this area of intense regulatory scrutiny and public concern.

The SBRR will also need to comply with multiple environmental laws, regulations, and industry practices. For example, through its authority under the Clean Air Act,[210] the EPA has promulgated regulations to reduce emissions from locomotives.[211] The SBRR will require wastewater treatment facilities at any yard or site where fuel is stored and waste disposed of, necessitating compliance with the Clean Water Act[212] and its accompanying regulations.[213] The Resource Conservation and Recovery Act[214] specifically applies to rail transportation of hazardous materials, mandating certain procedures when transporting hazardous waste, including obtaining EPA identification numbers to track waste, specific detailed manifest documentation requirements, and requirements for cleaning up any materials discharge.[215] The Emergency Planning & Community Right-to-Know Act[216] provides for the notification of emergency releases of chemicals to state and local emergency planning and response teams. Its regulations specifically apply the emergency release notification requirements to the rolling stock of

---

[209] *See* 49 C.F.R. § 1503.

[210] 49 U.S.C. §§ 7401 et seq.

[211] 40 C.F.R. Part 92

[212] 33 U.S.C. §§ 1251 et seq.

[213] 40 C.F.R. Part 122.

[214] 42 U.S.C. § 6901.

[215] 40 C.F.R. Part 263; *See also* NS Reply WP "RCRA In Focus Motor Freight & Railroad Transportation.pdf."

[216] 42 U.S.C. § 11001 et seq.

railroads.[217] The rules for these and many other environmental statutes are complicated and subject to change. Only a proper amount of environmental staffing can follow developing rules and ensure the SBRR is meeting its legal obligations under the environmental statutes.

Mr. Brown and Mr. Osborne propose an Environmental Group of five individuals. The Group would be headed by a Director – Environmental Protection. This individual oversees all environmental functions. The Director would be assisted by two Managers to head individual functions.

Manager – Hazmat and TIH Compliance. The Manager – Hazmat and TIH Compliance, and two Assistant Managers, would oversee all environmental hazmat and TIH issues. Given the SBRR's large amount of hazmat traffic, these three individuals will head efforts to ensure full compliance with the hazmat specific rules promulgated by multiple government agencies such as the PHMSA Hazardous Materials Regulations I and II describe above.

The Manager will also coordinate TIH-related infrastructure security, serving as the liaison between the Environmental Group and the SBRR's police to make certain all SBRR hazmat shipments are properly and securely handled. The Manager will be the individual with overall responsibility for hazmat transportation security planning, as TSA requested in its Recommended Security Action Items. The Manager and Assistant Managers will have frontline responsibility for implementing all of the TSA hazmat regulations at the SBRR including: (1) establishing and ensuring compliance with chain of custody and control requirements; (2) undertaking rail transportation route analysis; and (3) coordinating procedures to minimize hazmat cars' dwell time while in transit. The Manager and Assistant Managers will be responsible for developing and refining the SBRR's security plan, performing in-depth security

[217] 40 C.F.R. § 355.61.

training, and ensuring compliance with numerous other requirements that apply to rail transportation of hazardous materials. If a hazmat release were to occur, the Manager and his Assistant Managers would work with the customer to determine the appropriate response and also avoid similar, future incidents.

Manager – Environmental Engineering, Remediation, and Compliance. The Manager – Environmental Engineering, Remediation, and Compliance would oversee all environmental monitoring and inspections in the field, ensuring continued compliance with environmental laws. Required monitoring and inspections include the Clean Water Act—to make sure certain water pollutant discharge limits are not exceeded— and testing for the Clean Air Act—to guarantee the SBRR does not violate National Ambient Air Quality Standards. The Manager – Environmental Engineering, Remediation, and Compliace is also generally responsible for ensuring the SBRR's operations are being undertaken in an environmentally responsible, and legally compliant, manner. If any type of release does occur, the Manager and Assistant Manager would be in charge of the SBRR's compliance with the Emergency Planning and Community Right to Know Act. An Assistant Manager will perform necessary field inspections and testing and otherwise assist the Manager.

Given the environmental issues all railroads face, but particularly one with a vast amount of hazmat and TIH carloads, a five-person Environmental Group is conservative and reasonable.

(2) Police

SunBelt proposes that SBRR security would consist of two Security Agents reporting to a Director of Real Estate and Security. SunBelt Opening Ex. III-D-2 at 4-5. SunBelt rationalizes this minimal staffing by explaining that the SBRR "may also call in local public police forces, should assistance to handle a particular incident be required. This is common practice for railroads which rely increasingly on local police." *Id.* SunBelt provides no support for this

statement, and it is not consistent with real-world practice. In the first place, it is not at all "common practice" for real-world railroads carrying substantial volumes of TIH to neglect to hire sufficient security personnel and instead "rely on local police." Moreover, on the occasions when railroads do seek assistance from local police to augment railroad police (such as for responses to extraordinary events), railroads must pay for those services. While the SBRR conceivably could pay local police forces to augment SBRR police forces, SunBelt did not include these costs in their submission and cannot therefore simply assume that it would receive substantial local police assistance for free. Because of the significant security, regulatory and asset protection requirements of all railroads, especially those handling large volumes of TIH traffic such as chlorine, sufficient police personnel are required to cover the 585 mile, three state territory over which the SBRR Network is spread. Government regulations would require the SBRR to provide the forces necessary to meet security, safety and asset protection requirements. SunBelt's proposal is reactive—*i.e.*, waiting for a crime or security failure to occur—and then relying on local police to handle the problem. But government regulation, and the standard real-world practice of railroads, is to be proactive and work to prevent safety and security problems from occurring in the first place.

Real-world NS police statistics for the territory of the SBRR can provide some insight into the SBRR's police staffing needs. In 2011, NS experienced a total of {{ }} criminal and non-criminal incidents requiring an investigation in the territory encompassed by the SBRR. Of these, 31% were criminal.[218]

[218] *See* NS Reply WP "NS Incidents in SBRR Network.pdf."

A real-world railroad's police force is responsible for a multitude of functions, which NS proposes to organize at the SBRR into groups under a Chief of Police who will be supported by an Administrative Assistant.[219]

Communications. The Communications Group will work to ensure that the police have sufficient communications equipment to meet the SBRR's operational and safety needs and to comply with regulatory reporting and notification requirements. The Communications Group also documents all railroad emergencies, road crossing incidents, trespasser violations, potential security threats, and compliance with regulatory reporting rules. The Group will be responsible for manning the required 24-hour toll-free telephone number for the public to report emergencies or other unsafe conditions at highway-rail and pathway grade crossings and helping to direct any necessary response, in accordance with applicable rules. *See* NS Reply WP "77 Fed. Reg. 35164 (June 12, 2012).pdf."[220] To illustrate the likely call volume, in 2011, the Alabama Division of NS, a third of which is encompassed by the SBRR, received 2,484 police calls.[221] The Communications Group will also serve as the required point of contact for surveillance and notification for all events on the SBRR's network related to 1) The Department of Homeland Security, TSA and the Joint Terrorism Task Force; 2) AAR Communications Group; and 3) Department of Defense shipments.

---

[219] *See* NS Reply WP "SBRR Network NS Response Police Headcount.xlsx."

[220] The rules provide limited exceptions to the 24-hour nature of the toll-free telephone number but they do not apply to the SBRR. Further, because the SBRR will be a Class I railroad in 2015, it would be like all real-world Class I railroads which "currently have telephone systems in place." NS Reply WP "77 Fed. Reg. 35164 (June 12, 2012).pdf" at 16.

[221] *See* NS Reply WP "2011 Call Volume Report.pdf." The SBRR covers 31.5% of the Alabama Division, 578 out of 1,836 miles. 31.5% of the Alabama Division's call would be 770. Regardless of the volume of calls, by law the railroad must maintain a 24 hour toll line. *See supra.*

SunBelt did not provide for the necessary police communications assets, infrastructure, or personnel. Mr. Brown and Mr. Osborne propose that eight trained staff be assigned to support all of the important communications responsibilities of the SBRR's police force. Eight individuals is a conservative number that assumes two 24/7 positions with each person covering 274 shifts per year not including any vacations, training, or sick days. When necessary, the Chief Dispatcher will serve as a back-up.

Training and Administration. Railroad police officers are required to be commissioned police officers in the states through which their railroad operates. *See, e.g.*, 49 U.S.C. § 28101 ("[A] rail police officer who is employed by a rail carrier and certified or commissioned as a police officer under the laws of a State may enforce the laws of any jurisdiction in which the rail carrier owns property."). State requirements vary, but require the railroad police officer to meet at least some qualifications. *See, e.g.*, MISS. CODE ANN. § 77-7-505 ("[T]he Commissioner of Public Safety may appoint and commission as a railroad police officer any *qualified* person named by such chief police officer") (emphasis added). For business purposes, police must also maintain records of all security and asset protection incidents and training undertaken by the police force. The railroad's police force must also maintain employee identification and security requirements and conduct appropriate identity and background checks on contractors and new hires.

SunBelt provided no personnel to support this function. Mr. Brown and Mr. Osborne propose one individual to support the police administratively.

Special Investigations. Railroad police forces require a specialized group to protect against fraud and theft of customer and SBRR network property. A Special Investigations Group requires specialized skill sets in investigative and surveillance techniques that the broader police

force does not need to possess. The Special Investigations Group protects against employee fraud as well as theft and burglary of customer shipments. Without this function, the threat of enormous fraud, theft, and damage costs is great. NS, for example, has {{ }} active investigations ongoing in the territory encompassed by the SBRR.

SunBelt did not propose any police personnel to address fraud and theft on the SBRR. Mr. Brown and Mr. Osborne propose three Police Officers to staff this function.

Police Force. The SBRR also needs its general police force. Some of the functions of this force include:

- Security Infrastructure and Asset Protection and Incident Investigation: Railroad police forces must have monitoring and surveillance capabilities to proactively protect the SBRR's infrastructure, right of way, trains, and customer shipments. In addition, the police force must respond to incidents of burglary, trespassing and other threats to normal rail operations. The railroad's police must also comply with the Customs-Trade Partnership Against Terrorism and TSA rules regarding High Threat Urban Areas ("HTUAs"). The SBRR traverses the New Orleans HTUA.[222]

- Emergency Response: The police will help with the frontline response to emergency incidents, including applying special training and specialized assets to assist swiftly in any emergency or security incident on the SBRR.

- Surveillance and Protection for Military Shipments: The SBRR Police are required by the Department of Defense to provide surveillance and monitoring of their military shipments across the SBRR Network.[223]

- Police Relations: The railroad's police must maintain regular contact and joint training with all law enforcement agencies in the jurisdictions through which the SBRR operates. This is standard practice in the rail industry, and its practical application means that critical first responder coordination is immediately available in the event of any security, emergency, train accident, hazmat or criminal incident.

---

[222] *See* NS Reply WP "New Orleans Area HTUA.pdf."

[223] *See* NS Reply WP "Military Freight Traffic Unified Rules" at 152 et seq (summarizing rail transportation service provider rules).

Mr. Brown and Mr. Osborne propose a conservative eight police personnel across the SBRR's network and one Special Agent in Charge to meet these police requirements.

The total police force of 22 is not inconsistent with other railroads. For example, when CN and Grand Trunk acquired the Elgin Joliet & Eastern ("EJ&E") Railway in 2007, it reported a police force of five.[224] At 198 track miles, it was approximately one-third the size of the SBRR.[225] The proposal here is slightly more than three times the EJ&E, which is justified for two reasons. First, the EJ&E documentation may have some of the police administrative functions in other lines, such as clerks.[226] Second, the SBRR has a vast amount of TIH traffic, including 7,300 carloads annually with an average length of 400 miles. This requires a significantly higher level of security than the EJ&E.

(vi) Real Estate.

SunBelt has recognized the need for an SBRR real estate function, correctly stating that someone would need to be "responsible for sales, acquisitions and easements of real estate on the SBRR." SunBelt Ex. III-D-2 at 5. SunBelt proposes a Director – Real Estate & Security for this function.

NS accepts this position. The Director will be responsible for issues relating to the SBRR physical property. The individual will liaise with the Police Chief and address day-to-day real estate issues arising along the SBRR. The Director is also supported by the Manager of Real Estate & Development. This position is responsible for short- and long-term real estate issues including negotiating sales, acquisition, or lease terms; interacting with government authorities;

---

[224] *See* NS Reply WP "CN – Control – EJ&E.pdf" at 248.

[225] *Id.* at 19.

[226] *Id.* at 248.

design and engineering support; and any other activity related to the proper and efficient use of SBRR property.

Table III-D-26
Administration Department Staff Comparison

Position	SunBelt Opening	NS Reply	Difference
VP and Admin	0	2	2
Legal	0	1	1
Claims	1	3	2
HR	1	3	2
IT	7	13	10
Environmental	2	6	4
Police	2	22	20
Real Estate	1	2	1
Total	14	52	38

iii. Compensation

(a) Salaries for Non-Executives

NS accepts SunBelt's proposed approach to use data from NS Wage Forms A and B to calculate salaries for the non-executive personnel of the SBRR, with one exception. SunBelt misclassifies the Director – Sales and Marketing as "Corp Staff Manager" (STB Wage Form A & B Code 102). That position, and the six Marketing Managers NS adds, should be classified as "Sales and Traffic Representatives and Agents" (Code 205). *See* SunBelt Opening WP "SBRR Operating Expense NS Reply.xls," Tab "Summary," Row 239; SunBelt Opening WP "SBRR Salaries.xlsx Rows 8, 17. The Board's Wage Form A & B Code number 205 is the only code that directly references sales, the function of these Marketing & Sales Department employees. The reclassification has a moderate effect on marketing salaries, increasing them from $90,266 to $98,737.

(b) Executive Compensation

SunBelt has significantly understated compensation for the SBRR's executives in two major ways. First, SunBelt has chosen a clearly flawed comparison railroad in selecting the

P&W. SunBelt Opening Ex. III-D-2 at 8. SunBelt accurately notes that the P&W has similar route mileage to the SBRR. *Id.* But the P&W's 2011 operating revenue was just $32 million with 147 full-time employees.[227] The SBRR would dwarf the P&W with $387 million in Base Year operating revenue and 672 employees. The SBRR would be a far more complex operation, requiring more robust executive leadership.

There are much more appropriate comparison railroads, including RailAmerica and the G&W.[228] In 2011, the G&W had $558 million in non-Australian operating revenue, 785,377 non-Australian carloads, and 2,620 full-time employees[229] (with an estimated 2,100 in North America).[230] RailAmerica had $551 million in revenue, 840,000 carloads, and 1,808 employees.[231] These are much more comparable to the SBRR than the P&W.

Second, SunBelt ignores other compensation besides base salary, such as stock-based awards, that are major elements of executive compensation at all railroads, including the P&W. SunBelt's failure to account for other compensation is demonstrated by a review of its salaries workpaper. SunBelt claims, for example, that the President and CEO of the P&W has a salary of $437,231. But as its own workpaper demonstrates, the President and CEO of P&W had a total salary of $488,301 including "All Other Compensation."[232] "All Other Compensation" includes

---

[227] *See* NS Reply WP "P&W 2011 10-K" at I-4, II-4.

[228] In 2012, the G&W acquired RailAmerica. The numbers used here, from 2011, predate the acquisition.

[229] *Id.* at 11, 14, 50.

[230] *See* NS Reply WP "G&W and RA Stats.pdf."

[231] *See* NS Reply WP "RA 2011 10-K" at 3, 8, and 27.

[232] SunBelt Opening WP "III-D-4 Salaries.pdf" at 12.

funds paid to a retirement account, life insurance premiums, garage rental fees, and lodging and meals.[233]

NS proposes to use an average of executive compensation from RailAmerica and G&W, scaled to the SBRR based on revenue, including all non-salary compensation such as bonuses, stock awards, and miscellaneous compensation. RailAmerica and the G&W, like other corporations, have established compensation packages that include a base salary and incentive compensation, made up of cash and restricted stock units.[234] The Board previously held that stock compensation should not be considered part of compensation because, at the time, stock compensation was not counted as an expense by the railroad. *See Otter Tail*, STB Docket No. 42071, at C-12; *AEP Texas*, STB Docket No. 41191, (Sub-No. 1), at 59; *WFA I*, STB Docket No. 42088, at 49. Today, however, RailAmerica, G&W, and all other railroads are legally required to treat the cost of stock awards as an expense under FASB Statement of Financial Accounting Standards No. 123. *See, e.g.,* NS Reply WP "2005 RailAmerica 10-K.pdf" at 38 ("In December 2004, the FASB issued SFAS No. 123 (revised 2004), "Share-Based Payment" (SFAS No. 123-R), which amends SFAS No. 123, to require companies to recognize, in their financial statements, the cost of employee services received in exchange for equity instruments issued, and liabilities incurred, to employees in share-based payment transactions, such as employee stock options and similar awards."). Thus, the Board's prior reasoning for failing to consider stock options is no longer applicable. Moreover, including non-salary-based compensation is also consistent with industry trends. In 2011, the Tower Watson Railroad Industry Compensation

---

[233] *Id.*

[234] NS Reply WP "2012 RailAmerica Proxy Statement.pdf" at 21-22; NS Reply WP "2012 G&W Proxy Statement.pdf" at 26.

Practices Survey Results showed that { } of average railroad CEO pay and { } of average railroad top executive pay is in long-term incentives, made up largely of stock.[235]

Table III-D-27 presents executive compensation for RailAmerica and the G&W and the average of the two, scaled to the SBRR's revenues, which NS proposes to apply to the SBRR.[236] Table III-D-27 also shows executive compensation at KCS and the P&W, which are poor comparisons to the SBRR.

Table III-D-27
Executive Compensation Comparison

		P&W	KCS	RA	GW
Revenue (in thousands)		$31,698	$1,155,720	$ 551,123	$582,947
Compensation:	CEO	$488,301	$3,347,314	$2,023,273	$3,612,309
	COO	$253,188	$2,376,354	$923,344	$1,284,076
	Avg VP or Other	$176,826	$1,267,636	$1,199,010	$921,649
Compensation Per Thousand in Revenue:	CEO	$15.40	$2.90	$3.67	$6.20
	COO	$7.99	$2.06	$1.68	$2.20
	Avg VP or Other	$5.58	$1.10	$2.18	$1.58
Compensation Scaled to SBRR Revenues:	CEO	$5,961,653	$1,120,869	$1,420,748	$2,398,097
	COO	$3,091,165	$795,737	$648,375	$852,457
	Avg VP or Other	$2,158,864	$424,476	$841,948	$611,854

NS's proposed executive compensation compares favorably to benchmark studies. In 2011, the average CEO compensation for Class I railroads was over { } NS Reply WP "2011 Railroad Industry Compensation Survey.pdf" at 2. The average compensation for top financial executives was { } and the average compensation for top legal executives was { } NS Reply WP "2011 Railroad Industry Compensation Survey.pdf" at 3, 4.

[235] NS Reply WP "2011 Railroad Industry Compensation Practices Survey Results" at 8. Long-Term Incentives include stock options, restricted stock, and performance plans, which are also comprised largely of stock. *Id.* at 18, 23.

[236] *See also* NS Reply WP "Executive Compensation.xlsx."

Because SunBelt will become a Class I in 2015, these proposed compensation rates are extremely conservative, but far better supported than SunBelt's proposal.

(c) Outside Director Compensation

SunBelt also proposes that the Outside Directors would be uncompensated. This is completely unrealistic for a large company where the Outside Directors would be expected to take on multiple oversight responsibilities in critical areas like audit, compensation, and corporate governance. NS adopts the same compensation benchmark it used for executive compensation—*i.e.*, the average of G&W and RailAmerica, scaled by carloads to the SBRR—and applies it to Outside Directors. Each Director would receive $97,619 in compensation.[237]

(d) Fringe Benefits

NS applies the same fringe benefit ratio is proposes for its operating personnel. *See supra* III-D-38 to III-D-41.

iv. Materials, Supplies and Equipment

NS accepts SunBelt's proposed unit costs for the various materials, supplies, and equipment necessary for SBRR employees. The additional employees in NS's proposed SBRR staffing will require a corresponding increase in the total SBRR expenditure for materials, supplies, and equipment. Utilities and copier maintenance contract costs, similarly, are increased proportional to the increase in staffing. These increases and the supporting calculations are set forth in NS Reply WP "SBRR Operating Expense NS Reply.xlsx," Tab "Summary."

[237] *See* NS Reply WP "Executive Compensation.xlsx," Tab "G&W and RA."

v. Other

(a) IT

NS accepts the IT systems that SunBelt has proposed for the SBRR, but adjusts these systems for the larger workforce NS proposes.[238] SunBelt, however, drastically understates its estimate of software implementation costs. SunBelt proposes a one-time RMI implementation cost of $100,000, a figure that it acknowledges is an "Estimate" and for which it provides no support.[239] *See* SunBelt Opening WP "Exhibit III-D-2 Information Technology.pdf" at 2. In contrast, NS developed RMI implementation costs for the SBRR after consulting with RMI about the recent experiences of railroads who implemented RMI. In particular, NS learned from RMI that {{

}} experience suggests that the SBRR's implementation costs would amount to $4.5 million.

SunBelt also fails to provide SBRR crews with Mobile Crew Reporting ("M-Crew") devices, and it does not include a cost for RMI's Mobile Crew Reporting Service. Mobile crew reporting allows employees in the field to enter information on train and crew events into wireless devices that can report that information to the RMI system in realtime. Similar devices

---

[238] For example, SunBelt proposes only five licenses for its accounting system. SunBelt Opening WP "Exhibit III-D-2 Information Technology.pdf" at 70. NS increases this to 25 licenses.

[239] Having failed to adequately support its evidence on Opening, SunBelt is precluded from doing so in this case. *See, e.g., SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2 (served Apr. 4, 2003).

are standard among other railroads, both because real-time reporting is a key part of improving efficiency and network fluidity and because M-Crew reporting eliminates the need for other clerical staff to input reports from the field. A least-cost, most-efficient SARR of the SBRR's size and complexity would need Mobile Crew Reporting. Therefore, Mr. Brown added the hardware cost of M-Crew devices and the software cost of RMI's Mobile Crew Reporting Service to the SBRR's operating costs. These costs are based on an estimate provided by RMI, indexed back to 2009 based on the AAR Railroad Cost Recovery Index for the east.[240] NS proposes that an M-Crew device be added for most trains, except short movements with little need for real-time reporting.

SunBelt proposes a one-time training cost for its Accounting and HR systems of $25,000. *See* SunBelt Opening WP "Exhibit III-D-2 Information Technology.pdf" at 2. These costs are completely unsupported by SunBelt. Mr. Brown, by contrast, developed a real-world estimate of implementation costs based on published research. There have been a number of recent studies on the average implementation costs of enterprise resource planning ("ERP") software, which typically includes accounting and HR functions, that finds that the average cost of ERP implementation is four to seven times the cost of the software itself. *See* NS Reply WP "ERP Implementation Studies.docx." These costs include actual installation, the development of computer-based training courses, creation of railroad-specific instructional sheets, and programming and deployment of railroad-specific modules for particular activities. Based on this evidence, Mr. Brown concluded that a realistic ERP implementation cost would be approximately four times the cost of the software. That cost is at the low end of published studies of ERP software-to-implementation cost ratios. Further, to be conservative, NS accepts

[240] *See* NS Reply WP "RMI M-Crew Quote.pdf"; NS Reply WP "SBRR Operating Expense NS Reply.xlsx," Tab "IT Expense."

SunBelt's unsupported HR implementation cost of $25,000 because there is no software cost from which to calculate an implementation cost.

Finally, NS adds security and redundancy systems. SunBelt has provided for network security at its headquarters. NS adds the same security system to the SBRR's eleven field offices. SunBelt's communications system is a microwave and commercial telephone system. To provide a back-up in case of outages, NS adds a T1 telecom connection at New Orleans, Meridian, and Selma. In the event of an outage to the microwave system, the T1 telecom connection will allow the SBRR to continue major operations.[241]

(b) Other Outsourced Functions

SunBelt includes a special section in its Opening Evidence for "other out-sourced functions." SunBelt Opening at III-D-16; SunBelt Opening Ex. III-D-2 at 18. In total, SunBelt argues it can outsource "several finance and accounting functions, including preparation of income, property and payroll tax returns and financial/account auditing, legal services, including claims administration and investigation, and administration of the company's retirement plan."[242]

SunBelt presented a single spreadsheet listing the outsourced item and proposed costs, offering little to no justification for these numbers.[243] Having failed to support its evidence on Opening, SunBelt is foreclosed from doing so in this case.[244] NS has reviewed each of these functions and determined which are appropriate for outsourcing and what a reasonable cost for such services would be.

---

[241] *See* NS Reply WP "SBRR Operating Expense NS Reply.xlsx," Tab "IT Expense"; NS Reply WP "SBRR – IT – Computer Configuration.xlsx"; NS Reply WP "TI Telecom monthly rental.pdf."

[242] SunBelt Opening III-D-17.

[243] *See* SunBelt Opening WP "SBRR GA Outsourcing.xls."

[244] *See, e.g.*, *SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2 (served Apr. 4, 2003).

(i) Tax Preparation.

NS accepts SunBelt's proposed costs of outsourcing income tax preparation, but as detailed above does not believe property tax preparation can be outsourced. NS provides appropriate in-house SBRR staff for the property tax function in addition to the income tax outsourcing cost.

(ii) Payroll Processing.

NS agrees that the SBRR will be able to outsource many—but not all—payroll functions. Accordingly, NS accepts SunBelt's proposal for Paychex to process payroll at $50 per head, adjusted to reflect the staffing proposed by NS. NS also adds an outsourced cost for an Employee Assistance Program ("EAP"). EAPs are a commonly provided benefit to connect employees with services such as child care, mental health and substance abuse programs, and financial advisors.[245] NS itself pays $4.03 per month per employee for its EAP and adopts that cost here.[246]

(iii) Audit and Internal Review.

As explained above, the SBRR would require both financial audit and internal audit functions. SunBelt proposes a single $125,000 outsourcing cost for "Audit and internal review." *See* SunBelt Opening WP "SBRR GA Outsourcing.xls." This references the necessary financial audit, conducted by an independent body, to provide an opinion on whether the company's financial accounts are a true and fair reflection of the company's financial position. A financial audit is a common practice in the business world to ensure proper financial management. The Financial Executive Research Foundation has found that the average audit fees for private

[245] *See* NS Reply WP "EAP Consultants.pdf" (explaining that 75% of companies with 251-1,000 employees offer an EAP).

[246] *See* NS Reply WP "EAP Costs.pdf."

companies with between $100 million and $499 million in revenue was .06% of revenue.[247] In the case of the SBRR, that would be approximately $232,200 for the financial audit.[248]

The SBRR would also require an internal audit. As explained above, this is an audit of not just SunBelt's financial accounts, but of its broader policies and procedures to ensure proper risk management. Because SunBelt fails to provide for this important, modern business function, NS proposes an outsourcing cost. According to the Journal of Accountancy, businesses spent between .03% and .2% of revenue on internal audit. Mr. Brown conservatively assumes that the SBRR could obtain adequate outsourced internal audit support at the low end of this range: .03% of SBRR revenues, or $116,100.[249]

(iv) Claims Handling.

SunBelt proposes to outsource claims handling for the completely unexplained cost of $125,000.[250] As explained in detail above, SunBelt does not seem to fully comprehend what this function entails and why it is ill-suited for outsourcing.[251] Because this function cannot be appropriately outsourced at the SBRR, and because SunBelt provides no support for its outsourcing proposal, NS zeroes out the outsourcing cost for claims.

(v) Outside Counsel.

The final proposed outsourced function is outside counsel. As with most of its other outsourcing proposals, SunBelt presents no evidence for the cost it conjured up for this function, $200,000, which it divided between three state law firms and a firm to handle federal matters.

---

[247] *See* NS Reply WP "FERF 2012 Audit Fee Survey" at 24. As explained elsewhere in the report, the number reflects external audit only. *Id.* at 21.

[248] *See* NS Reply WP "SBRR Operating Expenses NS Reply.xlsx," Tab "Outside Services."

[249] *See* NS Reply WP "SBRR Operating Expenses NS Reply.xlsx," Tab "Outside Services."

[250] *See* SunBelt Opening WP "SBRR GA Outsourcing.xls."

[251] *See supra* III-D-92 to III-D-93.

But such minimal legal costs have no basis in reality. For example, SunBelt presumes the SBRR would have "minimal STB work" and would face "no max[imum] rate proceedings." SunBelt WP "SBRR GA Outsourcing.xls." Rate litigation legal costs cannot be wished away any more than SunBelt could presume that no locomotive will ever fail or trains will never derail. It is a cost of doing business in a regulated industry that certain customers have the right to challenge the level of their rates. SunBelt's wishful assumption is especially laughable because its traffic group contains traffic that has been recently subject to rate challenges. *See South Mississippi Electric Power Ass'n v. NS*, STB Docket No. 42128.

In order to come to a more reasonable assessment of outside counsel costs, Mr. Brown employed a percent of revenue model based on third party benchmarks.[252] As explained above, that leads to a more realistic, but still conservative, outsourcing cost of $1.4 million.

(c) Start-up and Training Costs

SunBelt proposes total start-up and training costs of $5.3 million. SunBelt Opening III-D-17. NS mostly accepts SunBelt's proposal but corrects a few methodological errors and makes other, minor adjustments necessary to fully account for all applicable costs.

(i) Training.

NS accepts SunBelt's method of calculating the average cost to train individual employees, but proposes three methodological corrections. First, NS adjusts the total training costs to incorporate the additional SBRR staff positions it has identified. Second, NS applies its

[252] *See supra* III-D-91; NS Reply WP "SBRR Operating Expense NS Reply.xls," Tab "Outside Services."

corrected fringe benefit ratio of 45.6% where training salaries include benefits.[253] Third, NS uses the attrition rate it calculated based on real-world attrition.[254]

(ii) Recruitment.

NS accepts SunBelt's basic approach to recruitment, but corrects a key methodological error. SunBelt calculated a recruitment cost of $1,585 per employee in recruitment costs, based on information NS provided in discovery. SunBelt Opening Ex. III-D-2 at 20. But SunBelt only included the out-of-pocket costs NS pays for particular services, and it did not include the cost of the in-house NS HR employees who carried out that work.

SunBelt derives its $1,585 recruitment cost from a workpaper entitled "SBRR Recruiting Costs.xlsx," which is an altered version of two documents NS produced in discovery. Together, these documents show the average cost per year per new hire from the years 2008 to 2011 as shown in Table III-D-28 below:

[253] *See supra* III-D-118.

[254] *See supra* III-D-93 to III-D-95.

TABLE III-D-28
Average Cost of Recruiting

Line Item	3 year average	Percent of total[255]
Communications	$ 18,759	0.54%
Prof. & Consultant Svces	$ 130,356	3.78%
Contract & Other Temporary Svc.	$ 849,722	24.62%
Advertising	$ 440,943	12.78%
College Funding	$ 270,000	7.82%
Miscellaneous	$ 4,130	0.12%
Testing	$ 156,196	4.53%
Travel	$ 1,211,142	35.10%
Meetings & Sessions	$ 369,770	10.71%
Total Cost	**$ 3,450,991**	100%
New Hires	2,177	
Average (3-year Avg. Cost/New Hires)	**$ 1,585**	

Because SunBelt's proposed recruitment costs do not include the salary and benefits of those on the NS staff involved in recruitment, they grossly understate the true cost of outsourcing recruitment. NS organizational charts show that NS employs a College Recruiting Manager with a staff of seven and an Agreement Recruiting Manager with a staff of six.[256] In order to accurately estimate the NS salary and benefits component of recruitment costs, NS appropriately includes the costs of these Managers and their staffs when calculating the average cost of recruiting per new employee. Table III-D-29 shows the Wage Form A&B compensation and benefits for these positions.

[255] Total may not equal 100% due to rounding.

[256] *See* NS Reply WP "NS HR Organizational Chart.pdf."

TABLE III-D-29
Salary and Benefits for NS Recruitment Personnel

	Position	Staff	STB code	Salary	Total
College Recruiting	Manager	1	201	$79,482	$79,482
	Asst Manager	3	202	$64,184	$192,552
	Employment Officer	3	202	$64,184	$192,552
	Coordinator	1	212	$57,932	$57,932
Agreement Recruiting	Manager	1	201	$79,482	$79,482
	Asst Manager	1	202	$64,184	$64,184
	Employment Officer	4	202	$64,184	$256,736
	Coordinator	1	212	$57,932	$57,932
	Total	15			$980,851
	Benefits		45.6%		$447,268
	Total Wage & Benefits				$1,428,119
	Avg. New hires		2,177		$656
	Recruitment Costs				$1,585
	New Cost to Acquire New Employee				**$2,241**

When the cost of in-house employees is added to the other recruiting costs SunBelt has proposed, the result is an average recruiting cost of $2,241 per employee. NS uses this corrected recruiting cost in its Reply Evidence.

(d) Travel

NS accepts SunBelt's annual travel expense of $10,475 per employee. SunBelt Opening Ex. III-D-2 at 21. But SunBelt mistakenly applies the travel expense to "all SBRR employees at the Manager level and higher," without consideration of specific job duties. *Id.* Including the two outside directors, this means only 12 individuals would travel. The view that travel can be limited to only the most senior employees, regardless of function, does not fully account for the

demands on running a railroad. Indeed, the Board previously rejected the exact same proposal that SunBelt makes here.[257]

NS's G&A expert Mr. Brown corrected this understatement by conducting a rigorous evaluation of the positions within G&A to independently determine whether or not the employees would be expected to travel. The evaluation was informed by a review of NS's own job descriptions for those positions, because they reflect the responsibilities for these positions at a real-world railroad.[258] A job description that called for a minimum of 3 to 5 days per month of travel was one indicator to Mr. Brown that an analogous position at the SBRR would require travel, but he based his ultimate conclusions about which employees would travel on the needs and requirements of the SBRR.[259] Mr. Brown also agreed with SunBelt that all Vice Presidents would travel.[260] In addition, Mr. Brown included outside Board members in travel because they must, at a minimum, travel to and from Board meetings. Based on his review, Mr. Brown added travel expenses for many SBRR employees whom SunBelt did not propose would travel and also

---

[257] In *AEPCO*, the Board specifically rejected the same proposal that SunBelt is making now: to limit travel to SARR "employees at the Manager level and higher." *AEPCO 2011*, STB Docket No. 42113, at 55 (rejecting complainant's proposal for the number of personnel that would travel because defendants "provide for a more realistic number of employees that would travel"); *see* AEPCO Opening, *AEPCO 2011*, STB Docket No. 42113, III-D-57 (Jan. 25, 2010) (proposing—just like SunBelt—to limit travel to SARR "employees at the Manager level and higher . . . except for Customer Service Managers and the Assistant Controllers").

[258] *See* NS Reply WP Folder "Job Descriptions.zip." *See also* NS Reply WP "Total Legal Expenses (inc salaries and benefits).pdf."

[259] Some of NS's real-world travel is a result of its multiple headquarters. That is why Mr. Brown carefully reviewed each job description to determine which actually required travel for their basic functions.

[260] *See* SunBelt Opening Ex. III-D-2 at 21 (proposing travel for all SBRR employees at the Manager level and higher, such as Vice Presidents and outside Board members).

scaled up the number of employees that would travel for those positions SunBelt and NS agree would travel in order to match NS's proposed organization size.[261]

Among the positions for which Mr. Brown added travel are:

- Help Desk PC Technicians: SunBelt proposes that of the entire IT Department, only its Director would have to travel. But SunBelt never explains how IT issues in the field would be addressed when remote repairs are insufficient. Help Desk PC Technicians will need to travel so they can go on-site when necessary to address IT problems. NS has proposed two remotely located Help Desk Technicians who will need to travel.

- Purchasing: SunBelt's failure to provide for any purchasing staff travel is also unrealistic. The Manager of Purchasing may need to travel around the SBRR's networks to help assess needs, visit vendors, and attend other meetings appropriate for his management level.

- Claims Agents: As explained above, SunBelt has improperly outsourced the claims function. NS proposes to move this function back inside the SBRR, which means that two Claims Agents will need travel budgets so that they can evaluate and investigate claims, including visiting incident sites and speaking to witnesses.[262]

TABLE III-D-30
Travel Comparison

	SunBelt Opening	NS Reply	Difference
Number of Travelers	12	36	24
Cost ($10,475 per employee)	$125,700	$377,100	$251,400

(e) Bad Debt

In *AEPCO 2011*, the Board recognized that bad debt is "a legitimate business expense" that should be incorporated into the SAC analysis. *AEPCO 2011*, STB Docket No. 42113, at 64.

[261] *See* NS Reply WP "SBRR Proposed Travel.xlsx."

[262] *See* NS Reply WP "Claims Job Descriptions.pdf" in NS Reply WP folder "Job Descriptions" folder.

Despite the Board's holding, SunBelt makes no provision for bad debt[263] and assumes that the SBRR will receive 100% of the revenue that it bills to customers. This is an unreasonable assumption as the SBRR, just like a real-world railroad, will have some uncollectible accounts. Applicable accounting standards require the SBRR to maintain an allowance for doubtful accounts. Statement of Financial Accounting Standards No. 5 (FAS5 - Accounting for Contingencies) requires companies to maintain allowances for doubtful accounts for the estimated probable losses on uncollectible accounts and other receivables.

NS estimated the uncollectible accounts for the SBRR by reviewing uncollectible accounts from R-1 Schedule 410. To obtain the best approximation of the average amount of bad debt that the SBRR would encounter over the SAC analysis period, NS calculated the average amount of uncollectible accounts as a percentage of revenue for all seven Class I railroads over the five-year period from 2007 through 2011, yielding an average of 0.05% of revenue. NS therefore estimates that the SBRR would incur a charge for bad debt equivalent to 0.05% of its Base Year revenue.[264]

vi. Benchmarking to Other Railroads Shows that NS's Proposed G&A Staffing Would Make the SBRR a Best-in-Class Efficient Railroad

NS's Reply Evidence produces a G&A staff that is the least-cost, most-efficient G&A staff possible for a railroad with the size and traffic mix of the SBRR. The reasonableness of NS's proposal is demonstrated by various benchmarks that confirm the maximal efficiency of NS's proposed SBRR G&A staffing and expenses. It should be reiterated that SunBelt provides no benchmarks for its proposed staffing or expenses—despite the Board's unambiguous request

[263] Having completely failed to present evidence on bad debt, SunBelt is foreclosed from doing so on Rebuttal. *See, e.g., SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2 (served Apr. 4, 2003).

[264] *See* NS Reply WP "SBRR Operating Expense NS Reply.xlsx," Tab "Summary."

for SAC litigants to provide such benchmarks. *See, e.g., AEPCO 2011*, STB Docket No. 42113, at 58 (criticizing parties for not providing benchmark analyses or any other sufficient explanation for staffing levels chosen). And having failed to provide any benchmark evidence on Opening, Sunbelt is foreclosed from providing such evidence on Rebuttal.[265] The appropriate response to SunBelt's disregard for the Board's request for benchmarks is for the Board to disregard SunBelt's unsupported evidence.

In contrast, Mr. Brown developed NS's G&A evidence by benchmarking wherever feasible. Mr. Brown used three distinct types of benchmarks when developing G&A staffing and spending: (1) published benchmark studies of specific categories of G&A spending and staffing; (2) benchmarks to all Class I railroads based on publicly available data; and (3) benchmarks to individual Class II and regional railroads where data was available. By any of these measures, SunBelt's proposed G&A evidence for the SBRR is out of step with real-world companies, including those in the transportation industry and other railroads. And adopting NS's well supported proposal would still make the SBRR a best-in-class, maximally efficient railroad, while also providing the necessary staffing and support that the SBRR would need in the real world.

First, Mr. Brown used benchmarking studies published by neutral third parties where such studies were available. While third party benchmarking studies are not available for all railroad functional areas, such studies are available in areas like information technology, human resources, and legal spending. These studies thoroughly demonstrate that even after adopting NS's proposals, the SBRR will be far more efficient than peer companies.

---

[265] *See, e.g., SAC Procedures*, 5 S.T.B. at 445-46; *Xcel*, STB Docket No. 42057, at 2 (served Apr. 4, 2003).

Information technology is an example of an area where third party benchmarks are readily available. A Gartner study of IT spending found companies, on average, spend { } of revenue on IT.[266] SunBelt claims that the SBRR would spend just 0.88% of revenue on IT, compared to 1.10% for NS's more reasonable, but still conservative, proposal. SunBelt's proposed IT staffing is also low when compared to benchmark studies. According to Gartner, companies in the transportation industry count { } of full time employees as IT employees.[267] NS, being conservative, proposes a lean 2.1% of full time employees as IT staff compared to 2.2% proposed by SunBelt, showing how reasonable NS's staffing is even with an increase.[268]

Third party studies that can serve as benchmarks for SBRR spending and staffing are also available for human resources. Under both SunBelt and NS's proposals, the SBRR's HR spending would be more efficient than benchmark studies would dictate. SunBelt proposes to spend just $426 per employee, an unreasonably low and unjustified number. NS proposes a more realistic, but still optimally efficient, $606 in HR spending per employee. According to a 2011 study by BNA, the median per capita HR expense among employers with 250 to 499 employees is { } and { } for employers with 500 to 999 employees, far more than SunBelt's proposal.[269] The same study also found that companies with 250 to 499 employees have { } HR employees for every 100 full time employees and employers with 500 to 999 employees have { } HR employee for every 100 full time employees, compared to .45 HR

---

[266] NS Reply WP "Gartner IT Key Metrics.pdf" at 20.

[267] NS Reply WP "Gartner IT Key Metrics.pdf" at 54.

[268] *See supra* Section III-D-3-c-(ii)-(f).

[269] NS Reply WP "BNA HR Benchmark and Analysis 2011.pdf" at 42, 43.

employees per 100 full time employees proposed by NS.[270] SunBelt, by contrast, proposes an absurd .31 HR employees per 100 full time employees.

Likewise, NS's proposed legal costs are based on a benchmark study of legal spending by ALM. That study found that the median company with revenue between $100 million and $999 million spends .4% of revenue on law departments. NS accepted .4% as a benchmark and applied it to the SBRR.[271] NS also used a benchmarking survey by The Network, Inc. to gauge the need for an employee ethics line.[272]

Second, Mr. Brown used the G&A spending of other Class I railroads as a benchmark for the SBRR, which would be a Class I railroad in 2015. Mr. Brown has conducted a study of G&A costs of all Class I railroads and compared it to SunBelt's proposal for the SBRR and NS's own proposal. Between 2009 and 2011, the average Class I railroad had 454 G&A employees per $1 billion of revenue. *See* NS Reply WP "Benchmarking.pdf" at 1. NS, CSXT, UP, and BNSF had an average of 410 employees per $1 billion of revenue over the same period. SunBelt proposed a mere 158 employees per $1 billion in revenue. NS's proposal of 506 SBRR employees per $1 billion in revenue is much more consistent with peer benchmarks, while still conservative as is appropriate for a least cost, most efficient railroad. *Id.*

As a percentage of revenue, Class I railroads spent 8.4% between 2009 and 2011 on G&A. *See id.* at 2. NS, CSXT, UP and BNSF spent 8.3% over the same period. *Id.* Yet SunBelt proposes a completely unsupported 1.4% of G&A expense as a percentage of revenue. *Id.* NS responds with a more reasonable 5.1%, making the SBRR efficient but still expending sufficient funds to meet its G&A obligations. *Id.*

---

[270] *Id.* at 19.

[271] *See supra.* Section III-D-3-c-(ii)-(e)-(1).

[272] *See supra.* Section III-D-3-c-(ii)-(e)-(6).

Third, Mr. Brown used real-world G&A staffing from other regional railroads as benchmarks to judge the reasonableness of his proposal. Throughout the staffing evidence, NS cites to the publicly available staff lists of the W&LE, MM&A, MRL, P&W, RBMN, and the Iowa Interstate Railroad. These staff lists likely only show the management of various functions at these regional railroads, but still demonstrate how preposterous the proposals of SunBelt are compared to real-world railroads. For example, SunBelt proposed no vice president-level executive officers. As NS has explained, the W&LE has a Vice President of Finance and a Vice President of Marketing.[273] The RBMN has a Vice President of Marketing & Sales, Vice President of Administration, and Vice President of Finance.[274] Within Marketing, NS demonstrates that the W&LE has at least seven marketing employees, the MM&A has at least five, and the P&W has at least three.[275] In the Human Resources Group, NS identified the HR staffing of the MRL (three HR staff members), Iowa Interstate Railroad (two HR staff members), and the W&LE (two HR staff members).[276] These are just a few examples of the specific comparisons NS has made to real-world railroads, something SunBelt completely failed to consider. Moreover, as NS has demonstrated, these comparison railroads do not approach the size and complexity of the SBRR. The W&LE handles one quarter of the carloads of the SBRR. The MM&A covers 510 route miles, but operates just 15 trains daily. The P&W moves just 36,000 carloads annually on 516 miles of track. The RBMN has over 300 miles and moves 24,000 carloads annually.

---

[273] *See supra* III-D-62.

[274] *See supra* III-D-62 to III-D-63.

[275] *See supra* III-D-71.

[276] *See supra* III-D-93.

Comparing the SBRR to complete G&A departments at Class II or Class III railroads is difficult to do because of a lack of publicly reported information. But there are some available comparisons. For example, the Dakota, Minnesota and Eastern Railroad Corporation ("DM&E") reported 63 "admin" employees in September of 2007, a category which included marketing, finance, accounting, and human resources.[277] At the time, the DM&E transported 260,000 carloads annually and had revenues of $263 million. That is less than half the carloads of the SBRR and significantly less revenue, but G&A staffing three times what SunBelt has proposed.[278] Based on the DM&E's total administrative staff, and the more specific group and departmental comparisons, SunBelt has proposed a G&A staff completely untethered from the real world. NS's Reply Evidence presents a G&A staff more consistent with these real-world railroads, while still providing for a least cost, most efficient SARR.

4. Maintenance-of-Way

SunBelt's opening evidence of the SBRR's maintenance-of-way ("MOW") staffing and expenses falls far short of its burden to present evidence of likely SBRR MOW costs that is "consistent with the underlying realities of real-world railroading." *WFA I*, STB Docket No. 42088, at 15. SunBelt's proposed staffing is not nearly sufficient to properly maintain the SBRR's network. This fact is aptly illustrated by a comparison of SunBelt's staffing levels to the MOW staffing that the Board has found to be reasonable in recent SAC cases. On a track-mile basis, SunBelt's MOW staffing is well less than half the level of MOW staffing in the last five decided SAC cases. *See infra* at III-D-139. SunBelt presents no evidence that would explain how the SBRR could operate with such a ludicrously small staff, and the Board should reject its unsupported and patently unrealistic evidence.

---

[277] *See* NS Reply WP "DME 2007 Employment.pdf" at 9.

[278] *See* NS Reply WP "CP – Control – DME Application.pdf" at 2.

NS expert witnesses James D. Bagley and David J. Hughes (the "NS MOW Experts") have developed a realistic and well-supported plan for the SBRR's maintenance-of-way ("MOW") staffing and expenses, which is detailed below. Each of the NS MOW Experts has extensive real-world experience in overseeing railroad maintenance and planning for MOW needs.

Mr. Bagley served as Vice President Engineering and Chief Engineering Officer of CSXT until March 2008. He also held several senior engineering positions at Norfolk Southern Corporation, including Chief Engineer Line Maintenance on the Northern Region, the Eastern Region, and the Western Region. He has unique qualifications to assess the MOW requirements for the SBRR based on over thirty-five years of railroad infrastructure maintenance and construction experience, much of which was gained managing maintenance of the lines replicated by the SBRR. Mr. Bagley also has more than nine years of extensive consulting experience, including numerous engagements involving the assessment of railroad infrastructure maintenance in the United States and internationally. Mr. Bagley is a member of the American Railway Engineering and Maintenance-of-Way Association and has served as a member of the Board of Governors of the American Railway Engineering and Maintenance-of-Way Association.[279]

Mr. Hughes has over three decades of railroad infrastructure maintenance and construction experience. He served as Chief Engineering officer of the National Railroad Passenger Corporation (Amtrak) from 2002 through 2005 and as Acting President and Chief Executive Officer from 2005 through 2006. Mr. Hughes also served for five years as president of Pandrol Inc., a manufacturer of railroad track fastening systems and president of Speno Rail

[279] *See* Section IV for a full statement of Mr. Bagley's qualifications.

Services Inc., a railroad maintenance contracting company. He has held several other railroad executive and senior engineering positions as well as having over a decade of consulting experience with dozens of engagements with over 35 railroads in 25 countries. He also has extensive experience with regional and short line railroads giving him good insight into the latest infrastructure maintenance practices of railroads with few or no work rules restrictions. He has over 30 years of experience as a registered professional engineer and is a past director and member of the board of governors of the American Railway Engineering and Maintenance-of-Way Association.[280]

Both Mr. Hughes and Mr. Bagley began their railroad careers as first line maintenance supervisors and rose to become the chief engineering officer of major railroad companies, giving them bottom to top perspective on railroad maintenance practices, costs, and strategy.

The NS MOW Experts have identified many flaws in SunBelt's MOW evidence, which are detailed below. Perhaps the most significant and persistent error in SunBelt's evidence is a failure to address and engage with the real-world factors that drive maintenance costs. These real-world factors include both wear-and-tear factors such as relative traffic density and train frequency and external environmental factors such as weather and terrain. SunBelt's MOW expert Mr. Crouch claims to have considered the SBRR's "geographic scope, terrain, number of trains and gross tonnages" when developing a MOW plan, but SunBelt's narrative, exhibits, and workpapers contain no evidence of that consideration. *See* SunBelt Opening Ex. III-D-3 at 2. On the contrary, Mr. Crouch appears to have used a one-size-fits-all approach to developing maintenance-of-way evidence. For example, he admits to developing roadmaster territories by using a one-size-fits-all metric of "roughly 200 route mile[s]" for each. *See* SunBelt Opening

[280] *See* Section IV for a full statement of Mr. Hughes's qualifications.

WP "Exhibit III-D-3 SBRR MOW.xls," at "MOW Staff," Cell S24. SunBelt's Roadmaster territories were therefore not developed by considering the varying "terrain, number of trains and gross tonnages" across the diverse lines of the SBRR system—rather, SunBelt used a simplistic assumption that each Roadmaster would be responsible for approximately 200 route miles, regardless of any of the real-world factors that affect maintenance needs. In this and many other respects discussed below, SunBelt's MOW plan is simply a paper exercise that mechanically assigns MOW resources to SBRR line segments without considering the factors that ultimately drive maintenance needs.

The result of SunBelt's flawed process is a MOW plan that is patently insufficient to serve the SBRR's needs and is far less extensive than the MOW workforces that the Board has approved in recent SAC cases. This is illustrated aptly by considering the number of MOW staff that SunBelt provided the SBRR on a track-mile basis. Track miles per employee is a reasonable metric for measuring the relative workload of each MOW employee, and the Board used this metric itself when evaluating MOW evidence in *WFA I*. *See WFA I*, STB Docket No. 42088, at 57. As Table III-D-31 illustrates, SunBelt's proposed SBRR MOW workforce is vastly smaller on a track-mile basis than MOW workforces accepted by the Board. The average track-mile-to-MOW staff ratio for the Board's five most recent decisions with MOW analyses is 4.1-to-1—about half of the 7.2-to-1 track-mile-to-MOW staff ratio that SunBelt proposes.

TABLE III-D-31
MOW Staffing in Recent SAC Cases[281]

	AEPCO 2011	*WFA*	*AEP Texas*	*Otter Tail*	*Xcel*	SunBelt Proposal For SBRR	NS Proposal For SBRR
MOW Staff	559	97	452	437	166	97	195
Track Miles[282]	3326	391	1664.1	1485	552.77	702	702
Track Miles-to-MOW Staff	**5.9**	**4.0**	**3.7**	**3.4**	**3.3**	**7.2[283]**	**3.9**

In short, SunBelt proposes much lower levels of MOW staff than those accepted by *AEPCO 2011* and *WFA*. And SunBelt does so without any explanation for its assumption. If SunBelt believed that some special factor would allow the SBRR's MOW staff to be twice as efficient as the MOW staffs approved in prior cases, then it was incumbent on SunBelt to identify and explain those factors in its opening evidence. SunBelt's failure to provide any explanation whatsoever for dramatically slashing MOW workforce from levels previously approved by the Board casts serious doubt on the credibility of its proposals.

In contrast, the NS MOW Experts' approach to the development of the MOW Plan for the SBRR was methodical and detailed. They first assembled the relevant data necessary to determine the MOW work load on the SBRR. For each of the line segments shown in NS Reply WP "Line Segment Work Load Evaluation.xlsx," the NS MOW Experts considered the track and

---

[281] *See AEPCO 2011*, STB Docket No. 42113, at 32, 65; *WFA I* , STB Docket No. 42088, at 57; *AEP Texas*, STB Docket No. 41191 (Sub-No. 1), at 27, 67; BNSF Reply in *AEP Texas* at III-D-167; *Otter Tail*, STB Docket No. 42071, at A-1, C-20; BNSF Supp. Reply in *Otter Tail* at III-D-28; *Xcel*, 7 S.T.B. at 48, 79.

[282] The track mile calculations exclude yards, set-outs and helper tracks, as the Board did in *WFA I*. *WFA I*, STB Docket No. 42088, at 57.

[283] The "MOW Staff" Tab of SunBelt Opening WP "Exhibit III-D-3 SBRR MOW.xlsx" calculates SunBelt's proposal as 5.96 miles per MOW field employee. But SunBelt arrives at this figure by counting route miles per employee rather than track miles. Track miles are a superior measure of MOW workload over route miles, because track miles account for the greater efforts associated with maintaining multiple-track lines.

route miles to be maintained, the traffic density and train frequency over the route, the extent and severity of curvature, and other relevant items affecting workload. The NS MOW Experts also considered external environmental factors, particularly high rainfall of the south and coastal south, soil types, terrain, and the soft track found through wet areas in the southern end of the SBRR.[284]

After evaluating the relevant SBRR and external data, the NS MOW Experts summarized the relevant characteristics that determine workforce requirements for each of the main SBRR routes.[285] The NS MOW Experts then assigned the appropriate number of track maintenance crews and signal maintenance employees to each segment as shown in NS Reply WP "Line Segment Work Load Evaluation.xlsx" and grouped them under an appropriate number of Roadmasters and Signal Supervisors. Bridge and Building maintenance crews were assigned to appropriately sized geographical territories and grouped under an appropriate number of Bridge and Building supervisors. The NS MOW Experts then designed appropriate management, commercial, and technical organizations at the Divisional and Headquarters level, all of which is summarized in NS Reply WP "III-D-3 NS SBRR MOW.xlsx," Tab "MOW Staff-Reply."

a. SBRR Operating Staff

The MOW workforce designed by the NS MOW Experts is modern, lean, and well-proportioned, and its size is consistent with the needs of the SBRR and with the results of past SAC cases decided by the Board. The plan results in a reasonable ratio of 3.9 main track miles

---

[284] *See* NS Reply WP "SBRR Environmental Factors.docx" for an assessment of the impact of external environmental factors on work load and working efficiency.

[285] Prior to preparation of the NS SBRR MOW plan, Mr. Bagley inspected the entire SBRR to see the first hand conditions that existed along the route and to identify the unique maintenance challenges along the lines. Notes and photos from those inspection trips are shown in NS Reply WP "SBRR Inspection Trip Notes and Photos.doc."

per MOW employee[286]—which means that the NS MOW Experts' MOW workforce would have a track-mile-to-employee ratio that is equal to or higher than (and thus more efficient than) the track-mile-to-employee ratios in *AEP Texas*, *Otter Tail*, and *Xcel* and similar to *WFA I*.[287] The SBRR has several unique characteristics that require relatively more staffing than previous SARRs considered by the Board. These unique characteristics and the additional staff attributable to them[288] are summarized below:

- A significant hump yard is required while there was no hump yard on comparable SARRs; SBRR's total yard track is double that of *AEPCO 2011* and half again that in *WFA I* requiring about twenty additional field MOW personnel;
- Soft subgrade in an area of high rainfall and flat terrain requires greater than normal ditching which requires above average ditch maintenance capacity, requiring approximately three additional MOW personnel;
- Higher than normal smoothing requirements due to soft subgrade through low lying areas on poor soil and high traffic density to New Orleans require approximately three additional MOW personnel;
- Positive train control increases signal maintenance work load, and requires an additional two signal maintainers for the field, two additional Signals and Communications staff in the General Office dedicated to PTC
- Unusually large bridge inventory, including the 5.5 mile bridge across Lake Ponchartrain requires approximately two additional field personnel to maintain bridges; and 13 bridge tenders (bridge tenders not included in ratios of miles/maintenance employee).

---

[286] Excluding 13 bridge tenders since the comparable SARRs had no need for such positions and they are not engaged in maintenance.

[287] The track-mile-to-MOW-staff ratio for the staffing accepted in *AEPCO 2011* was somewhat higher than that for the MOW staffing developed by the NS MOW Experts, but this is primarily because of the significantly more complex and varied maintenance challenges for the SBRR that are detailed herein. *See infra* III-D-153 to III-D-154; *see also* NS Reply WPs "Line Segment Work Load Evaluation.xlsx," "SBRR Environmental Factors.pdf."

[288] The number of staff shown provide the NS MOW Experts' best estimate of the workload associated with each point. In most cases only a close approximation of the number of staff associated with each point is possible.

- Technical and field support for four movable bridges accounts for approximately two additional positions.

These additional special factors are discussed in more detail below. But for the staff of approximately 22 associated with these additional workload needs, the ratio of track miles to MOW staff would be 4.1.[289]

The staffing for each of the MOW departments is summarized in Table III-D-32 below.

Table III-D-32.
Comparison of MOW Workforce by Function

Function	SunBelt	NS	Difference
Track	65	105	40
Structures	10	26	16
Communications & Signals	13	51	38
Support and Administration	9	13	4
Total	**97**	**195**	**98**

Source: NS Reply WP "III-D-3 NS SBRR MOW.xls," Tab "Comparison - SunBelt vs. NS MOW Staff"

Table III-D-33 breaks down the parties' competing MOW staffs by organization level.

Table III-D-33
Comparison of Workforce by Organizational Level

Organization Level	SunBelt	NS	Difference
General Office	16	24	8
Field Supervision	12	14	2
Field Worker	69	157	88
Total MOW	**97**	**195**	**98**

Source: NS Reply WP "III-D-3 NS SBRR MOW.xls," Tab "Comparison - SunBelt vs. NS MOW Staff"

b. General Office Organization

SunBelt seriously understates the SBRR's MOW needs in part because it fails to provide sufficient general office staff for the SBRR. SunBelt's MOW expert Mr. Crouch designed a 16 person MOW General Office organization, which significantly underestimates the SBRR's

[289] 195-22=173; 702/173=4.1.

staffing needs in several areas—particularly the technical staff necessary to support Communications and Signals.[290]

The SBRR consists of a complex 578 route miles of lines with high-tonnage, high-frequency traffic, movable bridges, sophisticated signal and communications systems, and an automated hump yard. Maintaining and operating this system will require an appropriate breadth of capabilities and depth of staff not provided by Mr. Crouch.

Efficient and effective railroad maintenance requires significant technical expertise, support for railroad commercial functions and coordination and planning to ensure that resources are deployed optimally, and SunBelt's proposal simply does not provide sufficient management to ensure that is the case. Indeed, the SBRR MOW General Office staff would be responsible not only for managing and directing the SBRR's own MOW staff, but also for negotiating contracts and coordinating relationships with outside contractors. *See* SunBelt Opening Ex. III-D-3 at 4. The General Office also must (1) manage the maintenance and replacement of infrastructure assets; (2) maintain road property asset inventories; (3) maintain records for tax purposes; (4) manage infrastructure-related relationships with government entities and other third parties; (5) analyze infrastructure asset performance; (6) establish standards and testing for materials and processes; and (7) develop plans for infrastructure maintenance.

SunBelt can only achieve its low General Office workforce levels by completely omitting many essential commercial and technical functions. For example, SunBelt does not provide sufficient staff to manage the maintenance of the SBRR's microwave, AEI, FED, grade crossing

[290] SunBelt categorizes the positions of Manager Welding & Grinding, Supervisor of Work Equipment and Water Plant and Fueling Technician as General Office Staff even though they are field worker or field supervisor positions, thereby overstating GO capacity.

signals,[291] PTC, traffic control systems, and hump yard; and it ignores the need for staff to manage joint facility accounts with other railroads, support real estate transactions and management, maintain property records, and manage the mapping and recordkeeping that are essential to modern railroad maintenance and legal compliance.

The NS MOW Experts designed a General Office staff for the SBRR from the ground up by identifying the necessary functions that must be performed. They then designed the minimum organization necessary to perform the essential functions. The result is a MOW General Office that is lean and well-suited to the many functions that the MOW department of a modern railroad must perform. The NS MOW Experts' General Office staff of 24 includes managerial, professional and technical support function, administrative staff, and trainees. The principal purpose and principal duties of each job are described in NS Reply WP "MOW Job Titles and Position Descriptions.pdf."

The Assistant Vice President Engineering has five direct reports: (1) Engineer MOW, (2) Engineer Structures, (3) Superintendent of Communications & Signals, (4) Manager of Support Services, and (5) the Manager of MOW Safety and Training.

Maintenance of Way and Structures The Engineer MOW is responsible for all maintenance of the SBRR's lines (including both operating expense and capital). He has seven direct reports: five Roadmasters, the Supervisor Welding and Grinding, and the Supervisor of Work Equipment. He is also responsible for the overall coordination of ditching, smoothing and material truck resources.

[291] SBRR will have an ongoing grade crossing improvement program, as NS has, that will require on-going support by SBRR staff. Urban growth and an existing backlog of unprotected crossings demands SBRR engagement.

The SBRR's structures group can be relatively small, because the SBRR's bridges will be newly constructed. That said, the SBRR will have 423 fixed bridges and four movable bridges totaling 23 miles in length to maintain, and many bridge repair and maintenance needs are not tied to the age of the structure. The NS MOW Experts rely on a single Engineer of Structures to manage all structures maintenance. He supervises the work of the B&B Supervisor and Bridge Inspector, oversees the operation and maintenance of the movable bridges, and ensures compliance with mandatory bridge safety standards.[292]

Signals and Communications. The Superintendent of Signals and Communications has four direct reports: (1) two signal supervisors, (2) one Manager of Signal Systems and (3) one Manager of Communications Systems.

Support Services. The Manager of Support Services has three direct reports: (1) the Manager – Engineering Costs, (2) the System Engineer – Real Estate, Taxes and Joint Accounts and (3) the Staff Engineer – Records and Maps. In addition, he serves as office manager, supervising the administrative assistants and trainees.

SunBelt does not provide for MOW trainees. A trainee program is a standard and essential way to efficiently develop employees who can fill entry-level technical and supervisory positions. Assuming an attrition rate of 5.8%[293] and a training period of eighteen months, the SBRR MOW department will require three MOW trainees for technical and first line supervisory positions.[294] These trainees are generally recent college graduates who provide a well-trained source of engineering talent to account for attrition. The Manager of Support Services, in

---

[292] *See* 49 C.F.R. Part 237.

[293] *See supra* at III-D-94.

[294] *See* NS Reply WP "III-D-3 NS SBRR MOW.xlsx," Tab Analysis of NS MOW Staff.

conjunction with the Assistant Vice President - Engineering, administers the training program, ensuring timely rotation of trainees into all facets of MOW activity.

There is also a need for three Administrative Assistants, conservatively assuming one Administrative Assistant for every ten General Office professional, technical and supervisory employees.

c. Track Department

SunBelt substantially understates the track maintenance workforce that would be required for the SBRR, primarily because it creates unrealistically large territories to be maintained by individual Roadmasters and track crews. The major flaws in SunBelt's track maintenance plan are explained below; others are set forth in more detail in NS Reply WP "Spreadsheet Analysis of SunBelt Track Workforce Plan.xls" and NS Reply WP "Text Analysis of SunBelt Track Workforce Plan.docx."

The Track Department developed by the NS MOW Experts consists of 102 employees, organized into the positions shown in Table III-D-34 below. The annual compensation for each position, by employee and in total, is also shown.

Table III-D-34
SBRR Base Year Track Employees and Compensation

Track	Positions	Salary	Total Salary
Engineer MOW	1	$ 90,266	90,266
Roadmasters	5	$ 73,867	369,336
Assistant Roadmasters	5	$ 73,726	368,629
Track maintenance foremen	13	$ 70,090	911,167
Track maintenance workers	39	$ 52,579	2,050,594
Smoothing Crew Foremen	3	$ 70,090	210,269
Smoothing crew RMOs	6	$ 61,519	369,117
Speedswing operator	1	$ 61,519	61,519
Welders & Helpers	10	$ 59,813	598,132
Ditching foreman/Gradall operator	3	$ 59,813	179,440
Swivel dump truck driver	3	$ 59,813	179,440
Semi-tractor driver	1	$ 59,813	59,813
Roadway Equipment Mechanic	3	$ 59,813	179,440
Backhoe operator	5	$ 61,519	307,597
Rail Lubricator Repair Repairman	2	$ 59,813	119,626
Material truck drivers	1	$ 52,579	52,579
Crawler dozer operators	1	$ 70,090	70,090
Crawler track hoe operators	1	$ 70,090	70,090
Supervisor Welding & Grinding	1	$ 73,726	73,726
Supervisor Work Equipment Maintenance	1	$ 73,867	73,867
Total Track	105	[redacted]	$ 6,394,736

Source: Reply "III-D-3 NS-SBRR MOW.xlsx"

The Track organizations proposed by SunBelt and NS are compared in Table III-D-35 below.

Table III-D-35
Comparison of SunBelt and NS Track Workforce

Track	SunBelt	NS	Difference
General Office	3[295]	3	0
Field Supervision	10	10	0
Field Worker	52	92	40
Total Track	65[296]	105	40

Source: "III-D-3 NS-SBRR MOW.xlsx"

i. General Office Staff

The maintenance of track and structures is led by the Engineer MOW who is responsible for system-wide maintenance of track. He has six direct reports: five Roadmasters, the Supervisor Welding and Grinding, and the Manager Work Equipment.

ii. Field Staff

(a) Roadmasters and Assistant Roadmasters

SunBelt understates the necessary track maintenance staffing by assigning each Roadmaster an unrealistically large territory to maintain. SunBelt proposes 3 SBRR Roadmasters with territories that average 193 route miles and 234 main track miles in length. These territories are approximately twice the length accepted by the Board in past cases. *See AEPCO 2011*, STB Docket No. 42113, at 66-67; *WFA I*, STB Docket No. 42088, at 57. SunBelt's evidence does not explain the discrepancy, let alone provide an explanation for its assumption that SBRR Roadmasters and MOW crews would be twice as efficient as those in past SAC cases.

[295] The Manager of Welding and Grinding and Supervisor of Work Equipment are actually field supervisors, not General Office staff, but are counted here as GO staff for consistency with SunBelt.

[296] Opening total is 68, but includes 3 administrative assistants that are not exclusive to Track, but are General Office Administrative.

To establish Roadmaster Territory limits, the NS MOW Experts first based a Roadmaster at the Norris hump yard in recognition of that yard's critical operational importance. They then grouped main line track maintenance crews into geographically logical Roadmaster territories, with each Roadmaster responsible for two or three track maintenance crews depending on the particular needs of that territory. The Roadmaster territories are diverse in the amount of main track they maintain; the shortest (which includes the Norris hump yard) is 119 main track miles and the longest is 172 main track miles.

All Roadmasters are responsible for the yard track in their territory. SBRR's yard track of 116 miles is 15.2% of main track miles; double the yard track miles in *AEPCO 2011* at 7.1% and half again as many as *WFA I* at 10.7%.

Even without accounting for the workload of the Norris Hump yard, each Roadmaster covers an average of 116 route miles, which is greater than was found reasonable in the *AEPCO 2011* case (110 miles) and in *WFA* (109 miles), where there were no hump yards. The specific territories each Roadmaster is responsible for, by line segment and milepost, are included in the workpapers accompanying this Reply Evidence.[297]

There are five Assistant Roadmasters, one less than proposed by SunBelt. Each Assistant Roadmaster covers an average of 116 route miles which is greater than either *AEPCO 2011* (85 miles) or *WFA I* (109 miles). The Assistant Roadmasters conduct track inspections in accordance with all applicable FRA regulations, and are trained and certified by the SBRR. Track inspections occupy virtually all of their time; the NS MOW Experts believe that the extensive FRA inspections that would be required mean that Assistant Roadmasters would spend

[297] *See* NS Reply WP "Line Segment Work Load Evaluation.xlsx."

four to five days per week inspecting main, yard, and other tracks, depending on the length of the inspection territory and the amount of interference from passing trains.[298]

(b) Track Crews

SunBelt provides for seven SBRR track maintenance crews. Once again, SunBelt's staffing would require each track crew to maintain far more track than the Board has found to be reasonable in past SAC cases. To maintain Opening SBRR's 702 main track miles with 7 track maintenance crews would require each crew to maintain over 100 miles, nearly double the miles per maintenance crew found feasible in the *AEPCO 2011* and *WFA I* cases. And once again, SunBelt does not provide any support for this alleged dramatic efficiency improvement. Moreover, SunBelt's track crew evidence is plagued by errors and omissions. As discussed more fully in the NS Reply workpapers,[299] Mr. Crouch greatly overestimates the capacity of track maintenance crews, smoothing crews, ditching crews, and Roadmasters by assigning them totally unrealistic amounts of track to maintain. He also proposes to have two of the SBRR's seven maintenance crews report to two separate Roadmasters; an unacceptable violation of basic management principles.

To determine the number of SBRR track maintenance crews actually required, the NS MOW Experts followed a two-step process. They first defined the factors that determine the amount of work a crew must perform and the conditions under which it must be performed. The

---

[298] The frequency of track inspections is dictated by the FRA track class involved and/or tonnage. The SBRR has mostly FRA Class IV track or Class III track with more than 10MGT/year, both of which require inspection twice per week. *See* 49 C.F.R. § 213.233.

[299] *See* NS Reply WP "Text Analysis of SunBelt Track Workforce Plan.docx" for a discussion of the many other serious errors, omissions and failures of professional judgment in SunBelt's track workforce plan. *See also* NS Reply WP "Spreadsheet Analysis of SunBelt Track Workforce Plan.xlsx."

major factors that determine workload for a mile of track are traffic density per track in MGT,[300] the amount and severity of curvature, and the number of switches, crossings and lubricators per mile that must be maintained. The efficiency of a track maintenance crew in performing this work is heavily dependent on the time between trains per track. For each line segment, based on the NS MOW Experts' assessment of the workload factors and the degree that train traffic interfered with maintenance as measured by minutes between trains, they estimated the length of track that a maintenance crew could maintain given the work load and train traffic. The NS MOW Experts have learned through experience that a track maintenance crew should be assigned as few as 40 track miles where train frequency, tonnage and other work load factors are high and a maximum of 80 track miles per crew in less demanding conditions. For SBRR, the result is 13 track maintenance crews with four crews placed on the McIntosh-Burstall line segment and nine crews placed on the Birmingham - New Orleans line segment. One crew is principally devoted to maintaining the Norris hump yard, though they may work anywhere on the Roadmaster's territory.

The second step taken by the NS MOW Experts was to group whole track maintenance crews together into Roadmaster territories. This grouping was based principally on the Line Segment Workload Analysis, and gave due consideration for the needs: (1) to assign whole crews to Roadmasters; (2) to assign crews and Roadmasters physically logical territories and headquarters points; and (3) to account for the amount of maintenance represented by yards, particularly the large and busy Norris hump yard. The final result was that 13 track crews—each

[300] For example, on a line with 1 track with traffic density of 30 MGT over the route, the density per track would be 30 MGT. On a line with 2 tracks, the density per track would be 15 MGT.

made up of a Foreman and three Crew Members (track laborers)—were organized under 5 Roadmasters.[301]

Each crew is responsible for day-to-day maintenance of the track in a defined territory averaging 54 main track miles.[302] They perform various tasks in connection with routine track maintenance, such as repairing detected rail defects, replacing missing/broken joint bars and bolts, replacing switch points and frogs, replacing failed tie plates/insulators/clips, occasionally replacing defective ties at critical locations such as insulated joints, removing snow/ice from switches, replacing/repairing damaged signs, correcting minor drainage problems, removing fallen rock and trees, and repairing minor high water damage to track, and maintenance of yard and other tracks in the area.

The ratio of 54 track miles per track maintenance crew is similar to the 55 track miles per crew found reasonable in the *WFA I* case and just below the 65 track miles per crew found reasonable by the Board in the *AEPCO 2011* case,[303] suggesting the NS MOW Experts' plan for track maintenance crews is within the range that the Board has found to be realistic for a least-cost, most-efficient SARR, consistent with the unique characteristics of the SBRR.

While the track-mile-per-crew ratio is instructive, it significantly understates the actual efficiencies assumed in the NS MOW Experts' plan, for under the NS plan the SBRR's MOW forces will maintain an additional 56 miles of hump yard track and 123 switches not reflected in the ratio as well as the large, medium and small yards and other tracks in their territories. Indeed, the NS MOW Experts' estimate should be recognized as even more conservative,

---

[301] *See* Reply WP "Line Segment Workload Analysis.xlsx," Tab "Roadmaster Territories"

[302] *See* NS Reply WP "III-D-3 NS SBRR MOW.xlsx," Tab "Analysis of MOW Workforce."

[303] *AEPCO 2011*, STB Docket No. 42113, at 68.

because the SBRR faces the following additional environmental challenges that increase track crew workload and decrease the feasible length of the maintenance territory for a track crew.

First, the SBRR is situated in an area with four times the annual rainfall of the area in which the *AEPCO 2011* SARR was situated.[304] This factor aggravates almost every element of track maintenance. Rail welding cannot be performed in the rain. Muddy roads and slippery rail slow the movement of crews. More minor drainage incidents occur regularly and generalized high water is an annual spring event. Moreover, the wetter climate of the south and coastal south results in more vegetation and development of soils that are weaker and more sensitive to moisture than in the west.[305]

Second, and relatedly, the soil composition of the SBRR's lines creates maintenance challenges. Over 30 route miles of the McIntosh to Burstall line segment would be constructed through an area of known "prairie soil" that provides very unstable support for the roadbed. [306] Track over such soils frequently gets out of cross level and alignment and requires very frequent smoothing to avoid speed restrictions due to poor track geometry. The swamp sections of the SBRR route are particularly problematic from a maintenance perspective. Soils in swampy areas have a high moisture content and typically are weak soils that provide poor support for the track resulting in an abnormally high requirement for smoothing. Moreover, most of the remaining SBRR route is over soils with significant clay content. These clay soils swell and shrink with changes in seasonal moisture content, sometimes to the point of cracking open.

Third, the SBRR is located in a more populated area than either the *AEPCO 2011* or the *WFA I* SARRs, which also increases the workload. Populated areas have many more road

---

[304] *See* NS Reply WP "SBRR Environmental Factors.pdf."

[305] *Id.*

[306] *See* NS Reply WP "SBRR Environmental Factors.pdf."

crossings and yard tracks. Traffic can slow movement of crews; there are many more nuisance events like trash dumping, right-of-way encroachments, incidents at road crossings, and off-ROW development that changes drainage patterns causing local flooding. Drainage through populated areas is generally poorer and more difficult to maintain. In short, soil conditions and the wetter and more populated territory in which SBRR is situated both adds significant workload and creates additional impediments to crew performance.

(c) Roadway Machine Operators

Mr. Crouch provides four roadway machine operators for the SBRR. They all are assigned to operate backhoes; one per Roadmaster district, plus one at large. Like other elements of the SunBelt MOW plan, the resources provided are inadequate, to the extent provided at all, and incomplete in that no provision is made for material handling vehicles.

The NS MOW Experts agree that each Roadmaster would require a backhoe and operator, but have scaled up the total amount of backhoes and operators to account for the required number of Roadmaster territories set forth above.[307] A backhoe is a key piece of equipment required by each Roadmaster, but it is not sufficient to effectively perform all roadway machinery operations. The SBRR will also need more specialized equipment like track mounted dozers, excavators, and Speedswings as well as vehicles for material transportation.

- Dozers. SunBelt requires one track mounted dozer with winch for clearing cuts and other general earthwork and winching for which a dozer is appropriate. These crawler dozers are unique pieces of equipment that push dirt rather than dig and lift and so perform a function not possible by any alternative type of equipment on the SBRR, and they have a winching capability that no other piece of SBRR equipment has.

- Excavators. Crawler excavators are also unique and essential equipment. While excavators share some characteristics with Gradalls used by ditching crews, they are more powerful in every way, but less adept at fine

[307] *See supra* III-D-148 to III-D-150.

grading, like shaping side slopes and ditch side or bottom. They are used for excavation in situations where neither a Gradall nor a dozer is capable. The NS MOW Experts provide for one crawler excavator.[308] The excavator can lift and move track panels and partially paneled switches during maintenance or repairs.

- Speedswing. The NS MOW Experts also provide for a Speedswing and operator at the Norris hump yard to perform tasks requiring nimble lifting, and for use elsewhere on the SBRR as required.

Machine operators also are provided for smoothing and ditching crews, which are discussed below.

NS accepts SunBelt's estimate that the cost of SBRR MOW maintenance material would be 35% of MOW direct labor—a ratio that is based on the ratio of costs for materials, supplies, fuel and lubricants to direct labor reported by Class I railroads in their R-1s. But SunBelt's MOW plan neglects to include trucks and drivers needed to transport machinery and maintenance material to the locations where they would be needed on the SBRR network, nor does SunBelt include costs for outside contractors to perform this service. The 35% R-1-derived ratio for materials costs does not account for the transportation costs of direct delivery to the job site or local transportation of material and equipment. In the experience of the NS MOW Experts, Class I railroads almost exclusively use their own equipment for this internal MOW materials and equipment transportation, and the costs of in-house trucks and truck drivers are not reflected in the R-1 line items for materials.

The NS MOW Experts have remedied SunBelt's failure to account for the transportation costs of MOW materials and equipment by providing one semi-truck and one material truck and drivers for system-wide use. The semi-truck will move large pieces of machinery such as

[308] The dozer and excavator provide specialized equipment to supplement the three Gradall equipped ditching crews discussed below. Without the dozers and excavator, three ditching crews would not be adequate for SBRR's five roadmaster territories in SBRR territory.

dozers, excavators, tampers, and ballast regulators between Roadmaster territories, and it will handle material such as rail, frogs and other material too large to be readily handled on material trucks. Material trucks will distribute and move routine maintenance material such as switch machines, crossties, switch ties, and other miscellaneous track, bridge and signal material.

(d) Welder/Helper/Grinders

SunBelt provides one welding crew per SBRR Roadmaster for a total of three Welder/Helper/Grinder crews, which is again inadequate for many of the same reasons SunBelt's proposed 3 Roadmasters are inadequate. SunBelt justifies this staffing level by claiming that "[t]here are very few turnouts in each district compared to the real-world NS, and very few joints to maintain, so there will not be a need for much welding repair on the new SBRR." *See* SunBelt Opening Ex. III-D-3 at 7. However, the proper standard of comparison is not the existing NS workload, but the actual workload that will exist on SBRR. The SBRR averages 34 MGT/route mile—double the NS average density of 17 MGT/route mile in 2011, and more than doubling the requirement for rail maintenance by welding.[309] According to SunBelt, the SBRR consists of 702 miles of main track with 142 turnouts to maintain, meaning the average crew would have to maintain an average of 140 main track miles and 28 turnouts. Welding crews are required to perform such tasks as installing thermite-welds at joints where replacement rail is installed or insulated joints are replaced; and repairing engine wheel burns, frog point maintenance, chipped rail ends, and localized rail flow problems.

The inadequacy of SunBelt's welder crew staffing is demonstrated by considering the average number of field welds that each crew would have to perform. In the experience of the NS MOW Experts, a well-maintained, high-tonnage railroad in good condition will normally

[309] *See* Reply WP "SBRR System MGTM.xlsx."

have one or two rail failures per mile per year. Conservatively assuming only one failure per mile per year on the SBRR means that each SBRR welder would handle 234 failures (1x702/3), requiring 468 welds per crew per year for rail failures alone, or 1.8 welds per crew each working day. One field weld requires an average of 60 minutes of uninterrupted track occupancy. On lines designed to operate at near full capacity, like SBRR, with some line segments handling 30 trains per day (and an average time between trains of 44 minutes), 60 minute work windows will be very difficult to obtain resulting in significant delay for welders. With welding territories averaging 193 route miles (578/3), the crew would have to travel an average of 96 miles per day, endure significant train delay, and make 468 welds for rail replacement alone, plus make two welds for each insulated joint replaced and still maintain 47 turnouts and perform the other welding work on their territory. This constitutes an impossible workload for a welding crew when combined with the other tasks that a welding crew must perform. In addition to welds required for failed rail repairs, a welding crew must also weld in replacement rail sections containing replacement insulated joints; repair engine wheel burns; maintain frog points; address chipped rail ends; and grind away localized rail flow problems. Moreover, a welder must be available on each Roadmaster district as a complement to the work performed by the Roadmaster's track maintenance crews and must be reasonably nearby in case of emergencies.

The NS MOW Experts provide one welding crew per Roadmaster resulting in the average welding crew maintaining 140 track miles and 28 switches plus other main track welding and grinding work and miscellaneous yard welding and grinding.

(e) Rail Lubricator Repairmen

The NS MOW Experts accept SunBelt's proposal for two lubricator repairmen.

(f) Roadway Equipment Mechanics

SunBelt provides two roadway equipment mechanics to cover 578 route miles and 16 pieces of machinery, which is not adequate given the length of the SBRR and the actual amount of machinery to be maintained. The SBRR actually requires 41 pieces of equipment due to its higher than usual requirement for ditching and smoothing.[310] The NS MOW Experts more appropriately provide three mechanics; each mechanic would be responsible for about 14 machines compared to the suboptimal 8 machines maintained per mechanic in the SunBelt proposal.

(g) Ditching Crews

SunBelt provides for two ditching crews. It is unclear how they are supervised or how they are shared between the three Roadmasters. Each SunBelt crew is equipped with a Gradall or excavator, a hi-rail swivel dump truck, and a conventional pick-up truck. In the best of circumstances, two ditching crews would be inadequate for 578 route miles, but SBRR presents unique challenges which require more than average ditching capacity. These challenges are discussed below.

The NS MOW Experts accept the proposed crew size and hi-rail swivel dump truck, but include only hi-rail Gradalls. Excavators, proposed as an alternative by SunBelt, are not capable of the fine grading necessary in flat terrain. Based on Mr. Bagley's personal experience with maintaining these lines and his field inspection of the full length of the SBRR, the NS MOW Experts concluded that three ditching crews supplemented by an excavator and dozer would be required to adequately meet the SBRR's ditch cleaning and earth moving requirements. While

[310] *See* NS Reply WP "III-D-3 NS SBRR MOW.xlsx" for list of equipment. This count excludes light trucks, trailers and standard dump trucks.

the SBRR initially starts with clean ditches, the warm, wet weather of the south will ensure quick regrowth of vegetation and clogging of ditches.

Ditch cleaning is performed to keep railway ditches defined and clear so that water runoff will be effectively drained away from the subgrade. Maintaining the subgrade strength by moving water quickly away from the track (particularly on track with high tonnages) is of the utmost importance, and subgrade stability depends on good drainage.

As shown in NS Reply WP "SBRR Environmental Factors.docx," soils in the SBRR territory are typified by red clay, which swells when wet and shrinks when dry, and by other problematic soils of low strength and high moisture sensitivity. Therefore, a yearly ditching program is particularly critical to avoid blocked drainage and pockets of water that soften and erode the subgrade—especially in cuts and culvert locations and flat sections where there is little ditch slope and low water velocity, resulting in high rates of silt accumulation. Ditches tend to fill up with silt, weeds, vegetation, rocks and other debris, and they can clog due to sloughing of cut slopes. Inadequate ditch cleaning results in saturated embankments, clogged ditches, and clogged culverts, which leads to softened subgrade and resultant restrictions on train speeds, higher maintenance expense for increased surfacing or undercutting of track, and higher potential for derailments due to unstable subgrade.

Ditch cleaning is thus a cost-effective preventive maintenance procedure that reduces total costs by eliminating unnecessary subgrade repairs and surfacing cycles and avoiding derailments. Industry standards provide for a minimum maintenance width of three feet at the base of the ditch. For example, the Track Cyclopedia specifies that the "minimum bottom width

in earth materials should be 3 feet."[311] A ditch section of dimensions less than this standard will have inadequate capacity to contain soil erosion or rock fallout from the excavated back slope, let alone to carry water runoff through a long cut section. Side wash and silt quickly would contaminate the ballast section. In addition, in those areas in which grades are 1% or less, water flowing in an unlined ditch will have very low velocity, resulting in a small throughput capacity. Any obstruction will cause the water to stand, creating soft subgrade and reducing the roadbed's ability to withstand heavy axle loadings. These conditions eventually will lead to a track pumping action where subgrade soils intrude up into the ballast resulting in a weak ballast section and irregular track surface, which will in turn require imposing slow orders on train operations until corrective action is taken to restore the track surface and ballast section.

Frequent ditch maintenance is extraordinarily important on the SBRR, which is located in the highest rainfall location in the United States (other than the coastal Pacific Northwest). Rainfall on the southern part of the SBRR averages 60-70 inches per year, and the northern part averages 50-60 inches per year.[312] Moreover, in southern Louisiana and Alabama—the area of highest rainfall—the terrain is flat with grades less than 1%, which means flow velocities in ditches tend to be very slow. This confluence of factors increases the importance of clean ditches.

Based on more than three decades of experience in the industry and maintaining the lines being replicated by the SBRR, the NS MOW Experts estimate that a two-person ditching crew equipped with a hi-rail Gradall, a hi-rail rotary dump truck, and a conventional ¾ ton extended cab pickup with 100 gallon fuel cell could, at best, adequately maintain parallel drainage ditches

---

[311] The Track Cyclopedia 10th edition, H.C. Archdeacon, Simmons Boardman Books, Inc. (relevant pages included in NS Reply workpapers).

[312] *See* NS Reply WP "SBRR Environmental Factors.docx" at 3.

along about 150 route miles of main track on the SBRR, given the frequency and severity of cleaning required in this area. The NS MOW Experts provide for three ditching crews on the SBRR. This capacity added to the capacity provided by the dozer and excavator will be adequate to clean ditches and perform miscellaneous other maintenance earth moving on SBRR's 578 route mile system.

(h) Smoothing Crews

SunBelt proposes two smoothing crews to provide spot smoothing and spot surfacing, and lining of track and switches to correct surface and alignment irregularities noted during visual track inspections and irregularities detected by geometry test cars operated over the track. In support of their proposal they allege that SBRR is newly constructed and therefore should require little smoothing, observing that the subgrade has not been damaged by rail joints. Both of these arguments are false. The fact that SBRR is newly constructed does not mean it will have little need for smoothing. In fact the opposite is true. There will be inevitable differential settlement at bridge abutments and on high fills, and the fill areas through low lying areas and over prairie soil will still require significant smoothing—perhaps more than on a mature line. Second, the argument regarding rail joint damage to subgrade would have been reasonable thirty years ago in the decade following the replacement of jointed rail with welded rail, but that factor has not been relevant for decades.

The NS MOW Experts accept the per-crew staffing and equipment proposed by Mr. Crouch for smoothing crews. However, the NS MOW Experts conclude that three smoothing crews are required. The weak soil characteristic of much of the SBRR, the 44 MGT traffic density between Birmingham and New Orleans,[313] the surfacing required at the Norris hump

[313] Including 7% additional MGT for locomotive MGT.

yard, and the relatively significant 23 MGT over prairie soil on the McIntosh line require three smoothing crews. Mr. Bagley has examined the actual terrain and tonnage for this territory, and he is very familiar with the area because he was Engineer Maintenance of Way – Southwest and Chief Engineer Line Maintenance – West over this territory. On average, each smoothing crew would be responsible for 234 main track miles and 142 main track switches. In addition, the smoothing crews would provide the required smoothing on the 116 miles of yard and other track and 273 turnouts on yard and interchange tracks on the SBRR. The three smoothing crews would be allocated to the five Roadmasters by the Engineer MOW, according to need.

d. Signals and Communications

SunBelt proposes a Signals and Communications ("C&S") staff of 13. This total is less than one quarter of the number of C&S staff actually required for three reasons. First, SunBelt assumes that signal maintainers can maintain an average of 2,000 AREMA units—a number that is far above common experience in the real world and is almost double the average number of units per maintainer found reasonable in Board decisions of past cases.[314]

Second, as described more fully in III-F-6-a-ii, the signal system SunBelt proposes to build has many flaws, including the fact that it has no relation to the actual SBRR track configuration. As a result, the inventory of required signal equipment is incomplete and therefore the count of AREMA signal units upon which SunBelt bases its signal maintainer requirements is also understated by over half. NS has corrected the signal design for the SunBelt SBRR network and finds that the number of AREMA signal units should be 27,470 AREMA units, rather than the approximately 13,188 AREMA units counted by SunBelt's experts. *See*

[314] For example, the Board accepted staffing of 1,250 units per maintainer in *AEPCO 2011* and 1,239 in *WFA I*. *See AEPCO 2011*, STB Docket No. 42113, at 73; *WFA I*, STB Docket No. 42088, at 63.

infra at Part III-F-6 for a description of the inadequacies of the signal system proposed by SunBelt and the NS remedies. Third, SunBelt greatly underestimates the General Office support staff that is necessary to operate and supervise a signal and communications system of the extent and complexity of the one installed on SBRR. The NS MOW Experts provide remedies for these failings below.

To determine the number of communications and signal staff required for the revised signal system, the NS MOW Experts performed a bottom-up evaluation of each of the SBRR's line segments to determine the number of signal maintainers required on each line segment and the needed number of field support personnel such as signal technicians and signal inspectors. *See* NS Reply WP "Line Segment Work Load Evaluation.xlsx." The NS MOW Experts also designed a C&S maintenance force for the Norris hump yard required by SBRR. The NS MOW Experts then designed a supervisory, management, and technical organization for the field and General Office to oversee the maintenance and operation of the C&S system. The resulting C&S organization comprised of 51 employees is shown in Table III-D-36 below.

Table III-D-36
SBRR Base Year C&S Employees and Compensation

Signals & Communications	Positions	Salary	Total Salary
Superintendent of Signals & Communications	1	$ 90,266	$ 90,266
Signal Inspector	2	$ 61,519	123,039
Signal Supervisor	2	$ 73,867	147,734
Terminal Supervisor C&S	1	$ 68,259	68,259
Signal Technicians - Hump	1	$ 68,259	68,259
Signalmen - Hump	6	$ 68,259	409,555
Signal Technician	2	$ 68,259	136,518
Signal Maintainers	25	$ 68,259	1,706,479
Relief Signal Maintainers	2	$ 68,259	136,518
CTC Center Technician	1	$ 68,259	68,259
Communications Technicians Radio	2	$ 65,044	130,089
Manager of Signal Systems	1	$ 90,266	90,266
Engineer - PTC Signal Systems	1	$ 64,184	64,184
Engineer - PTC Communications Systems	1	$ 64,184	64,184
Coordinator Communications Control Center	1	$ 64,184	64,184
Manager Communications Systems	1	$ 79,482	79,482
Engineer Grade Crossings	1	$ 79,482	79,482
Total Signal & Communications	51	[redacted]	$ 3,526,757

Source: "III-D-3 NS-SBRR MOW.xlsx"

The C&S organization proposed by SunBelt and NS are compared in Table III-D-37 below.

Table III-D-37
Comparison of SunBelt and NS Signal Workforce

Signal & Communications	SunBelt	NS	Difference
General Office	3	7	4
Field Supervision	1	3	2
Field Worker	9	41	32
Total Signal & Communications	13	51	38

Source: "III-D-3 NS-SBRR MOW.xlsx"

i. General Office Staff

SunBelt provided for only three General Office staff for C&S. The provision of two generic Assistant Engineers, with no explanation of their duties or explanation of why two is adequate indicates that either SunBelt does not appreciate the scope of work to be performed or chooses to ignore the breadth of technical skills and extent of operational tasks that exist in Communications and Signals on the SBRR. The SBRR is a regional railroad in size, but has all of the technical complexity in signaling and communications of a major Class I railroad. It has complex systems for failed equipment detectors, CTC control and field systems, automatic train control, automated hump yards, systems engineering and communications systems, positive train control (beginning in 2015), and electronic and electromechanical interfaces that are essential to keep these systems functioning safely and reliably.

In contrast, the NS MOW Experts provide a modest, but competent, communications and signals complement of seven C&S General Office staff to provide operational, regulatory, technical, and system reliability services. Communications and signals are separate technical specialties with totally different knowledge bases. The signals and communications technologies employed on the SBRR are no less complex than those on a major Class I railroad. The only difference is a smaller quantity of equipment. Thus, a small staff of signals specialists and communications specialists is essential. The necessity for each C&S managerial and technical employee is explained below.

The Superintendent of Communications and Signals is responsible for overall management of the Department. He has five direct reports: 1) the two Signal Supervisors; 2) the Terminal Supervisor C&S; 3) the Manager of Signal Systems; and 4) the Manager of Communications Systems.

The Manager of Signal Systems is responsible for all technical issues regarding signal equipment on the SBRR system. The Manager of Signal Systems devotes the majority of his time to traditional signal system issues. He has one direct report, the Engineer – PTC Signal Systems, who is responsible for PTC signal technology, including the installation and operational commissioning of the PTC signal equipment. In the years before the 2015 installation of PTC, the Engineer – PTC Signal Systems will devote his time to the development, installation, and commissioning of PTC equipment, and beginning in 2015 he will be ultimately responsible for operation of the PTC system. His activities are over and above any contractor activities, since the SBRR cannot delegate final responsibility for the system.

The Manager of Communications Systems is responsible for selecting and maintaining all communications technology and equipment on the SBRR. His major focus is ensuring the reliable operation of the SBRR's communication systems, including VHF base station and mobile radios and the microwave system. He has two direct reports; the Engineer – PTC Communications and the Coordinator of Communications Systems. The Engineer – PTC Communications, has a role comparable to that of the Engineer – PTC Signals, but dealing with PTC communications. While there is a temptation to combine the positions into a single PTC engineer, the technical issues and technical background required for signals is totally different from those for communications. As with other parts of the communications and signals universe inside and outside the railroad world, the two are split into two specialties because the knowledge base and skills are so different for the two specialties.

The Coordinator of Communications Systems is responsible for the minute-to-minute performance and management of the communications network, as well as maintenance of the communications equipment inside the Dispatch Center. He monitors performance, dispatches

contractors, and oversees routine maintenance of the communications infrastructure. He is responsible for the development and deployment of the tests necessary to provide an efficient and reliable microwave and radio systems. Any outages necessary for maintenance of the microwave and field base radio system are scheduled, monitored and approved by this position. Any interface work at the microwave sites necessary for the installation of PTC will be handled jointly with the coordinator and the PTC communications engineer. This position is on call at all times for emergencies after normal working hours.

The CTC Technician position is discussed below under Dispatch Center.

The primary purpose and primary activities for each position are shown in NS Reply WP "MOW Job Titles and Job Descriptions.pdf."

ii. Field Staff

The C&S field staff proposed by SunBelt is also infeasible. SunBelt provides for one signal supervisor with an unrealistic territory length of 578 miles, supervising an inadequate complement of 7 signal maintainers. Seven maintainers cannot possibly maintain the SBRR C&S system, as explained below and a 578 mile long signal supervisory territory is unthinkable.

iii. Signal Maintainers, Inspectors and Technicians

As discussed above, the seven signal maintainers proposed by SunBelt are too few: (1) because the assumption that an average maintainer can maintain 2000 AREMA signal units is inconsistent with common practice and with past case decisions; and (2) because the estimate of the number of signal units to be maintained is too low. The NS MOW Experts count 27,470 AREMA units for their highly engineered signal system, *more than double* the 13,188 AREMA units of the inadequate system proposed by SunBelt. The facts that signal maintainer work capacity is overstated and the workload in AREMA units is understated result in SunBelt providing less than half the required number of signal maintainers. SunBelt also fails to

recognize that signal maintainers require the support of signal technicians and signal inspectors to assist with troubleshooting and testing.

In performing their evaluation of the SBRR signal maintainer workload, the NS MOW Experts examined several typical NS signal maintainer territories in an effort to understand the relationship between signal maintainer productivity, territory length and train frequency[315] and to obtain factual information about real world productivity of signal maintainers.[316] The signal maintainer territories that the NS MOW Experts examined ranged in length from 7 to 104 route miles with traffic density of 5 to 40 trains per day. Notwithstanding the very large differences in territory length and train frequency, the differences in maintainer productivity[317] were relatively small, differing by only about 10%. The actual AREMA units per maintainer ranged from 896 to 1,045 and averaged 950 AREMA units per maintainer territory.[318]

Based on these real world facts, the NS MOW Experts conservatively used a ratio of 1,100 AREMA units per signal maintenance territory to determine the number of signal maintainers required on a daily basis. Using 27,470 AREMA units for the SBRR system results in a requirement for 25 full time signal maintainers. While the Board accepted AREMA units per territory of 1,239 and 1,250 for the SARRs in *WFA I* and *AEPCO 2011*, both figures were based on unsubstantiated opinion rather than on any objective evidence. *See AEPCO 2011*, STB Docket No. 42113, at 73 and *WFA I*, STB Docket No. 42088, at 63. In this case, however, the evidence includes a study that real-world signal maintainers maintain an average of 950 AREMA

---

[315] Note that areas with high train density also have high signal density per mile and that areas with low train frequency have low signal density, often only grade crossing signals with no traffic control signals.

[316] *See* NS Reply WP "Signal Maintainer Productivity.xlsx" for details of the analysis discussed in this paragraph.

[317] Measured in AREMA units per signal maintainer.

[318] *See* NS Reply WP "Signal Maintainer Productivity.xlsx."

units – over a wide range of conditions, and the fact that in past cases the Board accepted higher averages based on the evidence presented in those cases is irrelevant. *Cf. AEPCO 2011* at 58-59 (Board's acceptance of certain assumptions in past cases does not mean it will not consider evidence that different assumptions are warranted).

The NS MOW Experts provide two signal supervisors to supervise the 25 signal maintainers, giving each supervisor 12-13 maintainer territories covering an average of 289 route miles.

In addition to staffing each signal maintainer territory with a signal maintainer, there is a requirement for relief signal maintainers to replace regular signal maintainers who are off for vacation or other reasons for more than a day or two. The primary duty of a signal maintainer is the task of making required Federal Railroad Administration ("FRA") tests in a timely manner. Proper maintenance and testing is vital in ensuring the equipment is in compliance with FRA regulations. The testing and maintaining required to meet the FRA regulations must be completed on "not to exceed" frequencies; some of which are every 30 days,[319] some of which are every 90 days, some of which are every two years and some of which are every four years.[320] Failure to make and record the required tests by the due date for the test results in fines.[321] A history of failure to comply with testing requirements not only results in fines, but creates a permanent record that could imply insensitivity to safety on the part of the railroad. It is therefore essential to keep a signal maintainer territory manned to keep the tests and inspections up to date. Beyond the regulatory imperative to comply with testing schedules, there is an

---

[319] Thirty days does not mean once a month—it means every 30 calendar days, or less.

[320] *See, e.g.*, 49 C.F.R. §§ 236.101—236.110; 236.376—236.387and Reply WP "FRA Signal Test Schedule.pdf which is NS instructions to signal maintainers, showing the testing frequency for each test, based on the FRA signal testing regulations.

[321] *See* 49 C.F.R. § 234.6.

operational imperative to ensure quick responses to failures of train control signals or grade crossing protection systems to avoid train delays and delays to automobile travel.

Because of the stringency of regulatory requirements and because of the importance of rapid response to train control signal failures or grade crossing signal failures, signal maintenance territories must be covered for any vacancy lasting over a day or two. The NS MOW Experts provide two relief maintainers to cover the 25 signal maintainer posts spread over 578 miles. For all other MOW positions, vacation and other absences are covered by other regular employees. Consequently, the NS MOW Experts provide regular maintainers for 25 territories,[322] and 2 relief maintainers, or a total of 27 signal maintainers.[323]

SunBelt omitted two essential signal positions necessary for carrying out signal tests and complex troubleshooting of the signal system: Signal Inspectors and Signal Technicians. Signal Inspectors perform two-year, four-year and ten-year FRA mandated tests with the assistance of the Signal Maintainer.[324] These tests are beyond the qualifications of a signal maintainer and frequently require two people (inspector and the signal maintainer) to carry out. The NS MOW Experts provide for one signal inspector per signal supervisor, for two signal inspectors.

A Signal Technician performs maintenance and troubleshooting on electronic signal equipment such as code units, electronic track circuits, electronic grade crossing gate controls, and data radio handling CTC signals at control points. This work is beyond the skills of a typical signal maintainer. The NS MOW Experts provide for one technician per signal supervisor for a total of two signal technicians.

---

[322] 27,470 AREMA units / 1,100 units per territory = 25.

[323] Relief maintainers are not included in the comparison of AREMA units per maintainer since, mistakenly, there were no relief maintainers provided in *AEPCO 2011* or *WFA I.*

[324] 49 C.F.R. Part 234 for grade crossing signs, 49 C.F.R. Part 236 for train control signals.

iv. Norris Hump Yard

The Norris hump yard requires a dedicated signal maintenance workforce to maintain signals, car retarders and associated electrical, electronic and mechanical equipment. The yard requires a C&S Terminal Supervisor and one electronic technician who maintains the processor based control system for the hump yard. This includes monitoring the system to see if any adjustments need to be made because of weather changes or other changing conditions. The technician will also troubleshoot and repair electronic equipment such as track circuit loops, the distance to couple unit and radar systems. The position is on call when not working the normal first shift.

Six signalmen are also required at the hump yard; four on first shift and two on second shift. The first shift maintains the master, group and skate retarders to ensure proper operation. To operate properly, these retarders must be checked to ensure they are in proper adjustment to ensure that they can properly control the speed of the cars being humped; allowing a car to be released at too fast a speed results in either a derailment or damage, too slow results in a stalled car that must be coupled into and pushed by a locomotive to couple with the other cars, which results in humping delays. Testing and adjusting these retarders is time consuming, and if retarder brake shoes have to be replaced, is also very physical. Since work is generally taking place in more than one location, a minimum of two men must be assigned to every "on track" project to meet FRA Roadway worker safety regulations when a track cannot be made inaccessible.[325] The two signal employees that work second shift primarily do testing and small repairs as well as troubleshoot issues if necessary. Again, two employees are needed to meet FRA roadway worker requirements on the second shift.

---

[325] *See* 49 C.F.R. §§ 214.313 Subpart C – Roadway Worker Protection.

v. Dispatch Center

In addition to understating the required number of Signal Maintainers and omitting Signal Inspectors and Signal Technicians, SunBelt also misjudged the requirements for the maintenance of the dispatch center. SunBelt provides "on call" service by a communications technician, a signal maintainer and an IT specialist from the General Office. The "on-call" technician, as proposed, is also a roving technician that could be anywhere on the SBRR lines at the moment he is needed in the Dispatch Center and not available for hours after a fault in the Dispatch Center. Clearly, this is not a feasible plan. The Dispatch Center technician must be available when needed.

NS accepts the on-call IT specialist but not the on-call communications technician proposed by SunBelt. Sunbelt's communications technicians are relatively low skilled and principally involved in radio change outs in locomotives and vehicles and programming the radios. The maintenance and repair requirements in the Dispatch Center are much more sophisticated. In the NS plan, the Coordinator Communications Control Center is also responsible for maintenance and repair of the communications equipment in the Dispatch Center.

The NS MOW Experts also do not accept the SunBelt proposal for an on-call signal maintainer. The equipment in the Dispatch Center is completely different from the wayside equipment that a common signal maintainer is qualified to maintain. The Dispatch Center requires a dedicated CTC Center Technician with intimate familiarity with the operation and maintenance of the equipment in the Dispatch Center to keep equipment critical to the movement of trains in operation without interruption. The technician is on call at all times. When necessary, the technician also serves as an interface between dispatchers and signal maintainers as the technician can pull up any dispatching territory on his maintenance monitor and help

manage signal outages during busy times in the center and emergencies. The technician would be on call when not on duty.

vi. Communications Technicians

SunBelt provides for two roving communications technicians. SunBelt's indication that the technicians are "roving" is too vague to evaluate. SBRR Opening Ex. III-D-3 at 11. Sunbelt also claims that the roving technicians would be on-call to troubleshoot problems at the Dispatch Center. However, when there are problems with communications equipment in the Dispatch Center, immediate attention is required and roving maintainers may not be nearby. Moreover, the communications technicians are required to be qualified for VHF mobile radio maintenance, replacement and minor repairs. More skill is required than the common radio technician has. SunBelt's plan is an ill-conceived approach for maintenance of SBRR radio equipment.

The NS MOW Experts have evaluated the radio maintenance work load for the SBRR, and they determined that two communications technicians are required. The two technicians will be located at the radio shop at Norris yard where demand for service would be heaviest. The radio shop will also be required to install and make minor repairs to hand held radios and radios in SBRR vehicles and work equipment. Radio installations are time consuming, and it would not be practical to stop other work to do the installation work. In cases such as this, two employees in the radio shop is a more efficient operation as one can be making the install while the other is performing other maintenance. Maintenance of communications equipment in the Dispatch Center is handled by the Coordinator Communications Center, as described above at III-D-166 to III-D-167.

e. Bridge & Building Department

SunBelt proposes a Bridge & Building ("B&B") Department of 10 employees. As was the case with both Track and C&S departments, SunBelt understates the requirement for B&B

resources. SunBelt's assumption that one crew can cover 578 route miles and 427 bridges totaling almost 23 miles in length (including four movable bridges) is unrealistic.

As explained below, the SBRR will actually require two B&B crews of four men each as part of a maintenance workforce of twelve plus thirteen bridge tenders to operate three of the four movable bridges around the clock. The specific positions and compensation levels of the NS MOW Experts' workforce for this department are shown in Table III-D-38 below.

Table III-D-38
SBRR Base Year Bridge and Building Employees and Compensation

Bridges & Buildings	Positions	Salary	Total Salary
Engineer Structures	1	$ 90,266	$ 90,266
Bridge & Building Supervisor	1	$ 73,867	73,867
B&B Foremen	2	$ 63,061	126,123
Multiskilled Bridge Maintenance Workers	6	$ 55,301	331,806
B&B Machine Operator	2	$ 61,519	123,039
Bridge Inspectors	1	$ 70,127	70,127
Bridge tenders	13	$ 63,061	819,797
Total Bridge	26	[redacted]	$ 1,635,024

Source: Reply "III-D-3 NS-SBRR MOW.xlsx"

The B&B organizations proposed by SunBelt and NS are compared in Table III-D-39 below.

Table III-D-39
Comparison of SunBelt and NS Bridge and Building Workforces

Bridge & Building	SunBelt	NS	Difference
General Office	1	1	0
Division	0	0	0
Field Supervision	1	1	0
Field Worker	8	24	16
Total Bridge	**10**	**26**	**16**

Source: "III-D-3 NS-SBRR MOW.xlsx"

i. General Office Staff

SunBelt provides a single Bridge Engineer in the General Office with unstated duties. The NS MOW Experts likewise provide a single position of Structural Engineer who performs the function of the bridge engineer and other associated functions required by the SBRR such as checking structural plans that may be submitted to the railroad for approval by customers and others needing railroad approval of construction that may affect the safety or reliability of the railroad. He would also serve as the clearance engineer to approve the movement of high, wide, and heavy loads across the railroad and is the technical resource for movable bridges.[326]

ii. Field Staff

The NS MOW Experts understand that the newly constructed bridges proposed for the SBRR have different maintenance requirements than the bridges that currently exist on NS. Nonetheless, new bridges still need a workforce for ongoing maintenance, inspections, and repairs, as detailed below.

(a) B&B Supervisors

The NS MOW Experts accept SunBelt's proposal for one B&B supervisor.

(b) Bridge Inspectors and Other Field B&B Employees

The NS MOW Experts accept SunBelt's proposal for one bridge inspector. SunBelt's B&B Department's other field employees include a bridge maintenance crew consisting of one Foreman, a Welder, a Helper, and a Carpenter. There is also a B&B Machine Operator operating a bridge crane with one foreman designated to work alone with the Bridge Crane Operator. SunBelt does not explain what the two men would do or why it is feasible to work in this crew

[326] *See* NS Reply WP "MOW Position Descriptions.pdf."

configuration. Moreover, SunBelt omits the bridge hoist from its equipment list.[327] The NS MOW Experts conclude that such an arrangement is infeasible, unsafe and unproductive. A single person working with a lifting device at a bridge will normally not be visible from the hoist operator's location and—even if communication is possible—a single man working with a bridge hoist is inefficient. Moreover, a single bridge maintenance crew is not a feasible workforce for a railroad with the bridge inventory of the SBRR, as described above.

While little routine maintenance will be required, routine repairs and operating tasks must be performed. To name a few examples, damage will be caused by derailments and washouts; hand rails will be damaged by foreign objects falling from cars; wooden ballast retainers must be maintained; driftwood must be removed from bridges and culverts; bridge drainage systems must be kept free of debris; and movable bridges will require servicing and occasional maintenance and troubleshooting from the outset.

To more appropriately provide for operation and maintenance of the SBRR's structures, the NS MOW Experts have provided two B&B crews. Since the territories are almost 300 miles long, the B&B crews are traveling crews and must be completely self-sufficient. Each B&B crew consists of a foreman, a welder, and two helpers and is equipped with a standard railroad bridge maintenance truck. A dump truck with a backhoe on a trailer is provided to assist each of the two B&B maintenance crews, in lieu of the bridge cranes suggested by SunBelt (but omitted from SunBelt's equipment list). The NS MOW Experts do not object to bridge cranes, but believe that assigning each crew a backhoe (which is less expensive than a bridge crane) makes the crew more self-sufficient and effective over a wider range of jobs and avoids the need to transport the bridge crane from place to place by truck. A significant part of the crew's work

[327] *See* SunBelt Opening WP "Exhibit III-D-3 SBRR MOW.xls," Tab "Equipment."

will consist of removing accumulated debris from the upstream side of the bridges; performing minor slope repairs and rip rapping; and performing other tasks where the backhoe can be as useful or more useful than a bridge crane.

f. Misc. Administrative/Support Personnel

SunBelt provides for six Engineering administrative and support personnel.[328] This small number actually overstates the amount of support available, since two of the positions provide no support or administrative capability. The Manager of Mechanical Operations is not mentioned anywhere in SunBelt's narrative, so his proposed role is unknown. The Water Plant and Fueling Technician is a field position who seems to report to no one. Moreover, SunBelt does not specify a reporting structure for these employees; they are apparently self-supervising. The NS MOW Experts omit the unexplained position of Manager of Mechanical Operations from the NS MOW plan. The Water Plant and Fueling Technician is also omitted from the NS MOW plan as those responsibilities are assumed by SBRR Environmental Group.

As a replacement for the ill-considered SunBelt support staff, the NS MOW Experts create a Support Services group of thirteen headed by a Manager of Support Services. The Manager of Support Services has five professional reports: 1) Public Project Engineer, 2) Manager of Engineering Costs and Business Systems, 3) System Engineer – Tax, Real Estate, and Joint Accounts, 4) Director of MOW Safety and Training, and 5) Staff Engineer – Records and Maps. In addition, the Manager of Support Services is responsible for distributing work among the three Administrative Assistants and for overseeing the three management trainees.

---

[328] *See* SunBelt Opening Ex. III-D-3 at 14 & Table 5.

Table III-D-40
Comparison of SunBelt and NS Support and Administration Workforces

All Other Support and Administration	SunBelt	NS	Difference
Management, Administration & Other	6[329]	7	1
Clerical	3	3	0
Trainees	0	3	3
Total General Office	9	13	4

Source: "III-D-3 NS-SBRR MOW.xlsx"

The specific positions and compensation levels of the NS MOW Experts' workforce for this department are shown in Table III-D-41 below.

Table III-D-41
SBRR Base Year Support Services Employees and Compensation

Support Services	Positions	Salary	Total Salary
Manager of Support Services	1	$ 90,266	$ 90,266
Public Project Engineer	1	$ 79,482	79,482
Manager Programs and Contracts	1	$ 73,867	73,867
Manager - Engineering costs and Business Systems	1	$ 79,482	79,482
System Engineer - Real Estate, Tax and Joint Accounts	1	$ 79,482	79,482
Staff Engineer - Records & Maps	1	$ 64,184	64,184
Manager MOW Safety and Training	1	$ 79,482	79,482
Management Trainees	3	$ 64,184	192,552
Administrative Assistant/Clerk-GO	3	$ 57,932	173,796
Total Support Services	13	[redacted]	$ 912,591

Source: "III-D-3 NS-SBRR MOW.xlsx"

i. Engineer of Programs and Contracts

SunBelt provides for one Engineer of Programs and Contracts who is responsible both for implementation and monitoring of the SBRR's contracts for program and other maintenance and for preparing the Engineering Department's overall budget for approval by the Vice President-Engineering and other senior management.

[329] Water Plant & Fueling Technician, Manager Mechanical Operations, Engineer Programs &Contracts, Public Project Engineer, Manager Administration & Budgets, Manager Environmental/Safety/Training.

The NS MOW Experts accept one position for the purpose of administering programs and contracts, but on a full time basis and with additional duties. The Engineer Programs & Contracts will also assess track geometry measurement data, analyze results of rail flaw testing, recommend rail programs, plan rail grinding programs, and assist the Engineer MOW in assigning smoothing crews according to need.

ii. Public Project Engineers

SunBelt provides for one Public Project Engineer to interface with governmental agencies and other entities in handling requests for various types of public projects including rail/highway grade separations, new grade crossings, utility projects, and right-of-way encroachments. The Public Project Engineer also provides engineering expertise and support to the Roadmasters for issues related to such projects in their territories. The NS MOW Experts agree that a combination field/office position such as this is required. The Public Project Engineer would cover SunBelt's network and several major metropolitan areas. He would be in the field to perform preconstruction site visits and visits during construction to deal directly with fiber optic construction; wire and pipe crossings; drainage projects; over/under railroad bridge construction; billboard construction; right-of-way encroachments; and crossings at, above and below grade. Since there is no professional structure to provide him with standards and professional engineering support, plan review, and design guidance, this one individual would carry those responsibilities.[330]

[330] The Public Projects Engineer works closely with the Engineer – Grade Crossings in the C&S department who is responsible for technical standards and procurement of design of grade crossing signal circuits and interlocking of rail-highway grade crossing signals with highway traffic control signals.

iii. Manager of Administration & Budgets

SunBelt provides for a Manager of Administration & Budgets, who interfaces with the Human Resources Department with respect to hiring MOW employees. As proposed, he also assists the Engineer of Programs and Contracts in preparing the annual Engineering/MOW budget, and is responsible for the MOW payroll and monitoring/payment of contractor invoices.

The NS MOW Experts accept this position, so far as it goes, but expand the responsibilities and title the position Manager Engineering Costs and Business Systems. This position would be responsible for the MOW financial and business systems necessary to support the MOW function; the preparation and monitoring of budgets; and researching variances on behalf of the AVP Engineering. He would have principal responsibility for administration of the MOW budget. Functional department heads would have line responsibility for management of the budget.

iv. Managers Environmental/Safety/Training

SunBelt proposes a Manager Environmental/ Safety/Training to interface with federal and state environmental authorities on compliance, and monitor environmental compliance with respect to the SBRR's MOW activities. SunBelt proposes that they also manage the vegetation control program for the Track Department, and be responsible for MOW employee training and compliance with Hazmat practices and procedures. This hodgepodge of responsibilities makes no sense in the real world.

Environmental issues, with their regulatory, reporting and technical complexity, require completely different skills from safety and training. NS takes a more focused approach and places responsibility for environmental issues in the SBRR Environmental Group, described above at III-D-100 to III-D-108. To provide for MOW safety and training activities, the NS MOW Experts provide a Manager of MOW Safety and Training reporting to the AVP

Engineering. This position is responsible for overseeing the overall MOW program in training and safety, though the primary responsibility for safety rests with first line supervisors and line managers. The Director of Safety and Training is responsible for supporting the SBRR's managers and supervisors in securing necessary training in maintenance and safety. He also evaluates the safety performance of the MOW organization and reports to the AVP Engineering regarding training and safety and recommends undertakings by the MOW department to improve safety and competency for the MOW employees in the field.

v. Manager Mechanical Operations

SunBelt provides for a Manager of Mechanical Operations, but does not mention the position in the narrative. The NS MOW Experts delete this position from the NS MOW plan.

vi. Water Plant and Fuel Technicians

SunBelt provides for one Water Plant and Fuel Technician responsible for maintaining and repairing water and fuel equipment systems. SunBelt says the position is responsible for monitoring systems and performing preventative maintenance and general maintenance as necessary.

SunBelt's approach appears rooted in the 1980's when water and fuel service employees maintained these facilities. Moreover, SunBelt does not specify a reporting structure for these employees or any of the other employees in the SunBelt Admin/Support group shown in III-D-3 Table 5, leaving them all with no one to report to but the AVP Engineering.

As proper operation and maintenance of pollution control facilities has become more critical and highly regulated, the maintenance and operation of these facilities has had to become more professional. NS provides for this function within the SBRR Environmental Group, discussed above at III-D-100 to III-D-108. NS provides no MOW employees for this function.

vii. Allocation of MOW Personnel to Operations and Maintenance Expense

SunBelt allocates unrealistic amounts of time to non-operating activities. Those allocations are inconsistent with SunBelt's assertion that all MOW work other than routine maintenance will be contracted out. The appropriate allocation of MOW time between operating and non-operating activity is described below and in NS Reply WP "Correction of SunBelt assignment of time to operating expense.docx."

The NS MOW Experts allocate a realistic portion of the time of positions in the MOW workforce to non-operating activities within the framework of a much more meticulous description of the required MOW organization. The NS MOW Experts' rationale for assigning time to operations and maintenance are discussed below.

The great majority of positions in the NS MOW Experts' MOW workforce are engaged entirely in maintenance and operations of the railroad. However, a few essential positions are engaged in both operations and maintenance and capital and other work.[331]

The Engineer MOW is assigned 85% to operations and maintenance, because SBRR capital maintenance is contracted out and operating management of that work is the responsibility of contractors. The remaining 15% of time is involved with the identification of necessary capital projects and ensuring the results meet SBRR specifications. The Engineer Structures is likewise allocated 85% to operating expense based on the allocation of the staff reporting to him. The Superintendent Signals and Communications is allocated 85% to operating expense. The Public Project Engineer is 33% allocated to operating expenses, since some of his

[331] Only positions that are fully or significantly engaged in operations and maintenance of the infrastructure are included in the NS MOW workforce. Positions that would be fully dedicated to capital and recollectable work are not included in the NS MOW workforce. The NS MOW Experts' MOW plan provides for all non-routine infrastructure maintenance work to be contracted out, as does the SunBelt plan.

time is involved in speculative projects that never come to fruition and other matters that cannot be billed.

The Manager of Engineering Costs and Business Systems is 75% allocated to operating expense assuming the operating budget consumes 50% of his time, the capital budget consumes 25%, and other administrative activities consume 25%. The remaining positions are fully engaged in operations and maintenance of the railroad. *See* NS Reply WP "MOW Job Titles and Job Descriptions.pdf" for details of principal purpose and principal duties of positions.

g. Non-Program MOW Work Performed by Contractors

SunBelt provides for the outside contracting of some MOW work. The NS MOW experts generally accept this approach, but correct the costs as detailed below. The costs associated with the contract work performed in these areas of maintenance are summarized in Table III-D-42 and described below.

Table III-D-42
SBRR Base Year Contract Maintenance Expense

Contract Service	SunBelt Opening	NS Reply
Geometry Testing	$ 105,138	$ 332,732
Rail Flaw Detection Testing	180,646	141,599
Rail Grinding	383,763	564,326
Yard Cleaning	41,705	159,004
Vegetation Control	472,124	870,721
Major Bridge Inspection Cost	82,277	82,277
Shoulder Ballast Cleaning	-	145,032
Ditch Cleaning	-	-
Re-Paving Crossings	134,285	134,285
Snow Removal	-	-
Storm Debris Removal	10,000	25,000
Washouts	10,000	50,000
Environmental Cleanup	10,000	10,000
Clearing for Wrecks	310,580	482,591
Derailment Cost	418,524	954,788
Bridge Maintenance	32,000	32,000
Building Maintenance Cost	352,212	3,515,842
Communications System Maintenance	467,931	467,931
	$ 3,011,184	$ 7,968,126

Source: III-D-3 NS SBRR MOW Plan.xlsx

h. Planned Contract Maintenance

The NS MOW Experts accept SunBelt's assumption that the SBRR would contract out track geometry testing, ultrasonic rail testing and rail grinding services and that these are necessary functions.[332] The NS MOW Experts disagree about the quantities of testing to be performed and the unit cost of performing the tests, as described below.

i. Track Geometry Testing

SunBelt uses a cost of {{ }}/track mile tested, which it inaccurately asserts is based on data provided by NS in discovery.[333] In fact, the {{ }} rate is one concocted by a

[332] SunBelt Opening Ex. III-D-3 at 17.

[333] *Id.*

bewildering mix of operating expense and capital expenditures in an opaque workpaper that provides no sources or explanations for its calculations.[334] But what is clear from SunBelt workpaper "Rail and Track Testing Costs.xls" is that SunBelt's "contracting" cost is based in part on NS capital costs for purchasing track geometry testing equipment. This provides no support for an estimate of the costs of SunBelt's avowed plan to contract out track geometry testing.

As Sunbelt intends to contract out geometry testing, the correct rate for track geometry testing is {{

}} *See* NS Reply WP "III-D-3 NS SBRR MOW.xlsx," Tab "Geometry Testing - Reply."

SunBelt provided no documentation in support of its proposed number of miles by density class so it is impossible to confirm the calculated miles of track geometry testing. The NS MOW Experts have created an alternative geometry testing plan based on NS's revised network and tonnage as shown in NS Reply WP "III-D-3 NS SBRR MOW.xlsx," Tab "Geometry Testing - Reply." The NS MOW Experts accept SunBelt's proposed testing frequency of annual testing for lines with 5-30 MGT, testing every 6 months for lines of 30-60 MGT and testing every four months for lines over 60 MGT.

ii. Ultrasonic Rail Testing

The NS MOW Experts accept the use of { } per mile for rail flaw testing, but reject SunBelt's calculation of testing quantities. The methodology evident in the Opening workpaper[335] does not conform to the narrative explanation nor the requirements of 49 CFR § 213.237 - Inspection of Rail. SunBelt's MOW narrative exhibit says that "SBRR will conduct

[334] *See* SunBelt Opening WP "Rail and Track Testing Costs.xls."

[335] *See* Opening WP "Exhibit III-D-3 SBRR MOW.xls," Tab "Rail Flaw Testing."

ultrasonic rail testing at least once a year on all of its main line, and twice a year on track carrying 40 to 80 MGT." SunBelt Opening Ex. III-D-3 at 18. But the supporting workpaper categorizes SBRR into three classes with densities of 5-30 MGT, 30-60 MGT, and Over 60 MGT. These three categories are not consistent with the 40 MGT standard for Class IV track that Sunbelt claims to use in the MOW exhibit and that FRA has mandated in 49 CFR § 213.237. A second error is that Sunbelt calculates testing based on route miles rather than the required track mile basis. SunBelt seems to have erroneously replicated its approach to geometry testing in their calculation of ultrasonic rail testing requirements.

The NS MOW Experts have calculated testing frequency and resultant miles of required testing in conformance with FRA regulations[336] in Reply workpaper "III-D-3 NS MOW Plan.xlsx," Tab "Rail Flaw Testing-Reply." The NS MOW Experts have created an alternative analysis of testing requirements conforming to FRA regulations.

iii. Rail Grinding

The NS MOW Experts accept SunBelt's policy to grind rail every 60 MGT for tangent track, with one pass for tangent rail and rail in curves less than 3 degrees, and two passes for curves equal to or greater than 3 degrees. The NS MOW Experts also accept SunBelt's rail grinding unit cost per track mile of {{ }} for 2009 and update it to a 2011 cost of {{ }}. However, the NS MOW Experts reject SunBelt's suggestion that premium rail in sharp curves does not need to be ground before 100 MGT. This assertion does not comport with published research on good rail maintenance practice.[337] The NS MOW Experts have calculated required rail grinding miles using a grinding frequency of 25 MGT for curves 3 degrees or more

---

[336] 49 CFR § 213.237.

[337] *See, e.g.* Peter Sroba, National Research Council of Canada, "Rail Grinding Best Practices," 2003, p. 11, *available as* NS Reply WP "Rail Grinding Best Practices.pdf."

where annual gross tonnage is greater than 20 MGT, 30 MGT for all other curves, and 60 MGT for tangent track, consistent with best practice recommendations.[338] *See* NS Reply WP "III-D-3 NS SBRR MOW.xls," Tab "Rail Grinding – Reply" for details.

SunBelt's proposal to capitalize rail grinding costs squarely conflicts with Board precedent and NS practice. In *WFA I*, the Board accepted treatment of the cost of rail grinding as an operating expense, notwithstanding the complainant's argument that it should be capitalized because it extends rail life.[339] The Board reaffirmed the practicality of expensing rail grinding in *AEPCO 2011*.[340] SunBelt is factually incorrect in stating NS capitalizes rail grinding. NS charges rail grinding to operating expense.[341] Accordingly, NS includes annual rail grinding in SBRR annual MOW operating expense. SunBelt provides no justification for its decision to depart from Board precedent, and its failure to do so requires rejection of its arguments. *See SAC Procedures*, 5 S.T.B. at 446 ("the parties to SAC cases are cautioned not to attempt to relitigate issues that have been resolved in prior cases. Unless new evidence or different arguments are presented, we will adhere to precedent established in prior cases.").

iv. Yard Cleaning

Mr. Crouch proposes that SBRR's yards be cleaned once a year in order to ensure that debris does not affect rail operations. The SunBelt annual cost for yard cleaning is $41,705 per

---

[338] *Id.* Table 3

[339] *See WFA I*, STB Docket No. 42088, at 71.

[340] *See AEPCO 2011*, STB Docket 42113, at 77.

[341] *See* NS Reply WP "Rail Grinding SEC Letter" (NS response to SEC inquiry stating that NS does not capitalize rail grinding costs and that "[w]e expense . . . all costs for rail grinding and shoulder ballast cleaning[] when incurred"); NS Reply WP "Rail Grinding Email" (explaining that NS does not capitalize rail grinding).

year based on a verbal quote from ARS, a company used by Class I railroads for yard cleaning.[342]

The NS MOW Experts agree that for safety and health reasons, yard tracks must be cleaned at least annually to remove all foreign materials that fall from rail cars when cars are moved during handling operations. The NS MOW Experts also accept the daily rate of $2,600 proposed in SunBelt Opening WP "Exhibit III-D-3 MOW Costs," Tab "Yard Cleaning" updated to a 2011 daily rate of $2,791. However, SunBelt's allowance of three work days per yard is not realistic.

SunBelt's workpaper on Yard Cleaning costs only allowed for three days for each yard location (one day for mobilization, one day for cleaning yard tracks, and one day for demobilization) without any consideration for the size of the yards or the level of train activity. Because SunBelt claimed that its costs were obtained from a 2009 conversation with ARS Corporation, the NS MOW Experts contacted Mr. Vinnie Vaccarello, co-president of ARS Corporation to confirm average daily production rates for its yard cleaning machines and average cost per day of the machine.[343] Using a ten-hour workday with a very liberal eight-hours of productive on-track work time, and only one pass over the track to adequately remove all spilled material from rail cars, Mr. Vaccarello provided an average daily yard cleaning machine

---

[342] SunBelt Opening Ex. III-D-3 at 22.

[343] Mr. Vaccarello explained there are many factors which affect daily production rates, *e.g.*, are cars readily available for loading the material removed from the track structure, is yard crew or work train crew available to handle rail cars for loading the material removed from the track structure, what is the available on-track work time for the yard cleaning machine, what is the number of passes required over the track to adequately remove material spilled from rail cars.

production rate of approximately 10,000 track feet and a per day machine cost of approximately $2,600, not including fuel and lubricants.[344]

Based on this average daily production rate of 10,000 track feet, the NS MOW Experts took a more methodical and realistic real world approach to calculating yard cleaning costs. Using the 108[345] miles of yards for the SBRR System and an average daily yard cleaning production rate of 10,000 track feet, the NS MOW Experts calculated the total annual cost of yard cleaning for the SBRR to be $159,004.[346]

v. Vegetation Control

NS accepts SunBelt's general approach to determining vegetation control needs: that SBRR vegetation control costs will be a unit cost determined from NS actual 2009 costs for these cost categories. However, everything about SunBelt's calculation of Vegetation Control costs is wrong.

First, SunBelt errs in calculating the unit cost of the brush spray program by using 484 as the denominator, which is actually track miles sprayed, not track miles on the Alabama Division.

Second, for the crossing maintenance program, SunBelt uses one month of expenses rather than one year and again uses the incorrect denominator of 484 for track miles.

Third, SunBelt omitted critical categories of vegetation control. In discovery, NS provided costs for the ballast program, a program to spray the ballast section and toe-path area.

---

[344] The NS MOW Experts were unable to obtain a written estimate from Mr. Vaccarello to memorialize the oral estimate cited above because of Mr. Vaccarello's recent sudden death.

[345] Excludes intermodal, auto and bulk transfer yards.

[346] *See* NS Reply WP "Exhibit III-D_E NS SBRR MOW.xlsx."

This is an essential part of NS's vegetation control costs that SunBelt omitted from its cost calculations and that the NS MOW Experts have included.[347]

In addition, SunBelt assumes that the SBRR would incur little or no brush cutting costs, because spraying of construction-cleared right of way would greatly inhibit the growth of brush.[348] There are, however, some areas where herbicide brush control cannot be used, such as urban areas where there are ornamental shrubs and locations where there are crops growing. Most towns have vegetation ordinances that require brush to be maintained to a certain height. It is therefore necessary to mechanically cut portions of the route in addition to brush spraying. Without an aggressive brush spray program, it would be necessary to cut the entire route every three to four years. With a good brush spray program, brush cutting can be limited to many fewer miles per year. Vegetation control costs are summarized in Reply WP "III-D-3 SBRR MOW.xlsx," Tab "Vegetation Control-Reply."

vi. Crossing Repaving

The NS MOW Experts accept SunBelt's estimated annual costs of $ 134,285 for crossing repaving. However, the only activity of this work task, as described by SunBelt, is to replace pavement, not to replace the entire crossing as would be the case with a capital program. When only crossing paving is done, the crossing timbers, track ties and ballast are left undisturbed by crossing paving and hence, this is a routine maintenance function, not a function properly charged to capital.

vii. Shoulder Ballast Cleaning

SunBelt omitted the essential maintenance function of shoulder ballast cleaning. Although the SBRR will need no such work in the first three years, it will require shoulder

---

[347] *See* NS Reply WP "III-D-3 NS SBRR MOW.xls," Tab "Vegetation Control – NS".

[348] SunBelt Opening Ex. III-D-3 at 21.

ballast cleaning thereafter on four to five year cycles.[349] Shoulder ballast cleaning removes ballast from the ends of the ties and from under the first six inches from the end of tie, and cleans that ballast to ensure that water that accumulates in the ballast section has a free path to escape from the track. Shoulder ballast cleaning is a cost effective way to protect the subgrade from saturation, which is particularly important given the soils under the SBRR.

The NS MOW Experts have learned, through many years of experience, that the most economical method to clean the ballast is with a shoulder ballast cleaner. These are large machines with 30" wide ditching wheels on each side of the track. These wheels pick up all of the ballast from the ends of the ties to the toe of the ballast section. The ballast is then placed on conveyors and moved to a large screen, where it is shaken and particles less than 1" are separated from the ballast. The debris is deposited on the right of way, and the cleaned ballast is returned to the track by a conveyor system. The ballast cleaners can have a ballast regulator built into the machine, or a ballast regulator can be operated as an independent machine. Most of the ballast can be salvaged in this operation. Where there is a large amount of fine material removed, it is necessary to unload additional ballast behind the operation. If the shoulder ballast cleaner is not operated on a regular cycle, the track will become contaminated with mud, which causes geometry defects, increased maintenance costs, and potential for derailments. Once the ballast gets in this condition, the track must be undercut and all the ballast replaced with new ballast.

SunBelt completely misjudged the need for shoulder ballast cleaning on the SBRR, alleging that shoulder ballast cleaning was not applicable for new construction.[350] On the contrary, for the reasons described above a Class 1 railroad carrying SBRR's traffic density over

---

[349] *See* NS Reply WP "III-D-3 NS SBRR MOW.xls," Tab "Shoulder Ballast Cleaning – NS" for required cleaning cycles on SBRR lines."

[350] *See* Opening WP "Exhibit III-D-3 SBRR MOW.xls," Tab "Total," Cell B41.

the terrain and soils would require an annual program for shoulder ballast cleaning to adequately maintain the track structure of the 702 miles of main and branch main track.

To establish reasonable annualized shoulder ballast cleaning program requirements and associated costs for the SBRR, the NS MOW Experts first determined what SBRR lines would require ballast cleaning, and how often cleaning would be required. After considering factors like density, the NS MOW Experts divided the SBRR's line segments into two categories: (1) lines requiring ballast cleaning every four years; (2) lines requiring ballast cleaning every five years. The result of this analysis was a conservative estimate that the SBRR would require shoulder ballast cleaning on an average of 164 track miles of main and passing siding miles annually.[351] To determine the costs for shoulder ballast cleaning, the NS MOW Experts investigated NS's use of outside vendors specializing in this type of maintenance activity. {{

}}[352] Using the hourly contract rates for shoulder ballast cleaning in the 2002 contract with {{ }}, escalated to 2011 costs of {{ }} per 10 hour day, the NS MOW Experts calculated a very conservative annualized cost of {{ }} for shoulder ballast cleaning on the SBRR. The cost per pass mile cleaned is a very conservative {{ }}.

viii. Equipment Maintenance

While the SBRR has three in-house mechanics that perform routine maintenance and repairs to the basic equipment used by the field track forces, heavy maintenance of SBRR leased

---

[351] *See* Reply WP "III-D-3 NS SBRR MOW Plan.xlsx," Tab "Shoulder Ballast Clng – Reply."

[352] The NS MOW Experts do not believe the NS 2010 unit cost of }} is representative of average shoulder ballast screening costs for a least-cost, most efficient SARR. Accordingly, they have not relied on this figure and have instead created a shoulder ballast screening program with a substantially lower unit cost of {{ }}.

equipment is contracted out. The equipment that is partially maintained by contractors includes hi-rail trucks, dozers, Gradalls and backhoes, ballast regulators, tampers, air compressors and certain power hand tools. The SBRR's mechanics are prepared and equipped to perform preventive maintenance and straightforward repairs to this equipment. The NS MOW Experts accept SunBelt's proposal that the cost of annual maintenance of the SBRR's equipment would be 5% of its purchase price.

ix. Communications System Inspection and Repair

The NS MOW Experts accept SunBelt's proposal that communications system maintenance would cost 2% of the equipment's cost. This maintenance cost has been adjusted to account for the different communications systems values set forth in Section III-F.

x. Bridge Inspections

The NS MOW Experts accept SunBelt's cost for Bridge Inspections of $82,277.

xi. Building Maintenance

The NS MOW Experts accept SunBelt's assumption that the cost of building maintenance would be 2% of total building costs. This maintenance cost has been adjusted to account for the different building values set forth in Section III-F.

i. Unplanned Contracted Maintenance

i. Snow Removal

The NS MOW Experts accept SunBelt's position that there would be no snow removal costs for the SBRR.

ii. Storm Debris Removal

Storm debris is left on the track or against the upstream side of bridge structures following high water and other storm events. The southeastern part of the U.S. is particularly prone to this kind of damage. SunBelt provides an unsupported estimate of $10,000 in

contractor expense for storm debris removal. The NS MOW Experts, based on Mr. Bagley's decades of experience maintaining the very lines SBRR replicates, believe that $25,000 is a conservative estimate.

iii. Building Repairs

The NS MOW Experts accept SunBelt's proposal that building repairs would be subsumed in the general building maintenance cost described above.

j. Large Magnitude Unplanned Maintenance

i. Derailments

The NS MOW Experts reject both SunBelt's methodology and calculation of annual cost for repairing damage resulting from derailments and the cost of clearing wrecks on the SBRR. SunBelt's evidence is flawed for several reasons.

First, in its Opening workpaper, SunBelt bases SBRR expense for clearing wrecks on the ratio of SBRR to NS route miles, which implies that wreck clearing expense is wholly dependent on route length but totally independent of traffic volume. This assumption is obviously incorrect, for it would mean that the frequency of train accidents would be unaffected if the number of SBRR trains increased or decreased significantly.

Second, SunBelt fails to recognize that newly constructed railroads are not exempt from the risks of derailments. SunBelt's allegation that "[a] new railroad constructed to modern standards is less likely to experience a major derailment then the older plant of existing railroads" implies that derailments only occur as a result of track deficiencies. SunBelt Opening Ex. III-D-3 at 25. That is not accurate. On the contrary, most main track derailments are not

track-related.[353] In addition, the fact that the SBRR's track will be new does not make it less susceptible to track-caused derailments than railroads with well-maintained older track. Indeed, newly constructed track presents special risks for track-caused derailments, for new track is subject to differential settlement at bridge abutments, over culverts and on high fills. In short, in the experience of the NS MOW Experts, new track is not materially less subject to derailments than older well-maintained track.

Third, SunBelt has relied on the FRA accident reporting database to estimate the cost of damages due to derailments. However, as described in FRA Guide for Preparing Accident/Incident Reports, the costs reported to FRA are incomplete. The only costs reported to FRA are the direct costs of labor and material and rental of equipment and similar costs due to the derailment. The cost of fringe benefits, all overheads, and costs for use of owned equipment are not included.[354] In addition, costs for derailments below the reporting threshold are not reported at all.

A more complete accounting of derailment damage costs can be found in the NS form R-1, schedule 410, line 18—Road Property Damaged which amounted to $21,403,000[355] in 2011,

---

[353] In 2011 less than 41% of NS derailments were track-related. *See* NS Reply WP "Derailment Report." Other significant causes of derailments are human error (30%), equipment issues (12.4%) and signal problems (1%).

[354] FRA Guide to Preparing Accident/Incident Reports, Federal Railroad Administration Office of Safety, at 20-21 (May 23, 2011) (included in NS Reply workpapers).

[355] The information in this line item is set forth in 49 C.F.R. Part 1201 Section 3(a)(2)(48):

> (48) Road Property Damaged—Repair of roadway property and structures, used in revenue service, and all equipment not used in revenue service, when damage is caused by derailments, collision, fire, explosions, sabotage, other casualties, and excluding damage resulting through normal operations or use; such as part failures, overloads, overheating, short circuits and similar events. Part failures through normal operations are those where the resulting damage is restricted to the unit of road property which experienced the failure. When the damage extends to other units of road property, related expenses shall be charged to this function.

which includes all property damage costs, rather than the limited costs included in the FRA database. This system-wide cost can be apportioned to the SBRR based on total traffic handled measured in gross ton miles, scaling 2011 actual costs to the average of 2012-2020 gross ton miles[356] since accidents are directly proportional to the amount of traffic moving over track, not the miles of track or miles of route. Accordingly, NS estimates SBRR cost for clearing wrecks at 5.3% of NS actual cost in 2011, or $1,127,800. *See* Reply WP "Reply SBRR Derailment and Clearing Wrecks.xlsx."

Like property damage due to derailment, the cost of clearing wrecks depends on the number of wrecks, which varies with the amount of traffic. NS's actual wreck clearing cost for 2011 was $10,818,000. SBRR will generate an average of 5.3% of the MTGM generated by NS implying that SBRR property damage should amount to $570,039.[357]

ii. Washouts

High water events are responsible for both storm debris removal expense and washouts. The NS MOW Experts reject SunBelt's trivial annual allocation of $10,000 for track structure repairs resulting from washouts in one of the most thunderstorm-prone and highest rainfall regions of the U.S. Many of the lines being replicated by the SBRR are located in areas known to have experienced annually significant flooding and washouts resulting from hurricanes and extremely heavy rains. *See* NS Reply WP "SBRR Environmental Factors.docx." Based on real-world experiences in maintaining the exact same lines being replicated by the SBRR, Mr. Bagley estimates that the SBRR could expect to annually incur significant washouts, especially in the southeast and southwest areas of the SBRR and the Appalachian and Piedmont regions of the

[356] NS 2011 gross ton miles for cars and lading were 357Bn per NS R-1, Sched 755. SBRR GTM for cars and lading will be 18.1Bn in 2011 and 19.5Bn in 2020; Avg 18.8Bn or 5.3% of NS actual of 357Bn for 2011.

[357] *See* Reply WP "Reply SBRR Derailment and Clearing Wrecks.xlsx."

SBRR System. Based on Mr. Bagley's experience in having responsibility for maintaining the very lines being replicated, he estimates the SBRR would experience annual costs for materials and contract services of upwards of $50,000.

iii. Environmental Cleanups

The NS MOW Experts accept SunBelt's estimate of $10,000 for environmental cleanup.

k. Program Maintenance

SunBelt's unsupported assumption that one-third of the salaries of the Assistant Vice President-Engineering and the MOW administrative/support staff should be capitalized is not reasonable in light of the limited role these employees would have in contracted program work. *See* SunBelt Opening Ex. III-D-3 at 36. Since all program work on the SBRR is capitalized, the involvement of the General Office staff is much less than would be the case if program work were performed by railroad employees using railroad-owned equipment and using material purchased and handled by the engineering department. In particular, the only functions of the engineering department with respect to the contracted program work are to specify what work should be performed and to confirm that the work is performed according to specifications. With this reduced scope of involvement in program work, the NS MOW Experts set the allocation of the AVP Engineering at 15% capitalized, rather than one-third. Supervision of the program work is performed by a small number of project managers and inspectors who are entirely charged to the capital program. The field maintenance force is not materially engaged in the contracted program work.

The correct allocations of time to program and capital work are shown in NS Reply WP "III-D-3 NS SBRR MOW.xlsx," Tab "MOW Staff – Reply."

i. Rail Grinding

Rail grinding expenditures are discussed in B.1.d and shown in NS Reply WP "III-D-3 NS SBRR MOW.xlsx." The NS MOW Experts have charged rail grinding to operating expense rather than capital.

In *WFA I*, the Board accepted treatment of the cost of rail grinding as an operating expense, notwithstanding the complainant's argument that it should be capitalized because it extends rail life.[358] The Board reaffirmed this conclusion as to the expensing of rail grinding in *AEPCO 2011*.[359] Accordingly, NS includes annual rail grinding in SBRR annual MOW operating expense.

ii. Bridge Substructure and Superstructure Repair

The NS MOW Experts accept $32,000 for bridge substructure and superstructure repair.

l. Vehicles and Equipment

i. Vehicle Inventory

SunBelt provides few specifics regarding the capacity or added equipment included on the vehicles list, and it overly relies on pickup trucks. Of the 63 vehicles shown on the SBRR equipment list[360] 51—or 81%—are pickup trucks, rather than the specialized vehicles commonly used by railroads and that are a key element underpinning MOW crew productivity. The SunBelt MOW workforce cannot achieve best-in-class productivity without specialized vehicles that MOW departments depend on and that SunBelt fails to provide in adequate numbers.

The NS MOW Experts have remedied this failure to take advantage of specialized vehicles to boost productivity and have assigned commonly used types of specialized vehicles to

---

[358] *See WFA I*, STB Docket No. 42088, at 71.

[359] *See AEPCO 2011*, STB Docket No. 42113, at 77.

[360] *See* SunBelt Opening WP "III-D-3 SBRR MOW.xls," Tab "Equipment."

various positions. The vehicle list prepared by the NS MOW Experts is made up of 93 trucks of which 15 (16%) are standard pickup trucks, seven of which are equipped with hi-rail equipment.[361]

The NS MOW Experts have provided one hi-rail Suburban each for the Engineer MOW and the Superintendent of Signals and Communications to be used on inspection trips. These are the universally accepted standard inspection vehicle for positions of this level. SunBelt does not provide any vehicle suitable for inspection trips.

Each B&B maintenance crew has been provided with a standard B&B maintenance truck; SunBelt neglected to provide specialized maintenance trucks for bridge crews. These trucks are commonly 33,000 gross vehicle weight ("GVW") or more and have a crane, a hydraulic pump to power hydraulic tools, a utility body, and hi-rail equipment.

Assistant Roadmasters have been provided with a specially equipped track inspection vehicle rather than the standard hi-rail pickup. This type of equipment is standard for track inspectors.

SunBelt provided no appropriate vehicle kind for Roadway Equipment Mechanics. Consistent with long standing common practice, the NS MOW Experts have provided these field workers with standard mechanic trucks designed to meet the needs of mechanics and equipped with a service body, welder light duty boom crane, and other equipment to improve the mechanic's efficiency.

All MOW maintenance organizations have some capacity to transport material and equipment, but SunBelt failed to provide for this essential requirement. The NS MOW Experts have provided one standard material handling truck and one semi-tractor with trailer to assist

---

[361] *See* Reply WP "III-D-3 NS SBRR MOW.xlsx", Tab "Equipment."

with moving machines from place to place and handling large material such as rail and frogs. The material handling truck is a long stake bed truck (typically up to 60,000 GVW) and has a hydraulic boom crane with grapple and magnet attachments. The semi-tractor with trailer is equipped with a trailer suitable for transporting heavy equipment such as tampers, ballast regulators, bridge cranes and other heavy equipment as well as ties, frogs, rail and other track material.

Signal maintainers are provided with extended cab, utility body, four wheel drive to ensure all weather mobility of the maintainers. Maintainers in main line territories have hi-rail equipped trucks, but because signal maintenance forces in the Norris hump yard do not need to hi-rail extensively, their trucks do not have this capacity.

Two 33,000 GVW boom trucks with knuckle boom crane are required by the C&S department to handle materials too large to handle by hand. One of these vehicles is assigned to the Norris yard facility, the other to the line of road. In the yard, boom trucks handle brake shoes for retarders, skate rails, power switch machines, air cylinders and various other materials that are either too heavy to handle manually or too awkward to put in place without endangering the employees' safety. One example of the truck's safety purpose is that when changing brake shoes on a retarder, employees must work between the retarder rails on ties that have no ballast between them. This makes standing awkward at best, so a boom truck would be used to place brake shoes in place to minimize risk. On the line of road, the larger truck is used for material handling and equipment repairs. In the real world, signal equipment such as gate arm mechanisms at crossings, wayside signals and power switch machines are often damaged. It is cost prohibitive for every maintainer to have a spare $26,000 switch machine, a $9,700 gate assembly and a $6,235 wayside signal on hand. Supervisors keep their major spare equipment

items in a centralized location to minimize the amounts of larger cost spare parts and to expedite repairs. It should also be noted that because materials in inventory are taxed, keeping a large amount of costly spare parts in inventory can become expensive to a regional railroad. As FRA requires repairs be made "without delay" some spare parts must be kept, but by centralizing the major items, the supervisor can control costs and make timely repairs.

The C&S department also requires a bucket truck to reach certain locations that would put a maintainer in an unsafe position if a bucket truck were not available. When not being used for this task, it is used for normal maintenance issues such as removing overhanging brush in front of wayside signals, and handling small materials that are too heavy to be safely handled by hand but not heavy enough to require the larger boom truck.

SunBelt also failed to provide an appropriate vehicle for the smoothing crews. The NS MOW Experts provide a flat-bed truck outfitted specially for a smoothing crew with a fuel cell to carry fuel for the equipment and miscellaneous tools and parts.

A 53,200 GVW MOW bridge maintenance truck is added as SunBelt only provides pickup trucks with a capacity of around 8,500 GVW for these crews. Similar bridge maintenance trucks are similar in size and equipment to track maintenance trucks, but customized for bridge work. The standard equipment of bridge maintenance crews allows them the capacity to carry the tools, equipment and crane necessary for bridge work.

ii. Equipment and Vehicle Monthly Rental Rates

As described below, the NS MOW Experts do not accept SunBelt's monthly rates for vehicles and equipment.[362] Instead, the NS MOW Experts rely on Danela rental rates provided

[362] The NS MOW Experts could not confirm the Unit cost/Month Rates used by SunBelt in Opening Exhibit "III-D-3 SBRR MOW.xls", Tab "Equipment" and therefore have adopted alternative rates as documented in Reply WP "MOW Vehicles.xlsx"

in Discovery, to the extent available. Where Danela rates are not available, the NS MOW Experts offer an alternative method of estimating Unit Cost/Month rates based on the purchase price of the equipment, as described below.

Without explanation or support, SunBelt uses a factor of 60 to convert NS purchase prices of vehicles and equipment to Unit Cost/Month.[363] The NS MOW Experts believe that this methodology significantly understates lease rates in some cases, particularly for equipment with a normal life of 5 years or less. A comparison of Danella lease rates with the NS purchase price for similar equipment confirms this belief and suggests that a purchase price to monthly lease factor of 31 more closely reflects arms-length transactions in the real world for light vehicles.[364] For longer life vehicles, SunBelt's factor of 60 is reasonable.

The NS MOW Experts have adopted the following factors for converting purchase prices to estimates of Unit Cost/Month, depending on the gross vehicle weight of the vehicle.[365] For light vehicles under 6,500 pounds GVW, the purchase price is conservatively divided by 36 to establish a Unit Cost/Month. For vehicles with GVW over 6,500 pounds up to 10,000 pounds, a factor of 48 is used; for vehicles over 10,000 pounds GVW and for work equipment, a factor of 60 is used.

The alternative Unit Cost/Month shown below were either derived from (1) actual Danella lease rates provided in discovery or (2) actual purchase prices provided in discovery divided by an appropriate factor to estimate monthly costs.[366] For derivation of the Unit

---

[363] *See* Opening Exhibit "III-D-3 SBRR MOW.xls," Tab "Equipment," Column. D.

[364] *See* NS Reply WP "MOW Vehicles.xlsx," Tab "Comparison of Lease vs Purchase."

[365] It is indisputable that heavy vehicles commonly used by railroads have a longer useful life than light vehicles like pickup trucks and sedans.

[366] 36, 48 or 60 depending on vehicle GVW as described above.

Cost/Month applied in the paragraphs below, see NS Reply workpaper "MOW Vehicles.xlsx," Tab "Summary":

- The monthly rate on Case 580 backhoes is revised from { }, which is the average rental rate for 17 backhoes rented in 2009.[367]
- The monthly rate for trailers for backhoes is revised from { }, which is the average rate for 37 trailers rented during 2009.
- The NS MOW Experts add a hi-rail Suburban at a rate of { } based on an average purchase price of { }
- The price for hi-rail pickups is changed from { } based on the average of 31 rented hi-rail pickups in 2009 shown in data in discovery.
- The monthly price for standard pickups is changed from { } based on the average of 3 rented standard rail pickups in 2009 shown in data in discovery.
- The monthly price for a sedan is changed from { } based on the average purchase price for 19 sedans of { } and a conversion factor to rent of 36 as discussed above.
- The monthly price for a track maintenance truck is changed from { } based on the average purchase price for 28 track maintenance trucks of { } in 2009 and a conversion factor to rent of 60 as discussed above.

Finally, the NS MOW Experts accept the use of a Plasser 09-16 DynaCat tamper for smoothing, but the manufacturer confirms that the cost of the tamper would have been $2,000,000 in 2009.[368] That price is indexed to $2,150,000 as of December 2010.

[367] For all vehicles, the prices stated for 2009 are updated to 2011 prices in Reply WP "MOW Vehicles.xlsx," Tab "Summary," Column J.

[368] *See* NS Reply WP "Plasser email confirming price of tamper.pdf."

5. Leased Facilities

NS accepts SunBelt's evidence that the SBRR would "step into the shoes" of NS as to its trackage rights agreement with CN for a 2.4 mile segment in New Orleans and that the SBRR would not incur any costs for such trackage rights.

6. Loss and Damage

NS accepts SunBelt's methodology for calculating the SBRR's annual loss and damage cost.

7. Insurance

SunBelt's calculation of the SBRR's insurance needs is done—like so much of SunBelt's evidence—with no consideration of the unique needs of a SARR that is designed to transport an extraordinarily high percentage of TIH traffic. SunBelt proposes that SBRR insurance costs could be estimated by assuming that the SBRR would have an insurance-cost-to-operating-expense ratio similar to that of the Providence and Worcester Railroad ("P&W"), which had an average insurance-cost-to-operating-expense ratio of 3.89% from 2008 to 2011. *See* SunBelt Opening at III-D-21. But while the P&W may be a reasonable proxy for estimating the costs of the ordinary property and casualty insurance and claims that any railroad incurs, it is completely inadequate for estimating the unique and extraordinary insurance costs of a TIH-heavy railroad like the SBRR. A railroad with the unusually dangerous traffic profile of the SBRR would need to purchase additional insurance to account for that TIH-heavy traffic mix.

A railroad's insurance levels must be sufficient to protect its property (including buildings, vehicles and equipment); to mitigate liability for events that injure persons or property; and to provide coverage for the costs of catastrophic events like hazmat or TIH releases. Railroad companies insure themselves against these various risks in three distinct ways. First, railroads often self-insure against small losses; in other words, rather than

purchasing coverage that would apply to the first dollar of liability, railroads will purchase policies that only apply to damages over a certain threshold and will self-insure for any damages under that threshold.[369] For smaller railroads the self-insurance amount is typically small; for example, the RailAmerica railroads self-insure for the first $2 million of liability. *See* NS Reply WP "RailAmerica 10-K" at 9. Larger railroads like NS self-insure for larger amounts—NS self-insures for {{ }} *See* NS Reply WP "NS Response to INT 23.pdf" at NS-SB-HC-002586. The claims that railroads pay out under self-insurance are reported in their STB accounts and have been included in the Board's past calculations of SARR insurance costs. Second, railroads purchase insurance policies for the amount above self-insurance. Third, because insurance policies have maximum coverage limits, a railroad fully assumes the risk of any event which causes damages that exceeds the coverage limits of all the insurance it has purchased. Thus, the costs that a railroad must cover are (1) risks that are small enough that the company must use its own funds to cover them because they are within the deductible range; (2) risks that the railroad pays an insurance company to cover; and (3) risks that exceed the amount of insurance available and purchased.

The SBRR carries an unusually high amount of TIH traffic. While the SBRR is only 4% the size of NS on a route-mile basis, it would carry 7,300 carloads of TIH traffic annually—approximately 46% of all the carloads of TIH on the NS system. Measured on a car-mile basis, the SBRR would have 2.91 million car-miles of TIH traffic in 2011—one-third of NS's 2011 TIH car-miles.

[369] This is analogous to an automobile insurance policy with a deductible; an automobile owner with a $500 deductible effectively "self-insures" both for any incidents causing damages below the deductible and for the first $500 of any incident causing greater damage.

Table III-D-43
2011 SBRR TIH Traffic Compared to NS[370]

	SBRR	NS	SBRR Percentage of NS
TIH Carloads	7,300	15,884	46%
TIH Car-Miles	2.91 million	8.55 million	34%
TIH % of Total Freight Carloads	2.5%	0.4%	625%

Table III-D-43 shows that SunBelt's selection of such a high percentage of TIH traffic has created a SARR in which 2.5% of all freight carloads—about one out of every 40 cars—is a TIH shipment. This percentage is more than six times higher than the percentage of TIH carloads on NS. No real world railroad carries such a high percentage of TIH traffic—and certainly no SARR has ever done so.

SunBelt's choice to build a TIH-heavy SARR means that the SBRR will have a markedly higher risk of a catastrophic TIH release than other railroads. As explained below in Section III-D-9-e, a release of TIH could lead to catastrophic loss of life and billions of dollars of liability. It is not an option for SunBelt to "cross its fingers" that the SBRR would not suffer such a catastrophic loss. It must at the very least purchase insurance for such losses to the extent available. Indeed, the SBRR could not possibly obtain financing for the billions of dollars required to purchase land and construct lines and facilities if it did not prove to its lenders and/or investors that it has sufficient insurance coverage to mitigate the risks inherent in hauling chlorine.

NS accepts SunBelt's use of the P&W benchmark for baseline insurance costs, including self-insurance, and has proposed a conservative approach for approximating the costs of additional insurance to account for the SBRR's unusually high risk of TIH liability. The SBRR

[370] *See* NS Reply WP "TIH Mileage Summary.xlsx."

would need insurance for a wide variety of issues, from property insurance for SBRR buildings and facilities to casualty insurance for potential accidents. The SBRR's expenses are not limited to paying premiums; it also would need to account for funds to pay and settle claims within its self-insurance range. The insurance expenses incorporated in the P&W benchmark appropriately include both the costs of premiums and the costs of paying claims for casualties.

Using the P&W benchmark results in SBRR insurance expenses of $8.2 million. This is a reasonable approximation of a standard cost for ordinary liability coverage and ordinary claims. But it is plainly not enough to purchase coverage for catastrophic TIH releases. One study showed that a TIH release from a single rail car could result in 10,000 fatalities, over 32,000 other casualties, and over $7 billion in damages.[371] Studies of potential releases in urban areas have projected even more staggering potential losses of as many as 100,000 fatalities.[372] It is impossible to obtain liability insurance sufficient to cover the full potential extent of damage from a TIH release, but responsible real-world railroads spend considerable funds to purchase available policies that provide some coverage for potential catastrophic events. {{

}} The SBRR could not possibly obtain similar catastrophic coverage from an $8 million insurance budget.

While P&W's insurance coverage limits are not a matter of public record, its SEC filings indicate that its insurance policies likely have coverage limits less than $200 million. Specifically, the P&W has stated that "under catastrophic circumstances such as accidents

---

[371] *See* NS Reply WP "RMS Catastrophe Injury Insurance.pdf."

[372] *See* Section III-D-9.e. below for a detailed discussion of studies of TIH risk scenarios and the scope of potential damages from catastrophic TIH releases.

involving passenger trains or spillage of hazardous materials, the Company's liability could exceed its insurance limits." *See* NS Reply WP "2010 P&W 10-K" at I-8. Because federal law limits aggregate liability for a single passenger rail accident to $200 million,[373] this P&W statement strongly indicates that it does not maintain coverage above that threshold.[374]

Indeed, SunBelt had access to detailed information on precisely what it costs real-world railroads to obtain insurance for TIH risks, but it chose to ignore that information in its evidence. {{

}}

{{

}}

{{

[373] *See* 49 U.S.C. § 28103(a)(2) ("The aggregate allowable awards to all rail passengers, against all defendants, for all claims, including claims for punitive damages, arising from a single accident or incident, shall not exceed $200,000,000.")

[374] Indeed, regional railroad representatives have testified to the Board that most small railroads are unable to "qualify for adequate levels of insurance [or] pay the premiums required to provide such insurance against potentially catastrophic claims of this magnitude." *See* NS Reply WP "Borman Statement.pdf" at 2. Smaller railroads without insurance therefore "place their entire enterprise at risk every time they accept a single TIH car for shipment." *Id.*

}}

Table III-D-44

{{

{{	
	}}

{{

}}

The SBRR similarly will be required to purchase insurance against catastrophic losses. Not to do so would violate the basic principle that a SARR must be operated as a going concern. In other words, SunBelt cannot assume that the SBRR would refuse to adequately insure itself and instead resolve simply to declare bankruptcy in the event of a TIH catastrophe. (Any SARR that did declare bankruptcy would by definition not have SAC revenues that exceeded SAC costs.) And refusing to purchase catastrophic insurance similarly violates fundamental cross-subsidy principles, for it assumes that instead of bearing the full costs of its risky traffic profile the SBRR would externalize those costs to the general public.

To estimate the costs of SBRR catastrophic insurance premiums, {{

}}

The result of Mr. Brown's analysis is that the SBRR would spend $8.2 million on ordinary insurance costs and $5.14 million on premiums for catastrophic coverage.[375]

8. Ad Valorem Tax

SunBelt uses a methodology to calculate ad valorem tax that completely ignores how most of the states through which the SBRR operates actually calculate ad valorem taxes for railroads. Instead, SunBelt assumes that the SBRR's ad valorem taxes in the three SBRR states will be exactly what NS's taxes are, but pro-rated to account for the fact that the SBRR would not replicate all of NS's route miles in those states. *See* SunBelt Opening III-D-21. The problem with SunBelt's assumption is that ad valorem taxation is not primarily a function of route-miles; it is rather a function of profitability. For SunBelt to assume that the SBRR could be more profitable than NS and yet pay similar taxes is not consistent with real-world railroading.

[375] As detailed below in subsection III-D-9.e., this catastrophic insurance would only cover damages up to $1 billion. Costs for the risk of a TIH incident with damages over $1 billion are addressed in the Excess Risk subsection.

Each of the three SBRR States tax railroad property as a function of a railroad's overall profitability as an enterprise—its "unit value"—and in each of the SBRR States a SARR that is more profitable than the incumbent railroad would therefore pay higher property taxes. SunBelt is well aware of this fact. Not only did it ask for and receive in discovery detailed ad valorem tax workpapers explaining how states calculated NS's taxes, it also actually used the unit values from those ad valorem tax workpapers to index 2009 taxes to an estimate of 2011 taxes.[376] But SunBelt did not use any of the workpapers it requested to develop a methodology for estimating ad valorem taxation that accounted for the unit value method on which taxation in the SBRR States is based. Instead, SunBelt chose an analysis that assumes that the SBRR does not have to pay higher taxes for being more profitable. NS's Reply Evidence adjusts SunBelt's ad valorem tax calculations to account for the higher ad valorem taxes that the SBRR would incur by virtue of being a least-cost, most-efficient SARR with a high income value.[377]

SunBelt's evidence is utterly devoid of any factual justification for its ad valorem taxation methodology. Instead, SunBelt relies entirely on the fact that the method it used is similar to methods used by parties to previous SAC cases, including *AEPCO 2011*. *See* SunBelt Opening at I-58 (citing *AEPCO 2011*). But the Board's decision in *AEPCO 2011* was predicated on the specific evidence presented by the parties to that case, and in particular upon the Board's conclusion that defendants had not supported their position with anything but "unsubstantiated testimony." *AEPCO 2011*, STB Docket No. 42113, at 79. That is not the case here, where NS's

---

[376] *See* SunBelt Opening WP "SBRR Ad Valorem Tax.xlsx" (using assessed unit values from 2011 ad valorem tax workpapers to index NS 2009 ad valorem tax payments up to estimated 2011 levels).

[377] NS's Reply Evidence on ad valorem taxation is sponsored by NS witnesses Richard Brown and Michael Quinn. Mr. Quinn's sponsorship is limited to the factual assertions related to the ad valorem tax process at NS and how ad valorem taxes are calculated at the state level. Mr. Brown's and Mr. Quinn's statements of qualifications are located in Section IV.

evidence is supported by thorough documentation that (1) each of the SBRR States assess ad valorem taxation via a "unit method" that considers the value of the taxed railroad as a whole; and (2) each of these states primarily relies on an income valuation of the railroad when determining unit value for tax purposes. More broadly, the fact that SunBelt's evidence is similar to evidence submitted in some prior SAC cases is irrelevant to the question here, which is what the best evidence of ad valorem tax is in this case.[378] Here, the SunBelt method of simply assigning the SBRR a pro rata share of NS's ad valorem taxes significantly understates the ad valorem taxes that would be assessed upon an optimally efficient SARR with a high income valuation. The Board should correct this error by adopting the NS approach.

Subsection a describes how unit valuation works and demonstrates that each of the SBRR States use a unit valuation method for assessing ad valorem taxes against railroads. Subsection b shows that each of the SBRR States primarily relies on railroad income valuations to determine a unit value. Subsection c describes the distortions that would occur from using SunBelt's unadjusted method and describes a simple and conservative adjustment to SunBelt's ad valorem tax calculations that accounts for this unit valuation issue.

a. Unit Valuation Is the Basis for Ad Valorem Taxation In Each of the SBRR States.

States generally determine the market value of railroad property for tax assessment in one of two ways. The "summation method" individually values each tract of property in a state and then adds the values to derive a total value for the taxing jurisdiction. The "unit method," on the other hand, seeks to derive a single system-wide value for the railroad and then to assign a

[378] The Board has made clear that its determinations in SAC cases are based on the parties' evidence in each individual case—not on how the issue was decided in past cases. *Cf. AEPCO 2011*, STB Docket No. 42113, at 57-58 ("We note that our acceptance of certain G&A staffing levels in the past does not mean we will not entertain arguments that higher levels are warranted.").

portion of that system-wide value to the particular state. *See, e.g., Norfolk & W. Ry. v. Mo. State Tax Comm'n*, 390 U.S. 317, 324 (1968). The allocation of value generally is proportional to the percentage of a railroad's property located within a state, often measured by track mileage. In unit value states, railroad property typically is centrally assessed and valued for taxation by an office of the state government, which (1) determines a unit value for the system as a whole, (2) allocates a portion of that value to the state, and (3) transmits tax assessments to the local taxing jurisdiction.

The unit method is the most common method for states to determine the market value of railroad property for tax assessment. *See Rail Abandonments – Avoidability of Property Tax Expense Under the Unit Method of Assessment*, ICC Ex Parte No. 274 (Sub-No. 20), 1989 WL 238764, at *8 n.5 (served June 5, 1989) ("at least 36 States use some form of unit method").[379] Most importantly here, each of the states in which the SBRR operates uses a unit valuation methodology to determine railroads' ad valorem taxes.[380] NS Reply Workpaper "Ad Valorem Tax Procedures in the SBRR States.pdf" describes the unit method of ad valorem taxation in more detail and explains the ad valorem taxation process in each SBRR state.

In general, states applying the unit method use one or more of three approaches to estimate a railroad's unit value: the income approach, the cost approach, and the stock-and-debt approach. *See* Appraisal Institute, *The Appraisal of Real Estate* at 140-143 (12th ed. 2001); National Conference of Unit Value States, *Unit Valuation Standards* at § I.A. (available in NS Reply Workpapers) (hereafter "Unit Valuation Standards").

---

[379] *See* N.Y. State Office of Real Prop. Servs., *Survey of Railroad and Utility Taxation Practices Among the States*, Table 1 http://www.tax.ny.gov/research/property/reports/rr/index.htm (demonstrating that majority of states use unit method to assess railroad property).

[380] *See id.*; *see also* NS Reply WP Folder "Ad Valorem Taxes" (tax workpapers demonstrating unit value assessment for each SARR state using unit value for appraisals).

Income approach. The income approach assumes that a property's value is equivalent to its earnings potential. An income value for a railroad is therefore the present value of the railroad's future earnings. Appraisers using this approach typically use discounted cash flow models to estimate the current value of an income stream. *See* Unit Valuation Standards at § III. Nearly every unit value state considers some version of going-concern value when determining a railroad's unit value.[381] As discussed below, each of the SBRR States uses the income approach and place far more weight on income valuations than on other value indicators.

Cost approach. The cost approach is premised on the assumption that a property's value is related to its cost. Under a typical cost approach, the estimated value of the land is added to the estimated cost of reproducing all buildings and improvements on the land, minus depreciation and obsolescence. *See* Unit Valuation Standards at § II. The cost approach is considered by each of the SBRR States, although as demonstrated below states typically give more weight to the income approach in determining a railroad's unit value.

Stock-and-debt approach. Ordinary non-railroad property is often appraised using a sales comparison approach, in which the appraiser identifies similar properties that were sold in the subject property's market and uses those sales to derive a value for the subject property. *See* Appraisal Institute, *The Appraisal of Real Estate* at 297-314 (13th ed. 2008). Because the sales comparison approach is predicated on actual transactions in the marketplace, it is a persuasive indicator of value where sufficient sales data exists. But the sales comparison approach is only useful for properties that are regularly sold on the open market, and thus cannot be applied to estimate a railroad's value. A variant of the sales comparison approach, known as the stock-and-debt approach, has emerged for publicly traded corporations like railroads or utilities. Because

[381] *See* NS Reply WP "Survey of Railroad and Utility Taxation Practices Among the States" ("The income approach is a primary approach to valuing railroads in much of the nation").

there is "seldom available objective market evidence as to the price that railroads or public utilities would command if offered for sale, the next best alternative is the market price of the stocks and bonds of the enterprise owning the property."[382] States that use the stock-and-debt approach use the total value of a railroad's outstanding stock and debt as a means to estimate a market value. *See* Unit Valuation Standards at § IV. The stock-and-debt approach has come under significant criticism,[383] and many unit value states (like ({{ }}) do not consider this approach at all. Those that do tend to give it significantly less weight than the income approach, as demonstrated below.

b. Railroad Income Value Is the Primary Factor Considered By the SBRR Unit Value States.

While the SBRR States each assess unit value in different ways, the common thread among all the states is that their unit valuations are primarily driven by the state's determination of a railroad's income value. To be sure, each SBRR State uses a combination of more than one approach to assess a railroad's unit value. But an examination of the state tax workpapers demonstrates that far more emphasis is placed on the income approach.[384]

Alabama. In Alabama, rail operating property is assessed as a unit. The assessed value of property owned by railroads is determined by the Alabama Department of Revenue, which determines a system value for the railroad and then allocates a portion of this system value to Alabama based on the Alabama portion of the railroad's total car miles, revenue, all track miles

---

[382] *See* NS Reply WP "Alfred A. Ring & James H. Boykin, The Valuation of Real Estate.pdf" at 3.

[383] *See, e.g., id.* (noting that stock-and-debt approach often yields "dubious and unreliable evidence" of value, for "[t]here is no reliable relationship between the constantly fluctuating market of stocks and bonds and tangible and intangible assets reflected by such securities.").

[384] As mentioned above, NS produced to SunBelt all ad valorem tax workpapers in its possession for the SBRR states for tax years 2008, 2009, 2010, and 2011. These tax workpapers are included in NS Reply WP Folder "Ad Valorem Workpapers."

and original cost. *See* NS Reply WP "Ad Valorem Tax Procedures in the SBRR States.pdf."

{{

}}

Louisiana. Louisiana is another state in which rail operating property is assessed as a unit by the Louisiana Tax Commission. The Commission begins with estimates of the value of a railroad's entire rail system, and then allocates a portion of this system value to the state based on the applicable percentages of operating revenue, investment, track miles, car and locomotive miles, and ton miles in the state. *See* NS Reply WP "Ad Valorem Tax Procedures in the SBRR States.pdf." While the Commission {{

}} its response to a public survey indicates that it places the most weight on the income approach for current railroads (but that it might give greater weight to the cost approach for a newly-constructed SBRR):

> All three approaches to value are considered. Market data, however, is generally scarce, and thus cannot be employed. Original cost unadjusted for obsolescence carries greater weight on companies with recent significant capital investment, whereas other companies are valued more by the income approach.[385]

[385] *See* N.Y. State Office of Real Prop. Servs., *Survey of Railroad and Utility Taxation Practices Among the States: Louisiana*, http://www.tax.ny.gov/research/property/reports/rr/louisiana.htm (copy in NS Reply Workpapers).

Mississippi. In Mississippi, rail operating property is also assessed as a unit, not on a parcel-by-parcel basis. The assessed value of property owned by railroads is determined by the Mississippi State Tax Commission. *See* NS Reply WP "Ad Valorem Tax Procedures in the SBRR States.pdf." The Commission begins with estimates of the value of the railroad's entire rail system, and then allocates a portion of this system value to the state. {{

}}

c. A NROI Adjustment Should Be Made to Account for the SBRR's Relative Income Value.

Because railroad ad valorem taxation in the SBRR states is based on the state's assessment of a railroad's unit value, and because those unit value assessments are primarily driven by the state's income valuations of the railroad, there is no merit to SunBelt's assumption that the SBRR would be more profitable than NS and yet pay ad valorem taxes at a similar level. On the contrary, a hypothetical least-cost, most-efficient SARR operating in one of these unit value states would be required to pay ad valorem taxes at a level commensurate with its income stream.

---

[386] {{ }}

[387] *See id.*

In this case, the SBRR as posited in SunBelt's opening evidence has substantially higher net railway operating income on a route-mile basis than NS does. This higher income would translate into a higher income valuation and higher ad valorem taxes on a route-mile basis. By assuming that the SBRR would pay taxes at the same level as NS (prorated for the SBRR's relative mileage in each state), SunBelt effectively assumes that the SBRR could operate more profitably than NS without having a higher tax burden on those increased profits. That assumption is plainly not consistent with "real-world railroading." *AEPCO 2011*, STB Docket No. 42113, at 16 ("all assumptions used in the SAC analysis must be realistic, *i.e.*, consistent with the underlying realities of real-world railroading"). In real-world railroading, as in other commercial pursuits, part of the price one pays for higher profits is the need to pay taxes on those profits.

To account for the higher taxes the SBRR would pay as a result of its increased profitability, NS's ad valorem tax experts calculated a "Unit Value Modifier" that measures the relative profitability of SBRR vis-à-vis NS. This "Unit Value Modifier" is calculated by comparing the relative net railway operating income ("NROI") per route mile of NS with the NROI of the SBRR per route mile. The Unit Value Modifier thus measures the extent to which the income value of the SBRR would exceed the income value of NS on a per-route-mile basis. This approach is both reasonable—for income valuation is the primary driver of unit values—and conservative—for the income approach tends to produce the lowest value of the three approaches.

Using this Unit Value Modifier to adjust actual taxes paid by NS is also conservative because it ensures that the SBRR is able to take advantage of all the tax exemptions and benefits that NS enjoys. Railroad ad valorem taxation is a complex field that requires substantial time

from expert railroad staff who work with the various state assessors to ensure that NS receives fair treatment and that it only pays the tax owed—no more and no less. *See supra* at III-D-212 to III-D-215. NS's approach ensures that the SBRR receives the benefit of both all applicable exemptions and tax benefits and of all the negotiations and efforts of NS's ad valorem taxation professionals, while properly incorporating the effect of the SBRR's higher profitability.

NS's workpapers contain an income valuation spreadsheet that the Board may use as a model to apply the unit valuation methodology to the SBRR after the Board resolves all the parties' disputes as to SBRR revenue and operating expenses. NS also includes in its workpaper a calculation of Ad Valorem taxes based on a cost approach, demonstrating that the income approach is more conservative. *See* NS Reply WP "Ad Valorem Tax_Reply.xlsx."

With these corrections, total ad valorem taxes for the SBRR are $4.5 million.[388]

9. Other

a. Intermodal Lift and Ramp Cost

SunBelt calculated { } in lift and ramp costs for handling SBRR intermodal shipments at Birmingham and New Orleans.[389] Although SunBelt used information that NS produced in discovery, SunBelt failed to include certain NS costs for which the SBRR would be responsible.

SunBelt improperly excluded the costs of clerical support and utilities. NS produced materials to SunBelt in discovery that demonstrate that NS pays for certain facility expenses at the Birmingham and New Orleans terminals, which SunBelt inexplicably excluded. Specifically, SunBelt classified as "not included in SARR" the NS expenses reported to cost codes {

[388] Applying NS's correct ad valorem methodology to its SBRR proposal leads to ad valorem taxes slightly below SunBelt's proposal. When the Board applies the model following resolution of the parties' disputes over revenues and operating expenses, the result may differ.

[389] *See* SunBelt Opening III-D-22.

}.[390] To correct these errors, NS adjusts the unit cost per lift at each SBRR intermodal terminal to include these costs.[391]

b. Automotive Handling Cost

Following a similar approach as it did for intermodal terminals, SunBelt calculates costs of ${ } million for loading and unloading at SBRR's automotive facilities at New Orleans and Vance, AL.[392] NS accepts SunBelt's use of the NS discovery data for the loading and unloading costs, but corrects an inconsistency in in SunBelt's calculation of the SBRR expense. SunBelt used two different estimates of the total number of motor vehicles loaded and unloaded. For the purposes of calculating the unit cost per load or unload event at each location, SunBelt used NS discovery data that indicated 3.3 million vehicles loaded and unloaded on the NS system in 2010.[393] When calculating the number of motor vehicles associated with the SBRR shipments, however, SunBelt used a much lower figure of 1.8 million vehicles.[394] By calculating the cost per unit based on a larger measure of vehicles (3.3 million), but then assigning them to the SBRR based on a smaller volume figure (1.8 million) number of units, SunBelt understates the cost that the SBRR would incur. Correcting this error produces total vehicle load and unload expense for the SBRR of { }.[395]

---

[390] *See* SunBelt WP "SBRR Intermodal Cost Per Lift.xlsx."

[391] *See* NS Reply WP "SBRR Intermodal Cost Per Lift NS Reply.xlsx."

[392] SunBelt Opening at III-D-22.

[393] NS discovery data "Auto Distribution Volumes 2008-2010.xls" produced at HC-DVD-024, cited in SunBelt WP "SBRR AUTO DISTRIBUTION.xlsx."

[394] *See* SunBelt WP "SUNBELT_ATC_Open.xlsx," Tab "Vehicles Originate or Terminate."

[395] *See* NS Reply WP "SBRR AUTO DISTRIBUTION Reply.xlsx." NS also makes a relatively minor correction here along the lines of the correction to SunBelt's intermodal lift and ramp expense explained above. SunBelt also excluded NS's expenses reported to cost code "443NEC - Water and Sewerage" from the SBRR's automotive terminal cost, without explanation. As the

c. Costs Incurred By Residual NS For New SBRR-NS Interchanges

The SBRR's proposed entry and operations would require the Residual NS to incur new, additional costs in two areas. It is established STB precedent that costs imposed on the residual incumbent by the SARR's proposed operations are the responsibility of the SARR.[396]

First, SunBelt's selected traffic and network configuration combine to create new interchanges with the residual NS, including at least two at locations that are not existing NS crew change points. NS road crews will go on or off duty at these new interchanges when delivering trains to, or picking-up trains from, the SBRR. Because these interchange locations are not existing NS crew bases or terminals, the crews will have to be taxied to/from the closest NS crew location. SunBelt proposes that the SBRR will interchange trains with the residual NS at Wilton, AL; NS's nearest crew base is in Birmingham, 36 miles away. The SBRR will also interchange with the residual NS at Marion Junction AL, which is 14 miles from the nearest NS crew base in Selma. NS applied the taxi cost per mile that SunBelt used for SBRR crews to the above distances from new SBRR-residual NS interchanges to the closest NS crew change location, and calculated total new NS taxi expenses of $30,000 to include in SBRR's annual operating expenses.

Second, SunBelt proposed that the SBRR would rely extensively upon Distributed Power ("DP"). As discussed in Section III-C, while NS operates certain trains over SBRR lines with locomotives in DP configuration, the SBRR's operations would expand considerably the use of DP. As SunBelt assumed that most of the trains would run-through from or to the residual

---

SBRR will step into NS's shoes, it cannot avoid responsibility for the same expense that NS incurs.

[396] *See Duke/NS Reconsideration*, 7 S.T.B. at 865 ("we include in the SAC analyses the cost to retrofit locomotives of the "residual" defendant carrier . . .").

NS,[397] all of the locomotives in the run-through pool used to power SBRR trains would have to be equipped with DP capability. When Complainants in other cases made similar assumptions about the use of DP, the SARR analysis included the cost to retrofit a portion of the residual incumbent's fleet to add such functionality.

NS analyzed the locomotive event records that were produced to SunBelt for the NS trains that were used to move the selected SBRR traffic between New Orleans, Meridian, and Birmingham. SunBelt's assumption of distributed power represents a near ten-fold increase in the use of DP for these trains.[398] NS determined that these base year SBRR trains were powered by 1,008 different NS units.[399] 197 of those units were already equipped with DP, resulting in 811 units that were not. Rather than require SBRR to outfit all locomotives that were used at any time, NS eliminated from the analysis locomotives that were used fewer than once per quarter, and identified the portion of the trains' total miles that would be operated on the SBRR. This resulted in 132 units for which the SBRR would be responsible. As the SBRR fleet contributes 38 ES44 locomotives for operations over SBRR lines (as identified in Table III-D-4 above), NS conservatively assumed that the SBRR fleet could replace NS units and reduce SunBelt's obligation to retrofit other engines for DP operations. Thus, the SBRR would be required to equip with DP capabilities 94 of the units in the residual NS's fleet. NS determined a 2011 retrofit cost of { } per unit,[400] and includes with the SBRR operating expenses the associated annual cost of equipping the residual NS locomotives for DP operations.[401]

---

[397] Further, SunBelt did not include time to re-configure the locomotives to a conventional (head-end) configuration when they are interchanged with the residual NS.

[398] *See* NS Reply WP "Residual NS DP Retrofit.xlsx."

[399] *See id.*

[400] NS Reply WP "DP Retrofit Cost.pdf."

[401] *See* NS Reply WP "SBRR Operating Expense NS Reply.xlsx."

d. Calculation of Annual Operating Expenses

NS followed a similar process as SunBelt to calculate the operating statistics for the SARR.[402] However, rather than use SunBelt's Base Year—which was premised on the 12 months that preceded the commencement of the SBRR's operations, late July 2010 through late July 2011— and index to 2011, NS analyzed the annualized 2011 discovery data for the SBRR's carload and intermodal shipments (*i.e.*, non-unit train traffic) that were modeled in MultiRail. The 2011 traffic group represents the starting point for the SBRR's operations, and also provides the basis for all subsequent years of the SARR analysis, as the 2011 figures are projected forward in the analysis.[403]

As explained in Part III-H, SBRR car-miles provide a more accurate metric than ton-miles for adjusting operating expenses for changes in volume for a SARR with a diverse traffic base that has very different forecasted volume growth. SunBelt's use of ton-miles overweights changes to coal traffic volumes—which NS (and others) forecast to decrease—and underweights intermodal—the lightest traffic—for which the highest volume growth is projected. In using car-miles, NS relies upon the flat-car miles for intermodal shipments, which tempers their impact more than if individual containers were used.

---

[402] *See* NS Reply WP "SBRR Operating Statistics NS Reply.xlsx."

[403] NS also notes that the volume adjustments that SunBelt used to index the SBRR operating statistics from its Base Year to 2011 levels are flawed, as a by-product of SunBelt's double-counting of certain 2011 NS waybills and overstatement of SBRR volumes, explained in Section III-A above. *See* SunBelt WP "Base to 2011 Adjustment Factor.xlsx."

e. Excess Risk[404]

An additional inherent cost of SunBelt's TIH traffic, including its issue traffic, is the excess risk the SBRR would incur from the possibility of an accident involving a chlorine release. Due to the potential financial impact of a single incident, the SBRR's viability is placed in jeopardy every time it carries a single tank car of TIH traffic. While the chance of any particular shipment resulting in a catastrophic accident remains extremely small, in aggregate this risk presents a significant cost that the SBRR incurs solely as a result of transportation of TIH traffic. While the SBRR would need to purchase reasonably available insurance to protect against the risk of a TIH release, *see supra* at III-D-8, it could not possibly purchase sufficient insurance coverage to protect against the catastrophic losses that could result from a large-scale TIH release. SBRR, like NS, would effectively assume the risk of that potentially gargantuan liability in excess of its insurance coverage as an added cost of the TIH traffic it would transport. This excess risk cost cannot be ignored in the SAC analysis, for it is a real and acknowledged cost inherent in transporting TIH commodities. And the less insurance the SBRR acquires, the greater is the excess risk.[405] If the SAC analysis is to incorporate all costs of serving the selected traffic group, a quantified assessment of the excess risk of a catastrophic TIH release must be included as a cost of transporting such traffic.

---

[404] This section is sponsored by NS economic expert Professor A. Mitchell Polinsky. His judgments are based on his expertise and on conversations with NS's claims personnel regarding real-world TIH accidents. His workpapers and other sources are available in the "Excess Risk" subfolder of NS's III-D workpapers.

[405] NS's Reply evidence provides insurance coverage for SBRR up to $1 billion. *See* NS Reply III-D-8.

i. The Risk of A Catastrophic TIH Release That Exceeds The Limits of Reasonably Obtainable Insurance Cannot Be Eliminated Entirely.

SunBelt's issue traffic consists of chlorine, which, along with anhydrous ammonia, accounts for an overwhelming majority of TIH rail shipments in the United States, as well as on the SBRR.[406] Such traffic carries an inherent financial cost, for any accident involving TIH traffic has the potential to generate financial liabilities that would overwhelm the SBRR.[407] The magnitude of these potential liabilities is attributable solely to the extreme toxicity of chlorine itself, as described in Section H. Unlike derailments of coal or agricultural commodities, movements of TIH chemicals "have the potential for catastrophic consequences in the event of an accidental discharge or deliberate sabotage."[408] Indeed, a PHMSA study of transportation incidents between 2005 and 2009 found that chlorine accounted for the greatest number of high-impact casualties over the period.[409]

Railroads are constantly working to minimize the risk of a TIH release, in conjunction with chemical shippers and federal agencies, including the FRA and PHMSA. The safety record that has resulted from this effort is impressive: the FRA reported in testimony to Congress in 2006 that out of approximately 2.2 million tank car shipments of chlorine, only 788 (or 0.036%)

---

[406] *See* Lewis M. Branscomb et al., Rail Transportation of Toxic Inhalation Hazards: Policy Responses to the Safety and Security Externality, at 9 (hereafter "Harvard Report"). Copies of all studies cited in this section are included in NS's Reply Workpapers.

[407] *Cf.* Comments of Chairman Nottingham, STB Hearing on Ex Parte 677, July 22, 2008, at 59 ("Every business has a worst case scenario, sadly. . . . Railroads do too, sadly, and . . . probably for railroads it's a TIH type release in a dense urban area, resulting in numerous fatalities and massive tort liability. And at a certain point even the biggest railroads would have pretty much no choice but to shut down if faced with that kind of scenario.").

[408] Mark Hartong et al., A Risk Assessment Framework for TIH Train Routing, at 2.

[409] *See* PHMSA: Top Consequence Hazardous Materials by Commodities and Failure Modes 2005-2009, at 5 (Mar. 28, 2011) (chlorine accounted for 92 high-impact casualties in just 45 incidents; by comparison, gasoline, second on the list, had 53 high impact casualties in 1,386 incidents).

have been involved in rail accidents, and only eleven of those accidents resulted in a TIH release.[410] But the fact that these safety efforts have minimized the likelihood of railroads being involved in a chlorine release cannot entirely eliminate that risk or reduce the devastating consequences that would result from a chlorine release.[411]

The transportation of even a single tank car of chlorine carries the risk of massive liabilities. Professor Steven Shavell has explained that "[o]ne major way in which a release of TIH materials can come about is by accident. Accidents can happen during loading, transport, and unloading of TIH materials. During transport, the primary causes of accidents are derailment and collision between trains or between a train and a vehicle at a crossing point. Another common cause of a release is a leak from a tank car (for example, due to failure of a shipper to tighten a valve) that is not the result of a derailment or a collision." Opening Comments of Union Pacific Railroad Co., STB Docket No. FD 35504 (Verified Statement of Professor Steven Shavell at 6-7) (hereinafter "Shavell VS").

For example, early in the morning on January 6, 2005, a NS train collided with a parked train in Graniteville, SC, derailing several cars including three carrying chlorine. *See* Harvard Report at 19-20. A single chlorine car ruptured, forming a deadly cloud of chlorine gas that extended thousands of feet from the crash site. *Id.* at 20. The accident resulted in nine fatalities and 554 injuries and forced the evacuation of 5,400 residents. The FRA estimated the cost of

---

[410] *See* Written Statement of Joseph H. Boardman, Administrator, Federal Railroad Administration, U.S. Department of Transportation, before the Subcommittee on Railroads, Committee on Transportation and Infrastructure, U.S. House of Representatives (June 13, 2006) available at http://testimony.ost.dot.gov/test/pasttest/06test/Boardman3.htm (hereinafter "Boardman Testimony").

[411] *See* M. Orr, "Public Health Risks of Railroad Hazardous Substance Emergency Events," Journal of Occupational and Environmental Medicine (2001) ("Although a statistically rare occurrence, the effects on public health from the release of hazardous substances during rail transportation are potentially catastrophic.").

this accident to be at least $126 million in 2008. *See id.* at 20. However, later reports have demonstrated that this figure is likely far higher. *See* Jennifer Brookland, *Graniteville still pays heavy toll*, The State, Oct. 11, 2010 (reporting in 2010 that "[t]he Federal Railroad Administration estimated the cost of the Graniteville train wreck at close to $190 million. And that didn't include everything."); *see also* John D. Boyd, *Norfolk Southern Hit With Graniteville Accident Cost.* J. Comm. Online (Mar. 22, 2011) (reporting that NS recorded over $58 million of expenses related to Graniteville beyond covered insured losses in 2011). Further, many reports have noted that those costs would have been much higher had the incident occurred during the work day or in a more populated area. *See* Harvard Report at 3, 20.

Other TIH accidents have resulted in numerous casualties and significant liabilities.[412] A Union Pacific train collided with a Burlington Northern Santa Fe train in Macdona, TX, early in the morning on June 28, 2004, resulting in the rupture of one chlorine tank car. Three people were killed and 33 more injured by the release. *Id.* at 17-18. Two and a half years earlier, a Canadian Pacific train carrying anhydrous ammonia derailed in Minot, ND, after midnight on January 18, 2002, compromising five tank cars and causing one fatality and over 333 injuries, and requiring evacuation of 11,600 people. *Id.* at 16-17. Estimates for the significant damage to persons and property caused by these accidents are not available, but the equipment damage and environmental cleanup costs alone exceeded $5.8 million for Macdona and $10 million for Minot. *Id.* at 17-18.

---

[412] Similar examples are found outside of the transportation context. A 2011 chlorine release in Springdale, AR, resulted in 173 injuries, while another release the year before in Tulare, CA, injured 23. Environmental Health Sciences, *Special report: Chlorine accidents rupture life for workers, townspeople*, http://www.environmentalhealthnews.org/ehs/news/2011/chlorine-accidents.

As serious and tragic as these accidents were, each could have been far worse. Graniteville, Macdona, and Minot all occurred at off hours and away from population centers. As such, these only represent the floor of potential liability in a chlorine release, and do not come close to approximating the ceiling. *See* Harvard Report at 3 (warning that all three TIH incidents "could have been far worse").

A second way that a release of TIH materials can arise is through an act of terrorism. "TIH tank cars appear to be attractive targets of terrorism because they are numerous and hard to protect, can be ruptured—notably through derailment or the use of explosive charges—and can cause great harm when, as would be expected, a release is designed to occur in a densely populated area. The Federal Bureau of Investigation has reported that terrorists are specifically interested in attacks involving hazardous materials moving by rail,[413] and a number of studies suggest that a single release could cause fatalities in the thousands or tens of thousands, thus exceeding the number resulting from the World Trade Center attack on September 11, 2001."[414] Shavell VS at 7-8.

Professor Shavell had further noted that:

> Because of the potential for large numbers of deaths and injuries, the liability threat from TIH material accidents and acts of terror is great. Damages in the hundreds of millions of dollars are not hard to envision, and damages in the multiple billions of dollars could

[413] *See*, for example, an FBI National Press Release of October 23,2002, available at http://www.fbi.gov/news/pressrel/press-releases/fbi-distributed-through-the-nlets-communications-system.

[414] A Naval Research Laboratory investigation concluded that in a worst-case scenario of a release during a celebration or political event, 100,000 people could die in 30 minutes; a Homeland Security Council estimate assuming fewer exposed individuals found that 17,500 fatalities could result from a release; a National Research Council study determined that 1,000 fatalities could occur from a release, but assumed an attack at midnight, when few individuals would be outside, which might be viewed as an unrealistic time for terrorists to cause a release; a thesis on terrorism threats involving releases of TIH materials projected deaths in the range from 4,000 to 30,000. *See* the discussion of these estimates in the Harvard Report at 23-27.

> result if a discharge occurred in a metropolitan area, possibly as a result of terrorism. Moreover, the ability to insure against such liability risks is limited, in part because of the reluctance of the reinsurance market to assume the risks.

Shavell VS at 15.[415]

The insurance market for non-Class I railroads is particularly thin. Keith Borman, General Counsel for the American Association of Short Line Railroads, has testified before the Board on that point:

> In today's world if there is a hazardous material release during rail transit, all parties - regulators, private litigants and shippers alike - look to the railroad carrier as the primarily responsible party. This presents a particular problem for small railroads like AGR. In contrast to the giant Class I carriers, no small railroad has the assets to compensate claimants for the potentially enormous damages that are often associated with TIH and other hazardous materials incidents. Further, insurance is no answer because - again in contrast to the Class I carriers - it is not available to small railroads in the amounts and at the levels which would be adequate to compensate claimants and protect the viability of the small railroad business. This is in part because whereas huge interstate rail networks can spread their risk (and thus their insurance costs) over a vast rail system with thousands of shippers, small railroads typically have but a few significant shippers and just a few branch lines bearing the cost of insuring against catastrophic costs. No small railroad can qualify for adequate levels of insurance nor pay the premiums required to provide such insurance against potentially catastrophic claims of this magnitude. As a result small railroads place their entire enterprise at risk every time they accept a single TIH car for shipment. If the unthinkable happens, the railroad will simply `turn over the keys' to the claimants.

Comments of the American Association of Short Line Railroads, *American Chemistry Council et al. v. Alabama Gulf Coast Railroad (AGR)*, STB Docket No. NOR 42129 (Verified Statement of Keith Borman at 1). But in order for the SAC test to work, SBRR cannot assume that it will just

---

[415] Redacted Verified Statement of Warren B. Beach, Ex Parte No. 677 (Sub-No. 1), filed with the Surface Transportation Board, August 21, 2008, pp. 4-6. On the paucity of insurance coverage against catastrophic events, *see* generally Kenneth A. Froot, 2001, The Market for Catastrophe Risk: A Clinical Examination. Journal of Financial Economics, 60(2-3): 529-571.

"turn over the keys to the claimants" if it has an accident. It has to be presumed to continue to operate for the DCF analysis to be meaningful.

Several insurance studies have modeled the risk of a railcar TIH release in a densely populated setting. A Risk Management Solutions, Inc. ("RMS") model of a 90-ton chlorine release in a train crash in Chicago, Illinois, projected 42,600 total casualties, including 10,000 fatalities. *See* RMS, Catastrophe Injury Insurance, at 56 (2004). Although total cost figures were not estimated, losses to the insurance industry arising from the casualties alone would exceed $7 billion. *Id.* RMS noted that several factors could have lessened the consequences of such a release, but by the same token "[i]t also could have been worse." *Id.* RMS also modeled the effects of a rail yard fire resulting in the explosion and release of two tank cars of chlorine during the early morning hours in Houston, Texas. *See* Michigan Department of Environmental Quality, Report on Gaseous Chlorine Reduction Initiative, at 5. "The human health consequences [of the fire, explosion, and toxic fumes] were estimated at 600 dead, with 7,000 severely injured, and 250,000 having lesser injuries." *Id.* The total direct costs, including property and infrastructure damage and business interruption, were estimated at $17-22 billion, while other costs, including emergency response, approached $500 billion. *See* RMS, Risk and Insurance Top 10 Risks, at 56 (Apr. 15, 2004).

Other studies have sought to measure the potential results of an intentional release of chlorine from a tank car, such as in a terrorist attack. Due to the highly toxic nature of these chemicals and their transport through the national transportation system, security officials have warned that TIH material "stands alone as uniquely deadly, pervasive and susceptible to terrorist

attack."[416] Quantifying the risk of a terrorist attack is necessarily elusive, and such an attack, unlike an accident, would actively seek to maximize casualties. However, the source of the risk—namely a chlorine release from a rail car in a populated area—remains the same for both, and thus the studies are instructive as to the potential damages from an unintentional accident in a populated area.

The direst scenario, examined by the Naval Research Laboratory, modeled an attack on a TIH rail shipment in Washington, D.C., during a major outdoor gathering and concluded that as many as 100,000 deaths could result from a major release.[417] The White House's Homeland Security Council estimated that a TIH attack on a less crowded urban area would result in as many as 17,500 deaths, 10,000 severe injuries, and 100,000 hospitalizations.[418] A third study looked at an inner-city release from a chlorine tanker truck rather than a rail car. Even with its smaller capacity, one-fifth the size of a railroad tank car, the study estimated a fatality rate extending from 4,000 to 30,000 persons, with half of the deaths occurring within the first ten minutes.[419]

Although no financial values were attached to these projections, government agencies typically assess the value of a statistical life between $5 and $10 million.[420] From a liability

---

[416] Harvard Report at 23 (quoting Richard Falkenrath, former Deputy Homeland Security Adviser to President Bush and current Deputy Commissioner of Police, New York).

[417] *See* Harvard Report at 5 (citing Presentation of Dr. Jay Boris, U.S. Naval Research Laboratory, to City Council, Washington D.C., Oct. 6, 2003).

[418] "Planning Scenarios: Executive Summaries Created for Use in National, Federal, State and Local Homeland Security Preparedness Initiatives," Homeland Security Council (July 2004).

[419] Anthony M. Barrett, "Mathematical Modeling and Decision Analysis for Terrorism Defense: Assessing Chlorine Truck Attack Consequence and Countermeasure Cost Effectiveness," PhD dissertation, Carnegie Mellon University, Dept. of Engineering and Public Policy (May 2009).

[420] *See* Binyamin Appelbaum, *As U.S. Agencies Put More Value on a Life, Businesses Fret*, N.Y. Times, (Feb. 16, 2011), *available at*

perspective, the direct cost to the railroad from such an accident would be a function of the expected damages awarded or settlements paid to those killed or injured in an accident.[421] On average, a railroad could expect to pay a jury award of $5 million per fatality in a TIH accident or, assuming a 50% settlement discount, a $2.5 million settlement.[422] These numbers may be quite conservative, as a recent rail accident produced predicted payouts between $5 million and $10 million per death or serious injury.[423]

Liability costs for injuries would also be significant, because such awards include payments for medical care, rehabilitation, and pain and suffering that may not be awarded in a wrongful death case. The average liability cost for a serious injury in a TIH case is conservatively approximated at $250,000 from a trial judgment, resulting in a $125,000 settlement payment assuming a 50% settlement discount.

Additionally, there would be substantial property damages, business loss damages, and environmental remediation associated with a chlorine incident. Such was the case with Graniteville, where business loss and equipment damage at the Avondale mill was well documented. *See* Mike Gellatly, *Lawsuits ongoing four years after Graniteville wreck*, Aiken Standard, Jan. 6, 2009 (reporting that Avondale mill in Graniteville sued NS for $410 million, citing that their "facilities were covered with corrosive chemicals, and it would have cost more

---

http://www.nytimes.com/2011/02/17/business/economy/17regulation.html?pagewanted=all&_r=0.

[421] Settlement payments would be based on the expected jury award in such cases, and reduced by a settlement discount. *See* David A. Hyman et al., *Do Defendants Pay What Juries Award?*, 4 J. Empirical Legal Studies 1, 3-68 (Mar. 2007) (reporting an aggregate haircut of 56% on jury awards). For simplicity, NS applied a 50% haircut in its damage calculations throughout this section and assumed that all liabilities would result in settlements.

[422] *See supra* note 421.

[423] *See* Erica Werner, *Damages Limit at Issue in L.A. Train Crash*, Insurance Journal, Sept. 25, 2008, http://www.insurancejournal.com/news/west/2008/09/25/94033.htm (reporting payouts in the Metrolink crash would likely range from $5 to $10 million per death or serious injury).

than the business was worth to clean the buildings and replace the machinery"); *id.* (discussing EPA claims arising from incident).

Other examples of chemical and hazardous material disasters further illustrate the overwhelming liabilities that can be incurred by a single catastrophic accident. On September 9, 1987, an incident occurred in New Orleans, Louisiana, the terminus of the SBRR. That morning, an unattended railcar began leaking butadiene, a petroleum product, while stored in a CSX rail yard. *See* Harvard Report at 22. The leak spawned a fire, causing significant damage to the surrounding area but no serious injuries. *Id.* Local residents filed a class action lawsuit against CSX and several other defendant corporations who had some involvement with the rail car and were awarded a verdict of $3.4 billion in compensatory and punitive damages in 1997, *id.*, or more than $5.0 billion in 2012 dollars. Several defendants settled, but CSX, assessed $2.5 billion of the liability on its own, appealed and had its share reduced to $850 million before settling for a lesser amount. *Id.*[424] This multi-billion award came in a case with no fatalities and little proof of actual physical harm, two criteria unlikely to repeat in any catastrophic chlorine release. This illustrates the real danger of crippling liability that the SBRR and every railroad takes every time they transport a TIH carload.[425]

ii. Quantification of Cost of Excess Risk

To properly reflect the SBRR's cost of transporting TIH traffic, a measure of this excess risk must be assessed as an operating expense and apportioned to that traffic in the MMM

---

[424] *See also* Christopher Calnan, *Railroad Settles Tank Car Fire Suit*, Fl. Times Union, Nov. 22, 2001, available at http://jacksonville.com/tu-online/stories/112201/met_7898837.html.

[425] A similarly instructive instance of the significant liabilities that can result from non-lethal release of non-TIH hazardous materials occurred recently when a Conrail freight train derailed on a bridge near Paulsboro, NJ. In that instance, a derailment of several vinyl chloride cars that resulted in no fatalities or serious injuries has already triggered the filing of several lawsuits seeking funding for medical screening, including at least one that also seeks $10 million in punitive damages. *See* NS Reply WP "Residents File Suit over NJ Train Derailment."

analysis. The cost of such a risk is a product of two elements: (1) the probability of an accident (or terrorist attack) that results in a TIH release; and (2) the probable consequences of a release, if one occurs. A similar framework has been used by several modelers.[426]

To be conservative, NS has not attempted to compute the risk of a terrorist attack on the SBRR here. To be sure, any TIH traffic has the potential to be a terrorist target, and the SBRR's lines pass through several major cities, including the designated High Threat Urban Area of New Orleans. However, neither NS nor the Board has the expertise or information to permit estimation of the possibility of such an event, and fortunately there is no historical data on which to base such a calculation.

The Board can, however, estimate the probability of an accident that results in a catastrophic chlorine release from the SBRR's TIH traffic. In testimony before Congress, FRA administrator Joseph H. Boardman reported that out of approximately 2.2 million chlorine tank car shipments between 1965 and 2006, 788 were involved in accidents, including 11 instances of catastrophic loss of lading, four of which resulted in fatalities (.00018%). *See* NS Reply WP "Boardman Testimony." Although non-fatal incidents have the potential for large liabilities, NS conservatively assumes that any non-fatal incident would have a financial cost absorbed by the SBRR's purchase of reasonably available insurance. *See supra* at III-D-8. Thus, looking solely at the excess risk posed to the SBRR by a catastrophic release of its TIH traffic resulting in loss of life, the following probabilities results:

---

[426] *See* M.R. Saat et al., Optimizing Railroad Tank Car Safety Design to Reduce Dangerous Goods Transportation Risk, at 1 (2011) (calculating the risk as the annual rate of a release accident multiplied by the probabilities and consequences of various release scenarios); Mark Hartong et al., A Risk Assessment Framework for TIH Train Routing, at 5; Harvard Report at 29 (citing U.S. Department of Transportation, Federal Highway Administration, Office of Highway Safety, "Guidelines for Applying Criteria to Designate Routes for Transporting Hazardous Materials," FHWA-SA-94-083, Sept. 1994).

Table III-D-45
Percentage of Chlorine Tank Car Accidents, Releases, and Releases With Fatalities from 1965-2006[427]

	Total Carloads	Percentage of Total Chlorine Carloads
Total Chlorine Tank Car Shipments (1965 –2006)	2,200,000	100%
Chlorine Carloads Involved in Accident	788	0.036%
Chlorine Carloads Involved in Accident Causing Catastrophic TIH Release	11	0.0005%
Chlorine Carloads Involved in Accident Causing Catastrophic TIH Release With Fatalities	4	0.00018%

For its SBRR calculations, NS has used the 0.00018% per carload figure. That is conservative. As a percentage of its overall traffic, SBRR's risk would be greater than that of NS or the rail system as a whole. As Professor Shavell has explained: "The total risks due to shipping of TIH materials obviously increase with the level of shipping activity. The greater the number of tank car loads of TIH materials that are shipped and the more miles that each car load travels, the greater will be the total risks of TIH-related accidents, all other things being equal." Shavell VS at 12. As detailef above in Section III-D-7, the SBRR carries an unusually high amount of TIH traffic. While the SBRR is only 4% the size of NS on a route-mile basis, it would carry 7,300 carloads of TIH traffic annually—approximately 46% of all the carloads of TIH on the NS system. Measured on a car-mile basis, the SBRR would have 2.91 million car-miles of TIH traffic in 2011—one-third of NS's 2011 TIH car-miles.

[427] Data in the table was developed from the congressional testimony set forth in NS Reply WP "Boardman Testimony."

Table III-D-46
2011 SBRR TIH Traffic Compared to NS[428]

	SBRR	NS	SBRR Percentage of NS
TIH Carloads	7,300	15,884	46%
TIH Car-Miles	2.91 million	8.52 million	34%
TIH % of Total Freight Carloads	2.5%	0.4%	625%

SunBelt's selection of such a high percentage of TIH traffic results in 2.5% of the SBRR's freight carloads—about one out of every 40 cars—being a TIH shipment. This larger percentage of TIH traffic is further accentuated by the SBRR passing through an area of increased risk. "[T]he greater the population density along rail lines, the greater is the potential harm from an accident." Shavell VS at 12. The SBRR has a higher percentage of its traffic pass through High Threat Urban Areas ("HTUAs") than NS. 6.6% of the SBRR transverses the New Orleans HTUA; in contrast, only 5.6% of the NS system is in an HTUA. *See* NS Reply WP "TIH Mileage Summary.xlsx."

The second element, the probable damages resulting from a release of a TIH shipment that results in fatalities, depends on a wide variety of factors that often boil down to sheer chance. As the Harvard Report explained:

> In the event of an accident, the second factor, the severity of the consequences, depends on various elements. The impact of a release will be influenced by the quantity of product released and the nature and toxicity of the specific chemical involved. The dispersion of the gas will be affected by the atmospheric conditions at the time of release, including the temperature, moisture in the air, and wind direction and speed. The spread of gas from the release site is also affected by the morphology of the terrain, the density of buildings, and the shape and direction of streets. Injuries and deaths caused by the release will depend on the number of persons and the duration of their exposure to the plume, which is a

[428] *See* NS Reply WP "TIH Mileage Summary.xlsx."

> function of density of persons within the area, the size of the plume at toxic levels, and the speed at which persons affected can escape toxic levels. These factors are a function of time of day, the distance of that population from the release, the effectiveness of public response to emergency instructions, the rate at which people can move to safety, and the effectiveness of shelter-in-place.[429]

Considering first the historical examples of catastrophic TIH and hazardous material releases discussed above, it is clear that even incidents in relatively sparsely populated areas have the ability to cause significant injuries, fatalities, evacuations, and costs to the railroad involved.

Table III-D-47
Costs of Previous TIH and Hazmat Releases

Accident	Location	Date	Chemical	Casualties	Total Cost
CSX Railcar Leak, Fire	New Orleans, LA	9/9/1987	Butadiene (Hazmat)	None directly attributable	$3.4 billion jury damage award
Canadian Pacific Train Derailment	Minot, ND	1/18/2002	Anhydrous ammonia (5 cars ruptured)	1 fatality 333 injured 11,600 evacuated	Unknown
UP/BNSF Train Collision	Macdona, TX	6/28/2004	Chlorine (1 car ruptured)	3 fatalities 33 injured	Unknown
NS Train Collision	Graniteville, SC	1/6/2005	Chlorine (1 car ruptured)	9 fatalities 554 injured 5,400 evacuated	Over $126 million

Moreover, models of chlorine releases in densely populated areas show that such releases would be exponentially worse, with possible consequences ranging from tens to hundreds of billions of dollars.

[429] *See* Harvard Report at 30.

Table III-D-48
Projections of TIH Releases in Densely Populated Areas

Accident	Location	Chemical	Casualties	Total Cost
RMS Modeled Train Accident	Chicago, IL	Chlorine (90 ton release)	10,000 fatalities 32,600 injuries	Unknown (insurance industry losses of more than $7 billion from casualties)
RMS Modeled Rail Yard Fire	Houston, TX	Chlorine (2 cars ruptured)	600 fatalities 7,000 severely injured 250,000 lesser injuries	Unknown (direct costs estimated at $17-22 billion, indirect costs as high as $500 billion)
Naval Research Laboratory Hypothetical Terrorist Attack	Washington D.C	Chlorine	100,000 fatalities	Unknown, but an estimated $250 billion for fatalities alone
Homeland Security Council Hypothetical Terrorist Attack	Urban Area	Chlorine	17,500 fatalities 10,000 severe injuries 100,000 hospitalizations	Unknown, but an estimated $43 billion for fatalities alone

Even assuming an accident far less severe than any of the models or projections discussed above, a chlorine release resulting in fatalities would be expected to generate hundreds, if not thousands, of casualties. As mentioned above, Graniteville, Minot, and Macdona each occurred in sparsely populated areas, and at times outside of the working day, a fortunate coincidence that cannot be assumed for projecting any future incidents. *See* PHMSA, Notice of Proposed Rulemaking Regulatory Impact Analysis - Hazardous Materials: Improving the Safety of Railroad Tank Car Transportation of Hazardous Materials, at 4, 10 (Mar. 19, 2008) (recognizing "how fortunate the circumstances surrounding recent past incidents" of TIH train accidents have been, referencing specifically Graniteville, Macdona, and Minot). The EPA has estimated that the toxic range of a chlorine release from a 90-ton railcar can extend to three miles in an urban setting and six miles in a rural setting. *See* EPA, Background Document for Offsite

Consequence Analysis (May 1999). As a result, the number of people nearby and active at the time of the crash can greatly affect the resulting damage.

Modeling all of the possible permutations to determine the exact expected consequences of a fatal release of TIH traffic on the SBRR would be an impossibly complex undertaking. However, some reasonable estimates of the most probable results can be made. Approximately 76% of the land that the SBRR will acquire is classified as rural town, agricultural, or restricted.[430] NS estimated the probable liability costs of fatalities and injuries for an off-hours accident in this area using the actual injury statistics from the Graniteville accident, the most recent fatal chlorine accident and indicative of a sparsely populated release. Taking into account the estimated liability of $5 million for a fatality and $250,000 for serious injuries, all subject to a 50% settlement discount, NS projects a total estimated consequence of $60 million. This projection is conservative, as this is much less than the real-world estimated liability costs of Graniteville, discussed above.

In contrast, an accident in a lower population area during the workday or early evening, when more persons are out and/or working, would be expected to have far higher casualty numbers and damages.[431] *See, e.g.*, Comments of Edward R. Hamburger, AAR, STB Hearing on Ex Parte 677, July 22, 2008, at 290 (noting, for example, that if Graniteville had occurred at

---

[430] *See* NS Reply WP "SBRR Land Classification Breakdown.xlsx." Using the real estate evaluation is itself conservative, as it only accounts for the land usage directly abutting the SBRR. Because the toxic effects of a chlorine release can extend thousands of feet or even miles, this method will, if anything, understate the density of population that may be affected by a release.

[431] NS estimated peak times to occur during normal weekday commuting and work hours, from 7am to 6pm. *Cf.* Bureau of Labor Statistics, American Time Use Survey, Chart 17: Percent of employed persons who did selected activities on workdays by hour of the day (2011), available at http://www.bls.gov/tus/charts/chart17.pdf. Conservatively, no peak times were included for the weekends, resulting in 32.7% of the week being classified peak times for purposes of assessing the likelihood of a peak-time accident.

10:00 AM, a fully staffed textile mill and grade school would have been impacted by the spill). NS assumes that ten times as many individuals would be affected at peak times, resulting in an estimated liability of $600 million.[432] Both scenarios would be absorbed by the SBRR's additional insurance coverage of up to $1 billion. *See supra* at III-D-7.

For accidents along the remaining portions of the SBRR, comprised of residential, industrial, and commercial uses,[433] any release would involve far more harm. Informed by the RMS Houston model, which NS conservatively discounted to represent the least severe probable accident, NS projected that a non-peak accident in this area would result in casualty liabilities of $1.1875 billion. For a peak accident, NS again scaled the casualty numbers by ten to represent the increased exposure and risk attributable to increased activity during the workday, resulting in a liability figure of $11.875 billion. These casualty figures do not come close to the most severe models discussed above. The RMS Houston model itself projects $17-22 billion in direct costs, including property and infrastructure damage and business interruption, for what NS classifies as a non-peak accident, with indirect costs reaching $500 billion. Applying only the $5 million liability figure per fatality, discounted further by half to reflect likely settlements, incidents of the sort projected by RMS's Chicago Model or the Naval Research Laboratory would result in $25 billion and $250 billion in liability, respectively, for fatalities alone.

The excess risk numbers calculated by NS are conservative for additional reasons. They do not include the costs of moderate or minor injuries, of which there would be potentially tens to hundreds of thousands in a peak, densely-populated release. Nor do they include business losses, property damages, environmental remediation costs, or the cost of evacuations, all which

---

[432] NS assumes a multiple of ten based on the projections that an accident at a later hour in Graniteville would have impacted at least that much more of a local population.

[433] *See* NS Reply WP "SBRR Land Classification Breakdown.xlsx."

would still need to be taken into account to arrive at a comprehensive liability figure. Instead, they are informed and substantially discounted from the insurance projections discussed above.

The rightmost column in the chart below indicates which claims would not be covered by insurance were the SBRR to purchase $1 billion of insurance as set forth above in Section III-D-8. If the SBRR were not to have such insurance, its risk of crippling liability would be much higher.

Table III-D-49
Summary, Probabilities of Damage Scenarios From TIH Releases[434]

Fatal TIH Spill	Probability	Estimated Consequences	Insurance Coverage
Low Population Density Late Evening/Early Morning Low Damages	0.51	$60 million	Yes
Low Population Density Daytime Moderate Damages	0.25	$600 million	Yes
Densely Populated Late Evening/Early Morning Significant Damages	0.16	$1.1875 billion	**No, for $187.5 million of excess liability**
Densely Populated Daytime Widespread Damages	0.08	$11.875 billion	**No, for $10.875 billion of excess liability**

As a result, the cost to the SBRR represented by its TIH traffic's excess risk can be calculated as follows. For each tank car of TIH it transports, the SBRR faces a 0.00018% chance[435] of a TIH release causing fatalities. In such an event, the SBRR would face a 16% chance of significant damages from a non-peak incident, $187.5 million of which would be above insurance coverage limits. Additionally, the SBRR would face an 8% chance of a peak

[434] For the derivations of these calculations, *see* NS Reply WP "Excess Risk Calculations."

[435] Although this statistic could be further refined by factoring in the average route miles per carload, FRA administrator Boardman only provided accident statistics on a carload basis in his testimony, and they are not otherwise available over the relevant period.

accident in a densely populated area, resulting in $10.875 billion in damages above insurance coverage limits. Multiplying 0.00018% per carload by these percentages and damages produces an average excess risk per TIH carload of $1609. Multiplying that $1609 excess risk cost by the 7,300 carloads of TIH traffic that the SBRR would handle in 2011 suggests that SBRR would incur an annual excess risk cost of $11,745,700. Any SAC analysis that does not account for this real risk that the SBRR would bear necessarily understates the true costs of carrying the SBRR's TIH traffic.