

# **Analysis of SMART's Freight Market**

## **Prepared by Project Finance Advisory Ltd.**

### **For Sonoma-Marín Area Rail Transit District (SMART)**

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#### **Overview**

The goal of this study is to provide the Sonoma-Marín Area Rail Transit District (SMART) with an unbiased evaluation of existing and potential freight rail customers in its North Bay service area. The report first provides an overview of the relevant freight markets in the North Bay area where SMART operates. Key freight facilities that currently exist along the route are also mentioned. For each of those market or customer opportunities, an assessment of the potential for SMART's rail freight business has been provided. A section with information on expected operations and maintenance (O&M) costs is provided next. That is followed by forecasts for the next 10 years under three distinct scenarios, looking at base case, downside, and upside outcomes.

#### **Description of Study**

The geographic area covered by the study includes Sonoma and Marin counties within the North Bay Area, as well as southern Mendocino County and other adjoining areas where businesses could potentially benefit from SMART's freight service. A study objective is to identify potential freight shippers that could realistically utilize SMART's freight services anywhere along its current right-of-way from Corte Madera north to the Mendocino County line and east from the Ignacio wye to the end of SMART's trackage near Lombard.

The study addresses only tasks 3 and 4 as described in the original RFP, analyzing existing and potential customers, the freight market available to SMART in its service area, and providing a forecast of freight traffic under various scenarios. Also included is an estimate of Operations & Maintenance (O&M) costs associated with each freight customer's traffic. The portion of the study that will provide an operational review, financial analysis & modeling, development of a strategic plan, and recommendations for freight business investments as described in the September 2020 RFP has been deferred at SMART's request and is therefore not included in this initial report.

#### **Methodology**

Initial research into the freight market in SMART's service area was conducted remotely, using information obtained from a wide variety of internet sources along with documents and data provided by SMART. That work was supplemented by phone interviews with parties involved in freight transportation in the area, including Union Pacific, California Northern, NWPCo., with officials representing Marin, Sonoma, and Mendocino Counties, and with a variety of current

and potential rail customers. With that background research complete, an on-site visit was scheduled over a seven-day period which included face-to-face customer interviews, facility tours, hi-railing of the freight-only Lombard - Ignacio Wye segment, a cab ride along the Larkspur – Sonoma Co. Airport SMART passenger corridor, and visits via auto to all key freight facilities along SMART-owned trackage.

Following the week of on-site visits, additional work was conducted remotely, consisting primarily of research into the movement of products in various markets, additional phone interviews with potential customers, and analysis. This report summarizes key information that has been gathered as well as conclusions reached through research and analysis. As with all research endeavors, a tremendous amount of information has been gathered. That information has been summarized and presented in this report with the goal of being reasonably thorough yet concise. If there is interest in a specific topic beyond what is covered in the report, any available additional information will be provided upon request.

In several cases, NWPCo., customers, and other entities requested that certain information provided to us be kept confidential. In preparing this report, we presented the important take-aways from the confidential information while carefully excluding the sensitive details that were to be kept from competitors view. Although the confidential information is not presented directly in the report, it did influence the analysis and development of the traffic forecasts.

Accompanying this report is a listing of all parties that provided information utilized in this report, either through personal interviews, phone conversations, or by providing written information. A considerable amount of information was also obtained from internet sources, such as company websites or studies addressing various topics. In cases where a representative of a particular company could not be reached after repeated attempts, best efforts were made to learn everything possible by utilizing alternate sources of information. Sources included websites, academic studies, press releases, local media reports, railroad officials, and inquiries made to officials of similar companies.

## **Overview of the North Bay Area Rail Freight Market**

The single most important factor influencing the freight market in the study area is its proximity to the Bay Area's many production and transportation facilities. Numerous freight facilities exist throughout the Bay Area that provide traffic sources for a wide variety of products produced or consumed in the North Bay area. Examples include several refineries, ocean and inland ports, barge terminals, numerous rail-truck transload facilities, several large rail intermodal terminals, cement plants and terminals, and distribution centers for wine, beverages, and most other consumer products. Facilities of this type in large metro areas can provide efficient, high-volume, low-cost services for the movement of nearly all products that could potentially use rail. Generally speaking, pricing of shipments on the large "Class 1"

railroads such as Union Pacific results in their services being uncompetitive with trucks for distances under 500 miles. In the case of SMART's rail network, all major on-line stations are well within that distance from the Bay Area's many facilities – the most distant point being Cloverdale at just 90 miles from Oakland. For most products moving to or from a customer located in SMART's service area, it is advantageous to ship via either truck-direct, or to simply use trucks to shuttle to/from one of the Bay Area facilities that provide access to long-haul rail or ocean shipping. Trucks often represent significant competition for railroads, but they are especially effective when they can readily work in combination with long-haul rail or ocean shipping as is the case near the Bay Area. With trucks able to provide prompt, low-cost, pickup and delivery services throughout SMART's service area, there is little or no incentive for most shippers to use the freight rail services available along SMART's lines. Proximity to Bay Area facilities and intense truck competition are key reasons why NWPCo. has been unable to increase the quantity of cars it handles in recent years despite ongoing efforts.

Compounding those issues are several additional difficulties that impact industrial businesses operating in the area. The type of business that normally utilizes rail service – typically very large-scale manufacturing, production and/or distribution facilities – desire low-cost properties, reasonable labor costs, low taxes and utility costs, convenient access to major highways, business-friendly zoning, permitting, and licensing policies, and neighbors that will tolerate them without strong objection. The area served by SMART's network is often viewed as unfavorable in many of those categories, making it less desirable than other areas for development of large-scale businesses that typically utilize rail. A good example of the impact these issues can have upon development is the recently constructed distribution facility in Schellville. Completed in late 2018, the 250,000 sq. ft. industrial/warehouse building remains unoccupied despite interest from several potential tenants – including Amazon. While Amazon would not have utilized rail service at the facility, with modifications to the building and property it would be possible for another potential tenant to utilize rail for their shipping. At this time, the future use of this facility is uncertain.

Another significant issue impacting the freight rail business involves property development trends. Generally speaking, properties in the area are being developed to serve the needs of the “service” or “consumer” economy rather than more rail-friendly manufacturing and distribution businesses. Many facilities of this type that existed in the past in this area have given way to higher value uses of the properties. A good example is the waterfront area in Petaluma where parcels along 1<sup>st</sup> Street and Hopper Street that were formerly lined with rail-served, industrial businesses have been taken over by offices, condos, restaurants, retail shopping, and a new housing development. Many properties adjoining SMART's trackage are now occupied by self-storage units, car dealerships, strip malls, parking lots, retail businesses, and light manufacturing facilities that offer no potential for rail freight. This trend has impacted railroads across the country in recent decades, but it is especially impactful in the North Bay area given its characteristics.



Former rail spur in Petaluma, once served feed mills, now inactive.

Another issue impacting freight movement in the area is the fact that privately-owned railroads are competing against trucks and barges that make use of publicly funded infrastructure. Railroads establish their pricing structures with the goal of maximizing profit, considering the full cost of their track, bridges, and other elements of their infrastructure. Most spending for highways, roads, and navigable rivers is provided by government agencies with users paying only a portion of total costs. This is a critical issue that benefits trucking and water transportation over rail. To illustrate how this impacts SMART, a new customer wishing to receive product shipments at a facility near a rail line can have truck delivery with no investment at all – the truck simply travels by road and backs up to the dock. By contrast, rail service in this case would require an investment of approximately \$1 million for a switch and spur track along with possible modifications to the building to accommodate rail. The competitive transportation market in the area simply does not provide enough of a price difference between truck and rail for most customers to justify such a significant investment. The best hope to close that cost gap is to seek assistance from various public funding sources such as grant programs. Without assistance from public or alternate funding sources to help level the competitive field, it is unlikely that a meaningful number of area businesses would elect to ship by rail.

## The North Bay Area Rail Network

The rail lines currently owned by SMART have traditionally served the local region only, operating as branch or feeder lines with connections to the national rail network. As branch routes, they have never enjoyed the heavier volumes of overhead, or “through freight” that make typical U.S. mainlines financially attractive. A map of railroads operating in the North Bay Area is shown below.



SMART’s only link to the national rail network is through connecting railroad California Northern (initials CFNR). Track utilized by CFNR in this area is leased from Union Pacific with the lease containing specific commercial and operating restrictions that impact freight activities of both CFNR and SMART. One such restriction is that commercial activities for long-haul freight on both lines are to be handled by Union Pacific, with UP responsible for establishing pricing, customer communication, contracts/agreements, supplying of cars, etc. This means, for example, that prices for long-haul shipments originating or terminating on SMART’s trackage are to be set by UP. UP considers SMART and CFNR to be “Handling Carriers”, meaning that they essentially act as contractors to move carloads to and from customers on UP’s behalf. In other words, UP fully controls the routing, pricing, and marketing of SMART’s current and prospective long-haul traffic, making SMART’s customers essentially “captive customers” of the Union Pacific.

With UP having commercial control over its freight traffic, SMART is unable to influence key issues like pricing of shipments. This is especially challenging given the many small-scale customers found along SMART's route network. UP's ongoing strategy of aggressively raising prices on smaller-volume and captive shipments has adversely impacted handling carriers like SMART since the traffic losses that occur along with the steady rate increases erode the traffic base with no way to effectively offset those losses. This situation is one of the key reasons that rail traffic has been lost in the area over the years, and why it will be especially challenging to reacquire it from trucks.

Operational issues also present challenges to SMART's freight business. With multiple carriers needing to handle each shipment moving in or out, there is additional cost and delay involved compared to service provided by a single carrier. A car heading to Petaluma, for example, is normally handled by a UP train from Roseville to Suisun-Fairfield where it is left on a track for CFNR to pick up. When CFNR arrives, they take the car in their train to Napa Junction (American Canyon). From there, the car is moved west to a track in Lombard by a second CFNR crew where it is left for NWPCo. to pick up. An NWPCo. train then takes the car west to Schellville where a connection is made to another NWPCo. train that runs over SMART passenger trackage to Petaluma in the evening. All told, during this 93-mile journey a typical inbound car will be handled by five different crews working for three different railroad companies. The trip can take as little as 24 hours or may take up to four days, depending upon which days of the week are involved and how connections are made. NWPCo., for example, normally operates to and from Petaluma only on Monday and Thursday evenings, more or less frequently depending upon need. This operating pattern is intended to minimize costs while still providing a level of service acceptable to existing customers. While sufficient for today's needs, this pattern would need to be revised with an increased frequency of train operations and tighter connections if additional customers are to be attracted and retained in the future.

### **Principal Freight Markets of the North Bay Area**

**Grain and Feed** – Significant quantities of grain and feed are moved into the area each year in support of the livestock and poultry-raising activities taking place on farms in the region. Grains such as corn, barley, milo, oats, and wheat are currently being delivered by NWPCo. as well as by truck to several on-line customers. The feed mills blend the grain with other ingredients to produce custom-made feeds specifically designed for certain types of animals, primarily cattle/dairy cows and poultry. The raising of animals is a well-established business in Sonoma and Marin Counties, having been active in the area for over 100 years. Petaluma was once known as the "Egg Capital of the World". The outlook for this market appears to be secure, at least for the near-term. Most existing agricultural land is being protected from housing and commercial development by Ag + Open Space and other initiatives that will likely be in place for the foreseeable future.

In recent decades there has been a shift in demand from conventional grain to non-GMO grains and organic grain and feed products. While non-GMO/organic was a small part of the product market 20 years ago, it now comprises over half of all feed products sold in the area. This has altered the traditional supply chains and forced products to be sourced from a wide variety of origins, including from overseas. The feed mills today receive grain and feed products by either truck or rail, with economics being the key determining factor in their modal decision. A relatively small proportion of the mills' supply is covered by locally-grown grain – most is shipped in from the Midwestern U.S. with minor amounts from other U.S. regions or imported. Since none of the local mills are currently able to unload a unit train<sup>1</sup>, one of the mills in Petaluma currently receives a significant amount of grain by truck from a high-volume terminal in central California that can accept unit trains. This is driven by economics, with the total cost of shipping via the unit train with truck delivery to Petaluma being lower than the cost of shipping a single railcar directly from origin-to-destination. Trucks handle most deliveries to local feed mills from California, Idaho, Washington, and Oregon origins, with the ability for a backhaul in those lanes often making rates even more attractive.

NWPCo. currently handles grain and feed shipments to three customers – Dairymen's Feed, and Hunt & Behrens in Petaluma, and Willowbrook Feeds located three miles north of Petaluma. All grain & feed customers that we spoke with were pleased with service currently provided by NWPCo. – especially with their willingness to hold and then deliver specific cars upon request for no additional charge. Customers were hopeful that any modifications to the existing operation would not negatively impact their service or result in additional fees.



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<sup>1</sup> a complete train of 100+ cars moving together as a unit from origin to destination, with stringent rules limiting time to load and unload. Unit trains typically offer rates that are significantly lower than single-car shipments.

Grain cars being held until requested by one of the Petaluma feed mills.

Traffic records indicate that NWPCo.'s gross revenue from this traffic was approximately \$490,000.

### **Lumber and Building Materials**

The lumber and building materials market may represent an opportunity for growth in the years to come. It is the traditional core market for the Northwestern Pacific, with redwood and other forest products having provided the company a steady source of revenue throughout its long history. Several severe service disruptions that occurred from the 1960s through the 1980s eroded rail traffic volumes coming south from mills in Humboldt and Mendocino Counties. With each disruption of service trucks gained a greater share of the market. Rail service to the northern end of the line eventually ended in 1996, leaving truck as the only transportation option for most mills to the north.

There are two basic markets for rail shipping of lumber and building materials in the area – inbound and outbound. Inbound shipments of materials are comprised of forest products that are not readily available in the area, with woods such as pine and Douglas fir and manufactured products such as OSB coming in from distant suppliers. These products are either sold wholesale or retail for construction in the local area or are used for manufacturing of structural components such as trusses and beams that are used locally or shipped out. Many area businesses that sell building materials could be considered lumber yards or home centers, selling a diverse mix of products. Interviews with several of these customers indicated that their primary reasons for not using rail are, 1) they don't want to receive 100 tons of a single type of product at one time, 2) they are unwilling to tolerate the long transit times and variability in delivery times associated with rail, and 3) rail rates are not low enough to provide an incentive to shift traffic from trucks. These types of businesses strongly prefer the timely shipments of smaller, mixed loads of products delivered regularly by truck.

On the other hand, inbound shipments of lumber and building products moving to higher-volume wholesalers and manufacturing customers may present an opportunity for rail, especially to destinations north of Santa Rosa. The principal constraint to development of this market is related to current pricing and service levels provided by Union Pacific. Years ago, rail shipping offered a significant cost savings against trucking, making it attractive despite its service disadvantages. At present however, most area customers we spoke with indicated that trucking not only provides much better service, but also provides competitive pricing from most mills where their lumber products originate. This change has occurred primarily because of aggressive rate increases that long haul Class I railroads have taken in recent decades. Indications are that most North Bay Area shippers would not benefit from rail service, and when they can, the margins tend to be slim. Despite this, interviews uncovered a few instances where certain customers could potentially benefit from rail service when handling products



from specific origins. SMART's freight rail operator should be in regular communication with potential lumber customers to monitor market conditions and be prepared to act if conditions shift to favor rail transport.

The other market segment that holds potential for rail shipping is outbound movement of lumber and building materials. These products are produced at various mills along the northern end of SMART's trackage and are destined to markets across California, throughout the U.S., and internationally. There had been steady movements of these products in the past, but a combination of NWP service disruptions and aggressive rate increases by long-haul railroads have shifted this traffic to trucks. However, it is likely that marketing/sales attention focused on the larger shippers north of Windsor could result in rail shipping opportunities for SMART under certain market conditions. Products destined to higher-volume customers or distribution centers east of the Rocky Mountains could benefit from rail-direct service when market conditions are favorable. Ideally, lumber and building products would be loaded at customers' facilities via spur tracks, providing the most efficient, cost-effective option for their shipments. While a transload site could also provide these customers access to rail shipping, it is important to remember that the additional cost and difficulties associated with transloading would result in less lumber being shipped by rail compared to direct access via a spur track. Transload sites on SMART's network would also have the disadvantage of being in direct competition with other railroads' transload facilities in and around the Bay Area, which would also limit their market potential.

For the entire lumber category, it is important to note that the aggressive price increases applied to carload rail traffic by major U.S. railroads over the past 25 years have disproportionately impacted smaller volume, branch operations like SMART. Generally speaking, in the 1990s and before rail rates were lower than trucks which provided a significant discount that encouraged many shippers to use rail. However, price increases for rail shipments in recent decades have brought truck and rail rates to similar levels in many lanes, such as to the Bay Area from Oregon, Washington, and Idaho. Several lumber shippers we spoke with mentioned that they had used rail in the past but currently find no price advantage with rail service. This represents a significant obstacle to traffic growth in this market segment, especially when competing to/from points located within the Intermountain and Pacific Northwest states.

NWPCo. traffic records indicate that gross revenue from this traffic was approximately \$4,000.

### **Aggregates and Paving Materials**

The diverse geologic history of California means that most types of aggregate material needed for road-building and construction projects can be sourced from nearby locations. Aggregates – sand, gravel, and crushed stone – are the primary raw materials used in making concrete and asphalt mixtures for paving and construction projects. Since most aggregate material has a low

value and multiple sources are often available, it is typically sourced locally and transported by truck. One exception we discovered is a local customer who desires a premium type of rock for concrete. He utilizes coastal shipping to bring rock down from Canada, transferring the rock from ship to barge in the San Francisco Bay, then delivering the material to his transfer site via the Petaluma River. From the transfer site, rock is trucked to the concrete batch plant. The low cost of shipping by water allows them to receive the special type of rock from a distant source economically.

Cement used in making concrete is supplied to Sonoma and Marin Counties by truck from one of several plants or distribution terminals in the region. Plants are located near San Jose, in Redwood City, and in Richmond while there are distribution terminals located in Sacramento, at the Port of Stockton, in Union City, and in Cupertino. Local paving and construction companies buy cement from any one of those locations and have it delivered directly by truck to their batch plants where ready-mix is prepared for local delivery.

Asphalt for paving projects is produced by mixing aggregate materials with liquid asphalt that is sourced from an oil refinery. There are several Bay Area refineries that produce asphalt, and they deliver the liquid directly to each customer's mixing plant where the aggregates are added to create the paving material. When shipping liquid asphalt by rail it is necessary to use cars with steam lines so it can be heated prior to unloading so it will flow. Trucks, with delivery times of hours rather than days, do not need to be heated. Trucks can also deliver directly to a mixing plant located near a paving site, which rail cannot always do. For both cement and asphalt-based pavements, efforts to maximize use of recycled/reclaimed material has limited the amount of new material needed for projects, further limiting potential for rail shipping.

With most aggregate, cement, and asphalt being sourced within 100 miles, or having the ability to be delivered by barge, it is unlikely that rail could compete for delivery of these materials to customers in this region.

NWPCo. has not moved any carloads of aggregate or paving materials within the past five years.

### **Railcar Storage**

Many companies that manage fleets of railcars often have the need to store a portion of their cars at various times. This may be due to slack demand, or for other reasons. Car storage services offered by railroads may be of interest to railcar fleet managers, especially when the storage location is close to one of the customer's facilities. Almost any type of railcar may require storage at one time or another, but demand in the North Bay area seems to be highest for tank cars and intermodal equipment.

In the case of tank cars, fleet managers for several different petrochemical companies are looking to store both empty and loaded cars at various times. Their needs relate to operations at their nearby refineries in the Bay Area, with seasonal variability in production runs of certain

types of fuels and periodic maintenance shut-downs having the greatest impact upon demand for car storage. Tank cars loaded with hazardous products as well as empty tank cars with hazmat residue earn railroads premium rates for movement and storage. The higher rates are assessed as compensation for operational restrictions associated with the cars and for the additional risk they present in the event of an accident. NWPCo's existing agreements provide them with fees for handling storage cars both inbound and outbound. They also earn money for storage services – either per car-day, or a flat-rate lease of track space for storage, whether it is used or not. While demand for tank car storage varies over time, conversations with the various fleet managers indicated there will be continued demand for storage space in this area, with SMART's storage tracks near Schellville utilized as long as rates do not increase significantly from current levels.



Railcars in storage on yard tracks near Schellville.

We understand that other fleet managers have also expressed interest in car storage in the North Bay area, one of those being TTX Company. TTX manages a fleet of over 165,000 railcars operating nationwide and they often have need for storage in times of slack demand. The types of cars most often stored are intermodal (carrying trailers or containers) and auto racks (carrying vehicles). Assuming both equipment types can be stored on SMART's trackage, there may be demand for storage if rates are reasonable. TTX has made inquiries about available storage space recently and is likely to need space at various times going forward.

Although the specific customers wishing to store cars may change over time, the overall market for storage of railcars is expected to remain relatively strong in the North Bay area. This should provide SMART with a continued revenue opportunity in the future, as long as space is made available and it is marketed effectively.

As an average over the past two years, NWPCo. has moved the equivalent of 240 empty cars and 125 loaded cars annually for storage purposes. Transportation revenue (for car movement) amounted to roughly \$300,000 annually for both loaded and empty cars. Although financial records were not available, we estimate that storage revenue (daily storage fees plus track leases) for all customers amounted to approximately \$400,000 annually. The issue of hazardous car storage has been discussed. Hazardous cars command higher transportation and storage rates so a loss of this traffic would have a negative impact upon freight revenue. However, we believe that sufficient non-hazardous storage opportunities are available to fill any available storage space, with the net result being a revenue reduction in the range of \$200,000 - \$300,000 annually if hazardous cars are not stored in the future.

### **Historic Equipment Storage**

As of late March 2021, the Golden Gate Railroad Museum had approximately 16 pieces of railroad rolling stock in storage on various tracks in the Schellville area. The equipment is the property of GGRM and is being held for their use. Some equipment is being restored on-site for future excursion service while other equipment is being retained with the goal of preservation. GGRM has a need now and in the future for a safe, secure, reasonably priced storage location for their equipment and the trackage they currently lease at Schellville meets their present requirements. They are interested in storing additional equipment if space were made available. GGRM currently has contracts in place with NWPCo. specifying terms for use of track space at Schellville, as well as provisions for possible excursion service in the future. If terms and conditions of their agreement remain essentially unchanged, indications are that GGRM will continue leasing trackage in Schellville. We understand that GGRM owns certain track assets (north and south tracks at “Victoria Station” in Schellville) along with fencing and power hookups that are in service on SMART property. It is unclear if their ownership would allow those assets to be removed from the property or not, but they are presently being used by GGRM for equipment storage.



## Storage of historic equipment for Golden Gate Railway Museum in Schellville.

There are presently two other entities storing historic equipment at Schellville. Sonoma Rail Inc. (aka IFE Leasing) has a contract to provide storage space for rail equipment at Schellville. Sonoma/IFE is currently using the track located north of the Schellville wye and compensation to NWPCo. is in the form of a flat-rate monthly fee. The other storage agreement is with a private individual who leases track space for equipment storage. It is understood that they currently use the track north of the wye to store several diesel locomotives. We were not provided with a contract that specified terms for this equipment's storage. Various people that we spoke with mentioned a significant problem with theft and vandalism of equipment stored in and around Schellville. This issue appears to be the most significant threat to continuation of these storage agreements, with the real possibility that one or more parties could elect to store their equipment elsewhere in the future.

As of March 2021, there were approximately 28 individual pieces of historic equipment in storage in Schellville. Full records were not available from NWPCo., however contracts indicate that the company earned approximately \$33,000 in 2020 from storage of historic equipment.

### **Waste and Recyclables**

As is the case in any populated area, a significant volume of waste and recyclable material is generated each year in Sonoma and Marin Counties. Most streams of material are being managed by contractors such as Waste Management, Republic Services, and Recology, with those companies determining destinations and transport modes for the material they collect. The standard method of handling the streams of material begins with collection at private residences and businesses by truck. The trucks then deliver material to any one of several area transfer stations where it is processed and/or reloaded onto larger trucks.



Loading recyclable material in trucks at a Recology transfer station in Santa Rosa.

From the transfer stations, large trucks deliver municipal solid waste (MSW) directly to nearby landfills. The decision to use a particular landfill is driven primarily by economics, with consideration given to both transportation costs and “tipping fees” (the fee charged to dump at a landfill). The majority of the MSW generated in SMART’s service area is disposed of locally, going to either the Redwood landfill south of Petaluma, or to the Central landfill south of Santa Rosa, with a small portion taken to the Keller Canyon landfill near Pittsburg. A large portion of the MSW from southern Mendocino County is delivered by truck to the Potrero Hills landfill southeast of Fairfield, CA. In each of these cases, there appears to be no opportunity for rail service because of the short distances involved and the fact that either transfer stations or landfills are located off-rail. It appears that the landfills used today have available capacity and permitting to allow them to accept MSW for at least the next 10 years.

Recycled material is handled as a separate stream, moving by truck to sorting facilities known as Recycling Centers. At the recycling centers, material is sorted by type as various plastics, aluminum, paper/cardboard, glass, etc. Most recycled material is compacted into large bales and sold for raw material for further processing. Approximately 10 different types of material are collected by area recyclers with each being sold in separate markets through a variety of channels. At present, all material is moved from recycling centers by truck. Destinations for recycled material may change over time as markets shift, but at present most plastic, aluminum, and paper generated in the area is being shipped to Asia via the Port of Oakland. Without a change in market economics, there is no opportunity for rail to participate in these shipments. Because of the way glass is handled, however, there may be an opportunity for

SMART to become involved. Recycled glass is crushed and handled in bulk from recycling centers to facilities where it is processed for further handling. Much of the recycled glass collected in SMART's service area moves to a processor in Fairfield, CA whose facility is rail-served. Assuming certain challenges could be overcome, SMART has a solid opportunity to handle shipments of recycled glass from recycling centers such as Recology's in Santa Rosa to the processor in Fairfield in conjunction with CFNR. The biggest obstacle in that case is the need to gain access from SMART's mainline – there is currently no switch in place to serve Recology and the cost of a new switch is prohibitive.

NWPCo. has not moved any waste or recyclable traffic in the past five years.

### **Wine and Beverages –**

Lagunitas is a specialty brewer of beer in Petaluma that currently receives malt by rail from a supplier in Alberta, Canada. Because Lagunitas does not have a rail spur serving their brewery, the malt is taken to a nearby spur where it is transferred to truck for delivery to the brewery. We understand that the transload and trucking operation to Lagunitas was established by their malt supplier and they oversee its operation with Lagunitas not directly involved. Lagunitas is one of the larger brewers in the area but Sonoma County's website lists approximately 30 active breweries at last report. With Lagunitas currently using rail for malt delivery it is likely that other area breweries could also benefit from similar transportation options. While the growth of micro and craft breweries has plateaued in recent years, indications are that these businesses will continue producing at roughly existing levels for the foreseeable future. Assuming production volumes continue, there are opportunities for the handling of additional malt that could be transloaded from rail to truck for delivery to area breweries. These volumes would not be significant to any individual brewery, but collectively they could become meaningful. This opportunity would need to be discussed further with individual malt suppliers as well as local breweries to determine whether existing supply contracts or other restrictions would be a constraint. There appears to be at least some risk that current Lagunitas malt traffic could be lost to a transload facility served by a competing railroad. Cost estimates indicate that they have little financial benefit from using the current transload site vs. a competitive site. The best way to secure their business in the long run would be to construct a new spur track to directly serve their brewery, eliminating the need to transload the product.

Sonoma County lists over 250 individual wineries, with the majority selling their products commercially. Wine is shipped from the area to markets within the state, across the nation, and around the world. Until about 1980, most wine was transported directly from wineries to destination either by "LTL" (less-than-truckload carrier) or by a package/courier carrier such as UPS or Federal Express. Through the 1980s, this supply chain transitioned to a different model that utilized large distribution centers (aka "DCs") to consolidate wine shipments for various destinations into full truckloads or rail cars, significantly reducing shipping costs. This

distribution network continues to be used for most shipments today, with many of the large DCs clustered in and around American Canyon, near the Napa County Airport. These DCs are operated by logistics providers such as Biagi Brothers who specialize in handling of wine and related products.

For the vast majority of Sonoma County wine producers, it is impractical to ship full truckloads or railcars from their wineries directly to destination. Their lack of scale and broad distribution network makes it necessary to move shipments through a distribution center where they can be consolidated based upon destination. A typical shipment of wine from a Sonoma County winery or storage facility today is picked up by a truck and taken to a large DC. Each DC then consolidates shipments from multiple wineries to make full truckload, container, or railcar shipments for a specific destination. From the DCs, shipments move in a variety of ways, with trucks hauling directly to regional destinations, rail intermodal (TOFC or COFC) used for most long-haul shipping, with carload rail freight used occasionally for shipments to higher volume, distant markets such as Chicago or New York / New Jersey. Distributors receiving those shipments then store them as necessary, then deliver the wine to retailers in their area where it is eventually sold to customers. These well-established supply chains provide area wine shippers with the high levels of service, security, and acceptable rates that they require for their premium, high-value products.

Given the location of SMART's trackage relative to the supply chain for the bulk of the wine producers, it will be a challenge to attract a meaningful amount of wine traffic to rail. It is unlikely that any individual winery could benefit from rail shipping, because of traffic volume and logistics limitations. SMART's best chance to attract wine traffic would be to work with an entity that consolidates wine shipments (such as Alexander Valley Cellars) and/or operates a DC. This would help achieve the scale necessary to justify rail shipping and give SMART its best chance to develop a meaningful volume of traffic. SMART will also need to overcome economic challenges, since the established DC's handle very large volumes of wine and can therefore offer competitive prices when using their services. In addition, if SMART is to develop and retain wine traffic, it will be necessary to provide a main track switch at little or no cost to the shipper, offer consistent, reliable service, and ensure products are kept secure during transit. Lastly, while pure economics and other factors may not favor shipping by rail, if SMART can address the issues mentioned, it may benefit from certain shippers favoring rail over truck as part of an overall environmental sustainability effort that is gaining in popularity.

While there is the potential for wine shipping at some point in the future, no solid near-term opportunities were identified during the study. For this reason, the only traffic in the forecasts for the Wine and Beverages category is the malt for brewing of beer.

Traffic records indicate that NWPCo.'s gross revenue in this category in 2020 was approximately \$112,000 via the transload facility at Willowbrook. NWPCo. has not transported any wine or beverages in the past five years.



## **Transloading Opportunities**

By establishing transload sites – locations where products can be transferred between railcars and trucks – a railroad can greatly expand its potential market reach. With the ability to transfer products conveniently between rail and truck, a railroad can serve customers that do not have rail spurs at their facilities. The challenge in establishing transload sites is finding customers who can benefit financially given the additional handling costs associated with a transload operation. Looking at SMART’s current network, the portion of the line with the greatest chance for success would be the segment north of Santa Rosa. One or more transload sites in this area would allow customers to use rail when conditions warrant. These transload sites could be jointly used by SMART when desired, for delivery of track maintenance supplies or other purposes. One such site exists today, at MP 58.5 immediately south of River Road, Fulton. This site could be marketed to freight customers as a facility available for low volume transload activities. Other, larger-scale sites could be established further north based upon availability of suitable land and market opportunities, focusing especially on the needs of the potential lumber shippers in the area. In addition, the Willowbrook site that is used for malt transloading today could be expanded and improved, as mentioned in the previous section.

Products moving into or out of SMART’s service area that are often transloaded at other rail sites across the country include lumber, building materials, plastic pellets, grain, feed, malt, and fertilizer. Any of these products could make use of a transload facility having only a track, solid ground, and area sufficient for trucks to maneuver in and out. No immediate opportunities for additional transload traffic were identified during the study. However, depending upon the entity selected as freight operator and availability of funding, one or more new transload sites may be justified based upon market potential on the northern end of SMART’s network. Providing transload options would be a key part of a growth strategy for a typical privately-owned freight railroad with the goal of developing prospective freight business.

Apart from the malt (discussed in the previous section) and the two carloads of lumber that were transloaded on behalf of All-Truss at Schellville (covered in the Lumber category), there was no transloading activity on NWPCo. during the past year. Other cars transloaded during the past five years include a single test car of lumber unloaded at the Pruitt Industrial Park in Windsor and a one-time shipment of transformers for PG&E unloaded at Schellville.

## **Estimated O&M Costs of Freight Shipments**

Operating and Maintenance (O&M) costs associated with the handling of freight traffic will be examined for two basic expense categories – operations and infrastructure. In the operations category, this report will estimate NWPCo’s direct operating costs associated with individual

freight shipments. The infrastructure category will include track-related costs that SMART would be responsible for.

The cost analysis below examines only marginal costs – the incremental expenses borne by NWPCo. and/or SMART associated with the handling of freight cars on existing trains and infrastructure. In both cases, costs are estimated based upon the best information available at this time. A more detailed review of freight operating expenses under various scenarios will be conducted once full financial statements have been received from NWPCo. and subsequent financial modeling and strategic planning tasks have been completed. Any new freight traffic opportunity that is available to SMART will need to be evaluated on a case-by-case basis, examining the costs and revenue potential associated with the traffic and considering whether grant funding or other external assistance may be available to assist with the project.

**Operations: NWPCo. Freight Handling Costs** - At present, NWPCo.’s normal operation results in two trips per week along SMART’s north-south passenger corridor. Two locomotives are utilized on all trips, for reliability reasons as well as for operational convenience. Two employees normally ride the train, and an additional employee follows in a vehicle as necessary, to assist with bridge operation and other tasks. With this basic service pattern in place, operating costs associated with the handling of an additional railcar are minimal. The only significant direct costs to NWPCo. of moving a railcar to and from a customer are locomotive fuel, car hire<sup>2</sup>, and labor. The figures shown in the table below provide an estimate of incremental costs to NWPCo. of handling a single car of grain to one of the active customers located near Petaluma.

**Incremental Costs to NWPCo. to Handle a Freight Car  
Estimated for a Typical Grain Customer near Petaluma**

<b>Cost Category</b>	<b>Notes</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total Cost</b>
<b>Diesel Fuel</b>	1	444 ton-mi/gal.	\$3.50/gal	\$ 84
<b>Car Hire</b>	2	5 days	\$10/car-day	\$ 50
<b>Labor</b>	3	30 min./car	\$60/hour	\$ 30
<b>Incremental Cost</b>				\$ 164

Notes:

- 1 - Estimated based upon average consumption for a Genset locomotive.
- 2 - RR-owned cars allowed 5 free days before fees apply; assume av. 10 days on line; \$10/day rate is average for fleet of cars (1/2 private, 1/2 RR).
- 3 - Labor cost estimated based upon typical switching time for an additional car and estimate of NWPCo. gross labor rate for two-man crew.

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<sup>2</sup> fees paid to owners of railroad-owned cars for time and mileage while cars are in NWPCo’s possession.

The other significant traffic segment currently handled by NWPCo. is storage cars. These cars are moved primarily between the CFNR Lombard interchange and the yard tracks at Schellville, a distance of just over nine miles. Looking at costs on an incremental basis – considering the additional operating costs of a crew handling one more car on their train – storage cars have little impact upon NWPCo’s overall operating expenses. Most storage cars are empty, so their low average tonnage means relatively little fuel is burned by the locomotives in moving the cars. All cars are also “private” (not owned by a railroad) so they do not have hourly car hire charges associated with them. An estimate of incremental costs of handling a typical empty storage car Lombard to Schellville and back to Lombard is shown in the table below.

**Incremental Costs to NWPCo. to Handle a Freight Car  
Estimated for an Empty Storage Car Held at Schellville**

<b>Cost Category</b>	<b>Notes</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total Cost</b>
<b>Diesel Fuel</b>	1	444 ton-mi/gal.	\$3.50/gal	\$ 53
<b>Car Hire</b>	2	---	no cost	\$ -
<b>Labor</b>	3	30 min./car	\$60/hour	\$ 30
<b>Incremental Cost</b>				\$ 83

Notes:

- 1 - Estimated based upon average consumption for a Genset locomotive, 9 miles each way plus 20 minutes switching time.
- 2 - No car hire charges or mileage associated with private storage cars.
- 3 - Labor cost estimated based upon typical switching time for an additional car and estimate of NWPCo. gross labor rate for two-man crew. Handling a loaded car would cost approximately \$20 additional.

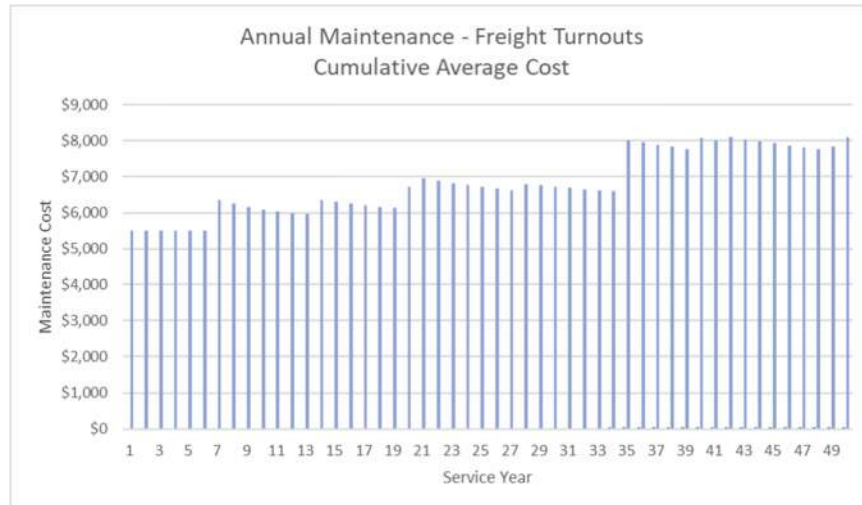
The costs shown above are the more significant “out-of-pocket” or direct operating costs associated with moving a freight car to a customer. Other costs, such as locomotive maintenance, insurance, administrative/overhead, depreciation, supplies, etc., are essentially fixed costs that will not vary significantly with additional traffic handled. These additional costs will be verified and analyzed fully as part of the subsequent financial modeling and strategic planning task work. In all cases we reviewed, revenue received for freight cars far exceeded the incremental cost of handling the cars. This indicates that individual shipments are contributing to operating earnings with relatively high margins, meaning it will be beneficial to add traffic as opportunities present themselves.

## **Infrastructure: Track Maintenance Costs –**

With the necessary infrastructure already in place to facilitate movement of freight traffic, capital spending to support existing freight customers' shipments will be minimal for the life of those assets. Maintenance spending to keep existing track assets in safe condition for passenger operation will be SMART's principal concern as the various infrastructure components age. There are two basic categories of track maintenance that will be impacted by the freight operation – maintenance of freight spur switches and general wear and tear of mainline track components.

**Freight Spur Switches** - The full cost of maintaining each freight spur switch may be considered a direct "freight cost" since those switches exist only to support the freight business. A turnout that provides access to a freight customer's spur will require maintenance to ensure it functions reliably and safely. Like any physical asset, its components will wear over time and require increasing amounts of maintenance as it ages. Looking at each major component, we expect that one of the highest-cost items in the near-term will be associated with inspection, testing, and upkeep of each switch's electrical / signal equipment. These sensitive components are prone to damage from vandalism and from routine track maintenance activities and will require periodic inspection and testing. As technological items they are often upgraded or replaced due to obsolescence or to ensure reliability of these critical safety systems. Other components requiring maintenance are switch points and frogs. As these components wear, they can often be repaired by welding and/or grinding to restore desired profiles. When the mainline is surfaced, tamping of turnouts takes extra time and expense because of the non-standard configuration of rail and ties.

Working with SMART's managers, an estimate of life-cycle maintenance costs for turnouts has been developed. The expected annual spending to maintain a typical main track freight spur turnout is shown in the graph below. Maintenance expenses in the early years are estimated to average \$5500 annually, with the principal cost being inspection and testing of signal equipment. As components age and replacement or major maintenance work become necessary, annual costs increase to approximately \$8000 annually. This amount covers replacement of major components such as ties, points, signal equipment, and the frog. The cost estimate can be refined and improved over time as SMART gains experience maintaining its turnouts and understanding factors specific to its own territory and traffic levels.

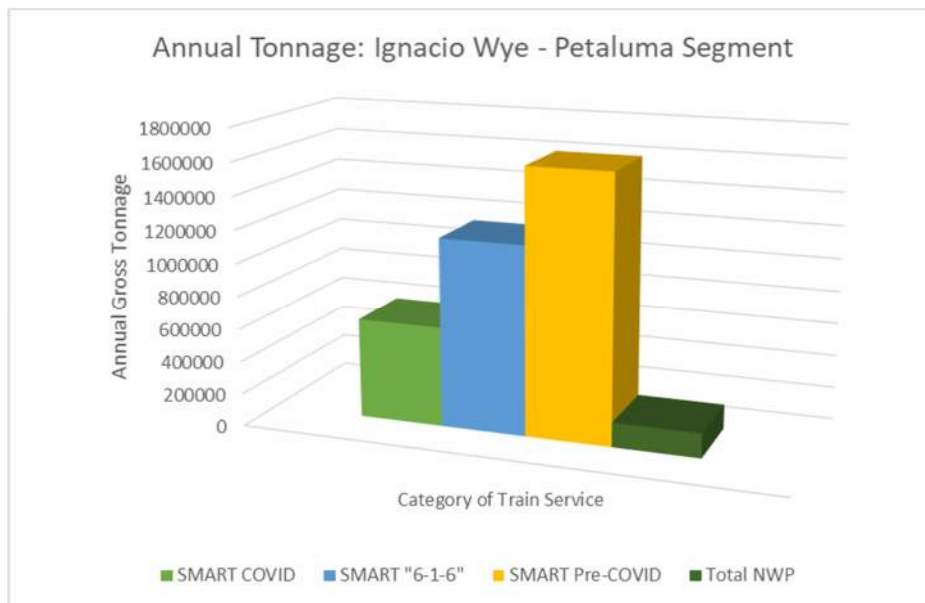


**Other Infrastructure Components** - Assets in this category include all other elements of the infrastructure owned by SMART that directly support the operation of trains, including the main track, switches, sidings, gauntlet tracks, bridges and culverts, stations, platforms, signals, the PTC system, dispatching hardware, and communications equipment. The freight operation that makes use of SMART’s infrastructure utilizes the various infrastructure assets to varying degrees – some are not used at all (stations & platforms) while others are essential to providing service (track, bridges, etc). In this section we will focus on asset utilization, providing examples of freight and passenger train usage of assets as a way of determining the approximate amount of wear and tear attributable to the freight service.

When attempting to gauge the impacts of freight traffic on the remaining infrastructure components along the north-south passenger line, it is helpful to first consider overall tonnage and traffic levels for perspective. SMART’s expectations for operation of passenger trains along with small, infrequent freight trains results in annual traffic and tonnage that place it at the very low end of the range found across the country. The light axle loadings of the 2-unit passenger trains along with exceptionally low levels of freight activity mean that SMART can reasonably expect to achieve relatively long lives from its track components. At these traffic levels, most components will likely need replacement due to age, rather than due to wear and tear from use. Expected lifespan of SMART’s rail provides an example of this. At existing passenger levels (COVID-reduced) and with current freight traffic it would take 658 years for SMART to reach the 500 million gross ton threshold that is often assumed for life of a new rail in tangent track. With the full SMART schedule (pre-COVID traffic levels), it would take 269 years to reach that same level. While that longevity cannot be expected, it puts into perspective the situation that SMART will likely face with major components along its main track – very light tonnage levels will mean that need for component replacement will likely be driven primarily by time rather than by tonnage.

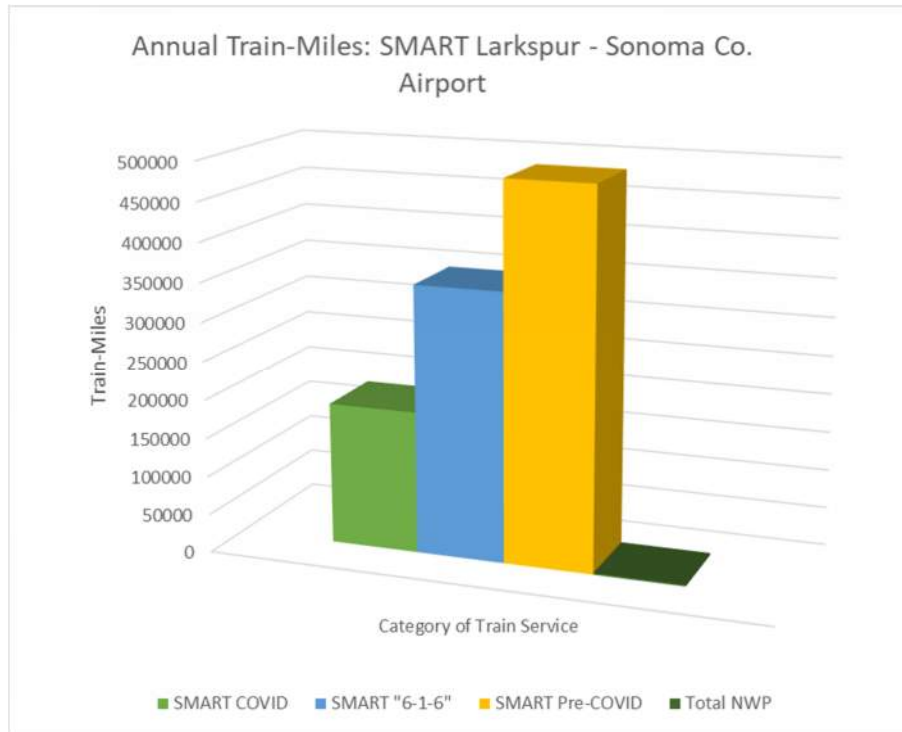
Regular passenger trains operated by SMART are comprised of 2-unit trainsets weighing 149 tons or 18.6 tons/axle. A full year of this traffic with the current (COVID-reduced) schedule of 80 trains per week would result in just 610,000 gross tons of traffic annually. Freight traffic results in a higher average axle loading (ranging from 8 up to 36 tons/axle) which will cause more wear and rail fatigue *per car*, but with just 588 carloads moving in 2020, total wear and tear from freight should not be material. At current traffic and service levels, the freight business generates just 149,000 gross tons annually – all centered within the Ignacio Wye – Petaluma segment. By contrast, a typical main track maintained by a U.S. short line railroad would see something in the range of 1-4 million gross tons annually. Many shared freight-passenger main tracks in the U.S. handle well in excess of 10 million gross tons annually.

Looking at the longer-term usage of the joint passenger-freight infrastructure, maintenance impacts of the freight operation will likely be negligible. This conclusion is based upon a review of overall train traffic anticipated on the line and the relative use of trackage by passenger and freight services. Looking at schedules anticipated as ridership recovers from the COVID pandemic, a partial SMART operation of 150 trains per week (the “6-1-6” schedule) would result in 1.2 million gross tons of traffic annually while operation on a full (pre-COVID) schedule would see 210 trains each week, generating 1.6 MGT/year. The relative amounts of passenger and freight traffic operating along the Ignacio Wye – Petaluma segment are shown in the accompanying graph.



Looking next at asset utilization from the perspective of trains operated, SMART’s current (COVID reduced) passenger schedule results in operation of 341 trains/month on average as opposed to the full operation (pre-COVID schedule) which results in approximately 900 trains

each month. With the freight service operating an average of 7.5 trains each month, the freight operation would account for just 2% of the COVID schedule and less than one percent of the full schedule. Activity in train-mile and ton-mile terms shows a similar relationship.



With the freight service accounting for such a small portion of the overall infrastructure usage and considering that “time” rather than wear / fatigue will likely be the primary factor driving replacement of track components, it is reasonable to assume that freight activity will not be a key driver of track maintenance spending in the future. It is likely that the need to adhere to the relatively high maintenance standards of a passenger operation will drive infrastructure maintenance and replacement cycles. In that case, overall maintenance spending would be essentially unaffected by the presence of the freight service at current and expected traffic levels. There will certainly be some degradation and wear of various assets due to freight activity. However, this should not be impactful in terms of overall infrastructure spending for SMART, given that freight traffic is such a small proportion of overall train activity on the north-south passenger line.

The final infrastructure segment to examine is the “Brazos Branch” trackage that extends eastward from Ignacio Wye through Schellville to Lombard. This segment is freight-only at this time and although there are long-term plans to upgrade the line for passenger operation, it appears unlikely this will occur before the end of the decade. The current condition of track along this line is more than adequate to support the existing freight operation for many years

with only minimal, routine maintenance. An inspection trip by hi-rail in March 2020 found the line to be in solid condition and more than adequate for the current needs of the freight operation. Overall condition of rail, ties, and ballast appeared to meet or exceed necessary standards. Current speeds are acceptable given the short distances that trains travel and the low traffic volumes. It appears that only minimal work - such as selective replacement of items such as rails, joint bolts, ties, and switch components, along with occasional tamping - should be sufficient to keep the line safe and passable for the foreseeable future. Periodic inspection of trackage and bridges will need to be done and will be one of the more significant costs for the branch. With the extremely low traffic levels that exist today, maintenance costs will be dictated primarily by passage of time rather than by movement of trains. Any moderate increase in traffic levels would have a negligible effect upon the need for track maintenance spending, assuming that higher speeds are not desired at some point.

In terms of overall cost, by far the most significant risk factors on the Brazos Branch are related to flooding and bridges. Flood damage and bridge maintenance and repair issues should be considered carefully since the line has a history of incidents that have resulted in significant cost to the railroad. Flooding in these low areas is common, and bridges – especially the movable structures – can require repairs involving six figure price tags. In previous instances funds for this kind of work have been available through state or federal programs such as FEMA and/or various grant programs. With the freight business being the sole user of this branch, a significant expenditure to repair extensive flood damage or address a major bridge issue will need to be evaluated carefully to determine if it is justified financially.

### **O&M Cost Summary**

With the estimation that freight spur switches will cost approximately \$5500/year for O&M during the first 10 years of service, knowing freight train operating costs and expected revenue, it is possible to calculate a break-even for a potential new freight customer that would utilize a main track switch. Breakeven levels in terms of annual cars are very low, with projected annual switch maintenance costs each year being paid off with as few as 5-15 cars/year.

### **Freight Traffic Projections**

Based upon extensive research as well as numerous interviews with customers, potential customers, and other individuals with knowledge of freight transportation in the North Bay Area, three traffic forecast scenarios have been prepared. The forecast numbers are based upon our best judgement after fully assessing the factors expected to impact the various freight transportation markets in SMART's service area. Summaries of our assessment of each key freight market were presented earlier in this report.

**Base-Case: Continuation of Present Operation** - This forecast assumes that the freight service continues to function as it has in recent years, with essentially the same operating and



commercial practices. This is essentially a “status-quo” forecast without any significant changes or major investments by SMART. The only changes would be to ownership of the freight business, with the likely outcome being additional emphasis on marketing and promotion of shipping by rail. Transload services are assumed to be available in Schellville and at one location somewhere north of Santa Rosa. If the northern transload location is newly-constructed, the forecast assumes it is paid for by grant funding or by entities other than SMART. Only minor operational disruptions are factored in due to flooding or bridge issues. The forecast assumes there are no significant additions to freight infrastructure (freight spurs, storage tracks, etc) and that existing track capacity continues to be available (such as Burdell siding, Schellville yard, etc). Some minor disruptions are assumed during the NWPCo. – SMART transition but they do not materially impact the amount of traffic handled.

Changes from today’s operation reflected in the forecast include:

- Use of a northern transload facility by various customers, developing over time.
- Additional malt traffic for area breweries through the Willowbrook transload site.
- Additional car storage business, making full use of all available trackage including some of the main track north of Windsor that is expected to be inactive otherwise.

In total, the base-case forecast projects \$948,000 in transportation revenue for 2021 growing to \$1.24 million by 2030. Storage/track lease revenue is estimated to provide an additional \$416,000 in 2021 potentially growing to \$677,000 in 2030.

**Downside: Multiple Adverse Outcomes** – The downside forecast assumes several outcomes that would adversely affect freight traffic. Examples of potentially negative issues are: continued aggressive carload rate increases by railroads, significant service disruptions, an aggressive increase in user fees for SMART trackage, loss of customer-responsive service, customers charged for cost of freight switches, only minimal marketing/promotional activities, restrictions to storage of hazardous tank cars, lower daily earnings for storage cars, and land not made available for new facilities such as transload sites. The forecast assumes that certain of these changes occur at various times. The Downside scenario is not intended to be a forecast of future events – only an illustration of the impact that various possible outcomes could potentially have upon freight traffic and revenue levels.

Significant changes reflected in the forecast include:

- Lagunitas’ traffic is lost to a competitive transload location (the base-case forecast for 2021 generates \$133,000 in revenue).
- Without Lagunitas’ malt business as an anchor, new malt business to other breweries fails to develop.
- A portion of the grain now moving to Petaluma feed mills is lost to intermodal; net impact is a reduction of \$156,000 in annual revenue by 2030.

- A northern transload facility is opened but potential growth is constrained by a variety of issues.
- A restriction on handling of hazardous material equipment results in loss of that high-revenue storage business; lower revenue, non-hazardous cars are substituted with the net result being a loss of approximately \$200,000 in total revenue annually vs. the base case.
- Additional storage track space is not made available in the future and Burdell siding is assumed to be unavailable (to be used as a passenger siding); net impact is a reduction of approximately \$110,000/year in revenue vs. the base case forecast by 2030.

In total, the downside forecast projects \$843,000 in transportation revenue for 2021, with those figures falling to \$742,000 in revenue by 2030. Storage/track lease revenue is estimated to add an additional \$266,000 in 2021 growing slightly to \$300,000 by 2030.

**Upside: Multiple Pro-Freight Business Policies** – The last of the three forecasts is an “Upside” forecast that assumes multiple policies favorable to freight development occur in the future. Examples of outcomes that would positively impact freight traffic are: rate reductions, improvements in service consistency and transit times, aggressive marketing/promotion of freight service, addition of freight spurs with minimal or no charge for usage, development of transload sites, prudent application of available grant funds to develop spur tracks and freight facilities, increased availability of trackage for car storage, SMART assisting with land acquisition needs, SMART willing to subsidize freight by limiting fees for use of trackage.

Significant changes shown in the forecast include:

- Transload facilities at various locations are utilized by off-line customers, mainly within the Lumber category, with traffic developing over time to add approximately \$83,000 in revenue annually over the base case by 2030.
- Additional grain shipments move inbound, a result of the feed mills’ efforts to improve service and utilize better logistical solutions for their products (adds approximately \$120,000 in revenue vs. the base-case forecast by 2030).
- Additional car storage space is offered at Burdell and various other locations; generates an additional \$63,000 annually over the base case for a total of \$171,000 per year.
- A portion of main track at the north end of the railroad that would otherwise be unused is utilized for storage of empty cars. Considering both storage and transportation revenue, this business adds just over \$300,000 annually vs. the base case. Each mile of track dedicated to car storage has the potential to generate approximately \$200,000 in revenue annually for SMART.

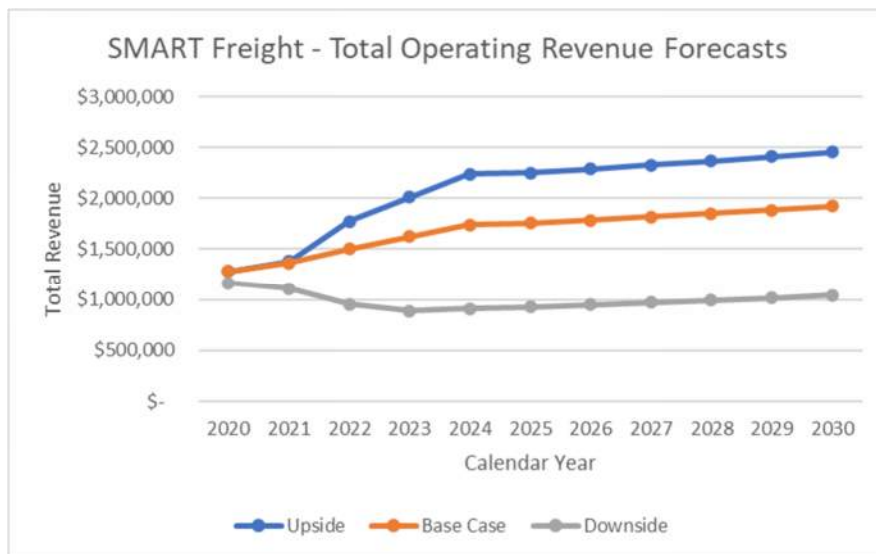
In total, the upside forecast projects \$963,000 in transportation revenue for 2021, with those figures growing to \$1,511,000 in revenue by 2030. Storage/track lease revenue could potentially contribute \$416,000 in 2021 with that amount increasing to \$944,000 by 2030, assuming the various optimistic assumptions come to pass.

As a side note, discussions with feed mill owners revealed potential benefits of receiving unit train volumes of grain from the Midwestern U.S. To facilitate this, it would be necessary to upgrade several Brazos Branch bridges, provide additional siding capacity, invest in high-capacity grain unloading and storage facilities with associated approval/zoning/permitting requirements. While this business opportunity has the potential to benefit feed mill customers, area farmers, and the freight rail business, it is worthy of note but did not seem likely enough to be included in the forecast because of the many challenges that stand in the way of such a project.

All scenarios assume that the Lombard – Ignacio Wye segment continues to be fully operational during the 10-year forecast period and that the current Union Pacific – California Northern route to and from the national rail network continues to be utilized as it is today.

### Summary of Car and Revenue Forecasts

The forecasts show a divergence of revenue outcomes over the next 10 years, primarily dependent upon how SMART elects to manage its freight operation. The graph below summarizes total operating revenue (transportation and storage combined) each year for the three forecast scenarios.



With a willingness to actively promote the car storage business as well as existing grain and malt traffic, the base case forecast envisions SMART's total operating revenue growing from present levels to nearly \$2.0 million by 2030.

With additional car storage initiatives, along with a willingness to strongly promote freight traffic and provide facilities necessary for growth, the upside forecast projects an additional \$500,000 in revenue over the base case, reaching a total of nearly \$2.5 million by 2030.

The downside forecast assumes multiple, negative outcomes including loss of the LPG storage business, loss of Lagunitas and certain grain shipments to competitive transload facilities, reduced track space available for car storage, and little or no development of potential northern transload sites. With those assumptions, the downside forecast projects a reduction in operating revenue of nearly \$200,000 from present levels within the first two years, recovering to just over \$1.0 million by 2030; approximately \$940,000 below the base case figure for the same year.

### **Conclusions –**

The amount of freight revenue generated on SMART's lines will be highly dependent upon the willingness of SMART to support and promote the freight business. With restrictive policies, minimal investment, and poor promotion of services, the freight business will likely decline, providing less revenue in the future than it does today. On the other hand, by actively promoting the freight business, being willing to invest in facilities, soliciting and wisely applying grant funding, and providing additional track capacity for car storage, freight revenue can grow considerably from present levels.

The information and preliminary conclusions presented in this report may be further refined and developed following receipt of complete financial and traffic records from NWPCo. and additional information from various customers. Once that information is obtained and financial modeling conducted, it will be possible to formulate strategic policies to guide decision making and investments regarding SMART's freight business.

**Customer Contact Log**

+ = multiple contacts

Date	Company / Agency	Name	Position	Contact	Comments
Mar 2	Union Pacific	Ryan Pichler	Senior Mgr - Short Line Development	phone	
Mar 3	UC Berkeley	Rob Leachman	Professor - IEBOR	phone	specializes in Logistics & Supply Chain; knows North Bay Area.
Mar 4	Valero Energy	Judy Watson	Mgr. - Rail Transportation	phone	
Mar 5 +	California Northern Railroad Co.	Jake Harrsion	General Manager	phone	
Mar 5	California Northern Railroad Co.	Eric Kreutzberg	Manager - Sales & Marketing	phone	
Mar 5	Valero Energy	Keith Kaiser	Mgr. - Rail Perf. Mgmt & Optimization	phone	
Mar 8	Sonoma County - Agriculture Divn.	Pete Albers	Chief Deputy Agricultural Commissioner	phone	707-565-2371
Mar 10	Mendocino Co. / MendoRecycle	Howard Dashiell	Director	phone	
Mar 11	Republic Services	Brandon Hart	manager	phone	
Mar 15	Lagunitas	no managers on-site	spoke with office personnel	visit	visited office, viewed transload facility
Mar 15	Willowbrook Feeds / Petaluma Poul	unknown	employee at feed mill	in person	discussed feed mill operation
Mar 15	Recology	unknown	manager	in person	discussed Santa Rosa recycling facility
Mar 16	Northwestern Pacific Co. Inc.	Victor, Elvis	Maintenance of Way Employees	in person	hi-rail Napa River to Ignacio Wye
Mar 16	All-Coast Forest Products	Steve Bernardi	Vice President - General Manager	in person	
Mar 16	Capital Lumber	Jeff Logue	Branch Manager	in person	
Mar 17	Hunt & Behrens	Dan Figone, Robert Falco	Owners	in person	Petaluma
Mar 17 +	Dairymen's Feed & Supply	Arnie Riebli +	General Manager	in person	Petaluma
Mar 18	Shamrock Materials	Joe Webb	Ready-Mix Operations	in person	Petaluma facility
Mar 18	Shamrock Materials	unknown	manager	in person	barge transload facility, "Landing Way"
Mar 18	Kelleher Corp.	unknown	manager	in person	
Mar 18	Novato Builders Supply	Lisa Hutchinson	Purchasing Manager	in person	
Mar 19 +	Pruitt Industrial Park	Kristyn Byrne	Property Manager	in person	
Mar 25	Zero Waste Sonoma	Leslie Lukacs	Executive Director	phone	
Mar 26	All Truss Inc.	Bob Biggs	Owner	phone	
Mar 26	Mount Storm Forest Products	Ed Mikowski	Owner	phone	visited facility Mar 19
Mar 26 +	Northwestern Pacific Co. Inc.	Danylo Hawks	General Manager	phone	numerous contacts
Mar 31	Marathon (formerly Tesoro)	Steven Ballesteros	Rail Fleet Manager	phone	
Mar 26	Viper Rail Car Storage	Jared White	VP- Business Operations	phone	
Apr 1	Bamcore	Myles McGinley, Jack...	Director, Strategy & Finance	phone	also Jack .., Director of Fabrication
Apr 6	Friedman's Home Improvement	Brian Pierce	Buyer	phone	
Apr 8	Golden Gate Railroad Museum	Garrett Brisbee	President	phone	
Apr 21	Oxbow Energy Solutions	Laurie Williams	Mgr - Sales & Admin.	phone	
Apr 23	Recology	Brandon Deshazer	District Manager	phone	
Apr 26	Cryo-Trans / Lineage Logistics	Herman Haksteen	CEO	phone	potential user of Schellville warehouse
Apr 26	Cushman & Wakefield	Brooks Pedder	Exec. Managing Director	phone	discussed Schellville warehouse
Apr 26	Union Pacific	Brett Watson	Manager - Beverages	phone	discussed wine shipping opportunities
Apr 27	NWPCo.	Judith Roberts	VP & CFO NWPCo.	phone	
Apr 27 +	Union Pacific	Brett Watson	Manager - Beverages	phone	discussed malt/beverage opportunities
May 13	Mead-Clark Lumber	Jeff Scott	Sales Manager	email	replied to our email
May 25	Union Pacific	Aaron Conley	Marketing Director - Forest Products	phone	discussed regional lumber market

**Still to Contact:**

Petaluma Poultry	Mike Backey	unsuccessful
Kendall - Jackson		unsuccessful
Syar		unsuccessful
Redwood Lumber & Supply		unsuccessful
Redwood Empire		unsuccessful
Lagunitas		unsuccessful
Alexander Valley Cellars		unsuccessful
Biagi		unsuccessful

**Visited customer facility in-person, no one available**

Petaluma Poultry		visit
Recology		visit
Mead-Clark		visit
Kendall - Jackson		visit
Redwood Lumber & Supply		visit
Lagunitas		visit
Alexander Valley Cellars		visit
International Wood Products		visit
Tonnellerie Radoux		visit
California Shingle & Shake	no employes on-site	visit
International Wood Products	Bryce	visit
California Northern Railroad Co.	no employes on-site	---
Sierra Mountain Construction Inc.	no employes on-site	---
Syar Industries	---	visit
Syar Industries	---	visit

unwilling to speak with us

American Canyon transload site

Schellville

viewed facility at Healdsburg

viewed facility near Todd Rd. Santa Rosa