Port of Rosedale

Great River Railroad Viability Analysis

Report to Date & Evolving Action Plan

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"One of Mississippi's greatest economic and logistical assets is our ports. We need to develop a plan of action to address our ports' backlog maintenance and capacity projects."

Gov. Tate Reeves' 2024 State of the State address

What was Strategic Rail Finance engaged to do?

The Port of Rosedale, Mississippi, engaged Strategic Rail Finance to assess the challenges, opportunities, and viability of investing in rebuilding and reopening the Great River Railroad (GTR).

What is the history of the Great River Railroad?

The GTR 30-mile right-of-way (ROW) remains in place from Metcalfe, Mississippi, near Greenville, north to the Port of Rosedale. Two more miles of ROW north of the Port do not warrant being put back into service at this time. The entire railroad has been out of service since 2001. The Rosedale-Bolivar County Port Commission owns the track and ROW, which it purchased from Illinois Central Gulf RR in 1981.

What has our assessment to date determined?

1) Our conversations with the Port of Rosedale's tenants and recent prospects have uncovered potential rail activity that more than covers the operating and maintenance expenses of a reopened Great River Railroad.
2) Half of the initial traffic depends on the continuation of the Lower Mississippi River's low-water conditions, which have forced shippers to pause or light-load barge shipments for three months in each of the last two years. The National Oceanic and Atmospheric Administration has warned that 2024 will likely continue these low-water dynamics, as the Upper Mississippi River watershed has experienced another winter of low snowpack and precipitation.
3) We have developed an economical, entrepreneurial approach to engineering, construction, and training to rebuild and restart operations, with an investment of $27,278,628, as detailed in Exhibit E. $10,775,000 has previously been appropriated in federal and state funding.
4) The public and private-sector benefits of this investment are logical but require a next phase of deeper logistics and commercial analysis to pinpoint.
5) A rebuilt GTR would likely attract additional traffic from shippers who locate on still available land at the port, including the adjacent undeveloped 250-acre Rosedale Industrial Park.

6) New rail-to-port logistics solutions for shippers in northern Mississippi can generate significant traffic, made possible by a rebuilt GTR and a rebuilt out-of-service 93-mile section of the Columbus & Greenville Railway (CAGY) between Greenwood, MS, and West Point, MS.
7) By rebuilding the GTR around a whole-state industrial systems strategy, we can proactively identify new Port and industrial park tenants and rail users who can benefit from this rail-truck-barge service. This industrial systems strategy is a breakthrough approach to supply chains and economic development that SRF has invented over thirty years of work in this field. It can boost the entire state's GDP and quality of life.
8) A reactivated GTR and CAGY would provide an option for shippers that use the Tennessee-Tombigbee Waterway to reach the Mississippi River in the case of future lock outages by moving across the state by rail to the Port of Rosedale or the Port of Greenville. Currently, the Tenn-Tom lock breakdown at Demopolis has prevented the waterway from being used since its January 16th failure until the scheduled completion of repairs on May 30th.
9) River commerce on the McClellan–Kerr Arkansas River Navigation System (MKARNS) and the Mississippi River may present additional opportunities to serve the region and the nation through a renewed port-to-rail connection at Rosedale and a rebuilt CAGY across the state. The next phase of project analysis should further illuminate these key possibilities:
    a. Logistics to and from Mississippi on the river has been focused on originations and destinations south to Baton Rouge, New Orleans, and overseas. On the other hand, commerce to and from domestic receivers and shippers north of Mississippi may offer significant economic development opportunities for the state made possible by a rebuilt GTR and CAGY.
    b. The Port of Rosedale's location at the mouth of the Arkansas River may also present opportunities for additional services since barges moor at Rosedale while smaller tow sizes, as limited by the MKARNS river depth, are aggregated into larger tows to continue on the Mississippi, and tows from the Mississippi are downsized to move on the MKARNS.
10) A United States Department of Transportation Consolidated Rail Infrastructure and Safety Improvements (CRISI) Grant should be applied for immediately to supplement the start-up funding. We have discussed this project with the Federal Railroad Administration leadership, and they are looking forward to fielding this application, which is due 10:59 PM Central, May 28, 2024. Decisions will be announced in September. This is a highly fortuitous schedule for advancing this rebuild project, and there are many reasons why it is an excellent candidate for CRISI funding.
11) We have also briefed FRA leadership on the related opportunity of rebuilding the CAGY, and they are equally enthusiastic about it.
12) The dialogue with FRA has also generated strong support for funding the foundational planning for the State Rail Authority and the multi-state logistics approach SRF has designed and can convene.
13) None of this funding is promised or guaranteed.

This is a different report from what consulting firms typically produce. The document you are reading is an Evolving Action Plan. Everything here has been written to present knowledge and information that is current, pragmatic, and clear so that it informs and serves as a platform for further thinking and planning.

This document reflects the contribution of person after person in Mississippi with whom we have had the opportunity to dialogue. There has been an outstanding reception of our wisdom in these matters. We perceive that people also appreciate not just being heard but respected while being able to contribute their wisdom, knowledge, and information to us.

What attributes of the Port of Rosedale point to its growth potential from a rebuilt GTR?

- Seven existing occupants at the Port and the Port's own loading facilities serving non-tenant shippers, which together move 1-2 million tons of product each year via barge and truck, could all integrate rail into their logistics approach.
- The Port owns two direct on-the-water properties with twenty-seven acres of developable land, which the GTR can easily serve.
- Bolivar County Economic Development District owns 250 acres of undeveloped industrial property adjacent to the Port, which can be reached via conveyor, truck, and rail.
- The Port is undergoing $10M+ of harbor dredging by the U.S. Army Corps of Engineers that will 1) enable continued barge movement in and out of the Port and 2) render another thirty-two acres of property accessible to water and rail.
- Its location on the Mississippi River at the mouth of the Arkansas River means that every barge tow coming down the Arkansas is combined with other barges before continuing North or South on the Mississippi. Conversely, large tows that travel on the Mississippi River are downsized before being moved up the Arkansas.
- The Port is located centrally in the Mississippi Delta, with its 7000 square miles of rich agricultural bottomland.

What approaches and activities have we undertaken to advance this project?

1) Related via video and in-person meetings with the management of companies that might benefit from using a reopened Great River Railroad to begin assessing future traffic volumes.
2) Pinpointed the cost of rebuilding the GTR, applying a rail-industry knowledgeable approach to selecting and acquiring materials, contractors, engineering, and project management.
3) Stimulated local, regional, and state-level support among elected leaders and professional staff.
4) Built a contact database of 148 and counting relevant stakeholders whose input and support are desired to build a successful GTR rail operation.
5) Designed a safe, efficient, and economical start-up rail operation based on the likely beginning volumes, rural low population, and flat terrain.
6) Created a realistic, user-friendly financial model of the GTR's construction, start-up, operation, maintenance costs, and potential revenues.
7) Identified the questions that must be pursued to establish an investor-grade business and economic development plan that will fully inform a go-/no-go investment plan.

8) Visited the U.S. National Archives in College Park, MD, and acquired copies of the 1916 GTR Railroad Valuation Maps that specify the boundaries of the GTR's Right-of-Way. Fourteen valuation maps are in Exhibit C of this report.
9) Conducted a thorough Google Maps search, identified all GTR public grade crossings, and cross-referenced them with the U.S. Department of Transportation Rail Crossing Inventory database. The detailed list is in Exhibit D of this report.

What is the present condition of the Great River Railroad?

1) The previous rail and ties are in place, but their age and condition require significant upgrades. Rail is measured and referred to by the weight of a 3' section. Over the years, rail has been produced at between 70lb. and 141lb. per 3' section. The northern twenty-four miles of rail is 70lb. rail, laid in the 19th century. It is too old and light to be reused safely. Beginning in Metcalfe at the southern end, eight miles of rail heading north is "90lb. rail".
2) We have designed the rebuild to replace the northern 24 miles of 70lb. rail and all ties and retain the southern 90lb. rail, strengthened by replacing 100% of the ties in that section as well.
3) The replacement ties installed in both sections are specified as 34% new ties and 66% #1 "Relay" ties. Relay ties are used ties in good condition, typically removed from a Class I mainline due to the demands of high-volume traffic.
4) 29 public grade crossings over the rail line must be rebuilt or closed.
5) Six relatively low, short bridges over small water channels along the ROW need repair or replacement.

What is the cost of rebuilding the Great River Railroad?

1) What is the cost of engineering, planning, capitalization, and permitting?
    a. $580,000
2) What is the cost of materials and construction?
    a. $26,363,628
3) What is the cost of project management?
    a. $250,000
4) What is the cost of equipment acquisition?
    a. $575,253, suggested to be funded through the Mississippi Department of Transportation Rail Loan Fund. This debt service has been included in the operations model, and 6) below
5) What is the cost of hiring and training personnel?
    a. $85,000
6) What is the cost of operating and maintaining the GTR?
    a. $68,882 per month on average, based on an initial traffic volume of 177 cars per month
    b. This includes debt service on the initial equipment required for start-up operations

What gross and net revenues from the GTR have been illuminated so far?

1) $92,925 per month Gross Revenues on average at the outset, based on 177 cars per month at $525.00 each
    a. We are using $525 per car for modeling, as this is a typical average tariff for railcars moving on shortline railroads of this length for agricultural commodities. Rail rates will eventually be determined by competition with truck rates (particularly for the Emerys clay moving to the Port from Crenshaw, MS), the availability of grain cars, and the tariffs the CAGY and Canadian National charge.
2) $24,043 Net Revenues per month on average at the outset

Which public sector and association leaders have we spoken with and received positive input toward the GTR rebuild?

1) Port of Greenville, Executive Director Tommy Hart
2) Mississippi Transportation Commissioner Willie Simmons
3) Mississippi Transportation Commissioner John Caldwell
4) Mississippi Department of Transportation Chief of Staff Jeff Ely
5) Mississippi Department of Transportation, Director of Aeronautics, Ports, Waterways and Rails Josh Stubbs
6) Mississippi Department of Transportation, Director of Intermodal Planning Jim Willis
7) Cleveland-Bolivar County Chamber of Commerce, Executive Director Hannah Aguzzi
8) Delta Council Executive Director Frank Howell
9) Delta Regional Authority, Chief Programs Officer Kemp Morgan
10) Economic Development Partners of Montgomery County, Executive Director Sue Stidham
11) Golden Triangle Development District, CEO Joe Max Higgins
12) Greater Grenada Partnership, Executive Director Matthew Harrison
13) South Delta Planning & Development District, Community Development Department Director Allyson Denson
14) Three Rivers Planning & Development District, Executive Director Vernon (Randy) Kelley
15) Inland Rivers, Ports, and Terminals, Executive Director Aimee Andres
16) International Port of Memphis, Executive Director Randy Richardson
17) Mississippi Department of Agriculture and Commerce, Deputy Bureau Director Ginger Williamson
18) Mississippi Development Authority, Executive Director Bill Cork
19) Mississippi Development Authority, Project Manager Marc Measells
20) Mississippi Economic Development Council, Executive Director Gwen Howard
21) Mississippi State Senator Wendell Bryan
22) Tennessee-Tombigbee Development Authority, President Mitch Mays
23) Senator Cyndi Hyde-Smith’s Senior Policy Advisor Kendall Moore

What is Collaborative Infrastructure Development, and why is it needed for the GTR and Mississippi?

Supply chains and infrastructure projects are almost always narrowly developed around individual businesses and properties due to a lack of systems thinking and an overreliance on competition between towns, counties, states, and private sector actors. Therefore, the location and design of new investments proceed as an amalgam of indiscriminate land transactions.

Outreach to stakeholders is typically treated as a burden rather than a goldmine, limiting the depth and authenticity of the interactions. Knowledge and perspectives that could be gained through thoughtful one-on-one conversations are left by the wayside. An ongoing tilt toward serving the fewest stakeholders rather than the most stifles the return on infrastructure investment.

To illuminate the region's opportunities and the consequent viability of investing in rebuilding the Great River Railroad, we have conducted significant outreach to local and state business and government leaders whose collaboration is vital to a proper return on that investment. Rather than the narrow lens typically applied to infrastructure projects where attention is on one port, one town or county, or one shipper, we have obtained the perspectives of multiple port directors, economic development leaders, transportation providers, and shippers.

We have interacted with people across the state through two driving trips and many Zoom meetings from Philadelphia, often with Robert Maxwell and, sometimes, Tommy Hart participating. Along the way, the volume of communications uncovers discoveries. We have, for instance, discovered that Steel Dynamics (SDI) in Columbus is building a biomass-fueled power generator for which they plan to source feedstock from out-of-state while the in-state wood products industry is struggling with an oversupply of biomass in need of a customer. What we practice and want to contribute to Mississippi is a set of approaches that enable folks across the state to learn what else is happening that plugs into the solution or opportunity they are out to advance.

Here is another example of what happens when you practice what we call Radical Inclusion, which essentially means talking with everyone relevant. Why not? While visiting a county-owned rail line managed by an SRF client in northeast Mississippi, Three Rivers Planning & Development District, we found a rail tie recycler in Amory. With 90,000 scrap ties from the GTR needing a home, having a disposal site in the state is excellent while supporting another publicly owned railroad.

Collaborative Infrastructure Development is an approach to infrastructure conception and investment that bridges the pervasive gaps in understanding and coordination between businesses, governing jurisdictions, and the public and private sectors.

Like many integral components of infrastructure systems, rail lines typically require service to many individual businesses and towns. Otherwise, the costs of building, maintaining, and operating the line will become uneconomical if there are long stretches without customers. Yes, there are mega-size businesses that ship enough individually to justify the costs of a single-customer rail line. However, their rail logistics still require their customers and suppliers, who are typically much smaller, to be connected by rail with other shippers in their area to render their collective rail service viable.

Conceiving the GTR reinvestment plan within Collaborative Infrastructure Development has begun. We have identified, cataloged, and invited leaders of all the towns and counties adjacent to the out-of-service GTR, the in-service and out-of-service Columbus and Greenville Railway (CAGY), and the North-South rail lines that do or would connect with all sections of the CAGY. In speaking with these economic development professionals, it was clear that they receive many Requests for Information that insist on rail service. There is significant support for rebuilding these two rail lines.

The success of the Port of Rosedale and a rebuilt GTR and their service to the state depend on the collective engagement of the region's economic development community. Their ongoing input is needed to identify and then support existing, new, and prospective businesses in their use of rail to and from the Mississippi River and elsewhere.

How can Rail-Enabled Economic Development serve the Delta and the state?

Transportation infrastructure is critical to communities as it determines the types of economic growth possible in a town, county, or region. While trucks remain a vital mode of transportation, not having freight rail service limits a location's attractiveness for many shippers and exacerbates the impacts of commercial transportation on roads and bridges. When there is no rail service, highway maintenance budgets, clean air, community safety, and quality of life suffer.

For example, Columbus, Mississippi, has been a surging industrial center due to its confluence of highways, the Tennessee-Tombigbee Waterway, and multiple rail lines. Comparatively, substantial portions of Mississippi are less attractive to industry because they do not have rail service, and trucks are impractical and expensive for certain commodity movements. Consider the industrial development occurring in Grenada now that effective freight rail service has been restored via a fully functioning Grenada Railroad.

As an already stable, well-managed service provider to local agriculture-related businesses in Bolivar County, the Port of Rosedale presents a valuable opportunity to grow its service to the state by re-establishing rail service via a rebuilt GTR to complement its excellent Mississippi River location and assets.

Success, however, in lower-population, less developed rural areas, such as the Delta and North-Central Mississippi, require a different approach to economic development than what has successfully served larger towns such as Columbus, Jackson, and Gulfport. The areas with less population require:

1) attention to the needs and opportunities of existing businesses
2) attention on attracting smaller new businesses than what economic development typically targets
3) aggregating the needs and opportunities of these business entities
4) illuminating natural resource development opportunities on a regional basis
5) grasping and addressing gaps and shortcomings of current transportation networks
6) thinking and planning to advance whole industrial systems and supply chains
7) assessing infrastructure development geographically at the whole region and corridor level
8) repurposing brownfield properties and existing infrastructure

9) identifying synergistic businesses to attract that can serve or be served by other existing companies
10) bridging the gaps in coordination between the rail, waterway, and highway service providers
11) providing the facilitation for these disparate private businesses to collaborate effectively

Rail and trucking networks are valuable to the degree that they enable movement to and from larger swaths of the marketplace for sourcing and distributing material and goods. The trucking network's value is relatively stable due to the nearly ubiquitous presence of roads and highways maintained by the public sector as a public investment. However, the value of the rail network to local and rural America has been shortchanged over time as more of the network's legs have been taken out of service. Mississippi has a distinct opportunity to lead the nation in reversing that decline by restoring not only the GTR but also the 93-mile section of the Columbus and Greenville Railway that has been out of service since 2001. While the investment in the GTR appears to be viable, the return on investment would be significantly enhanced when a rebuilt CAGY connects the GTR and the Ports of Rosedale and Greenville to all the towns, counties, rail lines, destinations, and businesses beyond the CAGY's current terminus in Greenwood.

Why does the GTR and the CAGY investment require a state-level commitment to rail-enabled economic development?

Freight rail service is too essential to a state's economic vitality and quality of life to be left to the railroads to advance, given their current business model. The Class I railroads, in particular, have operated under a business model emphasizing long trains and long-distance hauls to and from major ports, terminals, and the largest shippers. This has been a highly understandable reaction to operating in a competitive freight landscape wherein public resources fund road construction and maintenance. Having its infrastructure provided for it has unwittingly given the trucking industry a supportive business environment for externalizing its social and environmental impacts, providing flexible service to shippers of any size and length of haul, and remaining cost-competitive.

However, there is an increasing desire to return railroads to a growth industry for the benefit of shareholders, investors, customers, and the long-term vitality of our communities. Mississippi government leadership can facilitate this growth by enrolling the state's extensive network of economic development professionals in a statewide program of rail-enabled economic development. Indeed, the continental build-out of commerce and industry in the 19th century was only possible from this level of coordination between government and railroads.

Not being done elsewhere, this innovation can invite the Class I railroads and the state's shortline railroad ownership to collaborate with Mississippi as a test bed for rail service growth spurred by local rail-enabled economic development.

Railroad companies generally do a professional job of safely managing the trains they run, and they are well-capitalized for their stable, ongoing operations. They are, however, minimally staffed for local and statewide customer relations, public relations, government relations, and marketplace development. Growing rail requires active engagement in all these areas. Otherwise, service and business growth depend wholly on landing and serving only the largest industrial enterprises. This is why much of rural and less-populated Mississippi and the country

are challenged to establish the level of local rail connectivity necessary for supporting balanced industrial development and prosperous communities.

What is the likely future demand for freight rail service in general?

To answer this question, we can look at the rising importance of supply chains' environmental footprint in many companies' customer appeal, marketing, and the formula by which their investors make their decisions. Rail will become more in demand for years to come. This is especially applicable to companies developing and offering alternative fuel sources, fertilizer components, and other new product designs that feature an environmental contribution in their marketing and funding cases. This is highly relevant in Mississippi. One company currently making a $300M single-facility investment in the state reported that the CO_2 savings of their wood products is a critical investment criterion of their financial backers. Other vital enterprises in the state, such as Steel Dynamics (SDI), have the environmental footprint of their feedstock at the core of their business cases. SDI touts its use of scrap material as feedstock for its plant in Columbus. The contribution of rail transportation to supply chain sustainability can be a key incentive for companies, investors, and lenders to invest in Mississippi.

Through our non-profit policy development organization, OnTrackNorthAmerica, we have researched a fuller set of social, environmental, and financial advantages of freight rail transportation. As the total "Land Freight Lifecycle Impact" of transportation modes comes to light over the next several years, the numerous benefits of rail freight beyond its CO_2 emissions advantage over trucks will compel more businesses to utilize railroads for their logistics. As an example of the financial differences between modes, each truckload of freight causes the same road damage as 5,000-10,000 passenger vehicles. The material carried by a one-mile train with 80 railcars requires a 27-mile convoy of trucks on the highway to move the same goods. Railroads are the most space-, energy-, and capital-efficient means of moving heavy weight over land.

Mississippi is searching for solutions to a shortfall in highway and bridge maintenance funding. The most recent MDOT analysis of pavement needs identified 87% of the state-maintained lane miles as needing repair, rehabilitation, or preventive maintenance. Nearly 42% of these lane miles are beyond the point of preventative maintenance. At present funding levels, the state meets approximately 10% of pavement needs annually. The cost to perform these treatments is estimated to be nearly $4 billion. MDOT anticipates spending approximately $180 million annually on bridge replacements and repairs. Addressing the backlog of bridge replacement would require $2.5 billion.

Freight railroads enable economic development to be uncoupled from the continued expansion of truck traffic. Railroads pay for their track construction and maintenance, so the state benefits from rail-enabled economic growth in the short and long term.

As Mississippi continues to grow excellently in industrial activity, moving more of the unavoidable increases in freight volumes by rail is critical to avert problematic highway congestion, safety issues, and maintenance shortfalls. Introducing existing and prospective businesses to all the environmental, social, and logistics benefits of improved rail connectivity in, out, and through Mississippi will significantly contribute to the state's future prosperity.

What is the near-term assessment of likely GTR user volumes?

The Great River Railroad reinvestment rationale is based on a combination of three tiers of rail-port business development: 1) existing port tenants' future use of rail service (Assessed by SRF here), 2) rail service to prospects who have recently approached the Port of Rosedale (Also Assessed here), and 3) prospects that will be attracted to source and distribute materials to and from Mississippi that want to access the Mississippi River via the Port of Rosedale once rail service is re-established (Needs to be further Assessed).

Reactivating rail service to the Port of Rosedale will boost the productivity of existing port enterprises by lowering shipping costs, accommodating new business activities, providing goods movement during low and high-water months on the Mississippi River, and supporting facility and throughput expansion. Rail service to the Port also opens up logistics opportunities for new businesses to locate in Rosedale. Many of their operations will be part of new logistics-based opportunities for businesses throughout the state. As the origination or destination of goods moving through the Port will primarily be in Mississippi, local communities and economies across the state will benefit.

We have met with existing Port of Rosedale tenants and several recent prospects for using the Port. The following table was developed using information collected from the one-on-one interviews with the local management of these companies who have expressed their level of interest and possible volumes:

Customer	Commodity	In/Out	Tons/Yr.	Rail Asset Needed	Probability	Est Cars/Yr.
Regular Use						
Imerys	Clay	I/B	55,000	Storage building	70%	385
Helena Chemical	Liquid fertilizer	I/B	33,000	New sidetrack, pipe	65%	215
Simplot	Liquid fertilizer	I/B	16,000	Pipe to Port track	75%	120
Cives Steel	Flat roll steel	I/B	15,000	Rehab sidetrack	70%	105
Cives Steel	Finished steel	O/B	15,000	Rehab sidetrack	25%	38
Axel Americas	Base oil	I/B	2,400	Rehab sidetrack	50%	12
When Low Water						
Farmers Grain	Grains	O/B	500,000	New lead, conveyor	25% x 65%	812
Simplot	Dry fertilizer	I/B	150,000	conv. to Port track	25% x 65%	244
Helena Chemical	Dry fertilizer	I/B	120,000	conv. To new track	25% x 65%	195
					Total/Year	2,126
					Avg Month	177

This activity calculation is based on 1) estimating that low-water levels limiting barge traffic from the Port of Rosedale occur 25% of the year and 2) applying subjective probabilities to the rail traffic shippers expressed. These assumptions result in 60% of the GTR's estimated annual volumes coming from periods of low water. Further refinement of the operating model on a

monthly basis is needed to reflect the seasonality of low-water conditions and the seasonal ebbs and flows of each shipper's business activity.

The above estimates are conservative because they do not consider other possible traffic. The most apparent are two other Port tenants, Consolidated Grain & Barge (CGB) and Louis Dreyfus, each with an outbound grain business of the same magnitude as Farmers Grain. If Farmers Grain successfully maintains business during low water using the GTR, then CGB and Louis Dreyfus would likely follow their example. Additional sidetracks to their properties can be easily constructed. Another existing business with a likely interest in a rebuilt GTR would be Oxbow Crush in Greenwood on the CAGY. Oxbow is activating a large soybean processing facility that will receive large volumes of soybeans, some from sources on the Mississippi River, and will ship large volumes of soybean meal and soybean oil, some to outlets on the Mississippi River.

Nor do the above estimates consider the vast opportunities for additional traffic if all or a portion of the out-of-service portion of the CAGY between Greenwood and West Point were rebuilt. For example, if 27 miles of the CAGY were put back into service between Greenwood and Winona, GTR could effectively reach all existing Grenada Railroad (GRYR) customers. Of particular interest would be a new shipper on the GRYR, Highland Pellets, which is building a new $300M wood pellet production facility in Elliott, 14 miles north of Winona. Phase I of the Elliott facility will generate 10,000 carloads of pellets per year. Access to the GRYR would also make the Port of Rosedale more attractive to potential new tenants, such as Eion Corp, which will have annual imports of 10,000 carload equivalents of olivine sand from Norway. Olivine sand is a substitute for agricultural lime that pulls CO_2 out of the atmosphere while adjusting the PH of the soil for farmers.

For future reference, the Standard Transportation Commodity Code (STCC) contains specific product information used on waybills and other shipping documents. The primary STCC codes that apply to Port of Rosedale commodities are corn (STCC 01-132-15), wheat (01-137-10), soybeans (01-144-10), and rice (01-134-10).

What should be done next?

1) There is an urgent need to inform the comparative transportation and business economics of the primary modal conversion opportunity of moving freight from Rosedale to Baton Rouge and New Orleans by barge, truck, and rail in low and high water conditions. These questions can be answered for each Port tenant and user:
    a. How much are they shipping by barge south on the Mississippi?
    b. What is the seasonal nature of these shipments on a monthly basis?
    c. What are the temporal (timing) concerns relative to these shipments?
    d. What are their ability and costs to store products during low water delays?
    e. What are the trucking costs and availability from Rosedale to Baton Rouge and New Orleans during the year's low water/high demand times?
    f. What are the rail rates for this movement?
    g. How would railcars be acquired, and at what cost for these partial-year movements?
2) The destination for commodities sourced in Mississippi has tended naturally to be overseas due to its prime position at the base of the Mississippi River watershed, the fourth largest in the world. Along with Louisiana, Mississippi has a competitive

advantage compared to other Mississippi watershed states as the closest to ocean-going vessel loading. As confirmed by Tommy Hart, the opportunities for using the Mississippi River to distribute more Mississippi goods upstream to the heartland of America have not been adequately explored. This can be addressed beyond our initial outreach, wherein we identified two existing power plants north of the Port of Rosedale that expressed significant interest in sourcing wood pellets as replacement fuel for their boilers.

3) Accomplishing even the first-tier GTR development opportunities, which is to serve existing port tenants, requires a newly established effectiveness of the state in relating with the Class I railroads. After interchanging cars with the CAGY at Metcalfe, the Canadian National Railroad is the sole connecting carrier at Greenwood. They do not currently offer local service from there directly to Baton Rouge and New Orleans. They haul local traffic north to Memphis, then place it on trains going south. This will not suffice as a viable alternative to barge shipments down the Mississippi River when water levels are low.
4) Initiate the "State Rail Authority," as Governor Reeves expressed in his recent annual address, and make rebuilding the GTR and the CAGY its central focus at the outset.

Numerous industries and local economies across central Mississippi will benefit from new rail-port service at the Port of Rosedale and the Port of Greenville as a result of rebuilding the Great River Railroad and the currently out-of-service sections of the Columbus and Greenville Railway. The candidates we have identified for further analysis are 1) the forest products industry, including new energy and alternative products; 2) other agricultural products and inputs; 3) the steel and aluminum industry centered in Columbus, MS; 4) prospects for industrial land development within each of the counties and towns along the GTR and CAGY; 5) current industrial prospects that the Mississippi Development Authority is fielding; 6) prospects that other economic developers across the state are fielding; 7) existing businesses in the state who might be interested in rail-barge service; 8) industrial supply chains for new energy and waste/scrap/residual streams, including logistically-advantaged siting of new gathering and processing facilities in the state; and 9) the contribution of lower environmental footprint rail transportation to the attractiveness of specific businesses, for instance, Eion that distributes a limestone-alternative, CO_2-absorbing soil amendment material that depends on carbon credit trading.

Spurred by the Governor's commitment to a state rail authority, Mississippi's economic development community's collective participation in identifying, attracting, and landing new rail customers offers railroads an unprecedented business growth opportunity.

This level of thinking about whole-state logistics and infrastructure investments undergirded the nation's build-out of its rail network in the 19th century when there weren't existing customers already in place. Substantial mineral deposits, coal, forests, and land were available for development, but it required a level of capital that could only be raised through collective action and foresight. Towns, states, the federal government, businesspeople, and investors collaborated to implement the possibilities. Mississippi can benefit mightily from embracing this multi-dimensional land, resource, and transportation development opportunity.

SRF can continue to advance all these opportunities and tasks if resourced and empowered by the state to co-lead the conceptualization and execution of the Governor's vision toward a new age of rail-enabled economic development in Mississippi. Ultimate success in convening the

multi-county, multi-entity collaboration requires the endorsement and backing of the Mississippi Development Authority and Governor Reeves. The Ports of Rosedale and Greenville, and SRF can provide terrific leadership. Still, we will need the Governor's imprimatur to interact effectively with federal and state agencies, counties, economic development entities, major businesses in the state, and the railroads.

What are the keys to the success of the GTR?

1) Base the track rebuild on an informed understanding of rail operations and value engineering
2) Design the rebuild to include a highly detailed plan for materials procurement, delivery, distribution, pick-up, replacement, and disposal
3) Engage with existing port tenants and prospects in down-to-earth, commercially relevant dialogues
4) Plan for assisting each potential shipper in working through all the logistics-related challenges of modal conversion and business expansion, including the costing and operating particulars of materials loading, storage, and transportation
5) Illuminate Mississippi River and Arkansas River commerce and supply chains to pinpoint opportunities for new services at Port of Rosedale
6) Involve all the economic development entities in the state that can contribute to the success of the GTR and the Port by leaning into rail-enabled economic development
7) Map the natural resources and related stakeholders across the several commodity sectors that are prevalent in Mississippi, such as wood products and other agricultural items, steel, aluminum, manufacturing, and chicken farming
8) Grasp the geographies and current logistics of the material sourcing and product distribution for Mississippi's heavy freight shippers
9) Invent new logistics strategies that are realizable from a rail-port connection with the Port of Rosedale and the Port of Greenville
10) Expand the range of beneficiaries from these solutions by embracing all ports as potential synergistic "sister" ports to Rosedale/Greenville

Who should operate the Great River Railroad?

The Port of Rosedale management team can operate the GTR due to the customer make-up, relatively simple track operation, and single interchange point with the Columbus and Greenville Railway.

1) Customer relations
    a. GTR's customers will all be existing or new customers of the Port; thereby, port staff will already manage relations well.
    b. Port of Rosedale management is already knowledgeable about freight logistics.
2) Community relations
    a. The GTR runs through a rural, low-population region, requiring minimal interactions with the few nearby landowners, towns, and other businesses. As a public entity already known and well-established in the county, the demand for additional community relations will be minimal.

3) Rail operations
    a. The volume of activity and straightforward train movements from a single interchange at Metcalfe to its customers, all located at the Port of Rosedale, will require minimal operations planning and crew management.
    b. The three rail crew members can effectively manage primary responsibility for train operations, equipment oversight, and track maintenance.
    c. Given the relatively flat, open, straight terrain and smaller, slower train movements, hiring locally inexperienced, responsible, and trainable community members for these positions is safe. We have budgeted time to train these new crew members.

We have included in the monthly budget the overhead of 25% of the time and salary of the current Port of Rosedale Terminal Manager and Office Manager, two hours each day. This time will not be required on many days. We have also budgeted for training and 3rd-party support for this small administrative and management team, along with the Port Director. Our recommended professional for this training is Carl Belke, a long-time Strategic Rail Finance staff industry advisor. Carl has 50 years of experience managing railroads, from small to large, and he still enjoys training people new to railroad operations.

We have budgeted for monthly third-party administration of billing, car hire, and rail interchange movements. At this traffic volume and even much higher volumes, it is economical to establish this reliable approach to railroad administration details. We recommend Short Line Data Systems, Morristown, NJ. www.sdsrocs.com, Steve Friedland, Principal.

The history of public sector efforts to resurrect and manage failed private-sector rail operations is filled with learning opportunities. Most importantly, effective public ownership of freight rail operations hinges on the attention paid to assisting customers and prospects with evaluating and implementing rail logistics. The Port of Rosedale management has demonstrated an ability to assist customers in their logistics thinking. Adding rail logistics to their capabilities is practical and doable.

How can the GTR be rebuilt economically and safely?

1) Base the choice of materials and the rebuild plan on a sensible operating model in light of the relatively low initial traffic volumes, the 30-mile line length, working hours to accomplish one round-trip, and track speed for timeliness and safety.
2) Re-use as much of the existing track material as is financially intelligent and safe.
3) Tailor engineering expenses to a) address design challenges intelligently, b) meet the requirements of any public entities with jurisdiction, and c) make the best use of rail and bridge contractors' expertise and in-house design capabilities.

As the operation's initial volume is 125-225 railcars a month, the number of cars in any train will average fifteen. These cars can be pulled by one locomotive. With a 30-mile line at 10-25MPH, the train crew can traverse Rosedale to Metcalfe and back, including switching customers in one workday. These parameters have been factored into this replacement and rebuild plan, and all costs are included in the budget mentioned above:

1) Rail

a. Existing 90lb. rail on the Southernmost 7.9 miles of track will remain in place.
b. All 70lb. rail on the Northernmost 22.1 miles of track will be replaced. Otherwise, once the ties have been replaced and the rail has been re-straightened, new tension in this lightweight rail would render it susceptible to breaking under train moves.
c. We have priced an additional 3.1 miles of rail, ties, and Other Track Materials (OTM) for a new interchange track at Metcalfe and replacement and additional track at the port, including new sidings for several port shippers.
d. Replacement relay rail is highly unlikely to be available, as twenty-five miles of the same weight, type, and source. It will likely be necessary to mix weights as long as the rail weights are the same on parallel rails. All weight changes require "compromise bars" at each juncture. We budgeted five sets of compromise bars for this purpose.
e. The new weights may range from 100lb. to 115lb. This will be determined by availability and can include cut sections of continuous welded rail that Class I rail companies have deemed unsuitable for their high-volume lines.

2) Ties
   a. All existing ties will be replaced. Typical track rebuilds of this nature would leave a percentage of the old ties in place since Federal requirements at low train speed do not require every tie to be "good." However, given the age of the existing ties, it is wise to replace them all now.
   b. The replacement ties are specified as ⅔ used or "relay" ties and ⅓ new. This sets up a future tie replacement program where a percentage of ties can be replaced annually, beginning three to five years after this rebuild.
3) Other Track Material
   a. These are turnouts, joint bars, tie plates, bolts, anchors, and spikes
   b. All are specified as relay, except for all new spikes and the percentage of tie plates that will likely not be available in enough quantity as relay.
4) Bridges
   a. Six relevant water crossings span the length of the GTR, and all require repair. According to the Port's engineering firm, Eley/McPherson, four of the five bridges are to be repaired in place, and one is to be replaced with a culvert and fill. The sixth water crossing is already a culvert that needs to be replaced.
5) Crossings
   a. Of the twenty-nine public crossings along the GTR, nineteen are asphalt, and ten are gravel. At least two of the ten gravel crossings appear to be candidates for closure. Specifics are itemized in Exhibit D.
6) Engineering
   a. The GTR track does not need to be re-engineered for its replacement, given the planned 10-25MPH track speed and generally straight and level ROW. There are also minimal elevation changes at the water crossings that otherwise could have required additional engineering.
   b. Track design work is only needed for the new sidings at the Port itself.

7) Columbus & Greenville Railway Rebuild

a. The CAGY organization owns 1.8 miles of track and ROW that need rehabilitation to restart interchange service with the GTR. Four public asphalt crossings are along that span.

8) Port of Rosedale Rebuild and Rail Improvements

Existing Port tracks to be rebuilt*	5800’ switchback lead into the Port
	800’ sidetrack to Cives Steel
	350’ track to be extended below for new runaround
	1050’ existing runaround to be used for Simplot and car storage
	8000’ total existing Port track to be rebuilt
	* Not including existing Port warehouse sidetrack, to be left in place for possible future upgrade
New Port track**	
	1300’ additional length to new runaround
	1200’ sidetrack for Emerys
	450’ sidetrack for Helena Chemical
	2850’ lead to Farmers Grain & storage tracks
	1000’ 2nd storage track
	6800’ total new Port track for construction
	** Not including 1650’ at the south end of GTR for a new interchange with CAGY

How do the new track improvements serve customers and the operation?

In addition to the thirty miles of mainline to be rebuilt and the Port trackage of 8,000’ and 6,800’, there are two sidetracks off of the main line: 1) 600’ of sidetrack to Axel America and 2) 1,650’ of new interchange track at the south end next to the connection with the CAGY.

Regarding the new interchange track, a 1,650’ double-ended siding is planned with about 1,400’ of clearance, enough for 20+ cars per interchange. The GTR would leave outbound cars to the CAGY on the double-ended siding. CAGY could conduct the interchange either by 1) shoving inbound cars from the CAGY main line to the GTR main line where it is parallel to the new siding, cutting them off there, coupling onto the outbound cars in the siding, and pulling them back to the CAGY main line, or 2) pulling inbound cars to the GTR main line parallel to the new siding, cutting them off there, coupling onto the outbound cars in the siding, and shoving them back to the CAGY main line. Because the GTR would not want to shove cars for 30 miles back to the Port, its operation would consist of cutting off its outbound cars just short of the new siding, entering the siding and shoving the inbound cars onto the main line, and leaving them there, returning to its outbound cars and pulling them onto the siding and leaving them there, and returning to the inbound cars so that the engine is on the head end for the return trip.

Regarding service to various customers:

- Cives Steel would be served by rebuilding its existing track through its laydown yard, which is served by two overhead cranes.
- Simplot would be served from new car-unloading infrastructure under/next to the north end of the existing runaround track.
- Emerys would be served by the new sidetrack into the Port Complex, with an unloading pit under the track where four cars of tail room are available. A conveyor would then run from the pit into a new 6,000-to-8,000-square-foot storage building next to the clay barge conveyor.
- Helena Chemical would be served by the new sidetrack diverging from the above new Port Complex track near its existing storage silos.
- Farmers Grain would be served by the extension of the Port's lead track, such that new car-loading infrastructure could be built that is fed by a new conveyor from storage silos.
- Axel America would be served by rebuilding its existing track on the southwest side of its building.

Exhibit A shows a map of the GTR and its bridges. Exhibit B details the Port rail improvements.

Regarding car storage, there are three locations:

1) The two new 1,000-foot storage tracks built at the end of the Port lead track extension
2) Any portion of the old 1,050-foot run-around not used for Simplot unloading
3) Any portion of the north end of the main line not needed for tail room to enter the Port lead

What environmental and governmental approvals are required to plan, design, construct, and operate the GTR? (All costs have been included in the financial model)

1) Track rebuild
    a. As a "Common Carrier, Class III Railroad," the GTR's operating authorization is granted by the Surface Transportation Board (STB). The GTR's authorization has remained in place throughout the years it has been out of service. Our board member, former STB Chair Daniel Elliott, reviewed STB records to confirm.
2) Railroad operation
    a. USDOT's Federal Railroad Administration oversees and approves railroad operations. We have budgeted time and attention to prepare a new operating manual, engineer certification program, conductor certification program, and safety plan.
3) Wetland assessment
    a. The six stream crossings of the GTR have a small impact. The relatively small assessment expense of $6,000/stream will be covered by the Port's recently approved USDOT Port Infrastructure Development Program grant.
4) Bridges

    a. No state or federal approvals are needed for these bridges. Eley/McPherson can use Crouch Engineering of Brentwood, TN, for rail bridge design or rely on the selected bridge contractor. Our Carl Belke is a 50-year professional railroad bridge engineer.
5) Mississippi approvals
    a. Department of Wildlife and Department of Archives and History
    b. Intergovernmental review to meet federal grant funding requirements, $7,500
6) Crossing repairs
    a. Each crossing repair and re-initiation will need approval from the county and the Director of Aeronautics and Rails in the Mississippi Department of Transportation, for which Eley/McPherson estimates five administrative hours each x $125/hour
    b. State Highways #1, #446, and #450 are high enough traffic volume crossings to require MDOT approval at $2,000/crossing expense
    c. The Broadway Extended crossing in Washington County will require county approval
7) Outline for private and public crossing analysis and management:
    a. Determine the number and location of private crossings on the GTR.
    b. Establish which are covered by prior agreements.
    c. Identify the current condition and status of each crossing.
    d. Identify the adjacent property owners.
    e. Determine if they still occupy and use the property.
    f. Conclude if they still use and/or want to use the crossing.
    g. Determine their needs and demands.
    h. Establish a mutual crossing agreement for each location.

To inform the rebuild with accurate knowledge of the boundaries of the Port's GTR right-of-way ownership, we visited the National Archives in College Park, MD, and obtained copies of the original Valuation Maps from 1916, which show the original mileposts and widths of the ROW. In 1916, it was mainly 100' wide but down to 66⅔' in a few places, and it was usually wider at station areas. If the railroad is put back into operation, one of the future tasks will be clarifying real estate issues, including current legal boundaries. This also includes a) establishing agreements with users to release the GTR from liability in case of accidents at private crossings and users' responsibility for adequate upkeep, b) establishing agreements for utility crossings, c) possibly leasing out properties not needed for railroad purposes, and d) establishing sidetrack agreements with each customer that delineate responsibility in case of a derailment on the customer's property and responsibility for track maintenance.

The following knowledgeable, experienced individuals have provided input into our team's conception of the rebuild and the pricing of materials:

Company	Name	Address	phone #	email
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VIA Rail Engineering	Dan Guido	7976 Paloverde Drive, Ft. Worth, TX 76137	682-429-2298	dguido@viarailengineering.com
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Concluding Thoughts

For many years, Strategic Rail Finance has orchestrated unique public-private funding solutions for rail capitalization challenges. As we proceed to develop the complete funding strategy for the GTR and the CAGY, we will look to coordinate a combination of the applicable public funding options listed in Exhibit H, possibly including an FRA Railroad Rehabilitation and Improvement Finance (RRIF) Loan. Private funding can also play a key role.

The GTR and the CAGY are excellent candidates for CRISI grant funding, as the program is looking for ready-to-advance projects. As rebuild projects involving existing rail ROWs, they do not require time-consuming NEPA environmental approvals that handicap many other grant applications.

At the heart of all our funding solutions is a financial model like the one we developed for the GTR rebuild and operation (Exhibit E). Rather than basing the model on annual generalizations and hypothetical formulas, we focus on details, current material prices, thoughtful operating design, and contractor quotes. It is presented as a working Excel spreadsheet rather than a static PDF to facilitate its usefulness and ongoing refinement.

One of the valuable facilitation tools we offer Mississippi is our approach to identifying and cataloging stakeholders to facilitate active, time-saving engagement. Our use of the Act Contact Management Program (www.act.com) accommodates keeping folks informed and gathering their ongoing input. Exhibit F lists the groups in which we have cataloged the 150+ relevant stakeholders in Mississippi by their role in the state and their relationship to the rebuilding initiative. This respectful attention to each individual enables efficient communication, networking, and collective action that is not possible when working from just one central list.

Exhibits:

Each of the exhibits in this action plan is a valuable component. They have been generated with attention to accuracy, accessibility, and usefulness. The rail line and bridge location map, Port rail improvements map, original 1916 Val Maps, public grade crossing data, financial model, individual and group stakeholder lists, and funding options illuminate the current condition and the way forward toward a successful GTR rebuild and restart.

Exhibit A: Great River Railroad Map with Bridges
Exhibit B: Port of Rosedale Rail Improvements
Exhibit C: Fourteen original 1916 federally-recorded Valuation Maps of the legal boundaries of the GTR, previously the Illinois Central Railroad
Exhibit D: GTR and CAGY public grade crossings to be addressed
Exhibit E: GTR Rebuild & Operations Model
Exhibit F: GTR and CAGY Stakeholder Groups
Exhibit G: Relevant Mississippi economic development & community leaders
Exhibit H: Federal and State Funding Options