



Washington State
Department of Transportation

2017-2027 Grain Train Strategic Plan



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Nov. 16, 2017

The mission of the Washington State Department of Transportation (WSDOT) is to provide and support safe, reliable and cost-effective transportation options to improve livable communities and economic vitality for people and businesses. The WSDOT Grain Train Program is part of WSDOT's strategy to support cost-effective freight transportation alternatives for our state's farmers and other shippers to access global markets.

WSDOT worked in close partnership with the Grain Train Managing Port Partners, the rail operators, BNSF Railway, shippers and goods receivers, and many other stakeholders to develop the 2017-2027 Grain Train Strategic Plan. This public outreach, coupled with data-based analysis, supports implementing and funding priority strategies for the Grain Train program.

This plan outlines the vision and goals for the program and identifies operational improvements and policy changes that will ensure the program continues to enhance the economic competitiveness of Washington state. The program has six key goals:

- Move Washington-grown products reliably and efficiently to domestic and international markets.
- Help preserve Washington's short line railroads by generating revenue that may lead to better maintained or upgraded rail lines that support long-term infrastructure needs.
- Reduce greenhouse gas emissions and save fuel by reducing truck shipments.
- Help reduce wear and tear on local roadways by reducing truck vehicle miles traveled.
- Support a healthy multi-modal transportation system that improves economic vitality and enables development in the region.
- Be self-sustaining and provide funds for the maintenance and preservation of the state-owned short line railroad when sufficient revenue is generated to do so.

We thank everyone involved in the development of the plan. We look forward to working with them and with you to preserve and improve this important program that links our state grain products to the national freight rail network and global markets.

Sincerely,

Ron Pate, Director
WSDOT Rail, Freight, and Ports Division

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Washington State Grain Train Program Strategic Plan 2017-2027

Executive Summary

Introduction

When BNSF began experiencing train delays along the Northern Corridor in late 2013, access to railcars for wheat and barley shippers in Washington state was diminished because they generally relied on equipment from BNSF. It became nearly impossible to find available railcars and those that were available were very expensive. Shippers reported issues with unfilled car orders, cars arriving weeks after they were ordered and a more competitive secondary market that was meant to ensure best use of rail equipment. As a result, the cost to ship crops to market by rail for farmers in Washington state doubled or even tripled.

Grain cooperatives that access cars in the state Grain Train program have not had the same challenges. While the state-owned cars may take longer to get to their destination, due to congestion, they continue to be available. This resulted in grain shippers which have not previously used Grain Train cars to inquire about the program.

This led the Washington State Department of Transportation (WSDOT) and the Ports of Moses Lake, Walla Walla and Whitman County to work together to develop the Washington State Grain Train Strategic Plan (Plan) to ensure that the grain train program meets stakeholder needs and is in alignment with WSDOT's goal to enhance trade and sustainable economic growth. As one of the most trade-dependent states in the nation, Washington relies on an efficient freight transportation network. Freight-dependent industries accounted for more than 40 percent of the state's jobs. Thus, Washington's freight transportation system plays a critical role in fostering economic vitality and competitiveness in regional and global markets.

This plan was created to ensure the Grain Train program aligns with the Legislature's six transportation policy goals:

- **Economic Competitiveness and Viability:** Support the state's economic competitiveness and economic viability through strategic freight partnerships.
- **Preservation:** Preserve the ability of the state's freight rail system to efficiently serve the needs of its customers as well as preserve the potential of the system in the future.
- **Capacity:** Coordinate the freight rail system capacity increases to improve mobility, reduce congestion, and meet the growing needs of the state's freight rail users, when economically justified.

- **Energy Efficiency and Environmental:** Take advantage of freight rail's modal energy efficiency to reduce the negative environmental impacts of freight movement in the state.
- **Safety and Security:** Address the safety and security of the freight rail system and make enhancements, where appropriate.
- **Livability:** Encourage livable communities and family-wage jobs through the freight rail system and its improvements.

This Plan supports the freight-related strategies and recommended actions in the statewide *Washington Transportation Plan 2030*. The Plan also incorporates key points and findings from WSDOT's PCC Strategic Plan by highlighting the essential role that this program plays in freight mobility.

This strategic planning process analyzed opportunities that will help WSDOT and the three port partners evaluate the Grain Train program to improve service. The Plan evaluates the effectiveness of the program to date and identifies ways to increase operational flexibility to allow more shippers access to the program. It also addresses long term needs of the program, including potential growth and modernization of the car fleet and a sustainable equipment replacement plan.

This 10-year Strategic Plan has been developed with help of the Grain Train partners based upon:

- Program goals
- WSDOT Strategic Plan goals
- Insight gained from current and potential users and stakeholders
- Identification of future trends
- Understanding of potential opportunities for the program

The plan includes sections on Operations, Program Sustainability, Fleet Size Analysis, Grain Car Allocation and Performance Management. WSDOT's Practical Solutions approach was used to form the draft recommendations. The Plan was developed using stakeholder interviews and a Request for Information process as tools to gauge demand. Community engagement techniques were used to identify improvement strategies, evaluate alternatives and review/refine final recommendations.

Background

The Washington Grain Train program was initiated in 1994. The car fleet has grown from 29 cars in 1994 to the current state-owned fleet of 98 cars. The total fleet includes the 98 state-owned cars plus 18 cars owned by the Port of Walla Walla for a total Grain Train fleet of 116 railcars. The economics of the grain transport has changed over the last 22 years. There are fewer and larger shippers than when the program began. Currently, it is perceived that the current allocation method does not provide small shippers easy access to under-utilized

equipment. Based upon the July 2014 program review, the program goals remain sound and relevant. Those potential users that want access to the equipment have valid unmet commercial needs for the equipment. Currently, funding for car replacement is not considered a priority for the next 15 years because the existing fleet is operational through 2031. Stakeholders also indicated that continuing to grow the program should be a priority over transferring funds to meet short line railroad maintenance needs.

The Grain Train fleet is primarily used to transport Washington-grown wheat and barley to both Upper and Lower Columbia River barge terminals and port export facilities. Some cars have been used in the past to move commodities to out-of-state domestic markets such as California. Recently, some of the cars have been used to move wheat short distances within the state in “scoot” trains between smaller elevators to larger elevators and/or shuttle facilities. This is seen as a growing future trend where the smaller grain train cars are used to move grain from local elevators to centralized grain shuttle facilities. At the shuttle facilities, the grain is transloaded into larger jumbo hoppers for delivery by the mainline rail companies to export terminals in western Washington and Oregon.

Goals of the Program

This plan was built upon the Program’s foundational Vision, Mission and Goals.

Vision

A Grain Train Program that offers a fair and equitable allocation of WSDOT owned cars to Washington grain shippers.

Mission

To provide cost-effective grain hopper cars to move Washington grain to market.

Goals

There are six program goals:

- Move Washington-grown products reliably and efficiently to domestic and international markets.
- Help preserve Washington’s short line railroads by generating revenue that may lead to better maintained or upgraded rail lines and support long-term infrastructure needs.
- Reduce greenhouse gas emissions and saves fuel by reducing truck shipments.
- Help reduce wear and tear on local roadways by reducing truck vehicle miles traveled (VMT).
- Support a healthy multi-modal transportation system that improves economic vitality and enables development in the region.
- Be self-sustaining and provide funds for the maintenance and preservation of the state-owned short line railroad when adequate funds are available to do so.

Performance Measures

Using the program goals as guidance, six performance measures were developed. These metrics should be easy to track using the current reporting system. Each quarter, the managing ports turn in activity records to WSDOT's rail office. WSDOT then combines the reports into a master grain train spreadsheet that can be used to calculate and track these metrics.

1. Number of trucks diverted from state road each year.
2. Number of Vehicle Miles Traveled removed for state roadway each year
3. Number of gallons of fuel saved each year
4. Amount of greenhouse gas emission (CO²) saved by the program each year
5. Amount of cash generated each year that is available to reinvest into the program
6. Improved roadway safety as measured by the estimate in social costs saved from prevented accidents on the roadways.

Benefits of the Program

The Grain Train program continues to benefit Washington state in many ways. It reduces demand for trucking, reduces roadway congestion, reduces roadway and bridge maintenance and construction costs, reduces greenhouse gas emissions, reduces shipping costs for its users, and improves roadway safety. Moreover, the Grain Train offers railcars that can continue to meet the current demand generated by Washington wheat production. Thus, the program is needed to provide Washington state farmers an alternative freight transportation mode that continues to remove trucks from roadways in Washington state.

Recommendations

Recommendations are presented in this Strategic Plan for consideration and adoption by the Grain Train managing partners. Railcar Fleet Size and Allocation Strategy recommendations are made based upon the Grain Train programs goals.

Recommendation 1: Increase the number of cars in the fleet to ensure that the number of cars in each fleet is adequate to support small unit trains of 25 or more cars which is required to secure the best rates

It is recommended that the current Railcar Fleet Size of 98 state-owned cars be expanded through both purchase and leasing of additional cars to meet the demand identified during the development of the Plan.

Recommendation 2: Follow the current car allocation method for FY 2017

During the FY2017 harvest, it is recommended that the current car allocation method continue. This will allow the managing partner time to consider the recommendations and begin implementation based upon available resources.

Recommendation 3: Issue an annual RFI to determine demand

To determine actual demand for cars in a region or for a set time period, it is recommended a yearly RFP/RFI be conducted. Existing and potential car users will be required once a year to notify the state of their planned use for cars which WSDOT can evaluate to better allocate the fleet and increase utilization.

Recommendation 4: Institute a Daily Fee for repairs and maintenance

Because cars run in scoot services or remain on a short line, it is recommended WSDOT charge the shortlines a daily fee per car in the range of \$2.50/ car/ day. That fee only will apply when cars are in active service where no other grain train revenue applies. If cars are on the Class 1 railroads or a rate exists that generates revenue for the Grain Train, the daily fee will not apply. WSDOT has the discretion to waive the daily fee if notified the cars will be idle for an extended period of time. This fee serves two purposes — generating revenue needed to keep the fleet maintained and encouraging use of the cars.

Recommendation 5: WSDOT takes over the management of the Port of Moses Lake allocated cars and considers taking over administration of the full program to reduce redundant tasks

The Port of Moses Lake has requested they be released from the duties of managing the accounting of the CBRW and AOK cars since grain is not one of their lines of businesses. It is recommended that WSDOT assume administration of the program; work directly with the short lines involved; and control the grain train funds. This will result in a single entity providing day-to-day management of the fleet and allows funds to be centralized to align with the day-to-day management functions. WSDOT should engage with the other managing ports to gauge their disposition on WSDOT managing the program.

Recommendation 6: Allocate a \$25,000 administration fee for WSDOT program oversight and accounting

It is recommended WSDOT be reimbursed up to \$25,000 for its oversight and administration of the program. If the program is reassigned to the PCC Rail Authority in the future, this fee can be used by the Authority to hire part-time staff to run the Grain Train program.

Recommendation 7: Plan for the future management of the Grain Train

WSDOT should formally review the program every five years and report annually in the Gray Notebook on the status of the program. Scoot operations have the potential to increase maintenance costs as the cars are spotted, loaded and unloaded more often. It is recommended that WSDOT closely monitor car condition and develop a preventive maintenance program. WSDOT also should closely monitor market and distribution changes that might potentially affect the grain train and short line operations. The number of cars required and available will fluctuate from year to year and will need to be coordinated, but it is anticipated that the grain train fleet can be interchanged for another 15 years.

Chapter 1: Introduction

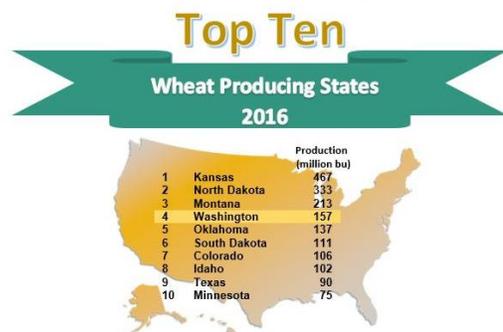
Introduction

The Washington State Department of Transportation (WSDOT) and the Port of Moses Lake, Walla Walla and Whitman County led the development of the WSDOT Grain Train Strategic Plan. The Plan was created to ensure the grain train program is in alignment with transportation system in Washington state that supports and enhances trade and sustainable economic growth. As one of the most trade-dependent states in the nation, Washington relies on an efficient freight transportation network. Freight-dependent industries accounted for more than 40 percent of the state's jobs. Thus, Washington's freight transportation system plays a critical role in fostering economic vitality and competitiveness in regional and global markets.

This Plan was created to ensure the Grain Train program aligns with the Legislature's six transportation policy goals: economic vitality, preservation, safety, mobility, environment, and stewardship outlined in RCW 47.04.280. There is a significant focus on the newest goal, economic vitality; as well as support for freight-related strategies and recommended actions found in the statewide *Washington Transportation Plan 2030*. This Plan also incorporates key points and findings from WSDOT's Palouse River and Coulee City (PCC) Strategic Plan by highlighting the essential role this program plays in freight mobility.

Washington state is ranked fourth in the nation's top wheat producing states and second in average yield per acre. In addition, wheat ranks number five in Washington's commodities based on production value, representing nearly \$600 million.

Washington is one of the nation's leading wheat-exporting states, with 85 to 90 percent of its production exported each year. In 2015, more than 50 percent of total US wheat was



Source USDA

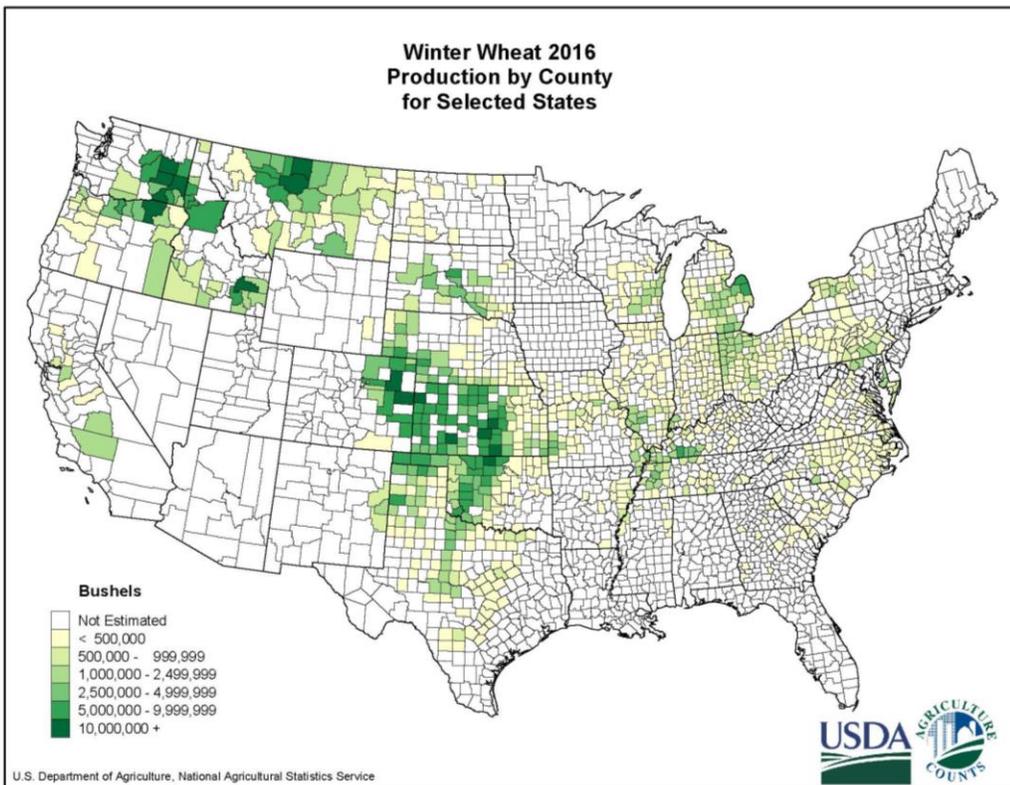
exported. Wheat is one of America’s largest agricultural exports, and provides a positive contribution to the agricultural trade balance.

Eastern Washington is home to some of the best wheat quality grown in the world. In 2016, Washington wheat growers harvested 2.2 million acres of wheat which had an average yield of 71.5 bushels per acre. Total wheat production for 2016 was 157,290 million bushels.

Most wheat grown in Washington is winter wheat which is planted in the fall. Spring wheat, which is planted in the early spring, is a secondary market. Both winter and spring wheat are harvested in July through September, depending on where it is grown in the state.

Whitman County has consistently been ranked the number one wheat-producing county in the United States every year since 1978. Whitman County specializes in the production of soft white wheat, often used in pastries, pancakes, cakes, cereals and flatbreads. In 2016, soft white wheat accounted for 79 percent of total wheat production in Washington state.

Exhibit 1: 2016 US Winter Wheat Production



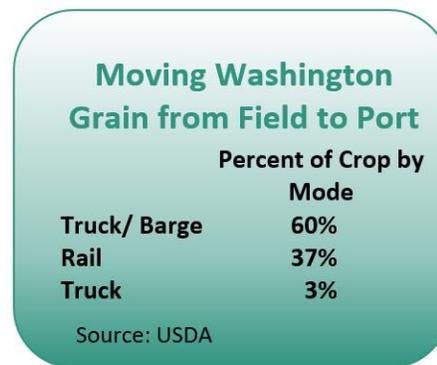
Source: U.S. Department of Agriculture

Washington state grain producers generally operate from family farms. The producers typically sell products and gain information from local co-operatives (Co-ops) and multinational firms. The elevators link the producers to distribution channels such as river barges, rail transportation and

trucking to get their product to overseas markets. The Co-ops also provide storage for farmers that want to maintain the commodities for future periods.

Washington grain moves primarily (60%) from field to export port through a combination of trucks and barges. Rail carries 37 percent and trucks carry around 3 percent from field to the exporting port. Rail/barge is another modal combination that is used in Washington.

The Grain Train plays a major role in moving the grain by rail, as it is usually used as a “scoot” train to deliver the grain from local elevators to grain shuttle facilities that transload the grain from the smaller 263,000-pound GVW capacity Grain Train cars into larger jumbo hopper cars that carry 286,000 pounds. These larger cars then are transported by the mainline railroads to the export terminals in Western Washington and Oregon.



Development of the Plan

The WSDOT’s Practical Solutions approach was followed to develop the Strategic Plan for the Grain Train and make recommendations on a railcar fleet size and allocation strategy. The recommendations found in this plan address the following goals:

Operations – Using demand forecasts and stakeholder input, the effectiveness of the current operating plan was evaluated. A high-level audit of the program was performed to certify the process is in place to ensure all revenues are collected and allocated into accounts to allow for maintenance, car replacement, and car purchase to expand the fleet when needed. Alternative operational models were identified and analyzed. The results from research and stakeholder input were used to determine the “right size” of the current fleet. Strategies were developed to address peaks in demand.

Sustainability – Revenue streams were assessed to determine that the current revenue system does meet the program goal of being self-sustaining. Alternative operational models were reviewed to determine the effects on program revenue and sustainability. The stakeholders indicated the transfer of funds to short line railroad preservation and maintenance fund should not be a priority. The priority should be the Grain Train. Currently, the Grain Train program is self -supporting. If additional sources of funding are needed for the operation, expansion and maintenance of the Grain Train in the future, potential sources remain: increased user fees including long-term leases of the Grain Train fleet, state funding and grants, and federal funding, and grants. Although additional state and federal funding may be an option, it is recommended that increasing the usage fees to be slightly less than market may be the best approach.

Cost Analysis – The team reviewed current and future maintenance expenses, as well as the current lease agreements. These leases were compared against current private leases. It was determined the program is meeting its goals and the public is getting a return on its assets primarily through the social benefits of removing the transport of the grain from public roads. The analysis includes recommendations that offer the best utilization of the cars balanced against the financial constraints. A limited procedural audit was completed on the billing and collection of fees. It was determined that although the reporting process may be considered slow compared to corporate standards, the accounting is done correctly. Recommendations are made about potential consolidation of the management and accounting functions to eliminate duplication of efforts between the managing ports and WSDOT.

Capital Investment (CAPEX) – Projected car procurement costs were calculated to confirm the validity of the asset management plan to replace existing equipment and consider when (and if) to procure additional equipment. The current Repair and Maintenance Plan was evaluated to ensure the program is consistent with industry standards and in compliance with federal regulations. This Plan recommends an investment strategy for fleet expansion and fleet replacement which can be prioritized based on both operational and financial needs. The team reviewed the schedule of replacement, potential sources of cars and alternative methods of obtaining cars, including lease programs. The analysis looked at which size of cars will be financially and operationally viable. In addition, the evaluation sought to confirm whether the proposed additional cars should be at the 268,000-pound capacity, or the 286,000-pound capacity, or an even larger gross weight capacity, based upon current track capabilities. Recommendations are based upon the desire to maximize the value of the program.

Grain Car Allocation - After considering alternative operational models, the plan recommends an allocation methodology that maintains adequate revenue, improves the existing utilization and continues to meet the programmatic goals. The team evaluated and compared current lease programs to private lease programs. They also investigated new regulations that will affect shipping procedures such as the Food Safety Modernization Act (FSMA) to ensure that the recommendations meet pending regulatory requirements. A recommendation was made for a leasing program package that offers the best flexibility and use of current cars.

Performance Management – The Plan includes the development of program performance metrics that will help to measure program's value and effectiveness. Current reporting data was reviewed to select a set of performance metrics that can be easily reported. Metrics such as individual car usage, revenue per car, average car usage, average miles traveled, and days in service were considered, but they were found to be less feasible due to data availability and timeliness. Thus, the recommended metrics were selected based upon ease of collection and value to the Grain Train's stakeholders. It is recommended that six performance measures be used to communicate the programs progress and results to stakeholders and WSDOT on a systematic basis.

Potential Additional / Previously identified Issues – During this process, additional issues were reviewed, including:

- Additional commodities
- Additional shippers
- Use of cars to bring commodities from other states which could increase economic activity in Washington

Chapter 2: Grain Train Program Overview

Overview of trends in rail car availability and utilization

The Grain Train program has grown over the past 20 years of operation. Since the initial WSDOT investment in 1994, the fleet has grown from 29 cars state-owned rail equipment pool to 98 cars. A recent derailment in August 2017 impacted six cars in the grain train fleet. The status of those cars is undetermined. The report does not reflect the consequences from the derailment. The figures in this report also include the Port of Walla Walla's additional 18 cars, bringing the total to 116 cars.

During this planning process, many elements were investigated relating to the current rail car strategies and future trends. These programs and trends were reviewed with Class I railroads, shortline railroads, private leasing firms and other public-sector stakeholders.

Programs examined include:

- Multi-car or shuttle program efficiency and its impact on shortline railroads and small shippers.
- Class I car pricing/access strategies designed to incentivize highest and best use and their impact on Washington state shippers' transport behaviors.
- Private company car availability to efficiently address peaks in demand or other issues that result in car access restraints.
- The effect of annual river closures for maintenance that limit the movement of grain and the Grain Train.
- The effect and potential ramifications of implementation of the Food Safety and Modernization Act (FSMA) on the use of grain cars.
- Investigation of other states for similar state ownership of cars (grain or otherwise).

The information gathered was the foundation the development of this Grain Train Program's Strategic Plan.

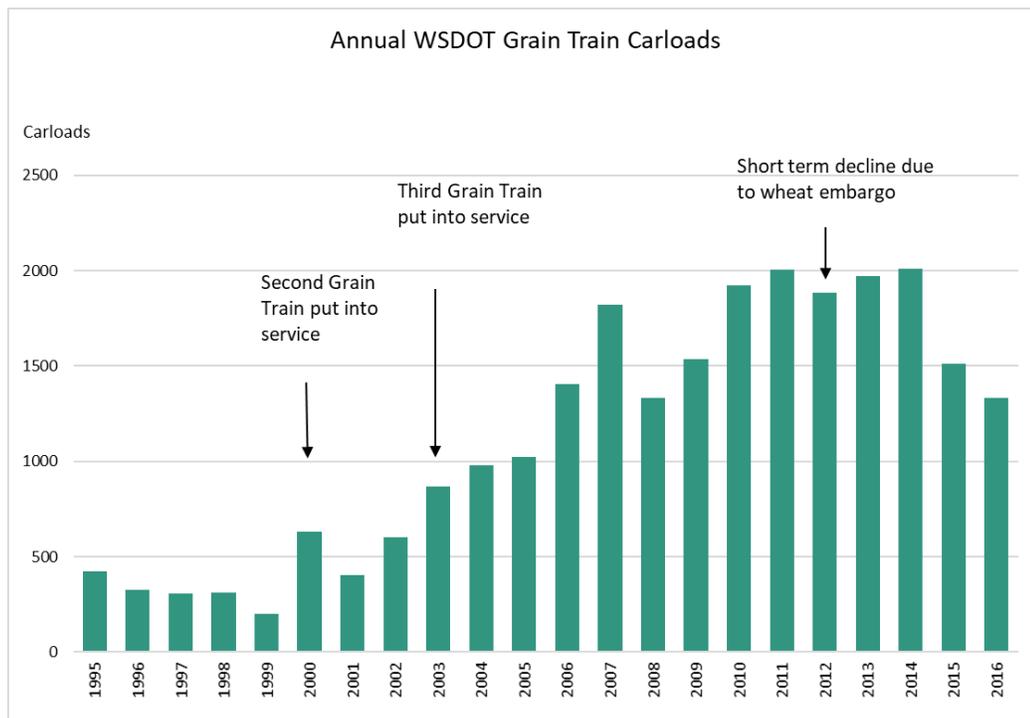
Is the Washington State Grain Train Program successful?

The program has been financially self-sustaining since the initial equipment purchase in 1994. The carload history demonstrates the steady demand for Grain Train cars. This steady demand has encouraged WSDOT to increase the number of grain cars from the initial 29 grain cars purchased in 1994 to the current number of 116 (WSDOT- and Walla Walla-owned cars).

The first Grain Train began operating near Walla Walla in 1995. This initial train generated enough revenue to pay for a second train that was put into operation in 2000 to serve the grain cooperatives in Warden and Schrag in Grant County. In conjunction with the state's purchase of the second train, the Port of Walla Walla purchased 18 cars in an effort to preserve rail lines in Walla Walla County. A third set of covered hopper cars went into service in 2003 to serve Whitman County grain cooperatives located in Oakesdale, Fallon, Spangle, Rosalia, McCoy, and Plaza.

Since the start of the Washington State Grain Train Program, annual carloads have increased 357 percent, from 423 in 1995 to 1,512 in 2015. It is anticipated strong car loading volumes will continue in the future due to high demand for Washington grain. The challenge is to keep the Grain Train transportation costs competitive with the cost of trucking. In 2015, volumes dropped primarily on the cars managed by the Port of Moses Lake because it was less expensive in that area to transport the grain by truck than to use the Grain Train to move the product.

Exhibit 2: Annual WSDOT Grain Train Carloads



Source: Monthly car hire reports received from shortline railroads.

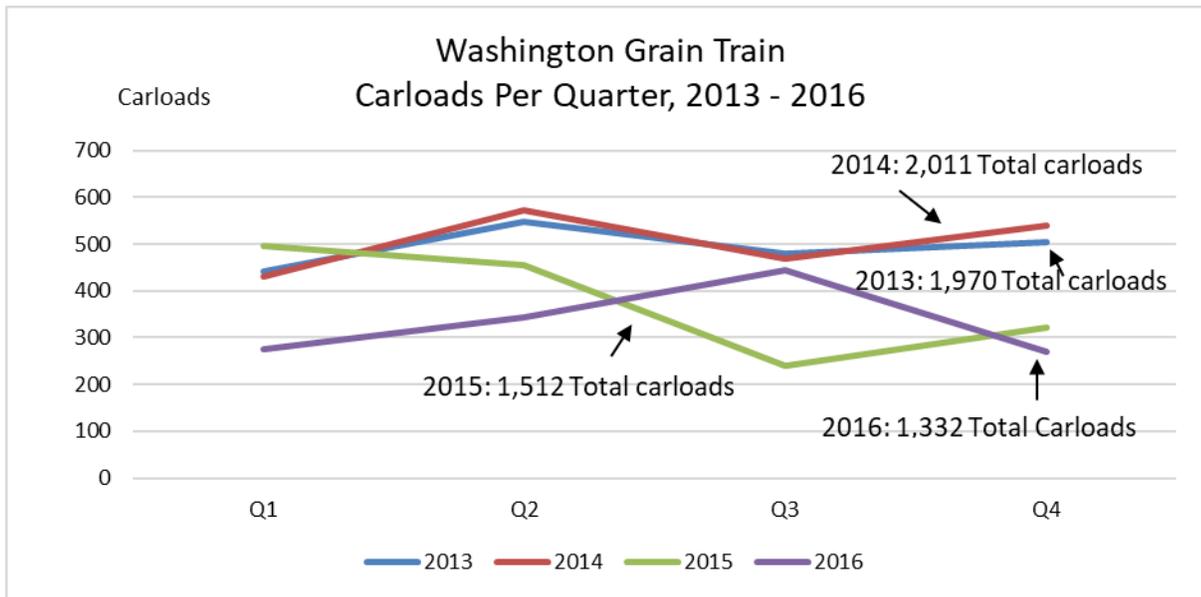
During the 20 years of the Grain Train's existence, the program has evolved to serve the changing needs of Washington agriculture. The industry has gone to fewer and larger grain elevators that use transportation differently. With the addition of shuttle facilities, there has been an increase in the quantity of grain that is delivered by rail to export facilities. Delivery of grain to the shuttle facilities by small sets of rail cars has provided an economical and environmentally-friendly mode of transportation. The use of cars to transport grain for the river barge program has increased the need for the car program.

The increase in usage and the cost/benefit to WSDOT show the program has been successful. Some adaptations will be required to meet stakeholder needs and to keep the program successful into the future. These changes include increasing use of the shuttle facilities as a regional collection point for the local grain production versus using Grain Train cars to move the grain all the way to an export port. Shortening the distance each car travels should improve the number of cycles each Grain Train car makes per year. The use of the cars to increase the use of shuttle trains also aligns with Class I business plans. The potential to increase the car cycles can be a solution to rail car availability issues.

How are the Grain Trains performing today?

The Washington State Grain Train carloads fluctuate on a month-to-month basis, due in part by market demand and grain car availability. Traditionally, most grain has been shipped in the second quarter (April to June) because demand is high for the prior year's crop in preparation for the new harvest. The slowest quarter is generally near the beginning of harvest in the months of July through September when the grain is being delivered directly off the farms to the local elevators for storage before it is moved further through the supply chain to either domestic or international markets. Exhibit 3 below clearly shows the seasonal nature of Grain Train use.

Exhibit 3: Washington Grain Train Carloads 2013-2016



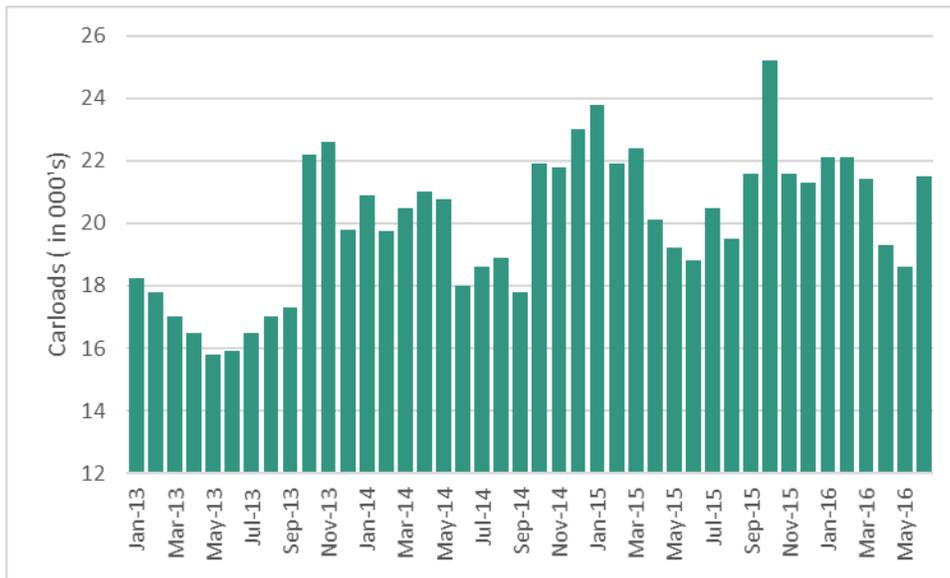
Source: WSDOT Rail, Freight, and Ports Division

What are the market dynamics of grain cars?

In the past, railroads have hauled approximately 40 percent of eastern Washington’s grain to market when compared to other modes of transportation¹. When rail to barge volumes are included, this percentage is even higher. Rail’s lower cost in many situations would naturally tend to increase that share. Exhibit 4 shows the variation in the average weekly grain carloads in the United States for the years 2013-2016.

¹ *Dynamics of Wheat and Barley Shipments on Haul Roads to and from Grain Warehouses in Washington State*. September 2003. Page 22.

Exhibit 4: Average Weekly U.S. Grain Rail Carload Volumes



Source: <https://www.aar.org/data-center/rail-traffic-data>

Historically, the extra demand was not always satisfied due to a lack of empty grain rail cars to load. This particularly occurs during the heavier shipping months, which generally begin in early fall after harvest. Greater demand for service would normally dictate the need for the mainline railroads to acquire more cars for loading. However, Washington state has two conditions working against such a solution. First, the BNSF Railway (BNSF) and the Union Pacific Railroad (UP) receive higher revenues from longer grain hauls originating in the Midwest versus the shorter eastern Washington grain shipments. Second, the presence of competition from river barges in the state reduces the typical cost advantage realized by rail transport in other markets. Thus, the Class I railroads have little incentive to buy extra cars to service Washington state grain growers.

Yet, for local shippers, the need for covered hopper cars still exists. For this reason, the state's provision of a dedicated fleet of covered hopper cars for Washington shippers has continued for the last two decades.

Who owns the equipment and where is it located?

The Washington State Grain Train Program includes 116 covered hopper cars. Of these, 98 are owned by WSDOT and 18 by the Port of Walla Walla. WSDOT and the three cooperating port districts (Port of Walla Walla, Port of Moses Lake, and Port of Whitman County) all help to manage the Washington State Grain Train Program. While WSDOT oversees the entire program, the port districts, on behalf of WSDOT via operating agreements, manage the collection of monthly car rental payments from the railroad operators for the use of the cars (see the following chart). A full inventory of the cars can be found in Appendix A.

Today, there are three Washington State Grain Train car sets composed of 268,000 pound cars, ranging from a total capacity of 4,650 to 4,750 cubic feet.:

- Forty-four of the state-owned cars and the 18 Port of Walla Walla cars are operated by the Watco Companies, LLC (Watco). These cars are used by Watco to pick up grain from elevators on the Blue Mountain Railroad (BLMR) running east of Wallula, and the PV Hooper Line of the Palouse River and Coulee City Railroad (PCC) Rail System, which runs east of the UP connection at Hooper Junction. The cars are transported entirely by Watco to the Wallula barge facility for further transport to exporting facilities down river. Since Watco has operating rights on the UP tracks between Wallula and the BLMR, and between Wallula and the PV Hooper Branch, the cars can flow between the lines in a seamless process.
- The second Washington State Grain Train set of 29 cars serves grain elevators on the CW Line of the PCC Rail System running west-northwest of Cheney. In the past, Eastern Washington Gateway Railroad (EWG) collected grain along this branch in the Grain Train cars for interchange at Cheney with BNSF and further transport to export facilities. With the opening of the HighLine Grain Shuttle Facility in 2016, EWG continues to collect the grain along the branch but now delivers it to the HighLine facility where the grain is transferred into jumbo hopper cars and shipped by a 110-car shuttle train to export facilities.
- The third Washington State Grain Train set of 25 cars serves grain elevators on the Columbia Basin Rail (CBRW) line from Connell to Moses Lake. These cars are interchanged by the CBRW with BNSF at Connell for further transport via larger train cars to Washington ports.

Exhibit 6: Grain Train Equipment Inventory Summary

Owned Grain Car Current Fleet				
Managing Port	Car Marks	WSDOT ownership #	Port ownership #	Railroad Line Assignment
Walla Walla	PCC 1XXX PCC 2XXX PCC 3XXX	18	18	Blue Mountain Railroad (subsidiary of Watco) and Palouse River and Coulee City Railroad (PCC)
Whitman Co.	PCC 3XXX	26		PV Hooper line of the PCC operated by Washington and Idaho Railroad
Moses Lake	CBRW 1XXX	25 ^{2,3}		Columbia Basin Railroad
Moses Lake	AOK 18XXXX	29		CW line operated by EWG
Total Owned Grain Cars		98	18	
Combined Fleet			116	

Source: WSDOT

How are the grain cars used?

Each of the shortline railroads serve several rural grain elevators located along their rail line. These grain elevators receive grain from local farmers (shippers) for storage and eventual transport to river barge facilities, deep-water ports, rail shuttle facilities, or processors. Elevators contact the shortline railroad when they need empty covered hoppers to transport grain. The shortline railroad matches cars with the requests, then delivers the cars to the selected elevator to begin loading.

Once loaded, the shortline railroad transports the cars to their destination. These destinations can be served by either the shortline railroad or through an interchange with a Class I railroad. If the delivery is to a Class I railroad, after the cars are unloaded, the Class I railroad (UP or

² Two cars have been eliminated from service. Original fleet of 27 is now only 25 cars. One CBRW car is still on the EWG line as of August 2017.

³ Temporally reassigned to the CW operated by EWG in spring 2016 and returned during the summer 2016.

BNSF) “reverse routes” the unloaded cars and returns them to the originating shortline at no charge. As the cars arrive back on the shortline rail line for loading, the entire process starts over again.

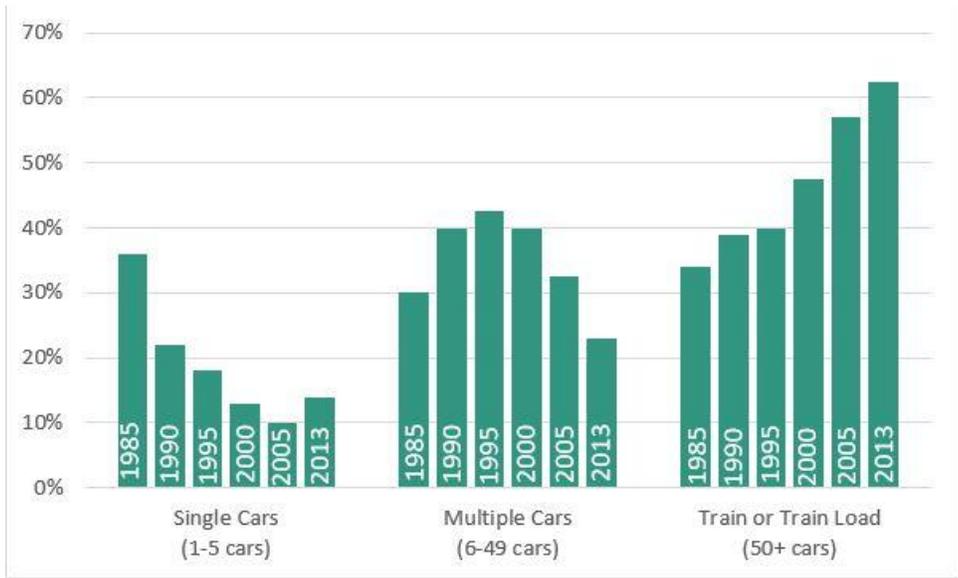
How has the size of Grain Trains changed?

Over the last two decades, there has been a switch on the mainline railroads to the use of larger capacity shuttle trains for a more efficient movement of the grain. These trains with more than 75 cars and dedicated unit trains of 110 cars, increase railroad efficiencies as they use Jumbo Covered Hopper cars that have a cubic capacity of 5,161 to 5,188 cubic feet of product. These cars have a standard mainline 286,000 lbs. gross vehicle weight, which cannot be moved on most of the shortlines due to weight restrictions on the shortline routes. Cars with capacity of 286,000 pounds can be used on all facilities that are on Class I tracks, including most of the Columbia Basin tracks. Thus, shippers with access to shuttle train facilities are able to realize the higher capacity cars and lower transportation costs offered by the shuttle trains.

Due to the car weight restrictions and shuttle train lengths, local rural grain elevators are unable to accommodate shuttle train shipments. The less-efficient shortline movements or lack of cars can lead to an increased demand for truck transportation for those shippers near a shuttle facility. Unfortunately, this runs counter to one of the Grain Train goals, which envisions the use of state-owned rail cars as a method to remove trucks from the local roads and highways. The removal of the heavy grain trucks from the roads is necessary to reduce wear and tear on the roads; thus, decreasing the cost of road maintenance and repair to local governments and the state. *The Effects of Increased Shuttle-Train Movements of Grain and Oilseeds – August 2013 USDA* goes into greater detail on the effect of the use of shuttle trains on highways.

Exhibit 7 below shows how the type of car usage has changed since 1985, from primary movement type of small strings of one to five cars to trains of more than 50 cars by 2013.

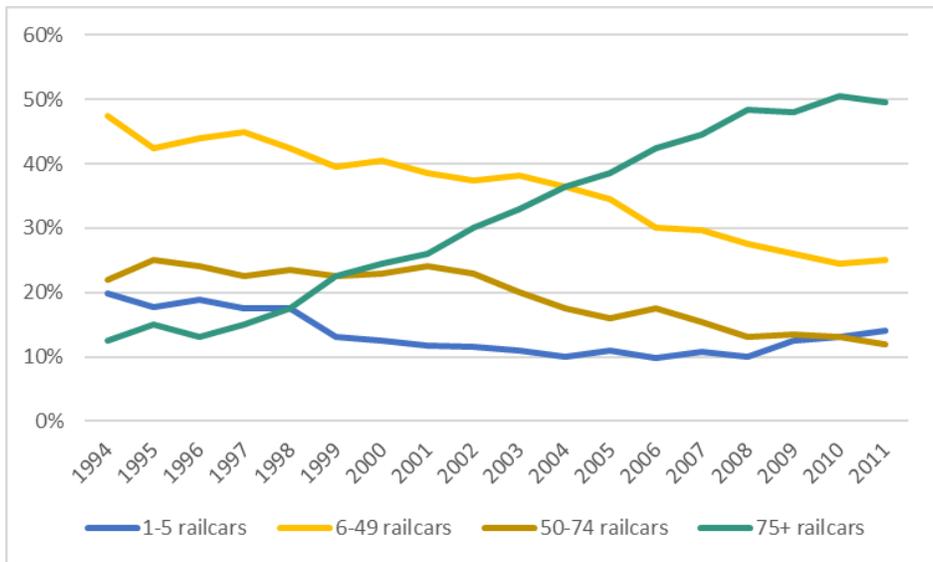
Exhibit 7: Historical Rail Grain Tonnage Movements by Type



Source: USDA analysis of Surface Transportation Board Confidential Waybill Sample

Deregulation in the early 1980s freed the railroads to innovate in many ways that had previously been precluded by the regulatory process. One of these important innovations was lower rates for multiple-rail car shipments, which eventually led to the development of shuttle trains. By 2010, more than 50 percent of rail-hauled grains and oilseeds (by weight) were hauled in sets of 75 plus cars. The chart below shows the percentage of grain moving by the different sizes of car sets.

Exhibit 8: Historical Percentage of Grain Moving by Movement Type



Source: USDA analysis of Surface Transportation Board Confidential Waybill Samples
<https://www.ams.usda.gov/sites/default/files/media/The%20Effects%20of%20Increased%20Shuttle-Train%20Movements%20of%20Grain%20and%20Oilseeds.pdf>

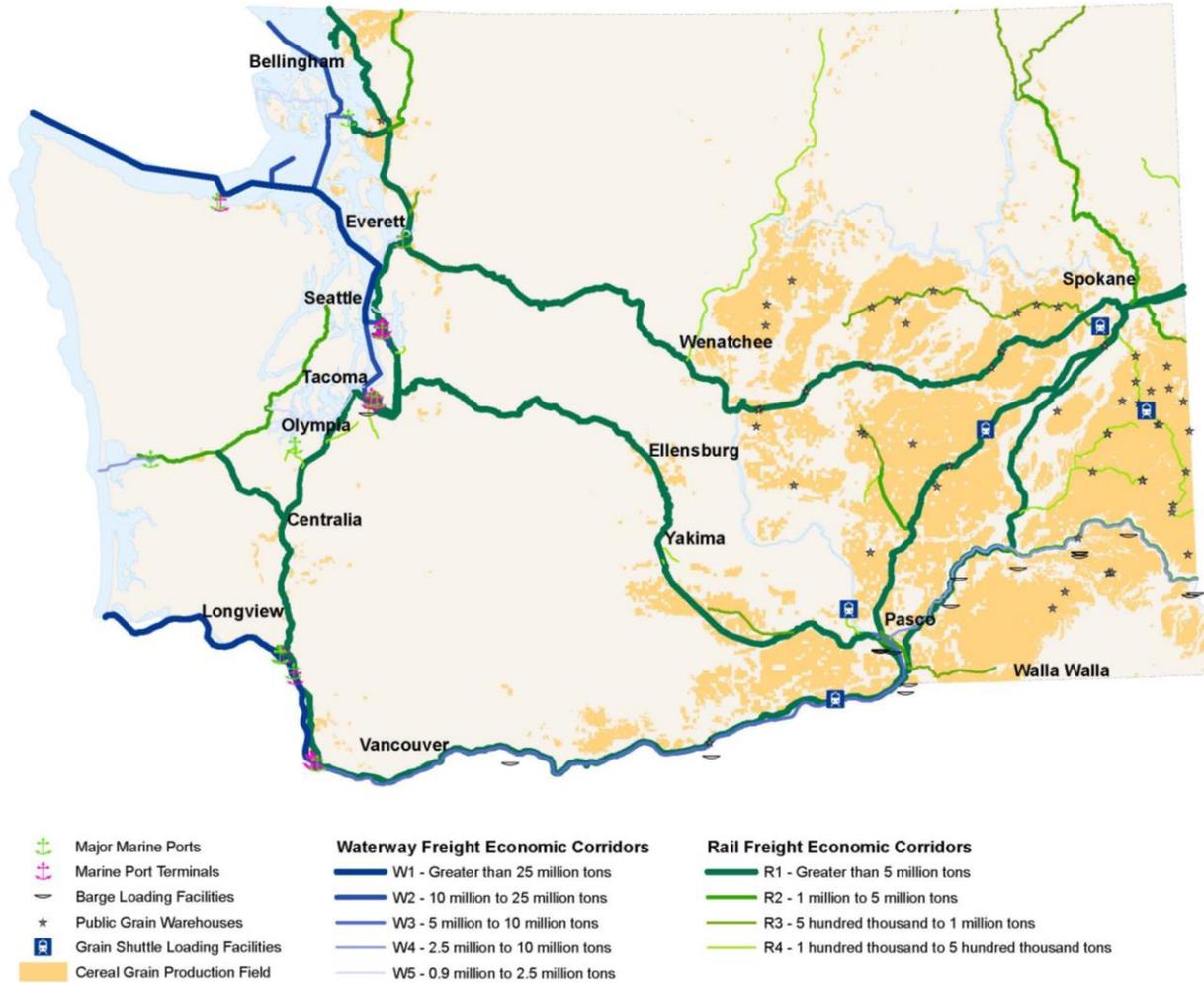
How has the development of shuttle facilities affected the Grain Train?

In recent years, five rail shuttle facilities have been built in eastern Washington. The efficiency of shuttle trains benefits both the railroad and agricultural producers fortunate enough to be near shuttle-loading elevators. Shuttle train rail cars cycle 2.5 to 3 times for every cycle of a non-shuttle train rail car. Grain covered hopper cars used in the main line shuttle services are also heavier and have a larger cubic capacity than the current Grain Train cars. This efficiency results in lower costs to the railroad and a portion of the savings is passed on to the farmer. With this lower transportation cost, shuttle-train loading facilities can offer higher prices to agricultural grain producers. But this higher price can be offset by any additional cost that the producer must bare to deliver their product to the shuttle facility.

Due to the efficiency of the shuttle model, the Class I railroads (BNSF and UP) have moved towards an operating model of encouraging use of shuttle facilities through lower rates and an investment in more full-unit trains. Single car rates are highest with lower per car rates for larger trains with more cars.

Exhibit 9: Grain Train Intermodal Facilities

Grain Shipment Intermodal Facilities Located on Washington State Rail and Waterway Economic Corridors



Source: WSDOT

There are five shuttle facilities in eastern Washington. Three are operating as origination shuttle facilities and two are operating primarily as destination facilities. Additional facilities are reported to be planned.

Origination Shuttle Facilities

The three operating origination shuttle facilities in Washington are:

- The Ritzville Shuttle Facility, owned and operated by Ritzville Warehouse.
- The McCoy Shuttle Facility, owned and operated by McCoy Grain Terminal, LLC.
- The HighLine Shuttle Facility, owned and operated by HighLine Grain, LLC.

Each of these facilities has a slightly different business model/plan, so each affects the transportation of the grain to market differently.

Ritzville Shuttle Facility

The Ritzville Shuttle Facility (also known as the Templin Terminal) is the oldest, opening in 2002. This 110-car shuttle loading facility, located a few miles east of Ritzville on the BNSF mainline, allows quick access to Columbia River export facilities. Since its opening, the facility's business plan has changed as other facilities have been built in eastern Washington. Prior to the opening of the other facilities, the Ritzville Shuttle Facility drew grain from the CW area. Some of this grain was railed to the facility in multi-car strings while other producers trucked deliveries to the facility. The opening of the HighLine facility generated a diversion of a portion of the wheat previously railed into the Ritzville Shuttle Facility. Ritzville, like other Washington shuttle facilities, now imports a large portion of its grain from the Midwest and upper Midwest and holds the grain for future shipment to export facilities on the Columbia River. Thus, in most cases the Grain Train cars will not fit into their current program.

McCoy Shuttle Facility

The McCoy Shuttle Facility in Rosalia has been in operation since its opening in 2013. This facility had a dramatic effect on grain transportation, since it has been able offer a competitive cost for rail transport to river barges for area producers. This facility is able to capture a portion of harvest that can be delivered by rail shuttles versus having the crop transported directly to the river elevators. Since the McCoy group also controls several river facilities, McCoy can respond to changes in freight rates by switching delivery of their grain purchases between the shuttle facility and their river elevators based upon transportation costs and final destination routing.

The McCoy shuttle facility can be used to accumulate area grain from either smaller McCoy facilities or from other elevators. A portion of these other elevators have the ability to move grain by rail to the McCoy Shuttle Facility. Grain Train cars can be used to move the grain by rail to this facility from the local rural elevators.

McCoy also has imported bushels of grain from the Midwest and upper Midwest area and holds the bushels for future shipment to export facilities. In most cases, Grain Train cars would not be a good fit to be used to move grain from the McCoy facility to the export facilities near the coast. This is due to the facility's location near the river, which makes a rail/barge option more efficient than a rail only routing to the export terminals at or near the coast.

HighLine Shuttle Facility

The HighLine Shuttle Facility is the newest facility that opened in spring 2016. It is a 110-car facility with both truck and rail loading and unloading capabilities south of Airway Heights. It was developed to keep rail rates competitive for farmers in five eastern Washington grain cooperatives after BNSF Railway requested the co-ops build a joint shuttle facility to maintain their rate structure.

Prior to the opening of this facility, the cooperative members "co-loaded" 110-car trains by delivering smaller sets of cars (scoot trains) to the BNSF facility in Cheney, where the smaller sets were combined into a 110-car shuttles for delivery by BNSF to export terminals in Portland, Oregon. Once the shuttle train was returned to Cheney by BNSF, the train was unassembled for distribution by the EWG to various locations on the CW. Once returned to the rural elevators, the cars were loaded once again and returned to the BNSF Cheney yard to be re-assembled into a shuttle length train for deliver to the export facilities. Grain from nearby co-ops also can be trucked directly to the facility where it will be loaded onto rail cars.

The facility also is capable of accepting large shuttles into the facility that carry products that will be trucked to local wheat mills, in locations such as Spokane and Cheney. The full effect of this new facility is yet to be determined. The Grain Train should benefit from this facility as it will be accumulating grain from elevators along the CW Line, which is very effective use of the Grain Train cars. It should be noted that the facility has recently acquired rail cars to supplement the capacity available from the WSDOT grain cars.

Destination Facilities

There are two additional shuttle facilities that are primarily used as destination facilities for feed products from outside of the Pacific Northwest that are used in their respective geographic areas. At this time, these facilities have not expressed interest in the Grain Train program.

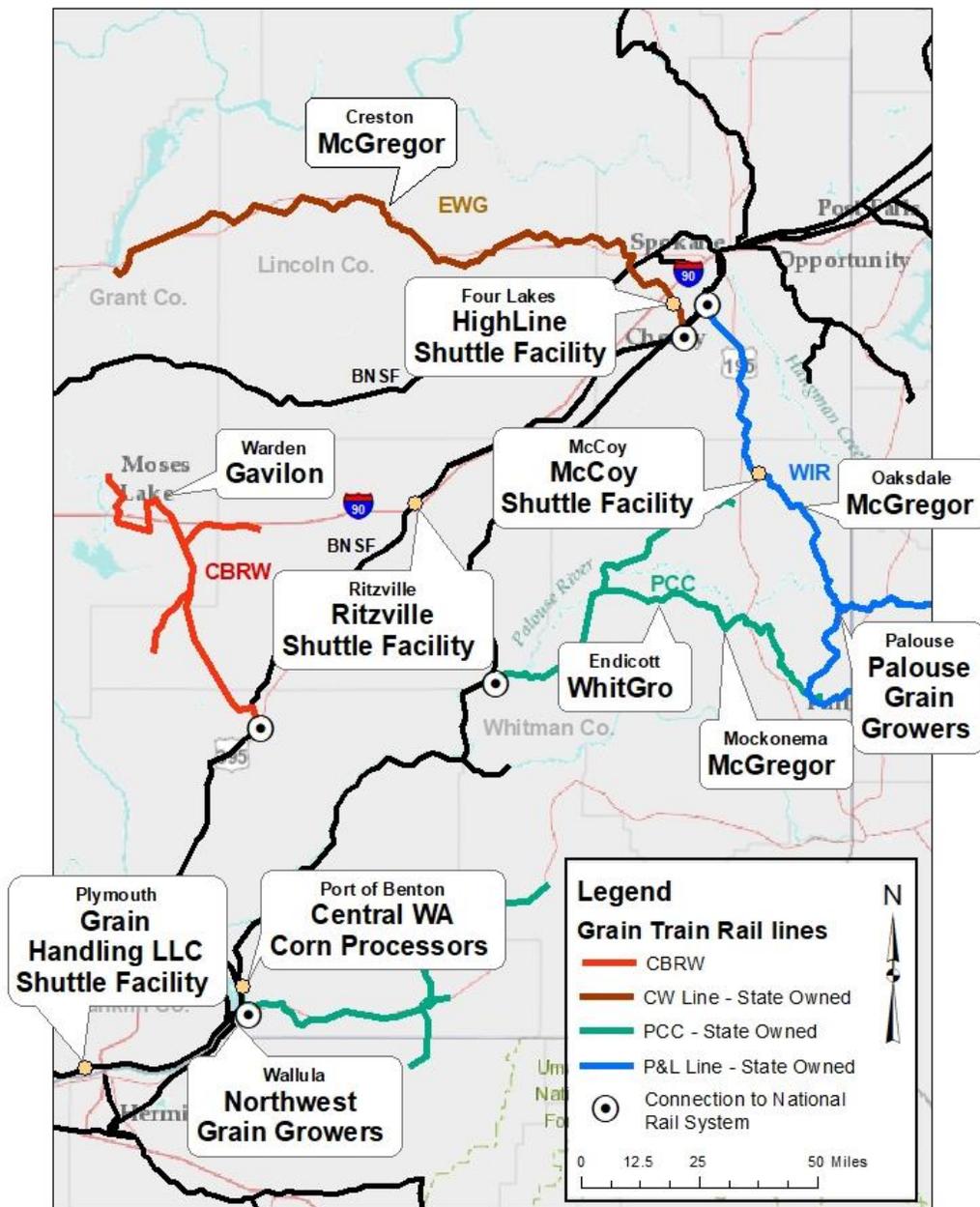
Plymouth Shuttle Facility

A shuttle facility located near Plymouth is owned by Agri-northwest Division of AgReserves, Inc. This facility receives grain from local production and brings in feed products from outside of the area. Most of the product is used as livestock feed in the local area. Currently the facility is used primarily as a destination facility, although the facility does have the ability to ship product out in shuttle train configurations if requested.

Port of Benton Shuttle Facility

A fifth shuttle facility in Washington is in the Horn Rapids Industrial Park of Richland within the Port of Benton. The facility, owned by Central Washington Corn Processors, came on line in the fall 2015. It is a destination facility for feed products. Currently, only equipment for rail unloading is on site.

Exhibit 10: Facilities along the Grain Train Routes

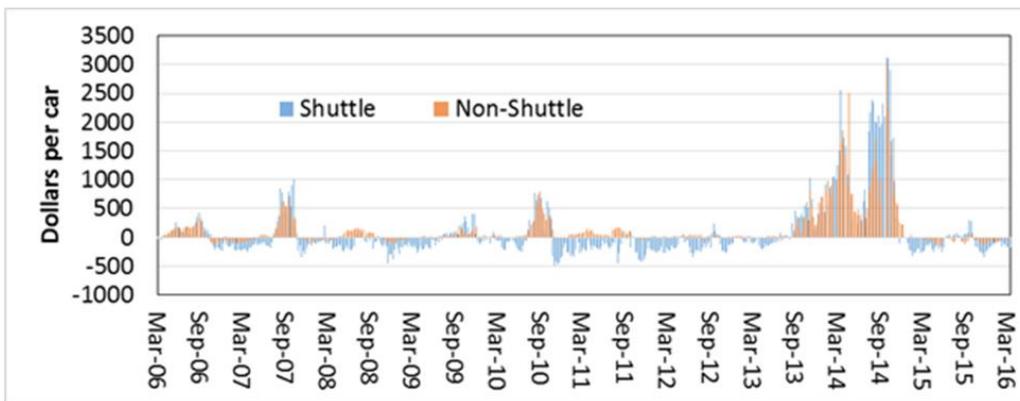


Source: WSDOT

How does Class I pricing and access policies affect the Grain Train?

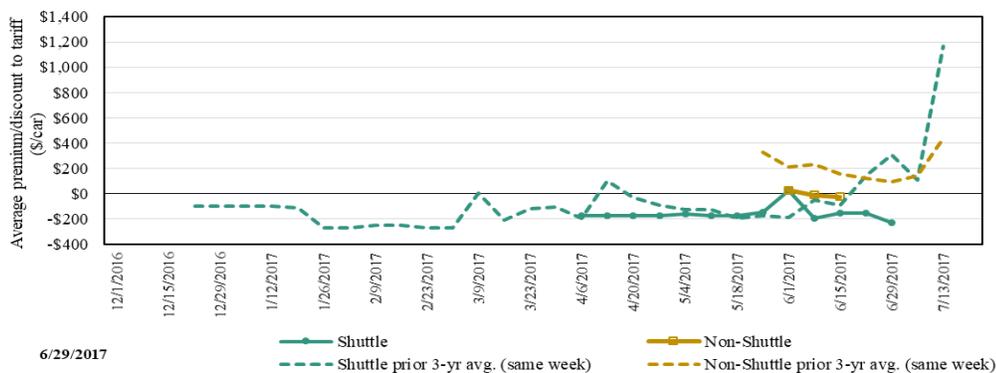
Class I shuttle programs hinge on the supply and demand of rail cars and the ability of the facility to build 110-car trains. In addition, there are seasonal and yearly factors that affect the incentives and therefore the cost of transportation. Virtually all of the current Class I grain programs focus on shuttle shipments as the most cost-effective method of shipping grain by rail. In the recent years, cars have been available on the secondary market, but shippers may not be willing to pay the prices offered for those cars. Pricing of cars is a function of supply and demand. Exhibit 11 demonstrates the variances in shuttle and non-shuttle bid rates on the secondary market compared to the tariff rates from March 2006 to March 2016.

Exhibit 11: Ten-Year History of Bids/Offers for Rail Cars to be Delivered in the Secondary Market



Source: U.S Department of Agriculture

Exhibit 12: Bids/Offers for Rail Cars to be delivered in August 2016, Secondary Market



Source: <https://www.ams.usda.gov/services/transportation-analysis/gtr-datasets>

For a closer look at the rate variability, Exhibit 12 above shows the average cost of cars to be delivered in July 2017 on the secondary shuttle rail car market. The cost for cars ordered the week ending June 28, 2016 were \$75 below the prior week, down \$313 from the previous year. There were no Non-Shuttle rail car bids/offers during the week of June 28, 2017.

What is the Grain Train river barge shuttle?

Of the 36-car Grain Train managed by the Port of Walla Walla, the Port and WSDOT each owns 18 rail cars. To maximize the use of all grain cars, WSDOT and the Port of Walla Walla entered into an agreement in October 2001 with Watco Companies, LLC, the shortline railroad. This agreement allows the cars to be either shipped to a deep-water export facility or shipped as a short-haul shuttle service to a river barge terminal in eastern Washington, such as Port of Wallula on the Columbia River. This train-river barge shuttle service has been effective by offering an economical alternative to truck-to-barge operations.

The river barge shuttle service gives the program another method to achieve one of the program's objectives. Using the river barge shuttle service helps to preserve essential rail service on endangered light density branch lines within their service area.

What is the effect of annual river closures on the movement of grain and the Grain Train?

The Columbia/Snake River system has a yearly closure period for repairs and updates on the aging lock and dam equipment. Most years it will last three to four weeks. But on a periodic basis, the closure will last two to four months. The Corps of Engineers does an excellent job of communicating the length of closure and the start date. Occasionally unforeseen problems can cause the closure to last longer than originally planned. Because of the well-organized communication, there usually are not any shipment delays most years. The rural elevators and export facilities have developed a good method of planning around river closures by shipping heavily before the closure and then again shipping heavily after the re-opening. Prior to the shuttle facilities opening, there had been transportation issues in years when there was a long closure. During these longer closures, export houses usually do not have the capacity to hold enough inventory to fully meet shipment requirements during the closure. Now with multiple shuttle facilities on line, export houses are able to adhere to their shipping schedules. Smaller shipments, such as the 26-car Grain Trains, also are used to augment shipments during river closures. It appears that increased transportation by rail during long closure years could increase the need for Grain Train cars. It should be noted that there was an extended river closure running from mid-December 2016 to mid-March 2017.

Who pays for the transportation of the grain?

Haulage Fees: The grain shippers pay the railroads a haulage fee to transport the grain to its destination. The shortline railroads and the Class I railroads — the UP and the BNSF — share these haulage fees.

Car Hire: The UP and the BNSF then pay the respective shortline railroads a “rental” fee (technically known as “car hire”) for the use of the publicly-owned Grain Train cars. These rental fees are deposited directly into accounts managed by each of the three port districts. A portion is used for grain car maintenance; a portion is set aside for eventual car replacement (based on a 20-year depreciation schedule); and the remainder is set aside and used as a “revolving fund” that is periodically tapped for fleet expansion. Interest earned by the revolving fund remains in the account.

The grain car rental payments that the railroads pay WSDOT cover all associated maintenance and car replacement costs.

How does the Grain Train generate revenue?

As part of the North American rail car fleet, the Grain Train cars are subject to the well-established rail car interchange rules of the Association of American Railroads (AAR). The rail cars of the three Grain Trains are each marked with an identifying car number and the initials of the private shortline railroad to which they are assigned (“PCC” for the Palouse River and Coulee City Railroad, “BLMR” for the Blue Mountain Railroad, or “CBRW” for the Columbia Basin Railway).. These markings permit the short-line railroad/grain train program to collect revenue for their usage for both time in service and miles operated. Car hire is not paid when the cars are on their “home” shortline nor are storage charges assessed.

Time

A portion of the fees collected is based on the amount of time the Grain Train cars are in the possession of a Class I railroad.

Mileage

A portion of the fees collected is based on the distance loaded Grain Train cars travel.

How are the railcar markings used?

The shortline railroad use rail car “markings” to identify their respective cars and to maximize the rental fee (time and mileage) received for the rail cars when the rail cars are in the possession of the Class I railroads. For a loaded car, the shortline railroad is paid for time and mileage and only for time on returning empty cars.

Cars with private markings are not associated with a specific railroad. In these cases, the amount of rental received is greatly reduced. Many rail cars in service around North America are owned by private companies like ADM (Archer Daniels Midland) and AGP (Ag Processing Inc.). Instead of receiving payment for time and mileage for a loaded unit train, the private car owner receives payment for time only. In addition, the private owner receives nothing when the cars return empty.

What are the available options to meet peak demands?

There are several options for securing additional single cars to expand the Grain Train fleet. The first would be the outright purchase of additional cars. The current purchase price for a 10- to 15-year old hopper car is between \$25,000 and \$30,000. These cars will require minimal maintenance before putting into them into service.

An alternative to purchasing cars is to lease cars to meet the variances in demand. Cars are available for leasing from several companies. During a year of large grain production, rates of cars tend to move higher. As previous charts have shown, October through the end of the year tend to be peak shipping months. Grain movement volumes during these months of higher demand typically are two to three times higher than months with lower shipping demand. Car lease rates are related to supply and demand on both a monthly and yearly basis.

Participating in a lease program could meet the peaks and valleys of the demand. A full-service lease would be a program where all costs are known up front. The current price range for this type of lease is \$250 to \$350 per month per car. Typical terms are two to five years. If there are months of increased shipping, that will push car costs up due to demand.

Single car costs for the smaller capacity rail cars tend to have similar cost patterns as the shuttle car values. Years and months when cars with a capacity of 268,000 pounds are in high demand, full service monthly lease rates can run \$400 to \$600 per car per month. During periods of low demand, monthly lease rates would be in the \$200 to \$300 range.

In order to stabilize the cost of leasing, the use of a preferred lease program may be an option. These programs have lease terms that range from two to five years. Rates for leases are highly dependent on the supply and demand of the cars at the time of the lease. Additional cost is incurred to mobilize the cars to put them in service. The costs for leasing cars to meet a short-term peak in demand probably makes this type of lease financially impractical for the Grain Train program.

However, a short (two- to six-month) term lease may be an option, if there is a need for additional cars on a short-term basis. At the time of need, inquires can be made to private companies that specialize in car leasing. Additional inquires also can be made to the Class I railroads.

What are the anticipated effects and potential ramifications of the implementation of the Food Safety and Modernization Act (FSMA) on the use of the current Grain Train cars?

Food and feed safety always has been a priority for companies involved with the production and distribution of products. The Sanitary Food Transportation Act (SFTA) of 2005 set in motion a framework for detailed procedures that apply to various food and feed processes. The Food Safety and Modernization Act (FSMA) final ruling was published in April 2016. Generally, regulations go into effect one year after final ruling which was in April 2017 for large businesses and in 2018 for small businesses. Regulations that were finalized over the course of the last five years will influence the transportation of food and feed products. The latest ruling appoints the Federal Drug Administration (FDA) as the responsible regulatory agency for some procedures. The full extent of the requirements is under review and education sessions were started in July 2016.

In advance of the sessions, several companies took steps to implement the perceived regulations. During the last few years, there has been documented contamination of wheat flour with peanut residue. The residue was traced back to transportation containers that had been used for peanuts. Some companies are adding requirements for documentation of previous loads carried in the cars.

The biggest impact on transportation is that records will need to be maintained on what products were shipped previously in the railcars. For the Grain Train, it is anticipated this will only affect covered hoppers if organic or non-genetically modified grains are being shipped. In that case, a dedicated fleet would be required (BNSF already has introduced such a program) or the rail cars will need to be cleaned before those commodities can be loaded.

It is expected that more extensive documentation procedures will be implemented. While this may require education and enforcement time, it should not cause any substantial effect on the continued operation of the Grain Train cars. These regulations should be monitored by WSDOT and appropriate action taken when required.

Another point to consider is that there is an interest of moving two commodities that have not been traditionally moved by the Grain Train program. The first is flour in covered hoppers which that would require pneumatic gate equipment. The second is pulse crops, such as beans and peas that would be moved in boxcars.

Are there other car program models to consider?

The state of Washington program seems to be unique in its ownership of rail cars for private use. During this research, no other governmental entities in the United States were identified as owning grain cars for public use. As the research proceeds, probing of stakeholders will continue to seek identification of any such programs.

The Canadian government did develop a grain hopper car program purchasing 12,500 cars during the 1970s and 1980s. Individual providences also have purchased cars. Similar to WSDOT's intent, the Canadian government took steps to maintain rail transportation options for its agricultural industry. As of 2015, the Canadian government owned approximately 8,400 cars, which is 25 percent to 30 percent of the total grain cars in Canada. The grain cars that the Canadian government owns are leased to Class I and shortline railroads versus operated as a fleet of small car strings like the Washington program.

Chapter 3: Vision and Policy

The following Strategic Plan pyramid demonstrates the building blocks of a strategic plan. The process starts with identifying what is the Mission of the program. This is followed a long-term vision of what the program is intended to accomplish. Finally, the program goals or objectives are set. These three elements form the foundation for the accomplishment of the program strategies. Once the stakeholders of the program agree on how they want to accomplish the Mission, then Performance Measures can be drafted to measure movement toward the Mission. Finally, Implementation Plans are developed to support the strategies. In this Plan, the recommendations should be considered part of the implementation plan. In addition, the managing partners will need to build out the implementation plan as the initial recommendations are put into place. It should be recognized that a strategic plan is a guide that needs to be refined annually as plans of actions are completed and new issues arise. Once every five years or so, a major relook needs to take place to ensure that the strategies meet current needs and can be crafted to address emerging trends.

Exhibit 13: Strategic Planning Pyramid



Source: The Beckett Group

Vision

A Grain Train Program that offers a fair and equitable allocation of WSDOT owned cars to Washington grain shippers.

Mission

To provide cost-effective grain hopper cars to move Washington grain to market.

Program Goals (Objectives)

- Move Washington-grown products reliably and efficiently to domestic and international markets.
- Help preserve Washington's short line railroads by generating revenue that may lead to better maintained or upgraded rail lines and support long-term infrastructure needs.
- Reduce greenhouse gas emissions and saves fuel by reducing truck shipments.
- Help reduce wear and tear on local roadways by reducing truck vehicle miles traveled (VMT).
- Support a healthy multi-modal transportation system that improves economic vitality and enables development in the region.
- Be self-sustaining and provide funds for the maintenance and preservation of the state-owned short line railroad when adequate funds are available to do so.

Chapter 4: SWOT Analysis

Overview

The effectiveness of the current grain car program was evaluated, as were the current roles and responsibilities of key contract partners. Based upon these findings, recommended changes to improve future operational performance have been offered in Chapter 7: Grain Train Recommendations.

What Are the Program's Strengths, Weaknesses, Opportunities and Threats?

SWOT Analysis

Based upon information gathered throughout the study, a Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis was prepared as shown in Exhibit 14. This analysis tool identifies areas where improvements can be made or where opportunities for growth can be pursued. It also identifies program weaknesses and threats that may require mitigation strategies to be developed to lessen the respective impacts. The analysis is divided into internal and external influences. The internal program conditions are identified under Strengths and Weaknesses. The external environment is described under Opportunities and Threats. Insights gained in the SWOT Analysis can be used to leverage the program's strengths and opportunities, positioning strengths to offset the effects of threats, and identifying actions that can be taken to eliminate or reduce weaknesses.

Additional feedback gathered in the program's stakeholder interviews are summarized by theme in Appendix C.

Exhibit 14: Strengths, Weaknesses, Opportunities and Threats Analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • The program has been in place and has been successful in the past. • Not charging demurrage to shippers is a plus for shippers. • The current 268,000-pound cars are the desired size for use on the shortline tracks. • State cars help to keep short lines viable as a shipping option. • The program keeps trucks off of the road. • The program reduces road maintenance cost. In the past, cash flow from the program has provided funds for maintenance on the state-owned shortline tracks. • Revenues have provided funds to cover operations, maintenance and a set aside for car replacement. • It offers a transportation option to farmers. • In most cases, the program has reduced the transportation cost for shippers. 	<ul style="list-style-type: none"> • Current operations are not consistent with the contracts. • There is limited operational and administrative oversight. • The program is not widely understood by entities that use the cars, nor by entities that would like access to the cars. • The cars have to run over shortline tracks that have suffered from lack of maintenance and capital funding. • There is a perception that there is a lack of stable funding from the state. • There is a lack of vertical communication between all parties/stakeholders of the program. • There is limited communication to and between stakeholders about car usage programs. • Concerns over the potential of losing the car program, or a reallocation of cars, causes shippers and operators to make alternative plans. There are stakeholder concerns regarding the perceived inability of WSDOT and Ports to fully support and understand the car program. • To some stakeholders, it looks like the program's benefits and viability is always changing. • Cars are wearing out. A maintenance program/schedule needs to be put in place.

OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • State cars are positioned for movement on shortline tracks (i.e. 268,000-pound size). • Niche markets: legumes, specialty commodities, organic and non-GMO, etc. • May be a need for box cars. • Negotiated pricing for private runs on Class I tracks. • Cars can be used for identity preserved (IP) shipments because the cars have traceability. • Supplying cars during times of lack or limited car availability from the mainline railroads. • Most of the time, state cars are the most efficient method of grain movement. • Negotiated Class I rates would secure shipment program. • More grain could move by rail if rates were negotiated • Some export houses and processors need bushels delivered in less than shuttle train size allotments. • Higher usage can occur during river closures. • If dams are breached, rail usage would go up. • Enhanced “scoot” car movement to the shuttle facilities and to barge facilities. • Furnishing cars to Great Western Malting and others. • With the lack of container shipment at Portland, legumes from across the state need to get to Seattle/Tacoma for export. • Good use of cars when operated in a planned program. 	<ul style="list-style-type: none"> • Scoot service relies on smaller elevators shipping by rail to shuttle elevators. • It is extremely difficult for a shipper to get shuttle load incentives when using state cars. • 286,000-pound cars are the size of choice for use on Class I tracks. • Federal Drug Administration Food Safety Modernization Act ((FDA-FSMA) regulations. • Rail rates are not always competitive with truck rates over short distances. • Movement by rail is less flexible than by truck. • There are currently no shipper commitments to use the cars. State car movement conflicts with Class I programs of efficient operations. • Cars are not used consistently by shippers, only when the shippers want to use the cars (car fleet is not achieving an average cycle count, i.e., Return on Investment (ROI) is low. • Class I rail rates might make rail shipment prohibitive for smaller car sets versus 110-car shuttles. • State cars are viewed by nonusers as captive cars to the current/regular users. • Not knowing the stability of the program, shippers and operators could buy their own cars, thus, driving the fleet usage down further. • Lack of commitment by elevators to use cars. • River transportation providers want to keep grain movements on the river. Thus, they price river movements very competitively.

What Are the Managing Port Perceptions?

Currently, there are three managing port partners: Port of Whitman County, Port of Walla Walla and Port of Moses Lake. The Port of Whitman County and the Port of Walla Walla believe the program has value to their port districts and their respective port stakeholders. The Port of Moses Lake would like to get out of the Grain Train Program, as it does not align with its lines of business nor does the production of grain within Grant County fall within their port district.

All three of the managing Ports stated that the management “fee” does not cover their administrative costs of the program. In one case, the Port has decided not to accept a fee, because the administrative process to bill the fee is more expensive than the actual fee that would be received.

The Ports of Whitman County and Walla Walla are content with the accounting process of the program. Program transactions administered by the Port of Moses Lake are very complicated due to the multiple parties involved in the process.

In all three cases, there is limited to no transparency (i.e. detailed reports) of railcar activity passed on to the respective managing Ports by the railroads. This provides challenges in the evaluation of both historical and current program performance.

Roles of the contractual parties are not clear and need to be updated and clarified.

What Are the Current Roles and Responsibilities?

The following summary of roles and responsibilities is based upon the contracts that each of the three port partners have with WSDOT regarding the Grain Train Program. The current structure was developed with the purchase of the first string of cars by the state in 1995. With each subsequent purchase of cars, a contract was written between the state, the respective managing Port, the respective shortline railroad and a local shipper association. Although, each Port contract is slightly different, the following roles and responsibilities are reflected in each of the three agreements.

State

WSDOT is responsible for:

- Retaining the ownership of the covered hopper grain cars.
- Determining the number of rail grain cars to place into service in partnership with each of the shipper associations and railroads in each of the respective managing Ports (Moses Lake, Walla Walla and Whitman County).

Ports

The Ports are responsible for:

- Establishing and managing an interest-bearing account, per RCW 36.29.020 and RCW 53.36.050, known as the “Grain Car Revolving Fund.” This account is for the purpose of depositing any revenues accruing from the use of the cars; reimbursing respective railroads for actual car maintenance expenses; and developing a reserve to replace or augment the covered hopper grain car fleet in the future.
- Collecting up to 1 percent of the monthly revenues from the grain cars as compensation for management services.
- Providing quarterly statements to the state, which contains information on deposits, withdrawals and account balances in the revolving funds.

Railroad

The railroads are responsible for:

- Managing and operating the grain cars in a dedicated service between grain elevators on the railroad and grain handling facilities.
- Expediting the transfer of empty covered hopper grain cars to loading facilities and loaded covered hopper grain cars back to the interchange points.
- Collecting penalty fees, demurrage payments, “per diem” fees and other income and fees generated from the cars. These funds are to be forwarded to the Ports at least once per month.
- Deriving tariff revenues from the transportation of the covered hopper cars that remain with the railroads.
- Submitting quarterly reports to the respective Port and WSDOT, which enumerate the grain car usage, shipper detention, shipper penalties and off branch income. The reports include car volume by shippers, commodities transported, trips per month, round trip times, idle time and loading time. The report also includes a detailed listing of any repairs made to the cars by car number and any problems encountered in their operation. The report also includes information on the number of non-state cars transported.
- Providing the essential maintenance and repairs of the cars as required to meet Association of American Railroad (AAR) requirements for interchange service.
- Managing the cars is the sole responsibility of the railroad.
- Maintaining the cars and paying any of the expenses incurred for any calendar year that exceed funds available in the Grain Car Revolving funds.

- Providing transportation to other shippers on their system, if the current shippers are unable to use the cars, provided such use:
 - Reduces heavy truck traffic on Washington roads;
 - Preserves Washington’s light density rail system; and
 - Provides cost effective modal choices to shippers.

Shipper Associations

Agreed to:

- Promptly load the covered hopper cars when delivered.
- Pay AAR demurrage policy and tariff rates applied to the cars detained by the shippers.

In the review of the current Grain Train Program, it appears that the current management structure may not be a sustainable model going forward, primarily because shipper associations that committed to using the cars are no longer viable organizations.

In discussions with the Port of Whitman County, it was proposed that a new structure could be designed to give the Ports more authority and oversight to the grain cars assigned to their respective Port. This includes:

- Setting the rates that provide a fair market return on the cars.
- Providing a mechanism for the equitable distribution of the available cars.
- Developing a mechanism to enable the movement of the cars between the Port partners, depending on the shippers’ demand and willingness to pay.

What Are the Thoughts on Changes to the Current Roles and Responsibilities?

The Port of Whitman County believes that economics should be the driver to a fair and equitable arrangement between the shippers, the railroads and the ports. The economics of supply and demand also should answer the questions on rates and the size of the fleet. It was discussed that a mechanism could be based on an auction methodology, where WSDOT puts out a “Request for Demand” notification that allows all interested parties to bid on the cars. This will provide information on the current demand for the cars at different price ranges. This methodology will “test” the market demand. In addition, it will allow shippers that do not think they have access to the cars to show their commitment to car usage at a specific price per car. If the demand justifies the purchase of additional cars, the funds from the current revolving accounts should be used to purchase the additional cars. This is especially timely as the current price for used cars is low compared to historical prices.

The Port of Whitman County proposed the following roles and responsibilities:

1. WSDOT would be responsible:
 - To procure the grain train cars.
 - For any rehabilitation required on the purchased cars.
 - For compliance of the cars to meet United States Department of Transportation and Surface Transportation Board requirements.

2. Managing Ports would be responsible for:
 - Administering the program, such as setting rates, accounting activities and reporting currently required by the program.
 - Owning the relationship with the shippers.
 - Owning the relationship with the railroads.
 - Being the clearing house for shipper and railroad issues.
 - Being transparent with the program activities.
 - Being the point of communication of the results/outcomes/challenges to outside parties, including the Washington Rail Caucus.

3. Railroads responsibilities would remain as stated in prior contracts, except:
 - The railroad operator will now take direction from the respective Port.
 - Once the direction is given by the Port, the railroad and shippers will be responsible for determining the logistics of moving the grain from place to place.

A second option is to turn the program over to the Palouse River and Coulee City (PCC) Rail Authority. To date, a search of the RCW's for any references that would prevent this change in management structure has not been found. In reviewing the PCC Strategic Plan for 2015-2025, the excerpt highlighted below may support the consultant team's initial thoughts on this option. Since the majority of the current cars run on the PCC system, the PCC Rail Authority should be looked at as an alternative management entity for the Grain Train or parts of the Grain Train. These "parts" are the cars currently assigned to the Port of Moses Lake, which include 24 cars assigned to the Columbia Basin Railroad (CBRW) and 29 cars assigned with the brand AOK to the CW Line. Recently, the Port of Moses Lake expressed its desire to leave the Grain Train Program since the program does not align with their current goals or lines of business and costs them money to administer. That being the case, the current cars that are assigned to the Port of Moses Lake need a new administrator to provide the monthly and quarterly accounting for the CBRW and AOK marked cars.

Excerpt from **The Palouse River and Coulee City (PCC) Rail System 2015-2025 Strategic**

Plan

“ADDITIONAL PCC RAIL AUTHORITY STAFF CAN PROVIDE SOLUTIONS

As the PCC Rail Authority was established to manage and oversee the business and economic development elements of operating leases on the PCC rail lines, there is opportunity to ensure the Authority is adequately funded and resource supported to fulfill the Legislature’s expectations. For instance, with minimal financing, current RTPO resources that are typically leveraged to support a regional economic development organization could also be leveraged to provide Authority staff support. A minimal operational budget that provides for staff support would assist the Authority with implementing the following prescribed responsibilities:

- Periodically gauge general rail customer satisfaction. This could include but is not limited to surveys, quarterly meetings, and similar items/activities*
- Collaborate with customers and railroads to improve service and resolve problems*
- Monitor service provision to customers for compliance with operating lease provisions relating to business and economic development*
- Recommend railroad operator requests to change service levels to WSDOT. The recommendations include quantifiable input on customer service, market conditions, customer needs, and any other basis for the request. WSDOT is responsible for making the final decision on the request*
- Oversee the railroads' preparation of the Annual Operating Plans required by the leases to the extent they relate to business and economic development. Oversight in this context means reviewing submitted plans and making recommendations to the railroads and the WSDOT regarding only the Current Status Report and Annual Service Plan elements of the Annual Operating Plan*
- Serve as a conduit for economic development utilizing the three branches of the former Palouse River and Coulee City Railroad Lines. This includes individual members of the PCC Rail Authority working with their respective Associate Development Offices and/or Economic Development Councils and the Department of Community Trade and Economic Development to promote economic development and identify funding sources. The PCC Rail Authority may also submit grant applications for public funding*
- Maintain communications with WSDOT and the railroads*
- Meet regularly to accomplish the above tasks, beyond the current quarterly meetings with WSDOT to share information, coordinate activities, and discuss common issues”*

Based upon a review of the above recommendation in the PCC Strategic Plan, it appears the option of looking at the PCC Rail Authority as an oversight entity may be in alignment with the goals and strategies identified for the PCC Rail Authority. This option should not be considered as a near-term option since the PCC Rail Authority is still in its own developmental stages. A transfer of the Grain Train Program to the PCC Rail Authority should be re-evaluated in two years.

Chapter 5: Railcar Fleet Size and Allocation Strategy

Research and stakeholder outreach was used to build the basis for a recommendation on the optimal Railcar Fleet Size and Allocation Methodology,

First, the factors that need to be included in such a determination were identified. Second, with those considerations identified, a Request for Information (RFI) was sent to the stakeholders of record for their input into their need for cars, as well questions regarding routing, use of modes and size of cars. Based on that input, and other information gathered during this process, a recommendation was developed on the fleet size and allocation methodology. This chapter describes the elements and input received. The recommendations are found in Chapter 7.

What is the optimal fleet size?

The optimal fleet size is dependent on at least four factors or questions. First, the question to be answered by the managing partners is: Are they willing to try the “auction” approach to pricing the cars? If yes, then the bid price will determine the demand for cars. If the demand for cars exceeds the current fleet, then an analysis can be done to see if the price can sustain the purchase and operation of additional cars. For example: if the lease price is set at approximately 90% of market value, there is probably a substantial demand from current shippers who are paying 100% of the market rate for cars. For example, in the past, The McCoy Group has leased up to 100 cars at a time, assumed to be at market rate.

The second factor is the ability/desire to move the Grain Train cars on Class I tracks. BNSF noted they do not want these older, smaller cars on their tracks. Conversely, UP noted they are willing to have the Grain Train cars moving on their tracks.

The third factor to consider in this discussion is how the cars will be allocated in the future. This makes the analysis challenging since it is important to know if companies such as Gavilon and the Highline Grain group will continue to have access to and demand for Grain Train cars, since they participate in the program through the Port the Moses Lake. If Moses Lake drops out and the elevators along that line do not have access to cars, that may decrease the overall demand for the cars.

The fourth factor to consider is estimating the level of demand from shippers that currently do not have Grain Train cars. Thus, the sizing of the fleet is dependent on whether the managing partners want to attempt an auction method to set the price of the cars. It is believed an auction will provide much greater insight into the demand for cars at different pricing levels. Once this information is gathered, a recommendation on the optimal fleet size can be formed

based on facts and financial calculations that take into account such factors as anticipated return on investment and pay back periods.

What Are the Options to a Fair and Equitable Method to Allocate Cars as Well as Price the Cars Near Market Rates?

Option 1: Allocation of Cars by “Willingness to Pay”

To determine demand for cars, an “auction” can be facilitated for the current cars. In addition to helping to set a competitive price for the rental of cars, this option allows shippers to indicate at each price level how many cars they are willing to commit to leasing on a 1-, 2- or 3-year basis. This will provide the managing partners with written documentation of the demand for current and potential cars.

Pros:

The “auction” format will allow the state and the managing ports to obtain demand information that is currently only received either verbally from a specific shipper or by reference or hearsay. This format will allow the shippers and the managing partners a transparent and fair approach to car allocation based on the shippers’ willingness to pay. It also will provide access to the cars for those who shippers who have not previously been involved in the Grain Train program.

Cons:

The allocation of the cars will be determined by the shippers’ willingness and ability to pay versus a distribution by port district as under the current program. The auction may cause all cars to go to one shipper or to a single short line.

Option 2: Assemble all State-Owned Cars into One Shuttle Train

Assemble all state-owned cars into a “shuttle train” that can deliver product from the shuttle facilities to the export terminals as a unit train.

Pros:

This will improve the opportunity to generate higher revenues than the program is currently achieving by keeping the cars captive as smaller train sets on the short lines.

Cons:

The current cars in the program’s inventory are not jumbo hopper cars, so a shuttle train consisting of 110 263,000-pound cars, will deliver 36,000 bushels less than a shuttle train with the same number of jumbo hopper cars. The mainline railroads prefer to use cars out of their own inventory in their dedicated shuttle train configurations to achieve their performance and

cost expectations. Therefore, there may not be a market for a shuttle train consisting of the smaller cars.

What Are the Options for the Reassignment of the Port of Moses Lake Cars?

Currently, the Port of Moses Lake manages two sets of cars:

A Grain Train set originally sized at 27 cars serves grain elevators on the Columbia Basin Rail (CBRW) line from Connell to Moses Lake. These cars are interchanged by the CBRW with BNSF at Connell for further transport to Washington ports. Due to two cars experiencing unrepairable damages and a third car that is ineligible to travel on the mainline, this set of cars is now at 24 cars.

The second set of cars that Port of Moses Lake administers is the AOK branded cars (29 cars). This trainset is currently assigned to the CW Branch.

Historical data over last two years shows use of the CBRW cars has been dropping due to current fuel prices that make trucks transportation price-competitive with rail transportation.

Option 1: Assign cars to another managing partner

One option for the cars is to reallocate them to the remaining two ports, Walla Walla and Whitman County, who have both expressed an interest in increasing their car allocation.

Pros:

The Port of Moses Lake would like these cars reassigned to another party as the administration of the program takes port resources and time away from projects and programs that better align with their business and economic development strategies.

Cons:

The reallocation of these cars to the other port partners could remove 24 cars from the CBRW and 29 cars from the CW Line if another managing partner cannot be secured for the administration of the cars in their current locations.

Option 2: Assign cars to a Private Entity

This option would allow one or more of the private entities currently using or transporting the cars on the CBRW line or the CW Line to manage the Moses Lake car fleet.

Pros:

The shippers then have the responsibility of car usage and the trainsets remain on the rail lines that are currently using them.

Cons:

The premise of the development of Grain Train program was that the cars would remain under public ownership. Although, selling them to current users is an option, it does not follow the intent of the program.

Option 3: Assign cars to the PCC Rail Authority

This option would turn the cars over to the PCC Rail Authority for its oversight, to ensure farmers along the PCC have cars to meet their needs. The managing partners acknowledge the current PCC Rail Authority has no staff or resources available to take on these new tasks. This can be solved by moving funds from the Grain Train Revolving Funds to the PCC Rail Authority for the express purpose of hiring resources to oversee and provide appropriate support for the Grain Train.

Pros:

The cars will be managed by an entity that has a responsibility for economic activity on the three short lines owned by the state.

Cons:

Current car activity includes movement on tracks not managed by the PCC Rail Authority. Keeping the trainsets on their current rail lines, which are not under the auspices of the PCC Rail Authority, is in conflict with the PCC's mission.

Option 4: WSDOT administers and manages program

Having WSDOT assume all responsibility for administering and managing the Grain Train program on a day-to-day basis would remove redundancies. WSDOT would approve all payments and purchases. The ports would not need to be involved in railroad operations and accounting.

Pros:

The cars will be managed by an entity that already has responsibility for approval of grain train activities, including accounting and utilization.

Cons:

Ports would lose the revenue they currently generate in administration fees.

Chapter 6: Performance Measures

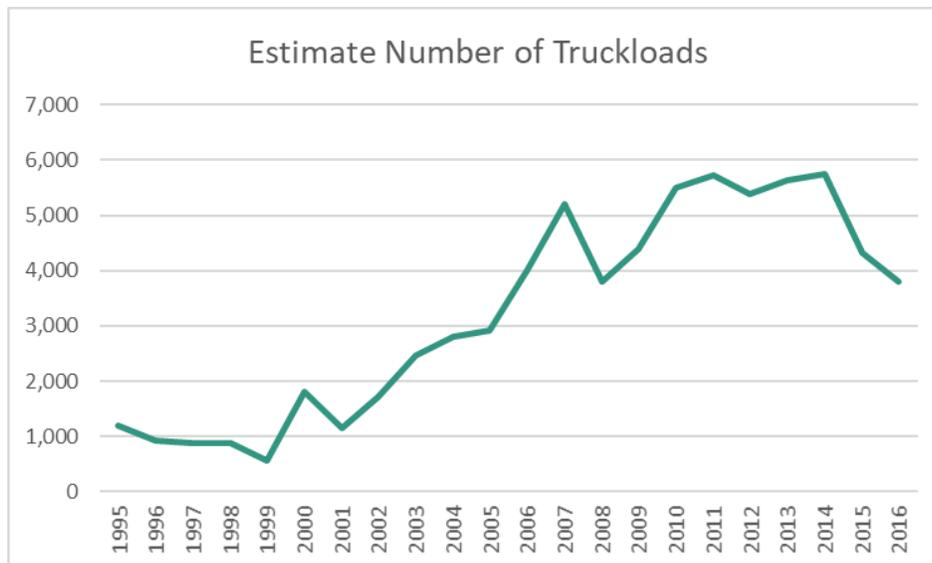
Program performance metrics were developed to help measure the Grain Train program's value and effectiveness. Current reporting data was reviewed to select a set of performance metrics that can be easily reported. A number of measurement ideas were analyzed, such as individual car usage, revenue per car, average car usage, average miles traveled, and days in service. It became clear that these metrics were not easy to obtain on a routine basis

Thus, the selected performance measures are based upon ease of collection, value to the grain train's stakeholders and alignment with program goals.

Performance Measures

1. Number of trucks diverted from state road each year.
2. Number of vehicle miles traveled (VMT) removed for state roadway each year
3. Number of gallons of fuel saved each year
4. Amount of greenhouse gas emission (CO²) saved by the program each year
5. Amount of cash generated each year that is available for reinvestment into the program
6. Improved roadway safety as measure by the estimate in social costs saved from prevented accidents on the roadways.

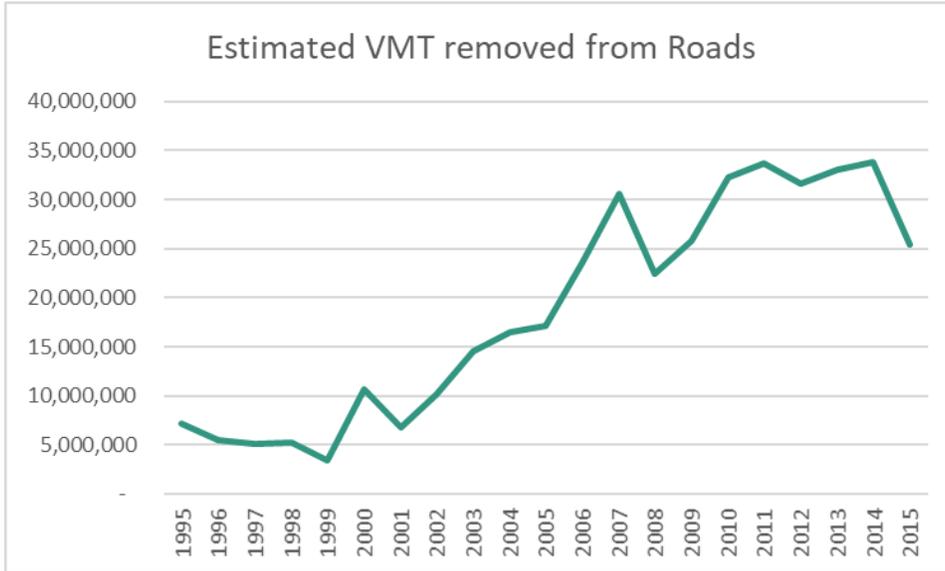
Exhibit 15: Number of Trucks Diverted



Source: WSDOT Rail, Freight, and Ports Division

It is estimated that almost 25,000 truckloads have been removed from use on Washington’s highways and roads because of product being moved by the Grain Train fleet since its inception in 1995.

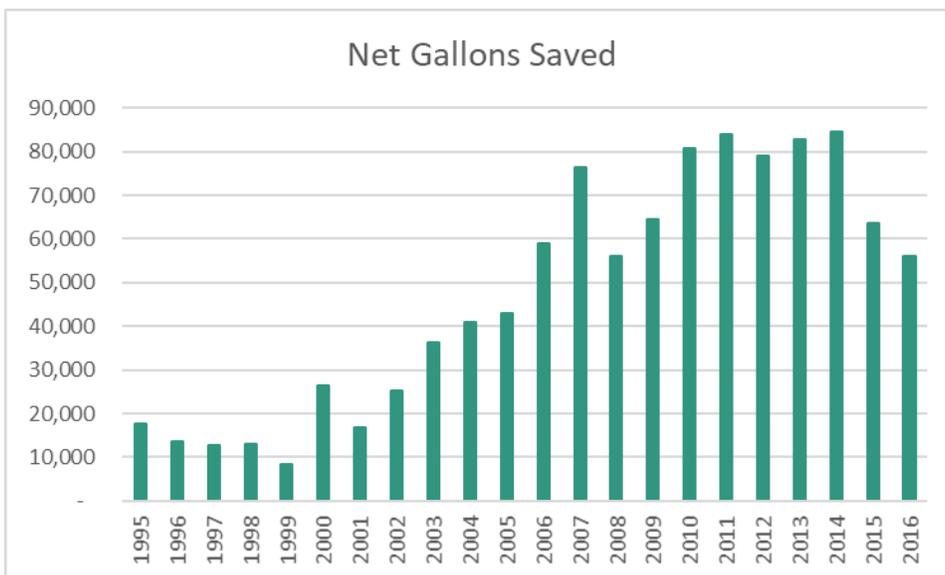
Exhibit 16: Number of VTM removed for state roadway each year



Source: WSDOT Rail, Freight, and Ports Division

The Grain Train has removed 416.4 million vehicle ton miles off of Washington roads and highways since 1995.

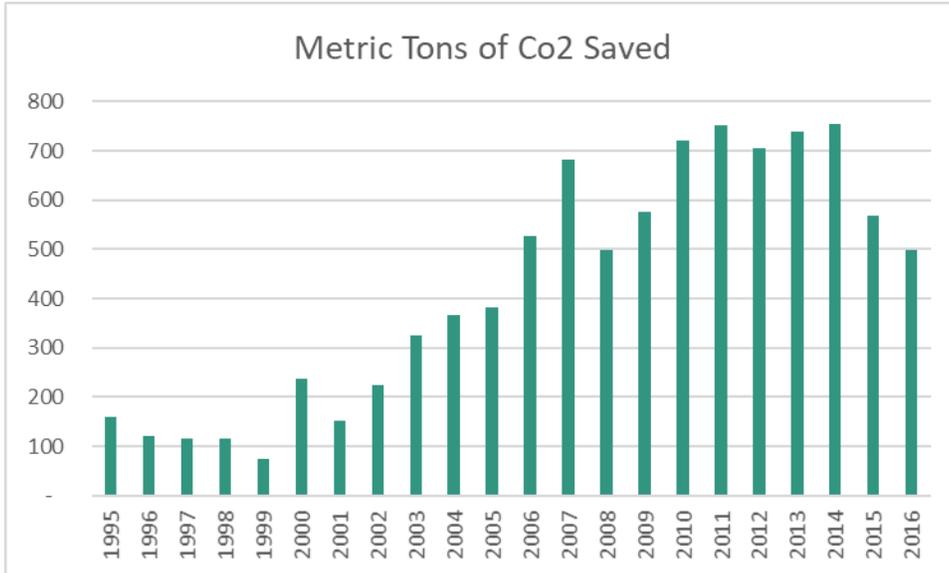
Exhibit 17: Number of gallons of fuel saved each year



Source: WSDOT Rail, Freight, and Ports Division

Since the inception of the Grain Train in 1995, more than 1 million gallons of fuel have been saved, as a result of more fuel-efficient trains, compared to trucks.

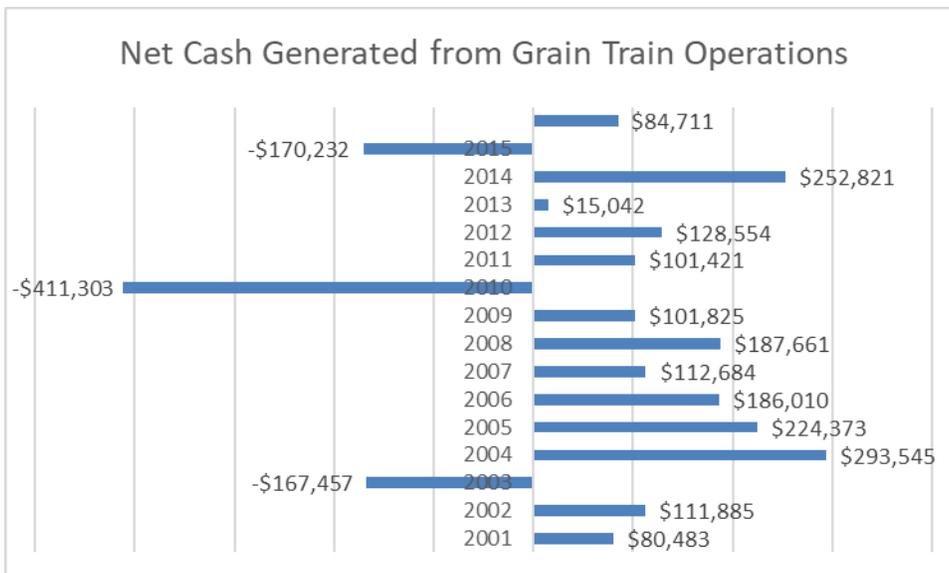
Exhibit 18: Amount of greenhouse gas emissions (CO²) saved by the program each year



Source: WSDOT Rail, Freight, and Ports Division

Moving grain by rail versus truck, has saved more than 9,295 metric tons of CO² since 1995.

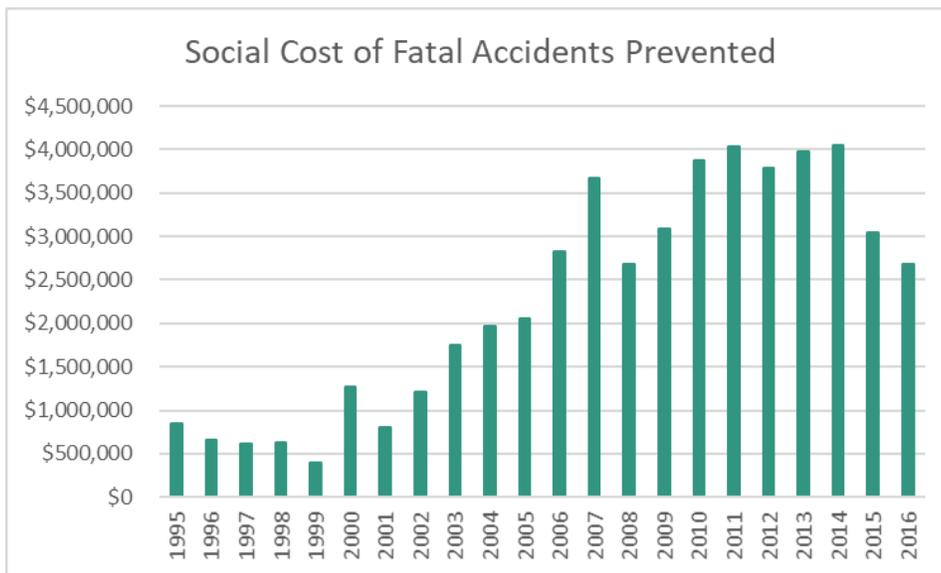
Exhibit 19: Amount of cash generated each year available for reinvestment into the program



Source: WSDOT Rail, Freight, and Ports Division

At least two cash transfers were made over the life of the program for infrastructure improvements on the WSDOT-owned lines. As of December 31, 2016, the Grain Train operating fund balance was \$1,372,926. In addition, there is \$1,323,285 set aside in the Grain Car Replacement Account as of December 31, 2016. Currently, there are sufficient funds in the replacement account to purchase approximately 44 cars at \$30,000 each. It is recommended that cars be replaced when their respective maintenance costs become excessive and the economic return on the costs no longer provide any additional economic life to the car.

Exhibit 20: Improved roadway safety measured by the estimate in social costs saved from prevented accidents on the roadways.



Source: WSDOT Rail, Freight, and Ports Division

Using values set by the USDOT, since 1995, it is estimated that 5.21 lives have been saved by removing 24,786 trucks from Washington state roads and highways. These saved lives are estimated to be the equivalent of \$50 million saved in societal costs.

It is recommended that these Performance Measures will be used to communicate the programs progress and results to stakeholders and the state on a systematic basis.

Chapter 7: Grain Train Program Recommendations

Summary of Current Situation

The majority of Grain Train railcars have approximately 15 years left before they cannot be interchanged with the Class I mainlines due to age. At that point, the cars will be 50 years old

and confined to operating exclusively on a shortline. Based on the age of the cars, it is anticipated that maintenance costs will increase as the cars continue to age.

Additionally, the program revenues will be limited going forward with the cars currently running on shortlines as scoot trains. Currently, only an occasional long haul is made to the coast on a Class I with Grain Train cars. This trend was evident beginning in Q2-2015, when program car hire revenues dropped due primarily to the CWBR cars not being used to deliver grain to export terminals at the coast. It is anticipated revenues for that fleet will rebound as the Gavilon facility restarts its rail program. However, it is anticipated the other Grain Train fleets will continue to generate only modest revenues as they have done in the past.

It is recommended that the current state-owned railcar fleet size of 98 be expanded through both purchase and leasing of additional cars to meet the demand identified during the development of this Plan.

An allocation strategy based on responses to an annual RFI is recommended to start with the FY2018 harvest season to annually re-set the pricing method and to let the market determine the economics of supply and demand for the program. If the demand identified through the RFI process is not sufficient to be handled through reallocation of the current fleet, based upon the availability of funds, it is recommended that the managing partners consider expanding the fleet to match the commitments of the users.

Detailed Recommendations

Recommendation 1: Increase the number of cars in the fleet to ensure that the number of cars in each fleet is adequate to support small unit trains of 25 or more cars which is required to secure the best rates.

It is recommended that:

- a) WSDOT purchase cars that were destroyed or damaged beyond repair over the last few years and additional cars to ensure all of the fleets have an appropriate number of cars.
- b) WSDOT should also move cars between the fleets based on 1) the number of years remaining in their 50-year life cycle and 2) the service the cars will perform within an individual fleet.

Exhibit 21: Current Grain Train Fleet

Owned Grain Car Current Fleet				
Managing Port	Car Marks	WSDOT ownership #	Port ownership #	Railroad Line Assignment
Walla Walla	PCC 1XXX PCC 2XXX	18	18	Blue Mountain Railroad (subsidiary of Watco) and Palouse River and Coulee City Railroad (PCC)
Whitman Co.	PCC 3XXX	26		PV Hooper line of the PCC operated by Washington and Idaho Railroad
Moses Lake	CBRW 1XXX	24		Columbia Basin Railroad
Moses Lake	AOK 18XXXX CBRW 1xxx	29 <u>1</u> <u>30</u>		Currently on the CW line operated by EWG
Total Owned Grain Cars		98	18	
Combined Fleet			116	

Source: WSDOT Rail, Freight, and Ports Division

This will bring the fleet on the Columbia Basin to 29 cars, enabling CBRW to obtain a discounted 25-car unit price from the BNSF to PNW export facilities at all times. (See Appendix A: for car details)

- c) WSDOT lease up to 25 cars to supplement the current state-owned grain train fleet of 98 if forecasted usage is confirmed in writing by the shortlines.

Based upon demand information gathered during this study, as summarized in Exhibit 22, it is estimated there is a total need for up to 128 state-owned cars in addition to the 18 cars owned by the Port of Walla Walla.

Summary of requests:

- The Columbia Basin has asked for a large enough fleet of cars to benefit from the lower rate that Class 1 railroads offer if more than 25 cars are shipped at once.
- The Washington and Idaho has asked for 30 cars to run in scoot train service.
- The Watco operated lines indicate they had the right number of cars.

- Frontier has asked about cars to support potential demand on both the Port of Royal Slope and Port of Columbia railroads⁴.

It is recommended these additional cars be leased versus purchased at this time. This recommendation is based upon the fluidity of the market and the desire by the Grain Train partners to remain flexible as the new and current users demonstrate their usage. This also will allow the program’s managing partners to review the current allocation model versus demand and prepare for any changes to the allocation methods by FY2018. It is estimated that cars can be leased for \$225-\$300 per car per month to meet this request for additional cars⁵.

Exhibit 22: Proposed Fleet

State-Owned Fleet	
Current state-owned fleet	98
Recommended purchase cars	5
Available state-owned fleet	103
Identified Demand	
Columbia Basin Railroad	29
Blue Mountain Railroad	18
Whitman Co	26
Frontier ⁴	25
W&I/ McCoy	30
Estimated Demand	128
Potential Number of Cars needed to be Leased for FY2017 harvest	25

Source: WSDOT Rail, Freight, and Ports Division

Recommendation 2: Issue an Annual RFI to determine demand

To determine actual demand for cars in a region or for a set time period, it is recommended that a yearly RFP/RFI be conducted. Potential car users will be required once a year to notify the state of their planned use for cars. WSDOT will then use this information to evaluate the program’s supply of cars.

It should be noted that the Grain Train fleet size is not fixed. WSDOT is able to add cars based on demand. Thus, WSDOT can adjust the fleet size and car allocation accordingly to demonstrated demand.

⁴ WSDOT has requested more information and a business plan to support this request.

⁵ Source: WSDOT Rail, Freight, and Ports Division

To support the needs of the grain shippers, each interested participant would be required to submit a yearly demand forecast to WSDOT that details the number of cars requested and the purpose of those cars. The state would have the discretion to reposition, purchase or lease cars based on demand and other factors, including availability of funding.

Any shippers not currently participating in the Grain Train program that is interested in acquiring cars would be able to contact WSDOT with a request which would be evaluated.

If the demand justifies addition cars based upon the users' willingness to pay, then it is recommended the managing partners consider expanding the fleet to match the commitments of the users. If users are only willing to commit for a short period of time, such as a year or less, then the managing partners should consider facilitating a fleet expansion through a lease, rather than taking on the burden of ownership to meet a short-term demand.

Recommendation 3: Institute a Daily Fee for repairs and maintenance

Short line Daily Fee

Because cars primarily run in scoot service or remain on a short line, it is recommended that the shortlines be charged higher car fees than are presently being paid. The concept is to charge the shortlines a daily fee per car in the range of \$2.50/car/day instead of the current car hire rate as outlined in the respective port contracts. The charge should be adjusted annually to reflect inflation and actual repairs and maintenance. This change in fees should motivate the shortlines to actively manage and use the car fleet.

The fee can be increased or decreased each year through consultation of impacted and involved parties. Any increase/decrease would be part of the RFI to provide sufficient time to make adjustments in fleet size and rates.

When the cars go off-line, there would not be a daily charge to the shortline. The Grain Train administrator would collect car hire from the Class 1 railroad under the current practice. To maximize car hire, it is recommended that WSDOT maintain a "railroad operator" car mark for cars that are anticipated to be moved on the Class 1 lines. If it is anticipated the cars will be captive on the shortline and move just in scoot service, a private owner mark should be sufficient.

To ensure that WSDOT and the managing partners retain flexibility, it is further recommended that if the cars are idle for a length of time, for example at least 30 days, the state would have the discretion to waive the daily car charges, if notified in advance. This will encourage the shortline and elevator(s) to forecast ongoing demand and notify WSDOT of their projected usage.

In addition, if it is determined that the cars are needed elsewhere, the state would have the ability to move the cars. If it is not economical to move the cars frequently, due to repositioning costs. Consideration also must be made for the limited time the cars would be idle and the

level of demand elsewhere. Otherwise, the cars should remain on the assigned shortline. Unless the cars are returning empty from a Class 1 move, it likely is impractical to reposition the cars from one shortline to another unless it is for a significant period of time that would allow for the recoup of repositioning costs. However, this flexibility to reposition may allow WSDOT to avoid leasing equipment to meet a short-term demand.

This proposed process should reduce the risk of the shortline assessing storage charges to the car owner when the cars are idle.

The proposed daily fee will be assessed by WSDOT on a per day charge to the shortline railroad for cars to cover ongoing car maintenance. It is anticipated this charge will be passed along to the freight payer in the form of higher rates. If notified, the state can waive the charge when the cars will be idle for an extended period of time. The daily charge will not be assessed when the cars leave the short line, since the program will be collecting standard car hire fees.

In scoot service to a shuttle elevator or barge loading dock, the cars can be expected to make four to eight trips per month, making the rate increase per trip modest.

The shortlines must notify WSDOT of any car repair charges beyond those required for the safe movement of cars. "Repairs to loaded cars must be confined to the minimum necessary for the safety of operating personnel, safety of cars, and the protection of lading" per the AAR Field Manual.

It is further recommended, if a repair is the result of damage done to the car, the shortline and/or the shipper/consignee be held responsible.

The shortlines are responsible for inspecting the cars and identifying repairs required due to negligence on the part of the shipper, receiver or railroad. This is especially true for possible damage to outlet gates, safety appliances and hatches. Repair costs in those situations are subject to review by WSDOT, which may determine that responsibility for payment lies elsewhere.

Recommendation 4: WSDOT takes over the management and administration of the program

The Port of Moses Lake has requested it be released from the duties of managing the accounting of the CBRW and AOK cars since grain is not one of its lines of businesses.

It is further recommended that WSDOT and the managing partners consider centralizing the administration of the program, to reduce administrative redundancies in the current system.

Recommendation 6: Allocated a \$25,000 administration fee for WSDOT program oversight and accounting

It is recommended that WSDOT be reimbursed up to \$25,000 for its oversight and administration of the program. If the program is reassigned to the PCC Rail Authority in the

future, this fee can be used for the Authority to hire part-time staff to run the Grain Train program.

As discussed in Chapters 4 and 5, it is recommended that over the next 3-5 years the Grain Train program be reassigned to the PCC Rail Authority to manage and administer. In order for this transition to occur, funds need to be allocated to the PCC Rail Authority for administration of the Grain Train Program. An administration fee will allow the PCC Rail Authority to hire a part-time staff person to run the program. It is recommended that \$25,000 of administration fees be used to cover WSDOT program costs to administer the Grain Train Program in the short term.

Recommendation 7: Future Management of the Grain Train

WSDOT should work with port districts to develop an implementation plan for the 2017-2027 Grain Train Strategic Plan. Further, WSDOT should partner with port districts to develop an ongoing management plan. It is recommended that a single entity be considered to provide day-to-day management of the fleet and that funds be centralized to align with the day-to-day management functions. If a consolidated management structure is not selected by the managing partners, then individual port plans must be updated to reflect the future management policies and procedures of the Grain Train program.

During this strategic planning process, each port identified different needs and desires for their port's participation in the management of the program. Responses ranged from "this program does not align with our lines of business, so please transfer the management of our assigned cars" to a port that wants to manage their rail cars like other port projects. i.e. as a very active partner in the operation and management decisions. It is recommended that once the initial recommendations are reviewed and implemented, WSDOT and each managing port review their current contract and negotiate a new contract that fits the needs of both the managing port and WSDOT.

WSDOT will work with all parties to monitor changing market and distribution conditions to insure that the Grain Train is positioned to meet challenges and is positioned to continue to play an important role in the transportation of Washington grain.

Spending Plan

Exhibit 23: Grain Train Program Spending Plan

13-15 TOTAL GRAIN TRAIN PROGRAM SPEND PLAN										
	Q3 - 2013	Q4 - 2013	Q1 - 2014	Q2 - 2014	Q3 - 2014	Q4 - 2014	Q1 - 2015	Q2 - 2015	TOTALS 13-15 Actuals	11-13 actuals
Beginning Balance	1,398,745.99	1,184,009.20	1,205,626.63	1,273,811.74	1,320,436.56	1,374,592.46	1,458,447.69	1,505,288.45		
Revenue (car hire - actual)	37,348.90	57,030.74	68,835.60	57,143.53	80,060.03	79,930.60	50,709.28	33,815.45	464,874.13	458,170.16
Revenue (car hire - projection)	41,800.00	24,200.00	51,100.00	59,800.00	41,800.00	24,200.00	51,100.00	59,800.00	353,800.00	
Revenue (Interest - actual)	4,894.53	4,561.22	4,842.74	4,539.85	5,128.07	5,522.54	5,756.93	5,260.29	40,506.17	37,905.33
Revenue (Interest - projection)	4,700.00	4,700.00	4,700.00	4,700.00	4,700.00	4,700.00	4,700.00	4,700.00	37,600.00	
Expenses (car maintenance, port management, etc)	(6,980.22)	(2,010.47)	(5,493.23)	(15,058.56)	(31,032.20)	(1,597.91)	(9,625.45)	(13,269.90)	(85,067.94)	(104,500.78)
Expenses (projection)	(31,900.00)	(13,000.00)	(12,200.00)	(11,800.00)	(31,900.00)	(13,000.00)	(12,200.00)	(11,800.00)	(137,800.00)	
Transfer out to PCC (per RCW)(1)	(250,000.00)	(37,964.04)	0.00	0.00	0.00	0.00	0.00	(240,000.00)	(527,964.04)	
Balance	1,184,009.20	1,205,626.65	1,273,811.74	1,320,436.56	1,374,592.46	1,458,447.69	1,505,288.45	1,291,094.29		
Cashflow before transfers	35,263.21	59,581.49	68,185.11	46,624.82	54,155.90	83,855.23	46,840.76	25,805.84	420,312.36	

15-17 TOTAL GRAIN TRAIN PROGRAM SPEND PLAN											
	Q3 - 2015	Q4 - 2015	Q1 - 2016	Q2 - 2016	Q3 - 2016	Q4 - 2016	Q1 - 2017	Q2 - 2017	TOTALS 15-17	13-15 ACT	11-13 ACT
Beginning Balance	1,291,094.29	1,277,318.62	1,288,215.47	1,323,914.41	1,355,942.33	1,344,742.77	1,372,929.35	1,247,929.35	1,047,929.35		
Revenue (car hire - actual)	15,251.06	13,547.15	40,663.79	41,981.38	18,631.67	25,652.29			155,727.34	464,874.13	458,170.16
Revenue (car hire - projection)	53,102.67	50,656.11	59,772.44	53,827.38	53,102.67	50,656.11	59,772.44	53,827.38	434,717.20		
Revenue (Interest - actual)	4,742.37	4,502.81	5,147.17	3,992.41	4,605.39	4,596.62			27,586.77	40,506.17	37,905.33
Revenue (Interest - projection)	5,000.00	5,000.00	5,000.00	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00	27,500.00		
Expenses (car maintenance, port management, etc)	-33,769.10	-7,153.11	-10,112.02	-13,945.87	-34,436.62	-2,062.33			-101,479.05	-85,067.94	-104,500.78
Expenses (projection)	-18,954.15	-3,597.64	-10,668.13	-11,971.93	-18,954.15	-3,597.64	-10,668.13	-15,726.16	-94,137.92		
Transfer out to PCC (per RCW)								-200,000			
Car Replacement Program							-125,000.00				
Program Expansion											
Balance	1,277,318.62	1,288,215.47	1,323,914.41	1,355,942.33	1,344,742.77	1,372,929.35	1,247,929.35	1,047,929.35			

Source: WSDOT Rail, Freight, and Ports Division

Grain Train car hire revenues dropped in Q2-2015 when the CWBR cars were not being used to deliver grain to export terminals at the coast. It is anticipated that revenues will return in 2017 as the Gavilon facility restarts its rail program. The majority of cars have approximately 15 years left before the cars cannot be interchanged due to age. At that point, the cars will be 50 years old and confined to operating exclusively on a shortline. Based on the age of the cars, it is anticipated that

maintenance costs will increase. Additionally, with the cars currently running on shortlines with only an occasional long haul to the coast on a Class 1, the revenues will be limited going forward.

Originally, it was anticipated that a \$200,000 transfer would be made to the PCC as is allowed under the RCW's. Feedback from the stakeholders, suggests this is not a prefer expenditure of Grain Train funds. Based on the age of the cars and the need to replace at least two cars in the CBRW fleet, it was estimated that \$125,000 would be spent in the FY15-17 biennium on car replacement (equaling approximately 4 cars). Recommendation 1 suggests that five cars should be purchased near term to bring the CBRW fleet to 29 cars. This purchase is estimated at approximately \$125,000 to \$150,000 before taxes. Recommendation 6 and 7 suggest an increase in management/ administration fees for the program that could be a minimum of \$15,000 per year for the port management fees alone. If the managing partners decide to provide additional fees to either WSDOT or the PCC Rail Authority to cover their respective administration costs of the program, the minimum fees will be higher.

Chapter 8: Plan Development and Implementation

Plan Development

This 2017 to 2027 Grain Train Strategic Plan is the result of a partnership between WSDOT and the three port managing partners. Interviews for this Plan began in July 2016 with the managing ports, WSDOT, rail operators, shippers, rail industry experts, and other interested stakeholders. A key component of this plan is the Strength, Weakness, Opportunity, and Threat analysis (SWOT), which is based on information gathered in these interviews.

One of the primary benefits of the SWOT analysis is the process of identifying and evaluating strengths, weaknesses, opportunities, and threats of a project or business. SWOT analysis is a key element used in strategic planning, and the process typically involves the diverse stakeholders, as represented in the Grain Train Program Strategic Plan SWOT Analysis. The end goal is to preserve and strengthen the existing assets; identify, amplify, and take advantage of the opportunities; and to overcome the weaknesses and threats, if possible.

The SWOT Analysis was prepared based upon interviews with various public and private stakeholders. More than 30 stakeholders representing varying interests, organizations, and public agencies were interviewed during the development process. A Request for Information (RFI) was utilized as an additional outreach tool to gauge interest in the program and gather car demand information. The RFI was directly emailed to stakeholders of record and was open for responses for 30 days. The RFI received seven direct responses. An additional four responses were collected by follow up interviews.

Grain Train program stakeholders include:

- PCC rail system operators
- CBRW rail operator
- Grain Train shippers
- Farmers
- BNSF Railway
- Union Pacific Railroad
- WSDOT Staff
- Port of Moses Lake
- Port of Walla Walla
- Port of Whitman
- Grain Cooperatives
- Wheat Commission

During the interview process throughout the development of this Plan, the stakeholders were presented the history and current Grain Train program conditions, and the strategies and policy basis of this Strategic Plan with key deliverables. The discussions emphasized the changing economics of moving wheat in Eastern Washington and the need for a plan that highlights the benefits and needs of the system. After the interview process, WSDOT and the managing ports were provided three technical memorandums on an overview of the program, the SWOT analysis and draft recommendation for their consideration.

Implementation of the Plan

WSDOT and the managing port partners will take the recommendations of this Strategic Plan and implement the recommendations as resources allow.

WSDOT is responsible for managing the overall multimodal transportation systems in Washington state. The Grain Train program helps WSDOT reach its goals of modal integration and environmental stewardship by providing this alternate mode for freight transportation. For the program to be effective, strategic car investments are needed, along with operational changes and policy improvements.

The Grain Train program benefits Washington state in many ways. It reduces demand for trucking, it reduces roadway congestion, reduces roadway and bridge maintenance and construction costs, reduces greenhouse gas emissions, reduces shipping costs for its users, and improves roadway safety. Moreover, the Grain Train offers railcars that can continue to meet the current demand generated by Washington wheat production. Thus, the program is needed to provide Washington state farmers an alternative transportation mode that continues to remove trucks from roadways in Washington state.

Recommended operational and policy changes should be achieved within the first three years of plan's timeframe. Fleet sizing and allocation will be an on-going conversation between the users and the managing partners throughout the plan as it is anticipated that supply and demand will vary from year to year. Thus, the managing partners will need time to determine the fixed size of the fleet and a "variable fleet" that can be sized through short term car leases. Coordination with all Grain Train partners is critical to the ongoing success of the program, and WSDOT and the managing ports will need to continue to work with all Grain Train Program stakeholders to advance the strategies identified in this plan.

Chapter 9: Summary

The continued public subsidization of rail branch lines through the Grain Train Car program by the state is justified based on the data collected during the development of this Plan. The program meets the program goals by:

- Moving Washington-grown products reliably and efficiently to domestic and international markets.
- Helping preserve Washington's shortline railroads by generating revenue that may lead to better maintained or upgraded rail lines and support long-term infrastructure needs.
- Reducing greenhouse gas emissions and saving fuel by reducing truck shipments.
- Helping reduce wear and tear on local roadways by reducing truck vehicle miles traveled (VMT).
- Supporting a healthy multi-modal transportation system that improves economic vitality and enables development in the region.
- Being self-sustaining and providing funds for the maintenance and preservation of the state-owned short line railroad when adequate funds are available to do so.

Observations

Currently, the program is self-sustaining and has been able to begin to build a cash reserve to replace the current fleet when their useful life is exhausted in 2030. The current estimate for replacement of each car is \$25,000 to \$30,000 for cars that are 20-30 years old. Newer cars could be purchased in the \$30,000 - \$50,000 range. With the proposed 103 cars in the fleet the total replacement cost at today's cost will be between \$2.6 million and \$3.1 million before any inflation is taken into account. With a cash balance in the replacement reserve of slightly more than \$1.3 million as of December 31, 2016, this reserve needs to more than double over the next 15 years. Another option is to slowly replace the fleet in small annual increments to ensure the cars remain viable to transport Washington grain on the mainline track into the future.

The introduction of shuttle facilities within the eastern Washington rail system offers the ability to collect grain into larger lots that can be loaded into the higher capacity 110-car unit trains. This change in the operational mode within the industry offers options to the Grain Train program that were not present when the state initiated the program in 1995. One option is to use the Grain Train program as a "scoot train" operation to bring local grain to the shuttle facilities. In a scoot train operation, the grain is collected at the local county elevators by the respective shortlines with Grain Train cars and delivered to the shuttle facilities. At the shuttle facility, the grain is accumulated and loaded into the heavier higher capacity jumbo hopper cars which are part of a dedicated 110 car shuttle. Currently, most of the cars in this service

are 286,000 pound gross weight but the Class 1 railroads are beginning to use 315,000 pound cars in very limited service depending on commodity and route. Upon release of the train, the Class I railroads transport the more efficient higher capacity 110-car shuttles to the export facilities. This is much more efficient than having to interchange the shorter strings of Grain Train cars with the Class I railroads who then have to combine these cars into a larger train for delivery to the export facilities. If the Grain Train cars remain captive on the shortlines as scoot trains, the age of the cars is of less a concern. Age of the cars is only a limiting factor if the cars are going to transit along the Class I mainline, since loaded cars more than 50 years old are prohibited from the mainline. However, the older the car, the higher the maintenance cost and more likely the cost to maintain it will exceed the value of the car. The reserve was established to replace the rail cars within the current fleet as the cars near the end of their useful life.

The covered hopper cars for grain and fertilizer service built in the last 50 years fall into two main groups. Those less than 5000 cubic feet account for most of the cars built 25 years ago and earlier. Those more than 5000 cubic feet represent the vast majority built in the last 25 years. The Grain Train cars have a cubic capacity between 4,650 and 4,750 and were built near the peak for those cars. The number of cars built each year varies dramatically. The 2017 North American Freight Railcar Review reports more than 40,000 cars were built in 1979/80 and just 2,500 cars were built in 1986/87. The cubic capacity of the cars is strongly correlated to the weight capacity. The Grain Train cars have a gross weight capacity of 268,000 pounds which work on Class 1 and exempt track. The cars exceeding 5,000 cubic feet will usually have gross capacity of 286,000 pounds, which requires Class 2 track if fully loaded. If the decision is made to replace the existing fleet in upcoming years, that will likely require a switch to the higher capacity cars.

Appendix A: Rail Car Inventory as of June 2017

	Railcar number	Grain Train Service	Builder	Built	Cubic feet	WSDOT Inventory #
1	PCC 1000	Walla Walla	ACF	Nov-80	4650	DOH025431
2	PCC 1001	Walla Walla	ACF	Nov-80	4650	DOH025432
3	PCC 1002	Schrag	ACF	Nov-80	4650	DOH025433
4	PCC 1003	Walla Walla	ACF	Nov-80	4650	DOH025434
5	PCC 1004	Walla Walla	ACF	Nov-80	4650	DOH025435
6	PCC 1005	Walla Walla	ACF	Nov-80	4650	DOH025436
7	PCC 1006	Walla Walla	ACF	Nov-80	4650	DOH025437
8	PCC 1007	Walla Walla	ACF	Nov-80	4650	DOH025438
9	PCC 1008	Walla Walla	ACF	Nov-80	4650	DOH025439
10	PCC 1009	Walla Walla	ACF	Nov-80	4650	DOH025440
11	PCC 1010	Walla Walla	ACF	Nov-80	4650	DOH025441
12	PCC 1011	Walla Walla	ACF	Nov-80	4650	DOH025442
13	PCC 1012	Walla Walla	ACF	Nov-80	4650	DOH025443
14	PCC 1013	Walla Walla	ACF	Nov-80	4650	DOH025444
15	PCC 1014	Walla Walla	ACF	Nov-80	4650	DOH025445
16	PCC 1015	Walla Walla	ACF	Nov-80	4650	DOH025446
17	PCC 1016	Walla Walla	ACF	Nov-80	4650	DOH025447
18	PCC 1017	Walla Walla	ACF	Nov-80	4650	DOH025448
19	PCC 3002	Whitman County	PullmanStd	May-78	4750	DOH025809
20	PCC 3003	Whitman County	PullmanStd	May-78	4750	DOH025810
21	PCC 3004	Whitman County	PullmanStd	Nov-78	4750	DOH025811
22	PCC 3005	Whitman County	PullmanStd	Nov-78	4750	DOH025812
23	PCC 3006	Whitman County	PullmanStd	Dec-78	4750	DOH025813
24	PCC 3007	Whitman County	PullmanStd	Apr-79	4750	DOH025814
25	PCC 3008	Whitman County	PullmanStd	May-79	4750	DOH025815

	Railcar number	Grain Train Service	Builder	Built	Cubic feet	WSDOT Inventory #
26	PCC 3009	Whitman County	PullmanStd	May-79	4750	DOH025816
27	PCC 3010	Whitman County	Ingalls	Apr-80	4750	DOH025817
28	PCC 3011	Whitman County	PullmanStd	Dec-81	4750	DOH025818
29	PCC 3012	Whitman County	Ingalls/NAC	Nov-81	4750	DOH025819
30	PCC 3013	Whitman County	Ingalls	Nov-81	4750	DOH025820
31	PCC 3014	Whitman County	Ingalls	Nov-81	4750	DOH025821
32	PCC 3016	Whitman County	Ingalls	Feb-82	4750	DOH025823
33	PCC 3017	Whitman County	Ingalls	Jul-82	4750	DOH025824
34	PCC 3018	Whitman County	Ingalls	Aug-82	4750	DOH025825
35	PCC 3019	Whitman County	Ingalls	Aug-82	4750	DOH025826
36	PCC 3020	Whitman County	Ingalls	Sep-82	4750	DOH025827
37	PCC 3021	Whitman County	Ingalls	Apr-84	4750	DOH025828
38	PCC 3022	Whitman County	Ingalls	Jan-84	4750	DOH025829
39	PCC 3023	Whitman County	Ingalls	Aug-80	4750	DOH025830
40	PCC 3024	Whitman County	Ingalls	Aug-80	4750	DOH025831
41	PCC 3025	Whitman County	Ingalls	Aug-80	4750	DOH025832
42	PCC 3026	Whitman County	Ingalls	Aug-80	4750	DOH025833
43	PCC 3027	Whitman County	Ingalls	Jan-83	4750	DOH025834
44	PCC 3028	Whitman County	Ingalls	Mar-80	4750	DOH025835
45	CBRW 1000	Moses Lake		Mar-70	4740	DOH025050
46	CBRW 1001	Moses Lake		Aug-66	4460	DOH025051
47	CBRW 1003	Moses Lake	PullmanStd	Dec-76	4750	DOH025052
48	CBRW 1004	Moses Lake	PullmanStd	Dec-76	4750	DOH025048
49	CBRW 1006	Moses Lake	ACF	Nov-80	4650	DOH025056
50	CBRW 1007	Moses Lake	ACF	Nov-80	4650	DOH025057
51	CBRW 1008	Moses Lake	ACF	Nov-80	4650	DOH025059
52	CBRW 1009	Moses Lake	ACF	Nov-80	4650	DOH025060
53	CBRW 1010	Moses Lake	ACF	Nov-80	4650	DOH025061
54	CBRW 1011	Moses Lake	ACF	Nov-80	4650	DOH025062

	Railcar number	Grain Train Service	Builder	Built	Cubic feet	WSDOT Inventory #
55	CBRW 1012	Moses Lake	ACF	Nov-80	4650	DOH025063
56	CBRW 1013	Moses Lake	ACF	Nov-80	4650	DOH025064
57	CBRW 1014	Moses Lake	ACF	Nov-80	4650	DOH025065
58	CBRW 1015	Moses Lake	ACF	Nov-80	4650	DOH025066
59	CBRW 1016	Moses Lake	ACF	Nov-80	4650	DOH025067
60	CBRW 1017	Moses Lake	ACF	Nov-80	4650	DOH025068
61	CBRW 1018	Moses Lake	ACF	Nov-80	4650	DOH025069
62	CBRW 1019	Moses Lake	ACF	Nov-80	4650	DOH025070
63	CBRW 1020	Moses Lake	ACF	Nov-80	4650	DOH025071
64	CBRW 1021	Moses Lake	ACF	Aug-81	4650	DOH025072
65	CBRW 1022	Moses Lake	ACF	Nov-80	4650	DOH025073
66	CBRW 1023	Moses Lake	ACF	Nov-80	4650	DOH025074
67	CBRW 1024	Moses Lake	ACF	Nov-80	4650	DOH025075
68	CBRW 1025	Moses Lake	ACF	Nov-80	4650	DOH025076
69	CBRW 1026	Moses Lake	ACF	Nov-80	4650	DOH025077
70	CBRW 1027	Moses Lake	ACF	Nov-80	4650	DOH025078
71	CBRW 1028	Moses Lake	ACF	Nov-80	4650	DOH025058
72	AOK 181056	CW Branch	PullmanStd	Apr-81		DOT26920
73	AOK 181067	CW Branch	PullmanStd	Apr-81		DOT26921
74	AOK 181078	CW Branch	PullmanStd	Mar-81		DOT26922
75	AOK 181126	CW Branch	PullmanStd	Mar-81		DOT26923
76	AOK 181138	CW Branch	PullmanStd	Mar-81		DOT26924
77	AOK 181156	CW Branch	PullmanStd	Mar-81		DOT26925
78	AOK 181166	CW Branch	PullmanStd	Apr-81		DOT26926

	Railcar number	Grain Train Service	Builder	Built	Cubic feet	WSDOT Inventory #
79	AOK 181181	CW Branch	PullmanStd	Apr-81		DOT26927
80	AOK 181238	CW Branch	PullmanStd	Mar-81		DOT26928
81	AOK 181266	CW Branch	PullmanStd	Mar-81		DOT26929
82	AOK 181359	CW Branch	PullmanStd	Mar-81		DOT26930
83	AOK 181362	CW Branch	PullmanStd	Mar-81		DOT26931
84	AOK 181366	CW Branch	PullmanStd	Mar-81		DOT26932
85	AOK 181371	CW Branch	PullmanStd	Apr-81		DOT26933
86	AOK 181395	CW Branch	PullmanStd	Mar-81		DOT26934
87	AOK 181408	CW Branch	PullmanStd	Mar-81		DOT26935
88	AOK 181424	CW Branch	PullmanStd	Mar-81		DOT26936
89	AOK 181438	CW Branch	PullmanStd	Apr-81		DOT26937
90	AOK 181469	CW Branch	PullmanStd	Mar-81		DOT26938
91	AOK 181473	CW Branch	PullmanStd	Mar-81		DOT26939
92	AOK 181487	CW Branch	PullmanStd	Mar-81		DOT26940
93	AOK 181597	CW Branch	PullmanStd	Mar-81		DOT26941
94	AOK 181610	CW Branch	PullmanStd	Mar-81		DOT26942
95	AOK 181640	CW Branch	PullmanStd	Mar-81		DOT26943

	Railcar number	Grain Train Service	Builder	Built	Cubic feet	WSDOT Inventory #
96	AOK 181700	CW Branch	PullmanStd	Apr-81		DOT26944
97	AOK 181945	CW Branch	PullmanStd	Apr-81		DOT26945
98	AOK 181962	CW Branch	PullmanStd	Mar-81		DOT26946
99	AOK 181994	CW Branch	PullmanStd	Apr-81		DOT26947
100	AOK 182094	CW Branch	PullmanStd	Apr-81		DOT26948

Two CBRW cars # 1009 and #1024 were scrapped and removed from the WSDOT inventory. As of 5/1/2017, there are 98 cars remaining in the State-owned fleet. All cars have been inventoried and accounted for during this study.

Currently, 24 cars are on the CBRW line and 74 cars on the PCC for a total of 98 cars.

Appendix B: Acronyms

Acronym	Term
AAR	Association of American Railroads
BCA	Benefit Cost Analysis
BNSF	BNSF Railway
CAGR	Compound Annual Growth Rate
CBRW	Columbia Basin Railroad
Class I	Railroad with annual operating revenue of more than \$433.2 million.
Class II	Railroad with annual operating revenue between \$34.7 million and \$433.2 million. Also known as regional railroads.
Class III	Railroad with revenues of less than \$34.7 million and engaged in line-haul transportation; also known as short-line railroads. Switching and terminal railroads are classified as Class III regardless of revenue.
CO2	Carbon Dioxide
CW	Central Washington Railroad
DOT	Department of Transportation
EWG	Eastern Washington Gateway Railroad
FRA	Federal Railroad Administration
FRAP	Freight Rail Assistance Program
FRIB	Freight Rail Investment Bank
g	grams
GHG	Greenhouse Gases
GMO	Genetically Modified Organism
Ibid.	In the same source (used to save space in textual references to a quoted work)

that has been mentioned in the previous reference).

MP

Mileposts

Acronym

Term

MPO

Metropolitan Planning Organization

MT

Main Line Track

n.e.c.

Not elsewhere classified

NEPA

National Environmental Policy Act

NHS

National Highway System

NOx

Nitrous Oxides

ODOT

Oregon Department of Transportation

PCC

Palouse River and Coulee City Railroad

PPP

Public-Private Partnerships

RCW

Revised Code of Washington

RFI

Request for Information

ROI

Return on Investment

RSIA

Rail Safety Improvement Act of 2008

RTPO

Regional Transportation Planning Organization

TIGER

Transportation Investment Generating Economic Recovery

UP

Union Pacific Railroad

U.S.

United States

UTC

Utilities and Transportation Commission

Appendix C: Comments from Interviews by Theme

The following summarizes the Stakeholder Comments by Theme

Efficiency

- The need to track and reverse route on Class I tracks decreases the flexibility in the movement of each car tremendously. This is due to the increased time that it takes to track the cars as they are reverse routed. The tracking of the cars is not a normal procedure for Class I railroads.
- Shuttle train cars average approximately three turns per month versus about one turn per month for single car shipments.
- It would be more efficient if the state-owned cars were put in the Class I car pool, which allows Class I railroads to use the cars as needed.
- State-owned cars are most effective and efficient when they are used in a planned program.

Shuttle Shipments

- There may not be any additional shuttle facilities built than what are currently operating.
- The pricing of shuttle cars is very liquid, based on supply and demand.
- The spread between the cost of shuttle movement and single car movement has increased. Thus, increasing the price advantage of shuttles.

Car Usage

- The best use for state-owned cars is for movement on shortline tracks as “scoot” trains to shuttle facilities. Due to the size of the cars currently in the program, there is limit to movement of the cars on Class I tracks.
- Niche markets may be a good use for the state cars, such as legumes, pulse crops and other specialty commodities that require specific product tracking throughout the supply chain for security and safety reasons.
- Need to have plans on how and where to store cars when not in use.
- The demand for the state cars is increased during periods of peak hopper car usage. Large crops create higher demand.
- Some of the elevators have load times, which would cause a demurrage charge with industry supplied cars.
- Some shippers use the state-owned cars only when there are financial or operational reasons to do so.
- More bushels would be shipped by rail if the freight cost was reduced. Those bushels would come from bushels that are currently being shipped by truck.

- Some export houses and processors can only take less than shuttle train shipments.
- When cars go too far down the Class I tracks, they take a long time to return. This causes problems for shippers who want to use the cars on a consistent basis.
- Some export houses felt that less than shuttle rail shipments will be more important this year with the longer river closure.
- Some stakeholders want the cars to be able to go geographically wherever the market takes them.
- Some stakeholders want to have those using the cars to have a minimum shipping requirement.
- Shippers that want the cars believe that those that have the cars have laid claim to them and are not willing to give them up. Those shippers have contacted the ports in an attempt to use the cars, but have not had access to the Grain Train cars.
- Most current users of state cars expect that they would be moving about the same number of bushels in the future.
- There is interest in having some 286,000-pound cars.

Regulations

- Many stakeholders expressed that it is not yet known how FSMA/FDA regulations will affect the shipping industry. Enforcement is supposed to begin in early 2017.
- Some stakeholders did not know about the new regulations.
- Some stakeholders are seeing more regulations because of FSMA/FDA.
- In anticipation of these forthcoming more restrictive FSMA/FDA regulations, some grain processors are already requiring documentation on each car's product and movement for up to three previous loads transported in the respective car.

Contracts

- Some shippers would like spot contracts, so a decision can be made at time of shipment on whether to use state-owned cars or not.
- Some shippers want to have long-term contracts so that car availability is known for an extended period of time.
- Many stakeholders did not have knowledge of the existence of Rail Shippers Associations and that they were a signing party on the agreements; or that one of the responsibilities of the associations was to direct car usage.
- Some shippers have used the program from inception and have been consistent users of the cars.

Going Forward

- To several stakeholders, a basis for a plan is looking at the past. What has worked? What are areas that need improvement? Are there any Revised Code of Washington's (RCW's) that are in place that affect the options of how contracts/leases are done? Any RCW's that affect how the program is run?
- Stakeholders mentioned that the State needs to come to a firm conclusion about the full range of benefits of the car program and shipping by rail in general. Examples include quantifying road maintenance cost saved, reducing the carbon foot print, improving traffic safety, promoting the agricultural industry, etc.
- Some stakeholders want a set amount of the car revenue to go to maintenance on the state-owned short line. Others do not want any of the cash flow from the program to go to the state-owned short line.
- A number of stakeholders asked: What is the goal of the state?
- The current contracts are not fully understood by nonusers. There is misunderstanding by some that the original terms only allowed for in-state movements. Some stakeholders indicated that they would like the ability to ship out of state using cars from the fleet.

Car Condition

- Stakeholders using the cars felt that the car condition was adequate.
- There is concern about car condition 5 to 10 years from now.
- Most current car demand is for the smaller 263,000-pound cars due to the weight restrictions on some of the shortline tracks. It should be noted that there are studies being done looking at the feasibility of track improvements, which would allow the use of 286,000-pound cars.

Billing Process

- The billing process is generally considered to be working well.
- Some stakeholders feel that the billing process is too cumbersome.
- Most stakeholders just see only their part of the billing process, so do not know what other parties are doing.

Appendix D: Comments from 2017 RFI

What was the RFI process?

Guided by the responses to the Stakeholder Interviews a Request for Information (RFI) was solicited by WSDOT on March 1, 2017 to gain additional information on rail car demand and usage. This RFI was used as a survey tool to gather additional information from both current grain car users, and from additional parties interested in having access to the cars. The RFI was sent directly to over 30 parties that had identified themselves stakeholders in the past.

During the RFI solicitation period, the consultants and WSDOT staff continued direct outreach to stakeholders to try to ensure that all interested parties were aware of the RFI and had ample information on the RFI and the importance in their responses. WSDOT and the consultants made extensive efforts to contact stakeholders to encourage them to participate in sharing their demand information through the RFI process. It was the intent of WSDOT and the consultants to use this survey to collect information to develop a picture of future equipment demand and gather suggestions on ways to improve car usage.

The RFI has 14 questions that queried current and potential users in their interested in participating in the program. Seven entities responded to the RFI. Below is a summary of the responses.

What is the demand for the grain cars?

RFI Responses Analysis

The following summarized the information gathered from seven responses to the RFI.

Types of Stakeholders responding:

Total Responses = 7

Handling and Storage Companies - 4

Shortline Railroads - 2

Grain shuttle facilities - 1

Current Users of the Grain Train

Total Responses = 7

Yes - 1

No - 6

Based upon the responses, it appears that current users decided that they did not need to respond to the RFI maybe because they were content with the current allocation method and size of fleet assigned to their respective regions.

Current shipping methods

Total Responses = 6

Truck to Barge – 4

Private car leases - 1

Truck only - 1

Current Grain Train consists of 268,000 lbs. cars, would you take advantage of the larger 286,000 lbs. cars?

Total Responses = 6

Either - 5

Only 268,000 - 1

How are you currently supplied with cars?

Total Responses = 7 (note: multiple answers apply to this question)

Grain Train – 2
Own - 0
Lease - 4
Railroad supplied- Mainline - 4
Railroad supplied- Shortline - 4

What type of car supply arrangement would work best for your business?

Total Responses = 5

Current Grain Train Program - 2
Not aware of current Grain Train Program - 1
Monthly Lease – 1

Additional comments:

Revenue Streams

- The car program revenue structure should provide enough money to repair and maintain the cars as well as have a portion of the revenue allocated to invest in additional equipment.
- The current system has worked well for over 20 years.
- The state should collect adequate funding streams from the use of cars to support acquisitions, maintenance, and management of the fleet.
- A monthly lease would be best with the money going back to maintaining the rail line and the state-owned rail cars.

Car Allocations

- We recommend that if the state purchases more cars, that the cars are available for all customers to use along the state-owned rail lines.
- Past users of cars be provided a reasonable forward allotment of the current fleet, per their current allocation requests / use commitment
- In addition to the current fleet, a flex pool of cars be made available to new users- whether rail carriers or shippers. State should favor allocation of “flex fleet” to those carriers best positioned to provide a steady, year around utilization of the fleet.

Other comments

- State inquire of those interested rail carriers – a) which can send cars out to interchange with BNSF or Union Pacific? b) what locations(s) and car counts they would support idle storage at zero cost to the state or Grain Train program?

Analysis:

The general consensus of the respondents is that current users are very happy with the program. They do want the revenues to not only cover repairs, maintenance and management of the program, but also have a portion of revenue set aside for future car replacement and or fleet expansion.

For non-users, there is a request to expand the fleet so that they can gain access to cars under the state program. There is additional interest in setting up a flex pool above the current sized fleet that can move from region to region based upon request and demand.

Taking into account seasonality, would you be able to forecast car demand in advance – how many cars and for what period of time?

Total Responses = 5

- We are committed to using the cars on a weekly basis nearly year round
- We use the Grain Train cars 12 months a year, nearly on a weekly basis.
- Wheat moves year-round but the majority between August and May. We move more cars than can be supplied currently by the Grain Train in our region.
- We could not supply a firm forecast at this time, but probably can in the future.
- Not applicable at this time
- About 100 cars during harvest

Analysis:

The responses varied based upon the size of stakeholder and their current use of the program. Based upon the general responses, it is believed that most users can forecast their need at least by quarter.

What method would you suggest to award covered hoppers? (e.g. auction, secondary auction, lottery, etc.?)

Total Responses = 7

- The spirit of the program was to allow commodities to move via rail while keep grain trucks off of the road system. Thus, reducing road maintenance costs. Thus, hoppers should be awarded based upon truck vehicle miles traveled (VTM) between origin and destination to meet this goal.
- The spirit of the program was to reduce road repair and greenhouse emissions by keeping semi-trucks off the road. Any changes to the current program would adversely affect the total amount of grain being shipped by state owned rail equipment.
- Carriers / users which have proven utilization numbers should be supported with credible allotments which the State can count on keeping in use.

- Orders originating from flex fleet staged location to locations needing cars for loading would generate costs to users. Thus, the user would assume the cost of holding any cars idle. It is suggested that any cars that go idle for two months be directed back to the flex pool for reallocation.
- Cars should be distributed equally between the three-state owned short lines.
- In the event that car demand exceed supply, then an auction and secondary auction are the best methods of allocation as they are a proven method for a fair allocation.
- It appears that some of the pre-existing users prefer to have control over the car supply and even feel some sort of “grandfathered” first right of refusal.
- There are potential new users that do not feel welcome to join the program by some of the existing users.

Analysis:

Current users agree that the goal to keep trucks off the roads should still be a guiding principle of the program. These same customers believe the current program and allocation method achieves the goal of reducing VMT on state roads, thus, reducing road maintenance costs as well as reducing greenhouse gas emissions. An additional benefit of the car program was the increased safety provided from reduced truck traffic.

Potential users are split on their opinions of whether the current program car allocation methods should remain static. There is an opinion that the Grain Train cars should only be allocated to users on the three state-owned rail lines i.e. the PCC. Others believe that if demand exceeds supply (whether the demand comes from current users or potential users) the supply should be increased if resources are available. They believe these additional cars should be put into a flex pool that can be allocated on an auction basis.

There also continues to be a belief by non-users that the current users are part of a “closed” system. In other words, if you are not a current user, there is not a method to obtain use of the current fleet.

Recommendation:

Based upon the current identified demand, the car supply needs to be increased. It is recommended that the pool allocated to the Port of Moses Lake region, that the two cars that have been damaged beyond repair be replaced. For the two other regions, Port of Walla Walla and Port of Whitman County, additional cars can be made available on a lease basis to users / shortlines in those respective regions. The size of the addition flex fleet will be determined based upon customer commitment. The cars will be leased on no less than a monthly basis, preferably a quarterly basis, to reduce repositioning expenses.

How would you recommend that you manage the WSDOT equipment under your control?

Total Responses = 5

Comments:

- It would be best if the cars are inspected any time they arrive on the line. If any repairs are needed, then WSDOT should contract with a vendor to make those repairs.
- No changes are needed at this time.
- The current system is sufficient for the management of equipment.
- A railroad should host cars at no cost to the Grain Train program and organize their allotted cars as follows:
 - Don't ask for more cars than the users on the railroad need on a steady basis
 - The railroad is responsible to get their customers to consistently utilize the cars allocated to the shortline.
 - The shortline should carry online maintenance cost of basic consumables (brakes shoes, air hoses, coupler shims)
- The shipper should pay a set monthly lease rate whether the cars are used or not.

Analysis:

The current users are very content with the status quo of paying a per use car rate. Potential users who have been outside the grain train program are more inclined to see the need for more "ownership" by those users or short lines that get cars from the state Grain Train pool. There is not consensus on how the maintenance and repairs should be done. It varies from the current system that a state vendor takes care of all maintenance and repairs and the cost comes out of the funds help by each of the three respective Ports to a system where the shortline is responsible for the consumables as part of their role.

Recommendation:

Over the next two harvest seasons the available fleet size be increased based upon signed commitments by users/short lines. In the FY 2018 harvest, additional cars above the owned fleet can be made available on a lease basis based upon an auction pricing method.

What method of communication between all shippers and operators would best serve the logistics of operation? Should a middleman participate?

Total Responses = 6

Comments:

- To be successful, there is going to have to be a middle man in order to make sure cars are available equally to all on the rail lines

- No changes are needed. A middleman will only drive up cost of operations making the use of the state-owned cars unfeasible.
- The current system is sufficient for the management of equipment. All that a middleman will do is drive up the cost of operations. So, we do not believe a middleman should participate.
- We propose that cars be allocated simply on a first come, first serve bases from common storage sites. Those short lines hosting these storage locations could serve as the advisors to the Grain Train partners on the number of available cars and would gain the empty haul charge applicable to their arrangements.
- I do not know why shippers and operators would need to talk. Once the cars awarded /leased they are under control and responsibility of that particular shipper. The shippers on each line could coordinate the usage of the cars on the short line.
- It would definitely be best to have a third-party clearing house for car supply considerations.

Analysis:

This question brought out a variety of responses. The current users expressed that no middleman was needed, that the current system worked well. Potential users were much more open to a middleman or third-party clearing house for car supply allocations.

Recommendation:

WSDOT can act as the overseer in the allocation of cars to the regions i.e. ports and short lines. The ports can provide local management of their assigned cars within their administrative area as needed. They can work with the customers and the short line(s) to ensure that all customers on each line within their administrative district get equal access to the cars assigned to their district.

What partnerships are crucial to the success of the proposed program?

Total Responses = 3

Comments:

- Current partnerships along a respective shortline work well
- We believe the users and carriers are the crucial partnerships to the success of the State Grain Train program. Users as to both steady patronage and operational organization / discipline (understanding that rail car positioning doesn't fit great with spot order fulfillment), carriers as to getting and keeping the cars moving – as they are only as good as the last guy to hand them the car.
- Just people treated equally and honestly.

Analysis:

The users want to participate in a fair and equal partnership with other customers on their respective short line, with their short line and with the state.

Do your transportation plans include barges? -Is that percentage growing?

Total Responses = 7

Comments:

- Yes
- Not Applicable
- We are utilizing the rail program at 100% capacity. Any growth is determined by crop size.
- We ship nearly 100% of our crop utilizing the grain train rail to barge system. Our growth is based upon crop size.
- Customer plans include barges – and rail-to-barge. We believe the use of barges as part of the transport of grain should grow, but rail-barge facility access or capacity is a major problem: Having the field coverage is meaningless if the barge facility is maxed, or adjoining facilities are 10 miles down an un-cooperative class 1 rail connection.
- Our area has barge capabilities, but also have significant rail needs. We prefer to ship by rail when cars are available rather than move by truck to the river terminals.
- We would be very unlikely to utilize rail to barge directly. However, cars we loaded for sales of wheat could be sent to barge terminal or export elevator.

Analysis:

The ability to use barges in transportation plans is dependent on where the respondent is located within the state. One of the respondents utilizes a rail to barge transportation program.

Do you primarily use truck or rail to access the barge terminals?

Total Responses = 6

Comments:

- 35% is delivered to a barge facility by rail, 15% is trucked from a country elevator to a barge facility, 50% is delivered directly from the farm to a barge facility by truck
- 100% of our program is rail to barge
- Our customers at this time are primarily reaching river ports via highway motor carriers
- We use truck to deliver to river terminals
- Not Applicable
- Truck

Analysis:

The modal split between truck and rail deliveries to barge varies from all railed to all trucked. Again, this is location dependent on the distance to the barge terminal and if rail is available between the origin and the barge terminal.

Given your knowledge of our Grain Train program, Any recommendations, and why?

Total Responses = 6

Comments:

- We have been a strong supporter of the Grain Train program for over 20 years. We would like to see the program stay the same. The current program has many benefits to Washington residents. Our program keeps roughly 10,000 semi-loads off the roadways every year reducing roadway repair and maintenance and greenhouse emissions while also improving safety on our highways.
- We have been a strong supporter of the Grain Train program over the past 20 years by utilizing the state-owned cars on nearly a weekly basis. It would be our opinion that this arrangement stays in place. The spirit of the program was to effectively and efficiently move grain while keeping trucks off of county and state highways thereby reducing the impact that such movement would have to the local road system.
- As a general recommendation, we would like to see past users be provided a reasonable allotment of the current fleet based upon commitment to use. Secondly, we support the development of a flex pool of cars that can be made available to new users. This flex pool could possibly be sited at central locations and the cars be allocated based upon commitment to utilization.
- Our knowledge of the Grain Train program is limited to new media and discussion heard at meetings. Thus, we have no serious recommendations as this time.
- We recommend that if the state purchases more cars, that they are available for all customers to use along the state-owned lines. This is especially important when car freight has sky rocketed on main line carriers. Currently one of our customers has had to lease their own cars for the past four years.

Analysis:

Current users are content with the current program as it is achieving the set goals of reducing VMT. Thus, reducing road maintenance costs and reducing environmental emissions. Potential users honor that the program is meeting current user needs, but would like to participate in the program. Thus, recommend expansion of the fleet.

Recommendations:

It is recommended that the expansion of the fleet be a mix of purchased and leased cars until the new users are able to demonstrate a utilization rate that provides the Grain Train program with confidence that the purchase of additional cars can be justified.

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Washington State
Department of Transportation

and

Grain Train Managing Partners:

Port of Moses Lake

Port of Walla Walla

Port of Whitman County

WSDOT

Rail, Freight and Ports Division

November 2017

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