INDEPENDENT REVIEW: TRANSPORTATION IMPACTS OF LOWER SNAKE RIVER DAM REMOVAL

End of 2023-25 Biennium Final Report
Joint Transportation Committee of the Washington State Legislature

Submitted by:

Eric Jessup (Principal Investigator)
Research Professor
School of Economic Sciences
Washington State University
301C Hulbert Hall
Pullman, WA 99164-6420
Ph: 509-335-4987
eric_jessup@wsu.edu

Jake Wagner (Co-Principal Investigator)
Assistant Research Professor
School of Economic Sciences
Washington State University
301G Hulbert Hall
Pullman, WA 99164-6420
Ph: 509-335-2115
jake.wagner@wsu.edu

Libby Ogard
President
Prime Focus LLC
918 Fox River Drive
DePere, WI 54115
Ph: 920-217-7222
logard@primefocusllc.com

Submitted to:

Dave Catterson
Coordinator
Joint Transportation Committee
Ph: 360-786-7398
Dave.catterson@leg.wa.gov

EXECUTIVE SUMMARY

The independent review of the WSDOT Transportation Impacts of Lower Snake River Dam Removal has resulted in the following key summary findings.

Information Sharing/Collaboration:

- Communication and data sharing between the two teams has been excellent throughout study period. The leadership of both efforts (Dave Catterson and Jim Mahugh) have been fully engaged, cooperative, collaborative, and collegial in all aspects of both efforts.

Total Logistics Cost Model Review:

- The expectation that modeling activities by the WSDOT led team would be of the highest quality and applicability was predicated on the large availability of resources allocated to that effort by the Washington State Legislature (approximately $2 million in first year, $4 million total). That expectation has not been met.
    - Inexperienced modeling team and heavy administrative structure
    - Unfamiliarity with grain, fertilizer and forest products industry (only grain model delivered)
    - Steep learning curve for entire WSDOT effort
    - Consistent delay in delivering Total Logistics Cost Model, ultimately delivering final base model June 24th, 2025, approximately 9 months beyond expected
    - These delays put time pressure on model validation efforts.
- While the WSDOT modeling effort was far behind their anticipated delivery schedule, vast improvements in the model (grain) have been realized once the modeling teams between CPCS and WSU operated directly. The most recent improvements include:
    - Increased granularity of origination points to increase geographic coverage.
    - Improved utilization of roads and country elevators.
    - Improved cost surface that reflects regional flow dynamics.
    - Clear explanation of historical data utilized to parameterize river pool volumes.
- The WSU review team has not evaluated the grain model under alternative model scenarios (code or outputs). The JTC team did share results at both the TAC and CAC meetings which raised surprising outputs. Chief amongst these were that once the Snake River Dams were removed as a shipping option, a large portion of areas throughout the region would experience reduced transportation costs.

Stakeholder & River Transportation Working Group Summary

- Concern regarding sedimentation flows in the McNary pool (if Snake River dams are removed) and doubted that navigation would be viable without significant dredging cost.

- Delay on TLC model completion impacting feedback from stakeholders

- Prior issues raised by advisory committee not incorporated into modeling
    - Difficult to know given advisory committee hasn't seen completed (final) results

- WSDOT teams lack of understanding of industries served and dynamic nature of global markets and how transportation affects that
    - Economic impact from loss of wheat market (increase cost makes wheat non-competitive)
    - Seasonal distribution of flows (each year is different, depending on market)

- Stakeholders input on alternative scenarios
    - Reacting to what WSDOT creates instead of collaboratively determined
    - Only discussed model for Wheat, not Fertilizer and Wood Products

- Concerns about waterborne commerce data vs LPMS data (raised each call)

- Concerns regarding Class I rail service and reliability and access to rail cars

- Concerned that total logistics cost model doesn't account for broader (systemwide) impacts such as congestion at export terminals or construction impediments on I-5 corridor

- Questions regarding how accident analysis and GHG will be determined

Most of the issues raised by stakeholders will ultimately be included in the WSDOT process and analysis as the next year of activities unfolds. The WSDOT team is striving to incorporate all feedback into their process, given their scope mandate and timeline of deliverables.

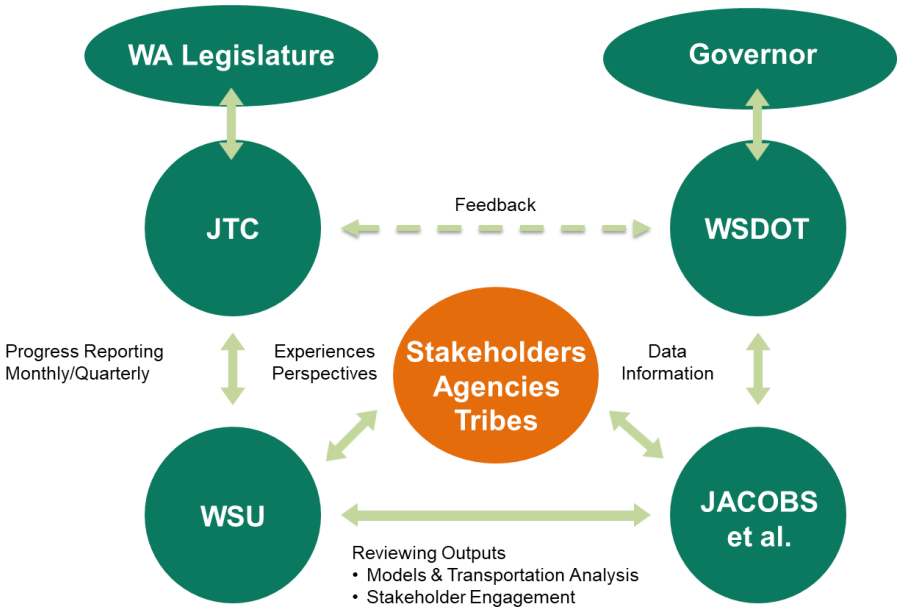
INTRODUCTION

This report documents activities over the past year associated with the independent review being conducted by the Freight Policy Transportation Institute at Washington State University for the Joint Transportation Committee. This includes an assessment and evaluation of the 1) information sharing and collaboration, 2) the total logistics cost model development by the WSDOT team and 2) stakeholder engagement & identified concerns. The information provided in this report is organized chronologically within these three primary activities.

INFORMATION SHARING & COLLABORATION

The mandate as established by the Washington State Legislature resulted in a slightly unorthodox working relationship between the review team and those completing the analysis, given that an independent review would be completed concurrently and not after the product had been completed. This created a need for establishing how the two entities would communicate and share information between WSDOT and the JTC teams. The two teams met in early May 2024 to discuss how data and information sharing would occur. These meetings were collegial with both teams being focused on working together to produce the best possible outcomes and achieve the respective work tasks and scope laid out within the contracts. Both teams were invited to present a brief update to the JTC at their scheduled meeting in Vancouver, WA on June 18, 2024. The agreed upon information/data sharing flow depicted in Figure 1 graphically illustrates the distinct differences and reporting lines between the two efforts.

Figure 1: Adapted Communication Flow from WSDOT



Throughout the past year the two teams have operated well together, sharing information and data to achieve the goals of the two separate efforts in a professional and respectful manner. The WSDOT team

has included the JTC team on all the outreach meetings and data collection meetings with respective stakeholders during the early months of the project (May, June, July and August) and also during meetings with the WSDOT Technical Advisory Committee and Community Advisory Committee meetings. The JTC also included invitations to Jim Mahugh for all meetings with the River Transportation Working Group monthly updates and shared presentation documents. The two teams have also met (initially bi-weekly and then less frequently) to discuss the total logistics cost modeling activities (discussed below) and with the USACE in developing their study scope and coordinating the USACE efforts.

The JTC and the WSU team has contributed significantly towards positively affecting the outcome of WSDOT study results, principally in two dimensions. First, in offering individual connections to the regional stakeholders whose information related to business activities (as it relates to transportation activities impacting river navigation) was sought given that the WSU team has worked closely with these individuals over many years and developed the trust and respect of business leaders throughout the region. The supportive participation of regional stakeholders and business leaders would not have been as successful had the WSU independent review team not offered strong encouragement to all affected parties and supported their participation. This is particularly true in connecting with the railroad operations, both Class I (BNSF and Union Pacific) and the shortline rail operators (WATCO), given that the WSDOT outreach efforts had been unsuccessful prior to scheduling meetings by the WSU team. Secondly, the WSU has team has provided innumerable council and advise for the WSDOT total logistics cost model, drawing upon their expertise and understanding of the economic complexities of those industries being modeled (grain, fertilizer and forest products) and developing transportation optimization models that accurately reflect conditions as they exist.

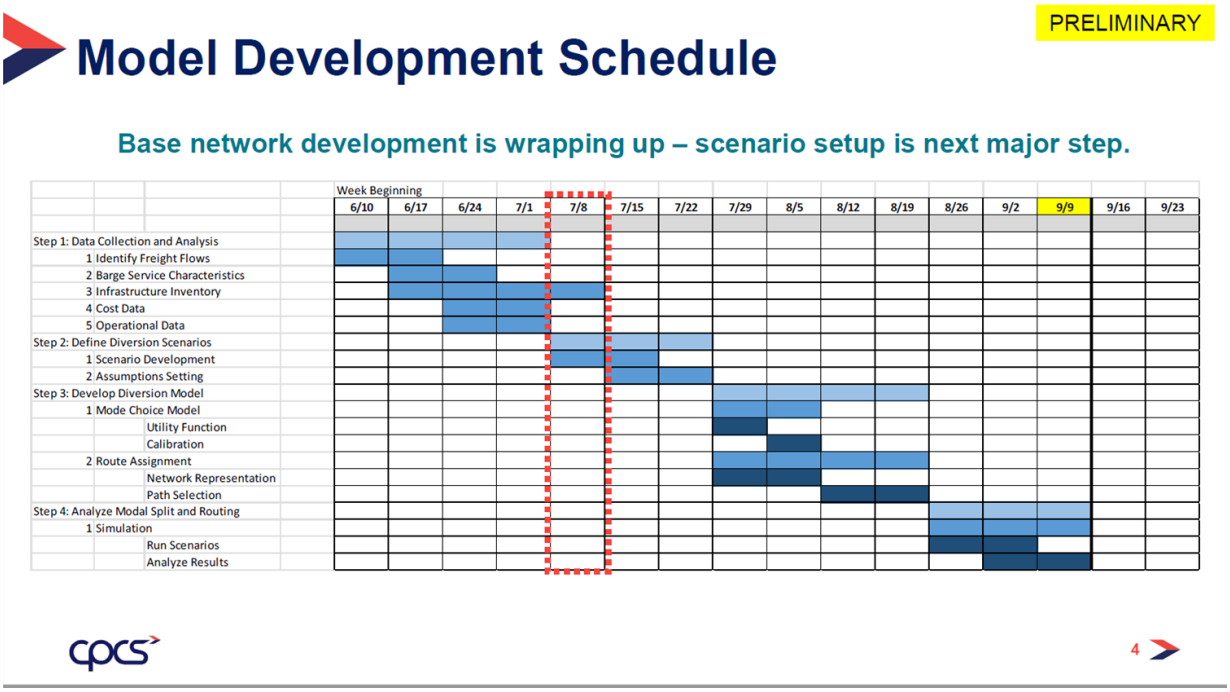
REVIEW OF THE TOTAL LOGISTICS COST TRANSPORTATION MODEL

The two teams began having bi-weekly meetings focused on the WSDOT total logistics cost model on June 13, 2024 and continued those meetings throughout 2024 and into 2025. The first several (4) meetings primarily focused on data collection efforts by the WSDOT team. The JTC team expected to focus upon the actual model, but no details were provided in the first four meetings. Given the expected timelines on when the WSDOT team was planning to show the results of this model (September 2024, see Figure 1)), the JTC team emailed Jim Mahugh on July 13th to raise this concern. The next meeting on July 25th, the JTC team raised again many questions regarding the model. Following that meeting on July 26th, Dike Ahanotu emailed the JTC team to ask that we put those questions in writing so that the WSDOT team could respond to those specifically. A copy of those initial questions and the subsequent follow-up are in the appendix of the 1st Quarterly report to the JTC. The most notable concerns of this exchange, revealing the limited modeling experience of the WSDOT team included:

- The initial model presented was not mathematically correct, including summation over parameters that didn't exist.
- The objective function did not solve for minimizing total transportation cost, but rather a two-stage shortest path algorithm (Dijkstras). A shortest path algorithm will not produce grain flows consistent with actual movements.
- Transportation cost for truck and rail were constants (static)
- Model included originations from townships that possessed no grain production and shipment to shuttle facilities that didn't receive grain (Plymouth, WA).

- Limited alternative route choices included in the model.
- Grain production growth over time far exceeds reality.
- Model rail network was not consistent with reality.
- Model optimization strategy was not theoretically consistent.

Figure 1: WSDOT Model Development Schedule, presented July 11, 2024

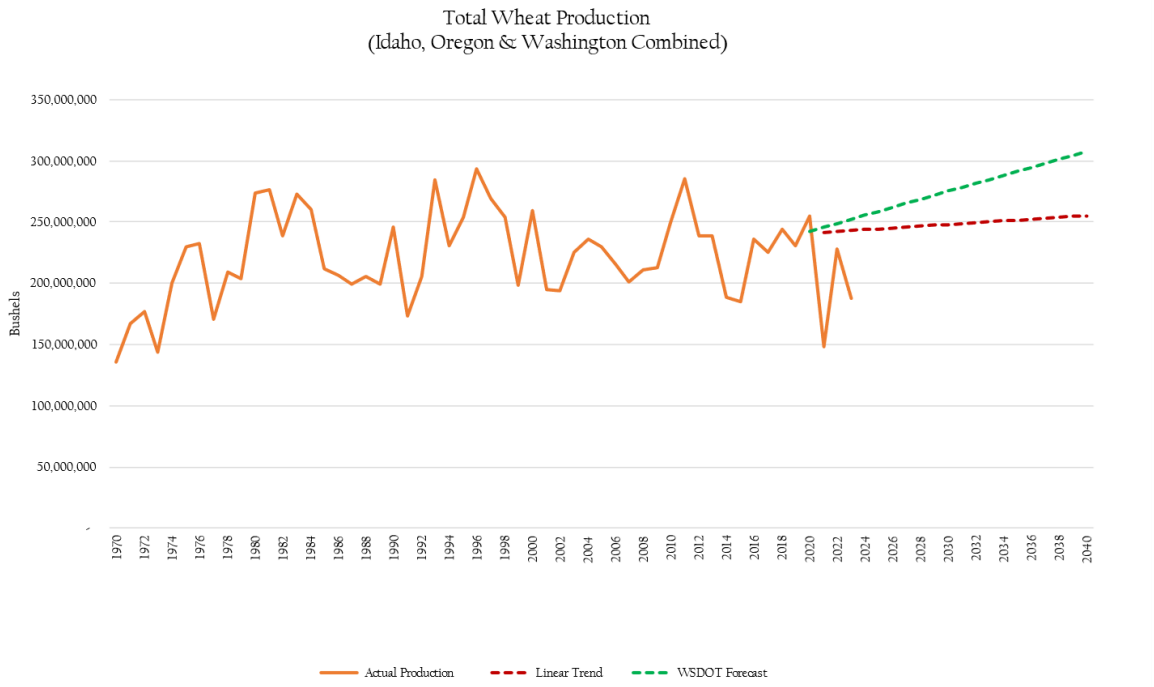


The WSDOT team delayed presenting outcomes of this initial model to the WSDOT Technical Advisory Committee, instead deciding to first have an information/input call with the stakeholders on August 30th and then presenting outputs of the model on September 13th. The WSU update meeting with the River Transportation Working Group on November 15 highlights many of the suggested changes that had not yet been incorporated into the WSDOT Total Logistics Cost Model.

Initially the consultants working for the WSDOT team were reluctant to share the actual model code. But once the WSU team signed non-disclosure agreements, the WSDOT team provided their codebook for WSU to review. Over the next several modeling meetings, several modifications were made to the WSDOT Total Logistics Cost Model, reflecting the issues that the WSU team raised. These included:

- ✓ Swithing the objective function from a two-stage path minimization to a global least cost optimization.
- ✓ Increasing the route alternatives available in the choice set.
- ✓ Providing truck and rail transportation cost functions (later modified several times) as opposed to static per mile estimates.
- ✓ Updating origination townships to only include those producing grain.
- ✓ Reducing the rate of grain production volume growth over time (see Figure 2 below).
- ✓ Removing Plymouth, WA as a shuttle rail receiving facility.

Figure 2: WSDOT Initial Grain Production Growth Assumption to 2045



The WSDOT assumed increase in wheat production between 2020-2040 would have resulted in an additional 60 million bushels of wheat being transported to market. The distribution of 2020 wheat flows from this initial WSDOT model (Table 1) produced 60% being moved by barge and 40% by shuttle rail, but under the production growth by 2040 the modal balance would have been 50% each. This was partly being driven by the incorrect assumption that river terminals had binding throughput constraints, but the country elevators did not. The WSU team (and grain stakeholders) recommended changing that assumption, given that river terminals have tremendous throughput flexibility.

Table 1: WSDOT Initial Total Logistics Cost Model Results

	Percent of Flows
	WSDOT Model
Direct to Barge	39%
Direct to Shuttle	16%
Country Elevator to Barge	21%
Country Elevator to Shuttle	5%
Non-Shuttle to Shuttle	19%
Non-Shuttle to Barge via Rail	0.19%
Barge Total	60%
Rail Total	40%

The bi-weekly Total Logistics Cost Modeling meetings between WSU and the WSDOT teams went from June 27th to November 22nd, 2024, but then paused for the remainder of the year while the WSDOT team prepared the LSRD Status Report (formerly called the Existing Conditions Report). The WSU Team was also provided the LSRD Tech Memo titled "Status Quo Vehicle and Rail Volume Report V2" and the optimization code on October 21st, 2024 from the CPCS team. We subsequently held a call with the Jacobs, CPCS and WSDOT folks on October 31st to discuss the total logistics cost model and the specifics of that model. Given that no further model discussion meetings were held through the end of 2024, WSU believed that the WSDOT Total Logistics Cost Model would be finalized and utilized to produce deliverables (existing conditions) expected by the end of 2024.

It was the WSU's team's expectation that report would provide detailed outputs of the Total Logistics Cost Model for all existing flows (wheat, forest products and fertilizer), given earlier communications and scope descriptions. That LSRD Status Report was reviewed by the WSU team and that detailed feedback is available from earlier reporting. The synopsis of that review included:

- Very simplistic industry descriptions that fail to capture the nuances of industry supply chains
- Limited description of the Total Logistics Cost model and explanation of how it functions
- Transportation flows provided (highway, rail) were aggregate (total), not related to traffic being modeled within study area or relationship between aggregate and that being modeled.
- Volume to capacity analysis for rail and highway didn't allow for relevant comparisons
- Limited model output flows provided and only at high level, without fertilizer or forest products.

The joint WSU & WSDOT modeling meetings reconvened February 24, 2025 (subsequent meetings March 12th, March 27th, April 9th, May 7th) and the updated Total Logistics Cost Model delivered to WSU on May 27th (wheat only). This model did incorporate many of the suggestions by the WSU team throughout the previous year, but still presented some concerns/challenges related to how the model was performing. These concerns included:

- Transportation costs reveal counterintuitive outcomes, primarily due to incorrect rates/pricing and how facility constraints were being applied.
- Large proportion of highways not being used in the modeling outputs, due to limited geographical dispersion for origination points and 35-40% of country elevators not being used.
- Barge volumes on the McNary pool too large and below McNary too small.

The two images provided in Figure 3 allow for a comparison of shipping cost between the WSDOT model and what would naturally (unconstrained) move in a least cost manner. The image on the right, titled Model Output, illustrates the draw region for wheat originating at different locations to barge, shuttle rail and non-shuttle rail. The image on the left illustrates how wheat would move based entirely on least cost shipping. The process for creating the image on the right involves imposing volume constraints via shuttle rail, thereby forcing volume to the river from townships that cost-wise would naturally move to shuttle facilities. This is the counter intuitive aspect, given that the image on the right should be reflective of shipping costs instead of constraints. This is largely why there were regions with shipping costs decreases in subsequent scenarios removing Snake River navigation. The easy solution to address this would be to modify the rate differential between shuttle rail and Snake River ports such that the image on the right from Figure 3 is driving by transportation costs and reflective without constraining shuttle rail volumes.

Figure 3: Least Cost Origination Discrepancy between Model Output

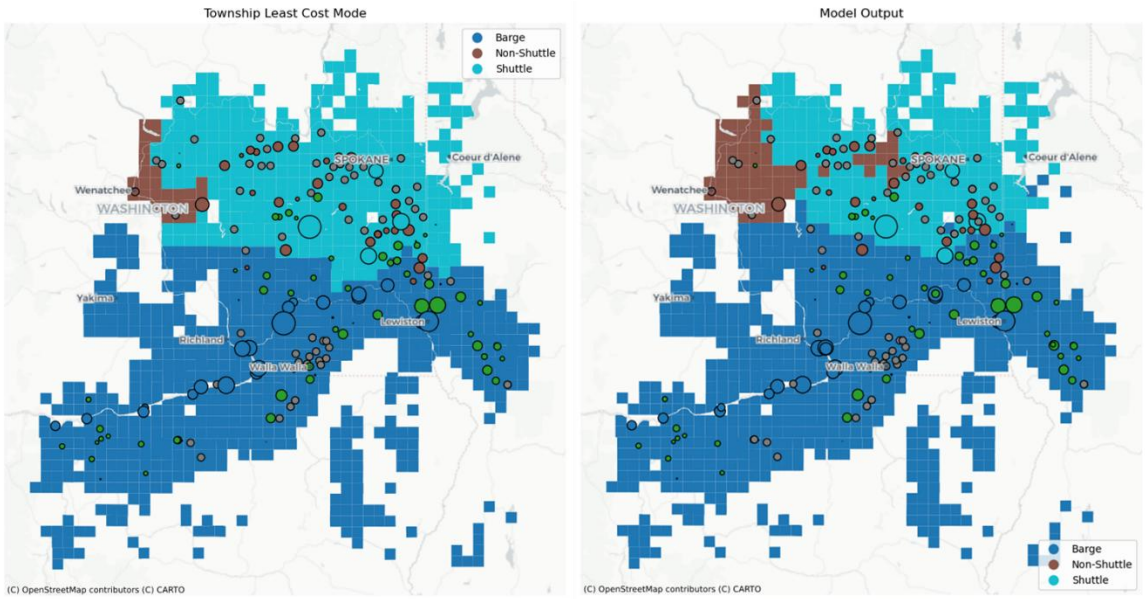
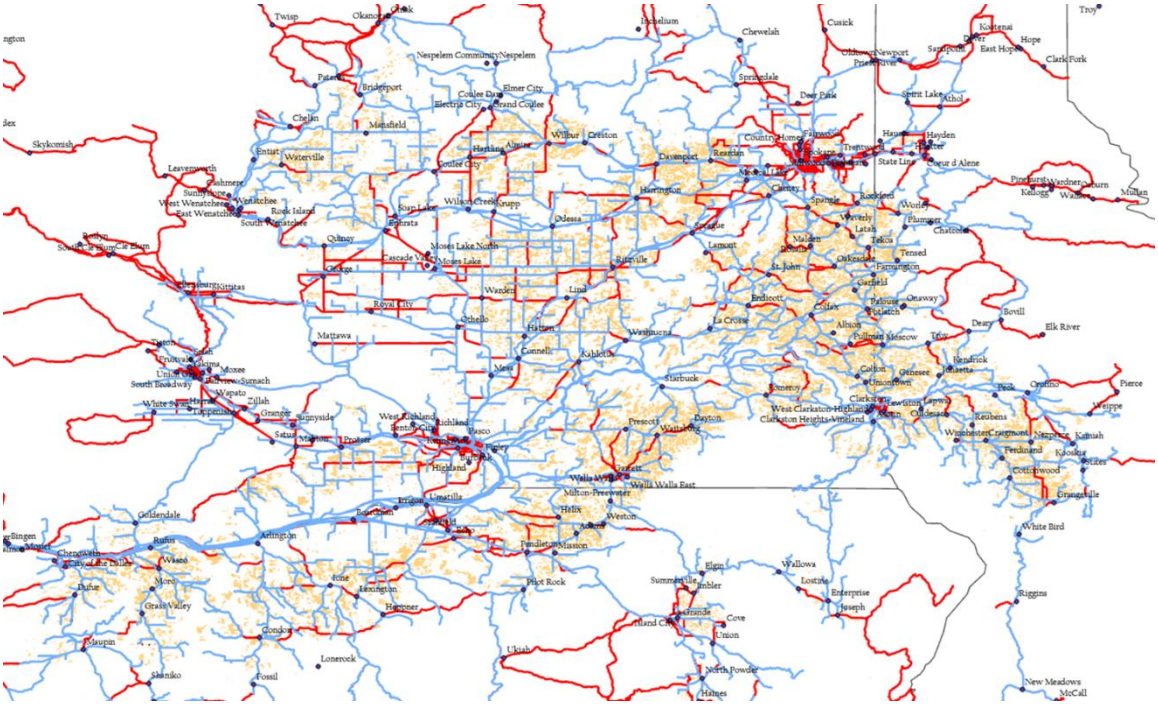


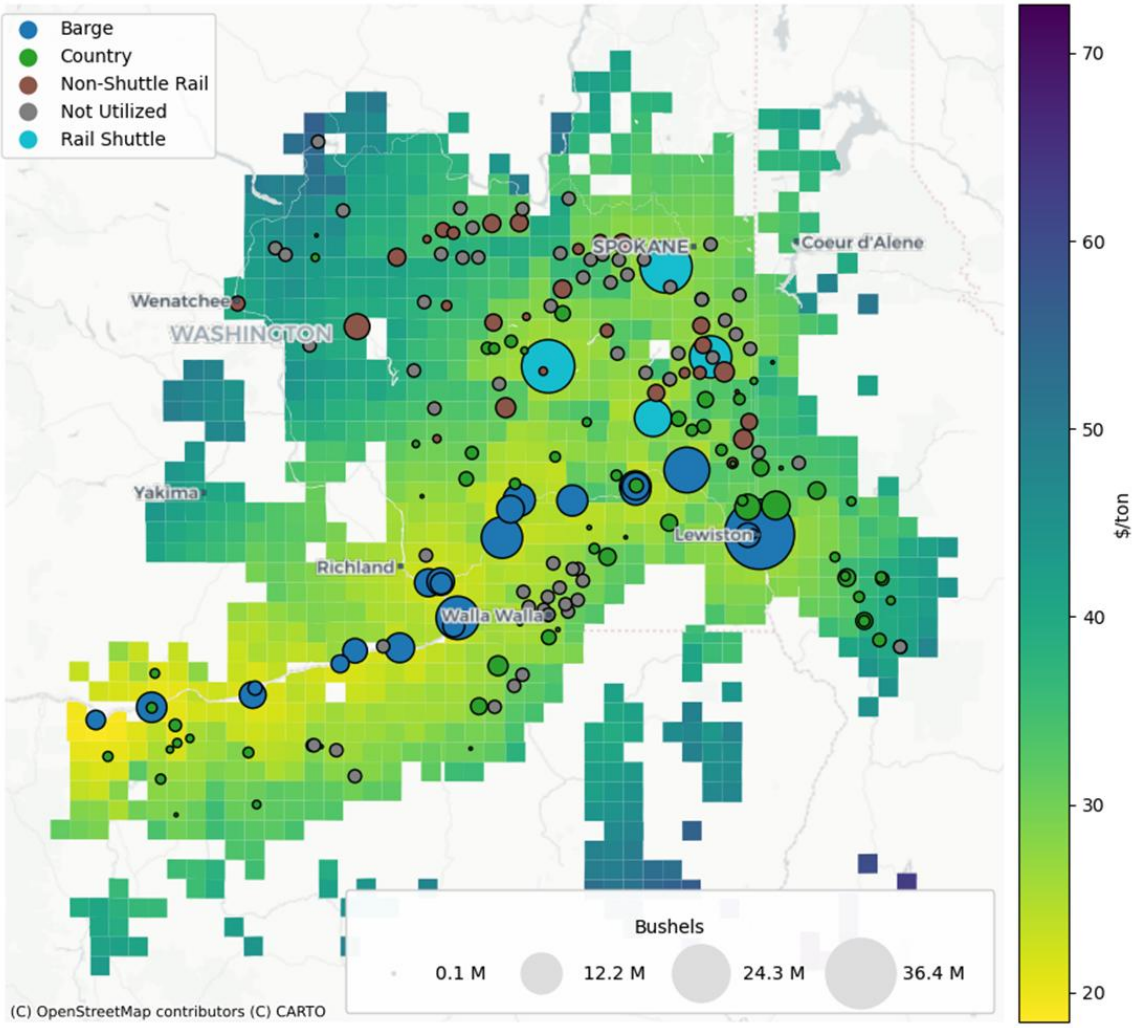
Figure 4: Highways with no Wheat Shipments, WSDOT Model



An additional limitation of that WSDOT model iteration is the large number of highways throughout the study area which are never utilized. The map in Figure 4 shows both blue (WSDOT truck flows) and red (highways not used in WSDOT model). Many critical highways in high-density grain production areas are not being used, thereby not accurately capturing the pavement/highway effects of grain truck traffic (primary purpose of model). In addition, many of the blue lines in Figure 4 are gravel/dirt roads that would not accommodate the volume of traffic allocated by the WSDOT model. The cause of this is partly how origination supply points are connected to the road network (snapping to nearest road node) and partly the geographical concentration of production to 6-mile radius points. The road layer utilized by the WSDOT model team included all traversable roads, including gravel/seasonal. In many cases, volumes are assigned to gravel roads and routes created that would never actually occur naturally (longer trips, higher transportation costs) and results in under-representing pavement affects from traffic.

Another factor impacting limited highway use is the large number of country elevators not being utilized, illustrated in gray in Figure 5 below. Feedback from stakeholders reveals that most all elevators are utilized to their storage capacity, most years. This would also lead to transportation costs that aren't reflective of actual wheat movements, since additional handling fees would be applied.

Figure 5: Transportation Costs and Facility Volumes

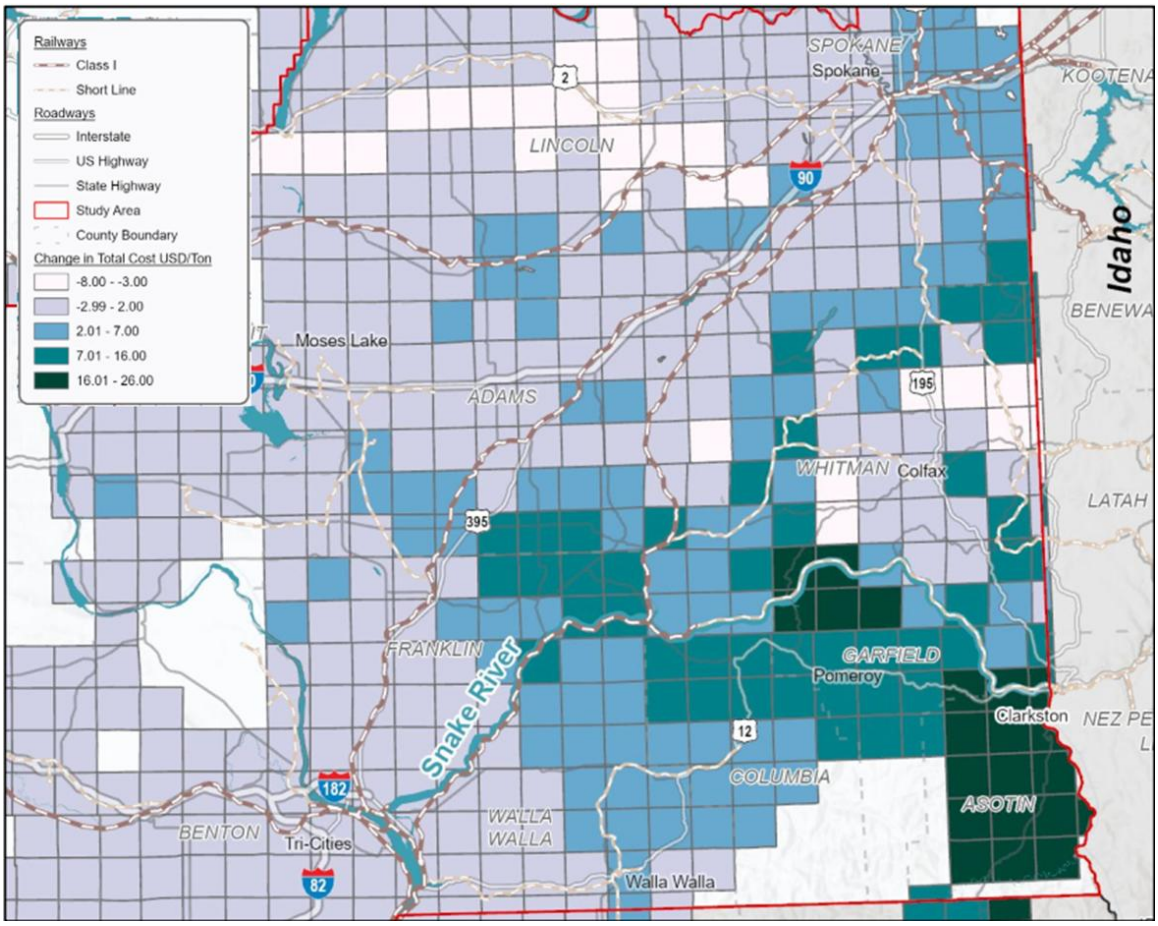


Additionally, there has been much discussion/debate on the barge volumes by river pool, trying to find a compromise between what river stakeholders provide vs. what the US Army Corp of Engineers Lock Performance Monitoring System (LPMS) data reports. It was our assessment that the volume allocated by pool have the McNary pool too large and downstream pools too small. This could partly be due to 2020 being a very high year (base year), but even comparing the prior 6 years (Table 2), reveals that downstream of McNary are consistently low based on LPMS data.

Table 2: WSDOT Model Error, based on Year and Pool

	Calendar Year					
	2024	2023	2022	2021	2020	2019
LOWER GRANITE	46%	39%	93%	37%	11%	31%
LITTLE GOOSE	10%	20%	40%	15%	-10%	17%
LOWER MONUMENTAL	102%	308%	148%	48%	13%	29%
ICE HARBOR	46%	-1%	-2%	0%	22%	27%
MCNARY	6%	21%	220%	59%	276%	24%
JOHN DAY	469%	297%	-2%	-57%	-70%	-47%
THE DALLES	-58%	-53%	-51%	612%	50%	8%
BONNEVILLE	-45%	-68%	-84%	-88%	-72%	-49%

Figure 6: WSDOT Model Change in Transportation Cost After Snake Rive Dam Removal



The total logistics cost model that was delivered on May 27th, 2025, did not include any alternative model scenarios. But the WSDOT team did present model results at both a technical advisory committee meeting and a community advisory meeting (one week apart) that illustrated the change in transportation costs if Snake River navigation is removed. The two different audiences received different presentations, although showing results from same model output. The image displayed in Figure 6 was presented at the WSDOT TAC meeting and illustrates how the cost of shipping wheat from each township would change once Snake River navigation is removed. According to this image, significant regions would be experiencing reductions in transportation costs. The image presented at the community advisory committee had the scale altered to only illustrate changes from zero and above. This is concerning because one would not expect that by removing the mode shipping option that 70% of the region utilizes currently as least-cost could create a reduction in cost once that option is removed.

After providing initial feedback to the WSDOT/Jacobs/CPCS team regarding the Total Logistics Cost Model limitations (May 27th version), the WSU and CPCS modelers began meeting directly to discuss additional model improvements. The next few weeks involved several productive meetings and implemented changes to the model that has improved model performance. These changes included:

- Improving the underlying road network layer that correctly identifies and differentiates between paved/unpaved roadways and assignment of travel speeds. The model is currently

utilizing the Open Street Map network and the process for snapping centroids to the closest roadway previously was causing errors. The CPCS team has applied several techniques that have improved this process.

- Township centroids which serve as supply originations points have been spatially distributed into 4 sub-townships (for any origination point greater than 10,000 bushels). This change increased spatial dispersion and will improve underutilization of highways.
- Improvements to the transportation cost surface, specifically related to the difference between barge and shuttle rail rates, thereby improving grain flow to a more logical direction.
- Iterating towards a defined and detailed description of identifying baseline comparisons for river pool volumes. The teams discussed the tradeoffs from utilizing various approaches and encouraged the CPCS team to document their assumptions and resulting risks such that all parties have the same understanding.

The model review process is ongoing and improvements to the model continuing. The underutilization of country elevators remains, and several important roadways are not utilized, but the CPCS modeling team is working to address these.

STAKEHOLDER ENGAGEMENT

The JTC established the River Transportation Working group, representing navigation interest on the Lower Snake River. A comprehensive list of over 60 participants have been included in the River Transportation Working Group (RTWG) which represents public and private stakeholders who actively leverage the river in its current state to support their livelihoods. A communication plan for the JTC was drafted to identify key communication objectives and the organization of the monthly River Transportation Working Group activities (Figure 1).

A kick-off meeting was held June 28th with this group to discuss the purpose of the working group and key issues and organizational issues as we begin this investigation. The RTWG subsequently met on the following dates:

- July 19, 2024
- September 20, 2024
- November 15, 2024
- December 18, 2024
- February 21, 2025
- April 4, 2025
- June 6, 2025

Initially the RTWG was scheduled to meet monthly, but some meetings were delayed due to awaiting deliverables from the WSDOT team. The purpose of these meetings was to provide the stakeholders feedback regarding the JTC independent review process and offer them an opportunity to express their reactions regarding how information being captured from the WSDOT modeling activities were being utilized. In addition to these monthly update meetings, a website was designed by Washington State University to capture feedback about the process and team interactions during the study. This website was discussed during the kick-off meeting and a link has been included in each meeting invitation. During each RTWG meeting attendees are encouraged to register comments and experiences on the RTWG website.

During the early months of the project (June-August), the WSDOT team, primarily organized by CPCS, conducted data gathering sessions with the variety of stakeholders. During these sessions Libby Ogard attended and noted any concerns and specific areas of emphasis each stakeholder identified. Generally, the stakeholders were very collaborative and provided detailed information about their operations to aid the WSDOT modeling effort. There were some stakeholders who expressed frustrations regarding the purpose of going through this effort and that it didn't encompass all aspects of the river system (economic impact, irrigation, recreation, others). Some of these criticisms were outside the WSDOT scope, but the data collection efforts reflected a very engaged and collaborative stakeholder participation.

Themes that emerged from this early data collection effort included:

- The WSDOT team (Jacobs & CPCS) seemed to have no knowledge of the industries (grain, fertilizer and forest products) they were being tasked with modeling.
- Information being provided may not yield a Total Logistics Cost model that accurately captures the nuances of the markets.
- The model wouldn't account for producers who quit growing wheat and the economic impact of that loss to the regional economy.

- The Washington Ports Association indicated that it was their belief that navigation would not be available in the McNary pool, yet the WSDOT was assuming it would be (based on USACE information).

During the later part of 2024 (September-December), the RTWG began expressing concerns that the WSDOT modeling effort was moving slowly and that provided information/feedback wasn't being implemented into the Total Logistics Cost Model. These stakeholders were expecting to see model results by the end of the year. In addition, stakeholders were concerned that there was a lack of railroad participation with the WSDOT effort. The WSU team (provided by Libby Ogard) scheduled several calls and provided contact information to WSDOT for the primary rail operators throughout the study area, including BNSF, Union Pacific, WATCO, Columbia Rail and Omaha Track.

Between January and June 2025, stakeholders increasingly became frustrated at the delay in being able to see the results from the Total Logistics Cost Model. Some of these frustrations were expressed at the WSDOT technical advisory meeting on May 28th and the community advisory meeting on June 4th. At these meetings, several results were presented, including alternative scenarios. Some of the stakeholders had been included in alternative scenario considerations, but not all. Several stakeholders indicated concern regarding how alternative scenarios were being developed without full input.

At the June 6th RTWG meeting, the following concerns/themes were voiced.

- Concern with the problems that the independent review had identified related to the limitations of the model.
- Frustration with the WSDOT addressing the identified concerns in a timely manner.
- The model for fertilizer and forest products hasn't been mentioned.
- The McNary pool not being available for navigation (by the Washington Ports Association) due to sedimentation and a large increase in dredging costs.
- Impact of increased transportation costs causing farmers to cease wheat production and the broader economic impact on the region resulting from this.
- How investments on the I-5 rail corridor and congestion at export terminals will impact the WSDOT model.
- The service reliability of Class I railroads and the availability of hopper grain cars.
- How the safety/accidents from increased truck traffic would be handled by the model.
- How the model is being used to calculate green-house gas emissions.

APPENDIX I: STAKEHOLDER & RTWG MEETING NOTES

RTWG Quarter 1 Activities:

- June 28, 2024
- August 2, 2024
- September 20, 2024 (delayed due to WSDOT input deliverable delay)

Fifty-eight stakeholders were identified and invited to participate in the RTWG. The RTWG team continued to add more stakeholders as they were identified. A kickoff meeting was held June 28, 2024 and covered primary objectives and proposed meeting frequency.

The WSU communication team attended 22 stakeholder interviews to discuss baseline conditions and specific transportation concerns associated with the loss of barge service. A second RTWG meeting was held August 2, 2022, and a short overview of modeling considerations were discussed at a non-technical level. The concept of future scenarios was discussed.

August 2, 2024, RTWG Meeting.

Interviews are wrapping up and the model is being built. Meeting comments from stakeholders are in the textbox below.

August 2, 2024 - RTWG - 14 Attendees
Is this analysis going to be an all or nothing approach?
Concern that transportation impacts more than barges but also commerce, ecology and public.
The rail needs to be understood, any negative impact is unacceptable, multiple levels of input is needed.
There needs to be an economic and competitive analysis of stakeholder impacts
Workforce capacity to handle the transition from barge to surface transportation needs to be analyzed.
Concern about rail capacity in the gorge to be able to handle the freight shift
Concern over increase of trucks in rural communities.
Need to talk about how the model will deal with competitive changes that will result
How will tribal interests be included?
What will be the status of the McNary pool impact and what improvements will be made in Lewiston.
Concern about the ability to estimate export market costs.
How will information sharing be managed?

Common themes included:

- Identification and discussion about the scope of work and what is included.
- How will competitive changes be modeled?

RTWG Quarter 2 Activities

- September 20, 2024 (rescheduled due to WSDOT late deliverable)
- October 2024 cancelled due to nothing to review from the WSDOT team.
- November 15, 2024, RTWG
- December 6-8, 2024, Export Port and Tidewater Terminal tour
- December 18, 2024, RTWG
- December 19, 2024, TAC
- December 20, 2024, Omaha Track Meeting

September 20, 2024, RTWG Meeting

First model development information was delayed which caused a postponement of the RTWG meeting. Comments from the meeting are listed in the textbox below.

September 20, 2024 (Rescheduled due to WSDOT delays)- RTWG - 15 Attendees
Every year fertilizer is different due to transportation, quality of project, labor issues and geopolitical sourcing issues. Will the nuances be captured?
Hard to capture absolutes when there is such volatility. Wants the final report to say there are many variables and uncertainties.
Some elevators are mislabeled, hard to deal with variability
Switch how the river quantities/tonnage is illustrated to make it clearer
How will reliability be addressed? Need a reliable system. Concern about rail service.
This transition takes out the elasticity of the export capacity. How will demurrage be captured? This could penalize the exporter. Could amount to extra fees and costs.
The current barge system keeps the exporters competitive. How will this be accommodated?
The rail volumes from MN and ND should be shown on the map.
10 cents per bushel does not come close to accounting for maintenance costs at transfer facilities.
This geography represents the "Galapagos of Grain Trading" and is different than the rest of the world due to the multimodal access and terminals.
Concern that by attending these calls we become complicit in the outcome.
Need clarification on what other scenarios will be identified. How will the impact be defined?
Where are we on Rail? Rail needs to be fixed, if Class 1's are not at the table, this can't move forward.
Where are we with workforce and labor resources? Any change will require more labor.
Is there enough time to capture the nuances? It seems that we are not set up for success, there is anxiety about being accurate daily.

If we don't have a river, this will not work. Too complex, too many external forces.
How much can the rail actually absorb?
The potato shippers do not want to compete with wheat on the local roads, not enough trucks for both commodities

Common themes included:

- Many questions were asked about the scope of work and the sources of data used to describe the base case and have the freight flows been accurately captured.
- Recurring concerns about how to capture the nuances of complexity.
- Where are the railroads they will need to be engaged in the solution.
- Concern that competitive freight impacts will not be accurately captured.
- Freight visualization issues, mislabeling and freight volumes not shown in presentation.

November 15, 2025, RTWG

Comments from the meeting are noted below, efforts remain focused on getting correct assumptions in the base case model.

November 15 RTWG - 25 Attendees
Upland elevators are at or beyond expected life, will lose capacity over time
Rail is constrained due to lack of cars, and is not interested in short haul
Model does not reflect the cost to serve global markets, it is a two-stage path to get grain to export terminals, then the export terminals need to get it to export markets
Concern about delay and quality of modeling inputs
Are the total crop acres growing or shrinking?
Concern about elevator constraint assumptions, not equally applied
Concern elevator constraints may be backwards in the model.
Need to get the baseline model volumes and assumptions right.

Common themes included:

- Frustration that the model is not using proper cost inputs.
- Worry that export costs are not being considered, it is a two-step process.
- Need to get baseline right.
- Can this region be accurately modeled?
- Fatigue over the time it is taking to get to an acceptable output.

A base conditions report was produced by the WSDOT team to summarize the interviews, flowing and freight asset inventory. This report was reviewed with comments and recommended corrections. This document lays the foundation for the base case by which to evaluate the changes in freight flows and in changes in total transportation costs.

Based upon stakeholder comments about the need to understand the two-step logistics process of exporting ag, a tour of four export ports and a barge terminal was arranged by WSDOT during the first week in December. The Ports of Longview, Kalama and Vancouver, WA were visited along with a Port of Portland, OR and a meeting and tour with Tidewater Transportation Terminal was arranged. A meeting was also arranged with the Pacific Northwest Waterways Association. These tours and meetings provide the JTC and WSDOT team with an opportunity to see the ag flow through the export logistics processes and assess rail access, storage sites, terminal activities and marine terminals. Meetings with stakeholders at these sites discussed freight volumes, logistics protocols, chokepoints and bottlenecks and provided a first-hand opportunity to see logistics activities in action.

December TAC and RTWG meetings focused on the review of the base conditions report.

RTWG Quarter 3 Activities

- January 3, 2025, RTWG – cancelled no model to review.
- January 10, 2025, BNSF
- January 22, 2025, TAC
- February 18, 2025, USACE
- February 20, 2025, JTC
- February 21, 2025, RTWB (rescheduled from February 7, 2025)
- February 27, 2025, UP Railroad meeting
- March 7, 2025, RTWG – cancelled no model to review.
- March 26, 2025, TAC

Model delays contributed to frustration. New USACE meetings are being added to evaluate geotechnical conditions. Class 1 rail meetings bring multidisciplinary teams to discuss the opportunity to handle diverted barge traffic.

January 10, 2025, BNSF Rail Meeting

Comments from meeting attendees are contained below.

January 10, 2025, BNSF Rail Meeting
Needs assumptions used for modeling base case conditions.
Is there capacity to take short line shuttle volume at interchange near choke points?
Combining two trains in the gorge would allow for better crew utilization. Is that feasible?
Cheney, WA commodity? light wheat? Need to confirm what product is handled there.
How is this information being wrapped into the model and what changes were made?

Common themes included:

- Representatives from marketing, network design, government affairs and operations attended the call and were open to discussions about participating.
- Slide labels of products may need to be reviewed.
- BNSF want to validate base case conditions vs. their freight flows.

January 16, 2025, JTC Meeting

The comments from stakeholders who attended the meeting are below.

January 16, 2025 - JTC
What are the different scenarios including mode diversion?
Discussion of selective intersection improvements, What Intersections are under consideration?
Estimated truck emissions will be based upon a ton mile equivalent. Do we have a map?
Estimated barge emissions will be based upon ton mile equivalent. Is there a map?
Discussion of Rail Capacity will be based upon 2019 State Rail Plan.
Discussion of Scenarios, process, volume assumptions. Est completion within week to 10 days.

Common themes included:

- This meeting focused on truck analysis.
- Only selected intersections will be reviewed.
- A map of the congestion areas would be helpful.
- Update on modeling progress and next steps

January 22, 2025, TAC Meeting

The comments from the stakeholders are contained in the textbox below.

January 22, 2025, - TAC
What assumptions will be used for dredging?
What are the air quality and methodology assumptions?
Need to look at empty train movements and separate them from loaded train movements
Need to do a physical roadway analysis to understand how additional volumes will impact state of good repair?
How will track safety be evaluated, crashes and fatalities?
Are there impacts below McNary pool, associated with water levels and dredging, how will that impact downstream commerce?
Jim Mahugh is trying to get in touch with Pier 86 to determine products transferred at Port of Tacoma.

Common themes included:

- This meeting focused on truck and marine analysis.
- Checking export facilities to determine commodities

February 19, 2025, USACE Meeting

Comments from the meeting attendees are contained in the cells in the text box below.

February 18, 2025, USACE Meeting
Need rail waybill data to determine local movements, additional signatures for data
Dike adding export port chapter, seeking data from export port visits and public brochures
Only one export port will be added to the model (will be Portland)
Wanted to contact US Wheat Assoc and WA state Wheat Commission to validate export volumes.
Task 2 upcoming task - full check of model, with safety emissions, congestion features
Will be looking at congestion volume compared to capacity ratios and change in truck volume, Roadway and Bridge Condition
Engagement team working on events for summer outreach.
Provided info on ESRI and electricity data layer to review any utility conflicts
Issue with definition of utilities, only transportation impacts are to be assessed, not slope stability

Common themes included:

- This meeting focused on utilities.
- Follow up on export port volumes and flow patterns.

February 20, 2025, JTC Meeting

The comments in the box below represent meeting comments.

February 20, 2025, JTC Meeting
How does the model constrain choice options?
CPCS explained some modifications, but the code has not been changed since last review
A two-stage optimization model with transportation flows will work if inputs are correct. Need to see set of route inputs and constraints on capacity
If distribution of report widens must take rail waybill data out - Who decides?
Hot spot analysis will be made where improvements are planned

For safety data will accident types be identified?
7 Bridges will be added to include South way bridge in Clarkston, SR12 Clarkston, SR128 Clarkson, Silcott Road, SR 127 Peyton, Snake River RR Bridge, SR 261 in Perry.
Suggested weekly modeling calls to speed up process

Common themes included:

- Meeting to discuss project progress.
- Recommendation to let the modelers from WSDOT and JTC team work directly on modeling edits to speed up review process.

February 21, 2025, RTWG meeting

The cells in the box below represent stakeholder comments.

February 21, 2025 - RTWG - 14 Attendees
Frustration over delays in model delivery
Will accommodations to disruption be meaningful?
Want to see the model to determine what might be missing
What is the modeling status of other commodities only discussion about wheat?
Will there be opportunities to shape scenarios?
No evidence of backhaul or empty repositioning moves in the model are they in there?
Export market demand is impacted by many factors, demand, weather, geopolitics. How is this being responded to?
Every decision has a tradeoff, but tradeoffs are not discussed
Use of LPMS data vs Waterborne Commerce Statistics need to see modeling difference
Given New Administration have there been any issues with USACE freezes or staff reductions
The US Bureau of Reclamation has done extensive modeling, estimates 30 million tons of sedimentation impacts. What is the impact on the water supply?
The ACOE only monitors the status of the channel, each terminal is responsible for clearing their own access to the channel. How many cubic yards will result and who will pay for maintenance if the dams are removed.
There needs to be an analysis of sedimentation impacts as it relates to transportation access and an identification of volumes and costs.
Scenario analysis should include "No access to McNary Pool"

Common themes included:

- Stakeholders continue to be frustrated with the pace of the model's development. They are losing confidence in the ability to come up with a working model.
- Attendance at the RWTG meetings is down compared to program start.
- Interest in coming up with modeling scenarios.

March 26, 2025, TAC Meeting

The cells in the table below reflect the comments from stakeholders who attended the call.

March 26, 2025 - TAC - 5th Meeting 26 Attendees
For the Commodity Impacts in Task 3 what tonnage will be used?
What are the deliverables for Phase 2?
What are the scenarios, and will we get to shape them?
Crash rates are determined by history - we should use 3 years of safety data.
How will peak traffic change after dams are removed - will this show up in the model?
River operates independently from rail, each commodity has a season by mode, many exports are blended from various sources.
Wants to know forecast assumptions – market can be very volatile year to year.
What data is used to model river commerce? Use Waterborne Commerce Data not Lock Data!
Different grades of ag are being mixed from rail and barge sources, can't sit on Unit train for 2 weeks
Will demurrage costs be factored into the model?
How will scenarios be identified?
Will the model recognize the tradeoff between soy, corn and wheat prices by month to determine capacity?
How many hours will the model allow a truck to drive before it has to go to rail or water?

Common themes included:

- Stakeholders are anxious to see a model which will allow them to review specific flows.
- Concerns about modeling assumptions and will the model be able to capture additional transportation accessorial costs which can impact profitability.
- Have ag blends for exporters been addressed. There is flexibility in the current barge system which can support mixing ag types, but this feature is not available if grain is transferred to unit train service. How will this competitive advantage be factored in?

RTWG Quarter 4 Activities

- April 4, 2025, RTWG
- April 23, 2025, RTWG
- May 2, 2025, RTWG cancelled no material to review.
- May 28, 2025, Watco Rail Meeting
- May 28, 2025, TAC
- June 4, 2025, CAC
- June 6, 2025, RTWG
- April RTWG Meeting

The comments below were captured from a group of 18, stakeholders who convened April 4, 2025.

April 4, 2025 - RTWG Meeting - 18 Stakeholder Attendees
What has changed since December?
Does the model address demand distribution and substitution of crops?
Lack of clarity about how the model treats volume growth versus shifts/loss to competitive markets due to change in transportation economics
An economic impact model must be done. What will the output look like?
How many times will the model be run to validate changes?
Concern that McNary Pool numbers are inaccurate.
Need to see an option for rail to the Tri-Cities Hub.
Concern that the modeling team has a lack of understanding of commodities and how transportation impacts the flow of freight.
Wants to see scenarios that may include multiple inputs
Concern about access above McNary Pool, need to identify gaps in access.
Is the Jacobs team looking at irrigation patterns which impact crop production?
Is the electric grid being considered. How will that impact freight flows?
The region is building 27 cloud facilities which may reduce power for freight producers, which is insufficient for the current freight activities today.
What is the WSDOT team going to deliver? What is the purpose of the study?
Where are the model outputs? I need to see model outputs.
Need to identify a list of the things that cannot be captured in the model.
The region is building 27 cloud facilities which may reduce power for freight producers, which is insufficient for the current freight activities today.
What is the WSDOT team going to deliver? What is the purpose of the study?
Where are the model outputs? We need to see model outputs.

Need to identify a list of the things that cannot be captured in the model.

Common themes included:

- Continued frustration waiting for something to change from the December presentations.
- A lack of clarity about what the scope and inputs are for the model and what the output will look like when completed.
- Specific questions remain unanswered about McNary Pool numbers, transportation access.
- Strategically there is concern about that the model can and can't do and how issues that model does not address will be answered.

April 23 TAC Meeting

The box below contains the stakeholder comments during this meeting.

April 23, 2025, TAC - 6th Meeting - 33 Attendees
What rail data is being used? The 2% waybill sample or the full database, Will movements be plotted from BEA zone or facility. Conflicting answers were received.
Covid was a 2020 year, why was this year picked?
Mode splits change year to year was that factored in?
What year is the base year and how are grain growth rates determined?
Rail congestion and pricing changes year to year which can also impact pool volumes. Mode competition is still shifting share of total crop
Need to look south of river for rail facility if locks are closed
You can make anything look viable on paper but there are many factors to consider not just rail, but storage, drivers and roadways would be packed with trucks
Lewiston does not have the physical area to build a rail loop track
How much volume is needed to justify a unit train. Not sure there is enough volume in Lewiston
Not sure it is cost effective to build a loop track and truck to Lewiston terminal
Is there Class 1 rail capacity to move freight if unit train terminal is built?
Where is the analysis of truck impacts?
What is the rate of truck volume growth?
The attendees are businesspeople not logistics analysts. These locations need to be determined based upon economics. There are many variables to consider, road, rail, storage, topography, access etc. Where do economics indicate a new facility should be built?
Asking trade associations or railroad where to build has inherent bias. Location choice should be based upon economics
Need a systems approach to site selection

Tri- Cities has three terminals not shown in the presentation which should be included in the model
Maps do not show terminals 225, 237, 238 and 258 in Tri Cities and should not be ruled out
Concerned that team is chasing wrong network costs.
This model solution represents a degradation of ag crops in the region. It is difficult to build out a single project let alone multiple projects such as loop tracks, storage and potential railroad right of way on level ground let alone this complex topography. There is no space for a loop track, and it will be impossible to permit and move each project forward together to support a reliable network solution

Common themes included:

- Slides were poorly labeled and hard to read. Dots representing three river terminals in the Tri-Cities were merged together so the amount of capacity in the Tri-Cities area was inaccurately represented.
- Catchment areas for the western most rail terminals showed an uncharacteristic configuration which would move grain east to a rail loading facility only to move west to an export port. No mileage keys were available to help determine if the out-of-route mileage would result in an economically viable shipment. Highway routes were not shown so alternative route options were unable to be visualized.
- Grain moves through a network of storage, trucks, rail or barge. The rail and river terminals were displayed in a standalone portrayal making it difficult to see how regional transportation competition between modes might impact freight movement.
- While you can make the case on paper, a thorough logistics analysis is needed to determine the most economical location. Locations have not been analyzed to determine if these sites are viable. No crop volumes have been estimated by the catchment area to determine the quantity of storage needed or the number of rail cars which may be generated in any given catchment area. It is unclear if there is sufficient volume to support a unit train as far east as Lewiston. More work needs to be done to make any decisions.
- The team kept mentioning time constraints and moved very quickly through the slides. With minimal labeling and singular modes, it was hard to absorb what was being presented.
- The WSDOT team continues to use jargon such as "Unit Rail Station" which is not used in the freight industry to describe railroad facilities.
- The WSDOT team frequently mentioned that they were contacting stakeholders to validate flows, but no such conversations have been reported in the stakeholder comment collection link on WSU website. It is possible that contacts were made with shippers who are not part of the sixty-six RTWG members.

May RTWG Meeting

Canceled due to no content to review.

May TAC Meeting

A long-awaited meeting to demonstrate the current state of the model capability and a preview of potential modeling scenarios. Map labeling needed improvement to include local labels and scenario assumptions were not clearly documented. In general, a lot of material in a short window of time. Difficult to absorb and analyze for the first time for many stakeholders.

May 25, 2025 - TAC Meeting - Scenario Introduction
Will crash data be extrapolated to reflect growth and mode changes?
How many grain tons per truck were used in the model calculations?
Will the crash data reflect Target Zero WSDOT goals? Will not meet standards if fatalities increase.
Must include cost of death in outcomes of taking locks and dams out of system.
There are sizeable grain volumes coming from OR and ID are they being included?
What is the source of BNSF rates in particular but all rail rates in general.
Maps are poorly labeled, not sure what we are looking at?
How is shuttle pricing different than smaller blocks of cars?
Is this a truck rail barge model? Is this cost effective?
It is not clear what handling and potential car handling fees are included in flows, all mixed in.
Need to know handling assumptions for Lewiston to Export Ports/
What lanes if any would be handled at Tri Cities if any? Not clear.
Have you driven this route?
Unclear what model assumptions were used, and terminal capacity options were limited.
What is the reliability of new routes? Wants to see impacts on route changes and assumptions which drive estimated for change in safety, crashes and fatalities, emissions and GHG.
It looks like Tri-Cities, Pasco and Kennewick are all included as shipping points, Kennewick has no shipping capacity.
If you increase Watco tonnage this could impact UP Reliability. Is that assumption considered?
If all volume shifts to rail how will export terminal congestion be handled at export ports?
If river ports are taken out how will this impact truck VMT at Inland terminals?
Would double berthing be used? Is it feasible?
Is demurrage included in the total cost model? What are the assumptions?
Concerned about the addition of intermediate ports will increase grain handling, will overwhelm system.
We need to add the Alliance Ferry and Central Ferry to Scenario 6 due to existing infrastructure conditions.
How will competition be preserved?
Will the model show when transportation costs exceed current business models in other words, the change in transportation costs which will impact farm economic competitiveness.

How many scenarios avoid Class 1 railroads?
McCoy looks to be missing the UP-rail gap which may preclude UP continues service or cost.
What scenarios will be run? Will stakeholders get to provide input on assumptions?
Who picks what models will be run? How many will be run?

Common themes included:

- Many of the slides were poorly labeled and working assumptions were verbalized but not attributed, which generated a number of economic and operational questions related to costs, volumes, handling assumptions and capacity requirements.
- Stakeholders identified several model nodes where implied assumptions were wrong such as Kennewick shipping capacity and UP routes, concerned about assumed rail rates which would impact rail allocations by terminal and carrier.
- Concern about economic competitiveness and the viability of new scenarios.
- How will transportation competition be preserved to ensure no loss of market or competitive network reach?
- Many stakeholder questions were asked and the WSDOT team committed to responding in a few days. The JTC team has not been copied in replies to these questions.
- In the subsequent RTWG meeting on June 6, 2025, stakeholders reported that they have not received this PowerPoint Presentation, and it was implied that the questions raised have not been answered.
- Audience interest in getting slides from the presentation is growing now that they are starting to see actual output.

May 25, 2025, TAC Meeting

Comments from the meeting participants are listed below.

May 25, 2025 - TAC Meeting - Scenario Introduction
Want to know if crash data will be extrapolated to reflect growth and mode changes?
How many grain tons per truck were used in the model calculations?
Will the crash data reflect Target Zero WSDOT goals? Will not meet standards if fatalities increase.
Must include cost of death in outcomes of taking locks and dams out of system.
There are sizeable grain volumes coming from Oregon and Idaho, are they being included?
What is the source of BNSF rates specifically? And all rail rates in general.
Maps are poorly labeled, not sure what we are looking at?
How is shuttle pricing different than smaller blocks of cars?
Is this a truck rail barge model? Is it cost effective to have so many transfers?
Not clear what storage and potential car handling fees are included in flows, all mixed in?

Need to know handling assumptions for Lewiston to Export Ports.
What lanes if any would be handled at Tri Cities? Not clear.
Have you driven this route?
Unclear what model assumptions were used, and terminal capacity options were limited.
What is the reliability of new routes? Wants to see impacts on route changes and assumptions which drive estimated for change in safety, crashes and fatalities, emissions and GHG.
It looks like Tri-Cities, Pasco and Kennewick are all included as shipping points, Kennewick has no shipping capacity.
If you increase Watco tonnage this could impact UP Reliability. Is that assumption considered?
If all volume shifts to rail how will export terminal congestion be handled at export ports?
If river ports are taken out how will this impact truck VMT at Inland terminals?
Would double berthing be used? Is it feasible?
Is demurrage included in the total cost model? What are the assumptions?
Concerned over the addition of intermediate ports. This will increase grain handling, will this overwhelm system.
Need to add the Alliance Ferry and Central Ferry to Scenario 6 due to existing infrastructure conditions.
How will competition be preserved?
Will the model show when transportation costs exceed current business models in other words, the change in transportation costs which will impact farm economic competitiveness.
How many scenarios avoid Class 1 railroads?
McCoy looks to be missing the UP rail gap in ownership which may impact UP continuous service or cost.
What scenarios will be run? Will stakeholders get to provide input on assumptions?
Who picks what models will be run? How many will be run?

Common Themes:

- The consultant team is using unfamiliar jargon when referring to train operations like "Unit freight Stations" this is confusing.
- Several questions about modeling scenarios and what may or may not be included.
- Frustration with not having a key to understanding what assumptions are in the model and which are not. Also having output tonnage and Total Cost information is needed to know if this will impact cost competitiveness.
- Some assumptions do not seem to be realistic; will these assumptions be available before the next run of the model?

June Community Advisory Meeting

This was the fourth Community Advisory Meeting with 17 attendees led by the WSDOT team and Jim Mahugh. The purpose was to review the working model and to display the eight potential scenarios. Stakeholders reacted to flow changes, and asked questions about cost assumptions and alternative route options.

June 4, 2025 - Community Advisory Committee - 17 Attendees
Would a full unit train be necessary at Lewiston, ID?
Want to know rail car demand at intermediate terminals headed westbound?
Are you modeling loading at an optimal point North of Lewiston or at an existing Lewiston Location? Where will the facility be located?
Does it make sense to send grain to Connell East to Kahlotus and beyond to get the freight out of the canyon? There is a former rail line there. This scenario will create traffic congestion in Pasco.
Lions Ferry is on the rail line, if the barge goes away why wouldn't you put the grain on rail at the same elevator instead of trucking it to Walula
Questioned the logic of increasing volumes through Four Lakes as an extreme out of route shift for grain shippers.
Questioned about the cost to move a ton a wheat to export and what costs are included?
When you calculate transportation costs are you considering the capital costs for the infrastructure you are suggesting building?
For scenario 5 shouldn't you be using the 2045 estimates instead of 2020?
STB allows reciprocal switching of non-exempt commodities (of which wheat is one). This would allow Great Northwestern to switch with UP at Ayers Junction.

Common Themes:

- Nearly every meeting there are questions about what is in the model and how assumptions are impacting the model. Can there be a key sheet which shows for each model what is included, how it is calculated and what the output variables are?
- The consultant team is using unfamiliar jargon when referring to train operations which does not inspire confidence among stakeholders. Unit trains load full trains at one point and move without stopping for additional cargo to the destination. These trains are not part of scheduled service but are "extra" trains with specialized crew and loading requirements. The volume map shows grain flows which build volume from Lewiston to Tri Cities. Stakeholders identified that multiple stops at intermediate locations would need to pick up freight. This type of train is a manifest train.
- The consultant team is quoting price changes in terms of dollars per ton when the stakeholders predominantly speak in terms of dollars per bushel. An effort to speak the audience's language should be made.
- The slide presentation lacked common legends and lacked mileage scales and consistent geographic labeling which led to questions, and at times confusion as to flow volumes. There were map errors. It would be helpful to label short lines and in service vs. out of service and Class 1 routes.

- Model assumptions were questioned because the stakeholders seemed to have more familiarity with the rail facilities and elevator locations than the modeling team. It drove questions about the actual location capability of handling projected volumes.
- The presentation would benefit from showing a table for assumptions and the resulting mileage and tonnage changes my mode.
- The consultant team would benefit from looking at economic assumptions and freight route logic, some scenarios are adding unrealistic "out of route" choices to move freight.
- Mode economics are driven by distance and labor (time to load or unload, store or stage) it is not clear that truck rates or rail rates reflect the relatively high fixed costs for short haul shipments. There were questions about cost per ton vs. cost per bushel.
- One stakeholder wanted to include Lewiston in scenario 5. No real process was noted with a deadline as to how or when specific modeling requests need to be made and with what detail.

June RTWG Meeting

The June RTWG meeting marked the first meeting which had substantive WSDOT consultant material in over six months. Nineteen RTWG stakeholders provided feedback which was very active and provided detailed and targeted responses to issues identified in the TAC meeting of May 28 which provided multiple proposed scenarios. This meeting used graphics to show how the base case model was allocating freight flows. The meeting ran for nearly 2 hours with only a few dropping off before the meeting closed. long and could have kept going for a two-hour window if people had budgeted that amount of time. The core group of 19 attendees participated. While the invitation list includes more than 58 individuals, a number of companies have multiple representatives.

June 6, 2025 – RTWG Meeting - 19 Attendees
Discussion of how freight will flow to nodes and suggested corrections for Endicott, WA catchment areas.
If Prices are not driving the model or are wrong, then downstream impacts will be a problem.
Concerns about mode shifts being driven by Transload capacity constraints.
Concern about WSDOT model use of highway capacity and number of highways not being used in model output.
Are these models being manipulated or are they aggressively wrong?
Why are not all the elevators used in the model?
Can seasonal or monthly elevator use be tracked?
Where is the consulting team getting the cost information?
Are there too many variables being introduced in one scenario? It makes it difficult to evaluate root causes of flow changes if you don't identify what the assumptions are which impact flows.
Question about Base Year volumes (related to curious flow changes)
Concern that if cost information is not shared, shippers will not be able to know when transportation costs will kill market trading/requiring alternative market flows.
Alternative scenarios will not decrease current shipping costs.

Concern the least cost model options are too broad - there are more micro regional factors to consider.
Highway 2 volumes look incorrect.
Interest in seeing individual assumption outputs. There is concern that putting shuttle trains in and taking out locks and dams at the same time masks freight flow shifts. Need to see the impact of each independently first.
Concern that volumes are lost in the model - The whole map should be green, yet there are gray and white values which seem unaccounted for.
Is the WSDOT team willing to fix the model? Fear that if this initial output is not addressed no one will circle back later to address this issue.
Will WSDOT be given the time to make changes they are "able" to make?
Why are some county elevators not being (skipped) in the scenario development?
Discussion of Mansfield elevator use.
Who is the audience for this report? Legislators? Let's not get caught in the weeds.
Where is the date coming from for this model? Clear data gaps are impacting accuracy.
Concerns that Ritzville is not participating with WSDOT team which skews the output.
The scope of the report is so narrow the output will not be reliable.
This report is a complete waste of effort; we have a pile of studies in the drawer already.
Concerns that handling and storage costs are underestimated and 40% of the elevators not being used is a concern.
Historically elevators were built to support the size of the crop and can scale to meet demand. Most all are used during the season so the model not using all elevators is concerning.
PNW uses elevators differently than other ag regions of the nation. Crop, transportation networks and elevator functions are customized to support the region.
The model is not suing the "Red" road, this is an issue, how do we fix this because the crops move on these roads. If these roads are not used this will skew freight flows.
We need to focus on these key modeling attributes of rural roads and elevators so that model identifies the other safety and transportation network design needed.
We have a challenge if the base line is incorrect
Seems the team is trying to figure out how to handle 217-unit trains but is missing a lot of pieces about how the grain gets to the train.
We can't identify alternatives if the base line is incorrect.
This seems to conflict with past studies
How will this impact the I-5 corridor- seems there would be significant impact. Where are these estimates?
Need a Minority Report to address all the issues that are unresolved.

Assumption that I-5 is in the scope of work and needs to be addressed.
If the WSDOT team has not adequately addressed the costs, then they have not done their job.
Will economic impact be addressed?
217 trains would be a flow stopper for the I-5 Corridor
The modeling effort is way too simplistic and needs to identify the rail network impact of the additional trains (217)
It is estimated that there are 214-unit trains that will be generated out of the Lewiston pool based upon 90 million bushels alone.
What is this diverted volume moving by river today to the I-5 rail corridor network? The BNSF and UP networks will be impacted by these shifts.
This system is complex with a lot of tangential impacts (interdependencies) that will impact the flows and other things like roads and storage.
How will this impact the terminals - this is very vague
Concern about project delays impacting time to address the shortcomings and final report quality
We have been here before, concern there is no time to go back and fix the basic assumptions.
There is no baseline for the I-5 rail network model
If there is no baseline for I-5 how to calculate impacts
Need to know model expectations and what components are included.
How do we communicate better? No TAC meetings are long enough, we don't get ppts after TAC meetings in a timely manner we don't have a description of the inputs or expectations of the outputs. A more interactive approach is needed for TAC meetings.
Critical to see that meaningful feedback is being acted upon.
Are there enough scenarios? Are the scenarios responsive to the issues which will impact freight flows?
After last TAC could not absorb all scenarios, no idea if the freight scenarios are in there.
A two-hour call to discuss scenarios in detail is needed. Need a more interactive approach.
Not sure the base model is robust enough to handle the rail, county elevators and rural roads as discussed earlier.
The base model does not capture the seven additional shuttles needed to move freight, neither BNSF nor UP are included in the scenarios. If you pull out the dams all the rest is Moot.
The TAC meetings go through the models too fast, need to show down so the audience can absorb and understand the images.
Don't have enough information to understand the scenarios and impacts.
Where are the fertilizers, wood chips and logs?
Fertilizer will be big and complex too

Very Complex System need time to process. We are not modelers, need assistance to understand what the model is doing.

Common Themes Included:

- The RTRG has lost confidence in the WSDOT consultant team's modeling capabilities of complex ag supply chains and basic understanding of railroad networks in the PNW.
- With many rural roads and up to 40% of the county elevators eliminated, coupled with overstated ag tonnage volumes in the McNary pool, frustration is mounting that an accurate portrayal of PNW river tonnage which may be displaced by a lock and dam removal on the Snake River can be accurately portrayed in realistic scenario which resembles reasonable logistics decisions. Rail notes and assumptions are so narrowly focused that no consideration of 217 additional unit trains might impact the Washington State Rail network including the heavily traveled Amtrak Corridor paralleling I-5.
- There is concern that there is insufficient time to address the modeling errors identified in the June RTWG review and if past experience is repeated if these issues are not addressed now, they will be cast aside, and corrections will be skipped in order to produce an oversimplified forecast of future freight flows by the contract deadline of December 2026.
- Communication with the TAC attendees is inadequate in that it does not identify the modeling inputs, sources and assumptions. The modeling output expectations are unclear. Model presentations are pushed out during the call with insufficient time for attendees to absorb, analyze and develop thoughtful questions within the time frame of the call. A workshop or half-day session should be designed to allow for stakeholder analysis. The slides presented at the TAC meeting on May 28, 2025, have not been distributed to stakeholders and questions asked of the WSDOT team have not been responded to.
- The scope is unclear about whether the I-5 rail corridor is part of the study or not. There is concern that the addition of 217-unit trains and their impact on Class 1 and short line rail networks is accurately captured.
- No other commodities have been discussed, and fertilizer is also a complex and nuanced supply chain to models.

APPENDIX II: RIVER TRANSPORTATION WORKING GROUP

River Transportation Working Group Distribution List		
Organization	**Name**	**Email**
Affiliated Tribes	Amber Schulz-Oliver	Ambers@atnitribes.org
Alta Forest Products	Luke Machtolf	lukemachtolf@altafp.com
American Cruise Lines	Kristin Meira	kristin.meira@americancruiselines.com
American Cruise Lines	Mark Freeman	mark.freeman@americancruiselines.com
American Queen Steamboat Company	Gary Frommel	gfrommelt@aqsc.com
American Waterways	P. Schrappen	pschrappen@americanwaterways.com
American Waterways	B. Trammell	btrammell@americanwaterways.com
Bennett Lumber Company	Brett Bennett	brett@blpi.com
Blue Spruce Strategies	Lisa McShane	lisa@blue-spruce.com
BNSF	Brendan Camey	Brendan.camey@bnsf.com
BNSF	Johan Hellman	johan.hellman@bnsf.com
BNSF	Matt Igoe	Matthew.igoe@bnsf.com
BNSF	Kevin Long	kevin.long@bnsf.com
Clearwater Paper	Darin Douglass	darin.douglass@clearwaterpaper.com
Clearwater Paper	Jay Backus	jay.backus@clearwaterpaper.com
Columbia Rail	Chris Hyland	ch@columbiarail.com
Columbia Walla Walla Railway	Paul Didelius	pd@columbiarail.com
Columbia River Steamship Operators	Amber Carter	Amber@comcast.net
G&W Railroad	Michael Yuen	michael.yuen@gwrr.com
G&W RR	Michael Yuen	Michael.yuen@gwrr.com
Genesee & Wyoming RR	Ross Lane	ross.lane@gwrr.com
GoRail	Nate Kaplan	nkaplan@gorail.org
Highline Grain Growers	Paul Katovich	paulk@highlinegrain.com
Idaho Foerst Group	Alan Harper	abharper@ifg.com
JTC	Jennifer Harris	jennifer.harris@leg.wa.gov
JTC	Jenny Forty	jenna.forty@leg.wa.gov
JTC	Rachel Dean	Rachel.Dean@leg.wa.gov
JTC	Dave Catterson	Dave.Catterson@leg.wa.gov
McGregor Company	Alex McGregor	alex@mcgregor.com
McGregor Company	Leslie Druffel	leslie.druffel@mcgregor.com
Omaha Track	Frank Forlini	frank@omahatrack.com
OR Dept. of Fish/Wildlife	Liz Hamilton	nsializ@aol.com
Pacific Northwest Waterways	Neil Maunu	neil.maunu@pnwa.net
PNW Grain Cooperative	Shawn O'Connell	shawn@pnw.coop
PNWA	Megan McKibben	megan.mckibben@pnwa.net

Shaver Transportation	Hearther S. Shaver	heathers@shavertransportation.com
Shaver Transportation	Rob Rich	rdr@shavertransportation.com
The Palouse River and Coulee City	Larry Rasmussen	Larry.Rasmussen@wsdot.wa.gov
Tidewater Transportation & Terminals	Jennifer Riddle	Jennifer.riddle@tidewater.com
U.S. Army Corps of Engineers	Jarod Norton	Jarod.K.Norton@usace.army.mil
Umatilla Tribal Organization	Gary Burke	garyburke@ctuir.org
Union Pacific Railroad	Eric Gehringer	ejgehrin@up.com
Union Pacific Railroad	S. P. Nichol	spnichol@up.com
United Grain	John Todd	jtodd@ugcpnw.com
UP Railroad	Aaron Hunt	amhunt@up.com
UP Railroad	Adrian Guerrero	aguerre@up.com
UP Railroad	M. Phaney	mphaney@up.com
UP Railroad	Sara Nichol	
USACE	Cynthia Boen	cynthia.a.boen@usace.army.mil
USACE	Kelly Baxter	kelly.d.baxter@usace.army.mil
WA Assoc. of Wheat Growers	Michelle Hennings	michelle@wawg.org
Washington Eastern Railroad	Bill Goldsberry	bgoldsberry@jag-transport.com
Washington Grain Commission	Casey Chumrau	casey@wagrains.org
Washington Public Ports Assn.	Chris Herman	cherman@washingtonports.org
Washington State University	Jake Wagner	jake.wagner@wsu.edu
Watco	Amy Slay	amy.slay@watco.com
Watco	Matt Hoobler	matt.hoobler@watco.com
Watco	Kurtis Lindsey	klindsey@watco.com
Wilbur-Ellis	Gracie Dickerson	Gdickerson@wilburellis.com
WS DOT	Paul Muppidi	paul.muppidi@dot.gov
WS DOT	Gary Martindale	gary.martindale@dot.gov
WSDOT	Jim Mahugh	jim.mahugh@wsdot.wa.gov
WSU	Eric Jessup	eric_jessup@wsu.edu
Yakama Nation	Gary Pierce Jr	https://ynle.com/staff/index.html
Yakama Nation	Star Diavolikis	star_diavolikis@yakama.com
Yakima	Gerald Lewis	gerald_lewis@yakima.com
Yakima Bait	Daniel McDonald	danielm@yakimabait.com
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